

Vancouver Island Drug Checking Project

Preliminary Results for May 2023

The Vancouver Island Drug Checking Project delivers drug checking services in Campbell River, the Comox Valley, Duncan, Port Alberni, and Victoria, BC. Our service has been operating in partnership with SOLID Outreach, AVI Health and Community Services, Port Alberni Shelter Society, Vancouver Island Mental Health Society, Duncan Lookout Housing and Health Society, Vancouver Island University, and the Island Health Authority. This free and confidential service provides information on composition of substances and harm reduction information.

885

Samples Tested
1 - 31 May 2023

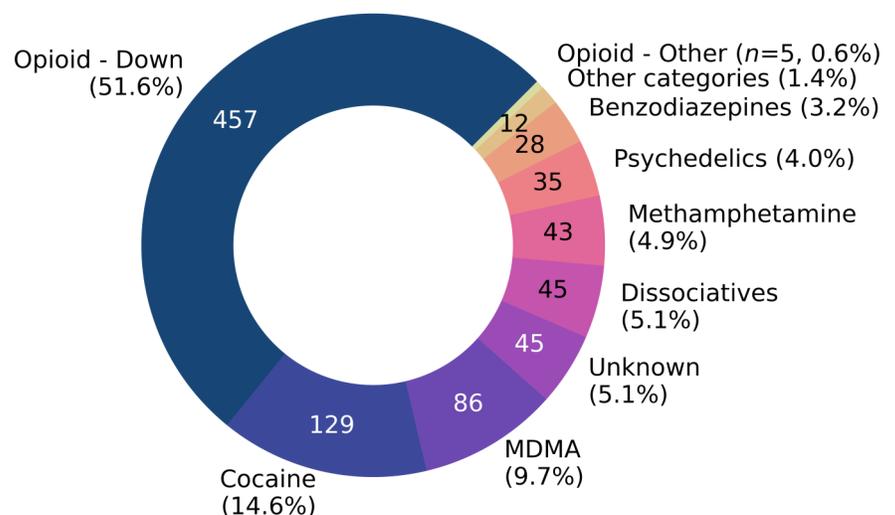
Highlighted findings:

- The median fentanyl concentration found across all drug categories was 10.2%
- Carfentanil was found in 2 expected opioid-down samples at concentrations of 0.07% and 1.70%
- Benzodiazepines and/or etizolam were found in 37% (170/457) of expected opioid-down samples
- Bromazolam, the most common benzo found within opioid-down, was found in 153 down samples with a median concentration of 2.2% and maximum concentration of 44.6%
- Xylazine was found in 21 samples (18 expected opioid-down, 3 “unknown”) with a median concentration of 1.1% and a maximum concentration of 29.1%
- Fentanyl was detected in 1 sample expected to be cocaine base (hard/crack) from Victoria. This sample repeatedly tested positive for fentanyl via immunoassay strip test, over a range of concentrations, but no fentanyl or fentanyl analogues were detected via mass spectrometry.

[Read our blog](#) for further interpretations of our May data.

What were people bringing to be checked?

Service users bring us a wide variety of substances that can be grouped into different drug classes. This pie chart aggregates the samples we checked by their “expected” substance (i.e. the drug category reported by the service user). The number of samples checked in each class is included inside each slice and the relative proportion of all samples checked is given in parentheses. These data are separated by collection location/method on the following page.

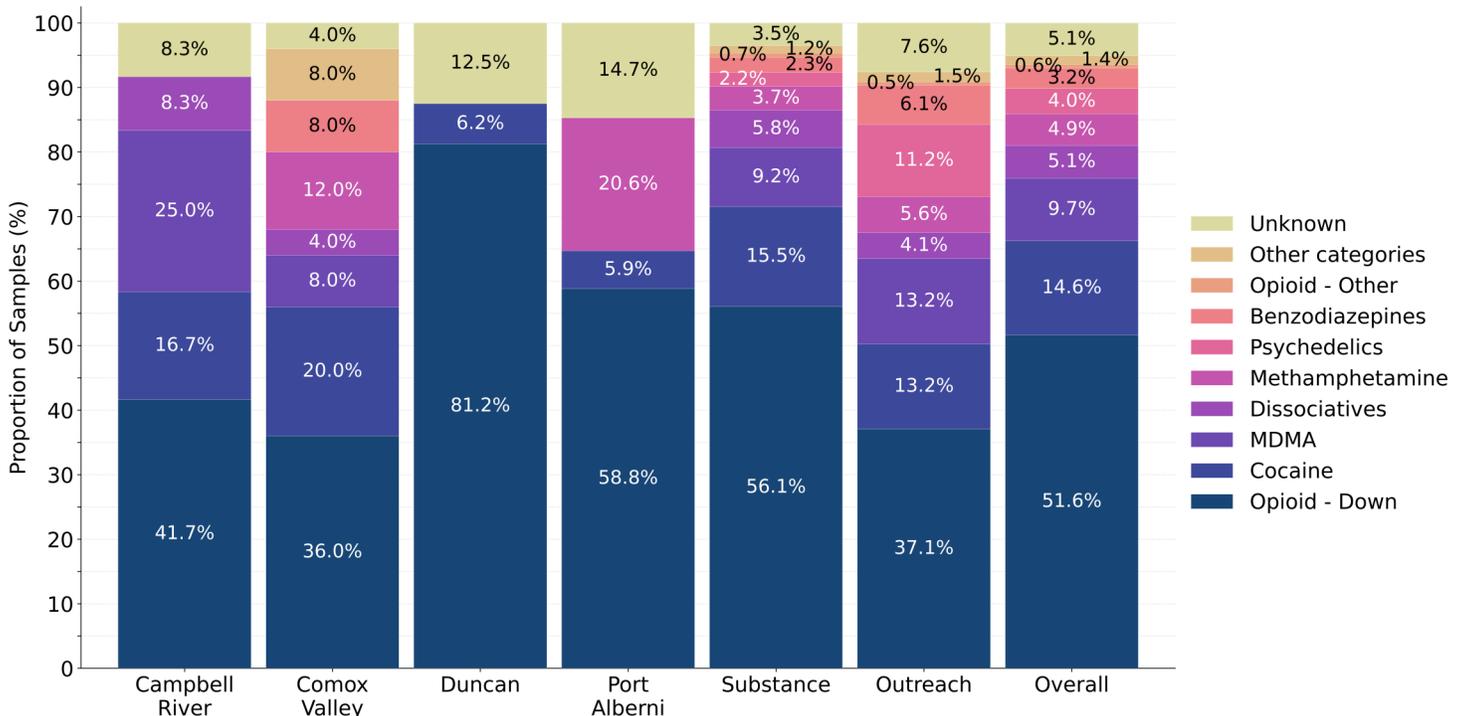


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What were people bringing to be checked by service model?

The “expected substance” data presented on the front page of this document can be separated by sample collection location/method, where “Substance” samples are those brought directly to our Victoria storefront, “Campbell River”, “Comox Valley”, “Duncan”, and “Port Alberni” are samples received through our distributed drug checking model, and “Outreach” samples are those collected at supported housing sites, at overdose prevention and supervised consumption locations, and through no contact drop-off envelopes. May’s Outreach data also includes samples checked at the Lamplight Year One festival (n=50 samples). The relative proportions of samples checked by expected class and location are shown in the stacked bars below, and the sample counts are listed in the table at the bottom of this page.



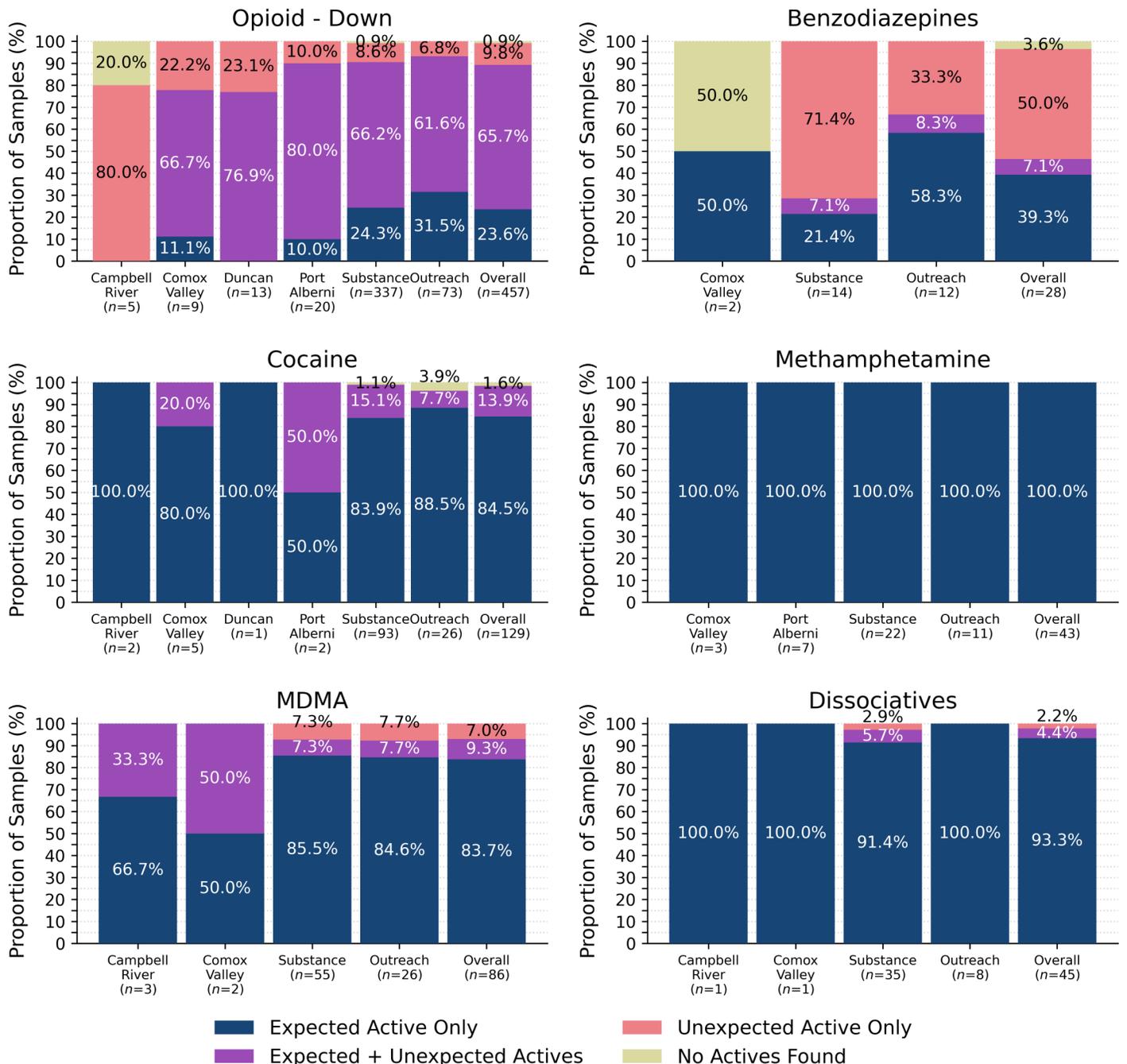
Expected substance	Campbell River	Comox Valley	Duncan	Port Alberni	Substance	Outreach	Overall
Opioid Down (fentanyl and/or heroin)	5	9	13	20	337	73	457
Cocaine (HCl or Base)	2	5	1	2	93	26	129
MDMA	3	2			55	26	86
Dissociative (ketamine)	1	1			35	8	45
Methamphetamine		3		7	22	11	43
Psychedelic (2C-B, DMT, LSD)					13	22	35
Benzodiazepine		2			14	12	28
Other Opioids (Dilaudid, oxycodone)					4	1	5
Other (cannabis, GHB, steroids, etc.)		2			7	3	12
Unknown/Missing	1	1	2	5	21	15	45
Total samples checked	12	25	16	34	601	197	885

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What did we find?

We checked each sample to determine what active ingredients, adulterants, and cutting agents were present. While a majority of samples contained the expected active drug, we also detected a number of other notable components that may cause unexpected effects. The figures below illustrate the proportions and numbers of samples checked in each drug category, separated by collection location/method, colour coded by their composition. **Dark Blue** bars group samples that were “as expected” with no other notable compounds detected, **Magenta** bars show samples that contained the expected drug *and* other unexpected active(s), **Salmon** groups samples that only contained unexpected active(s) (the expected drug was not found), and **Lime** displays samples where no active compounds were detected.



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What did we find?

Expanding on the figures shown on the previous page, for each drug category and collection location/model, we list the number of samples that contained the expected active and/or other notable components. Samples where no detected actives have been excluded for brevity.

Opioid Down	Campbell River	Comox Valley	Duncan	Port Alberni	Substance	Outreach
<i>Expected Active Only</i>		1		2	82	23
Fentanyl		1		2	82	23
<i>Expected* + Unexpected Active(s)</i>		6	10	16	223	45
Fentanyl*		6	10	16	222	41
Heroin*					2	5
5F-ADB				4		
Acetylcodeine					2	5
Acetylmorphine					1	5
Benzodiazepine (undifferentiated) ¹				4	4	2
Bromazolam		6	9	9	103	12
Carfentanil					2	
Cocaine HCl			2		1	
Desalkylgidazepam					2	
Etizolam					3	1
Flualprazolam				1	9	
Flubromazepam					1	
Fluorofentanyl		4	2	4	184	36
Hydromorphone					1	
Lidocaine						1
Methamphetamine			1		1	
Morphine						1
Oxycodone						1
Xylazine		4	1		10	2

Expected Opioid - Down data continued on next page

Data are preliminary. There were missing data for some samples. Instruments may not be able to detect all ingredients and certainty of interpretations may vary. Multiple substances may be present in one sample and substances may be present in trace concentrations. *Expected active component. ¹Benzodiazepine (undifferentiated) results are based on a positive benzo strip test and are unconfirmed by paper spray.

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Opioid Down (continued)	Campbell River	Comox Valley	Duncan	Port Alberni	Substance	Outreach
Unexpected Active(s) Only	4	2	3	2	29	5
4-Fluoro-ADB		1				
Benzodiazepine (undifferentiated) ¹	2		1	1	1	
Bromazolam	2	1	2		8	1
Cocaine HCl			1			1
Fentanyl	1		1			
Fluorofentanyl	3	1	1	1	29	3
Methamphetamine			1			
THC				1		
Xylazine						1

Cocaine (HCl or Base)	Campbell River	Comox Valley	Duncan	Port Alberni	Substance	Outreach
Expected Active Only	2	4	1	1	78	23
Cocaine Base	2		1		17	2
Cocaine HCl		4		1	61	21
Expected* + Unexpected Active(s)		1		1	14	2
Cocaine Base*				1	9	1
Cocaine HCl*		1			5	1
Fentanyl					1	
Levamisole		1			2	1
MDMA					1	
Methamphetamine						1
Phenacetin				1	10	

Methamphetamine	Comox Valley	Port Alberni	Substance	Outreach
Expected Active Only	3	7	22	11
Methamphetamine	3	7	22	11

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MDMA	Campbell River	Comox Valley	Substance	Outreach
<i>Expected Active Only</i>	2	1	47	22
MDA			2	2
MDMA	2	1	45	20
<i>Expected* + Unexpected Active(s)</i>	1	1	4	2
MDMA* + Cocaine HCl				1
MDMA* + MDA	1			1
MDMA* + MDEA		1		
<i>Unexpected Active(s) Only</i>			4	2
4-AcO-DMT (MDMA expected)				1
Cocaine HCl (MDMA expected)			1	
Ketamine (MDMA expected)			1	
MDA (MDMA expected)			1	
MDMA (MDA expected)			1	1

Dissociatives	Campbell River	Comox Valley	Substance	Outreach
<i>Expected Active Only</i>	1	1	32	8
Ketamine	1	1	32	8
<i>Expected* + Unexpected Active(s)</i>			2	
Ketamine* + Cocaine HCl			1	
Ketamine* + Phenacetin			1	
<i>Unexpected Active(s) Only</i>			1	
Ephedrine (Ketamine expected)			1	

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Psychedelics	Substance	Outreach	Benzodiazepines	Comox Valley	Substance	Outreach
Expected Active Only	10	20	Expected Active Only	1	3	7
2C-B	4	2	Alprazolam (Xanax)	1		
3-MMC		1	Bromazepam			1
4-HO-MET		1	Bromazolam		2	1
5-MeO-DMT	1		Etizolam		1	2
5-MeO-MiPT		8	Flualprazolam			3
DMT		1	Expected* + Unexpected Active(s)		1	1
Ibogaine	1		Bromazolam* +		1	
LSD	3	7	Flualprazolam			
Mescaline	1		Etizolam* + Flualprazolam			1
Expected* + Unexpected Active(s)	2		Unexpected Active(s) Only		10	4
2C-B* + 2C-H	1		Bromazolam		3	2
2C-B* +			Cocaine HCl		1	
Cocaine HCl + Phenacetin	1		Etizolam		2	1
Unexpected Active(s) Only		1	Flualprazolam		2	1
3-CMC (3-MMC expected)		1	Mirtazapine		1	
			Pregabalin		1	

Opioid Other	Substance	Outreach
Expected Active Only	2	1
Hydromorphone (Dilaudid)	1	
Naltrexone	1	
Oxycodone		1
Unexpected Active(s) Only	2	
Acetaminophen + Noscapine (Acetaminophen + Morphine expected)	1	
Isotonitazene + Butonitazene (Protonitazene expected)	1	

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Other	Comox Valley	Substance	Outreach
Expected Active Only		3	1
Cannabis		2	
GHB			1
Sildenafil + Tadalafil		1	
Expected* + Unexpected Active(s)		1	
GHB* + GBL		1	
Unexpected Active(s) Only		1	
Methamphetamine (amphetamine expected)		1	

Unknown/Missing	Campbell River	Comox Valley	Duncan	Port Alberni	Substance	Outreach
Unexpected Active(s) Only	1	1	2	4	17	12
Amphetamine					1	
Benzodiazepine (undifferentiated) ¹			2	1		
Bromazepam						1
Bromazolam		1			2	2
Cocaine Base	1					1
Cocaine HCl				1	3	1
Fentanyl			2	1	5	3
Fluorofentanyl					7	1
Fluoxetine					1	
Furosemide					2	
Ketamine					2	4
MDA					1	1
MDMA					1	1
Methamphetamine			1	1		
Oxycodone				1		
Xylazine			1		1	1

Data are preliminary. There were missing data for some samples. Instruments may not be able to detect all ingredients and certainty of interpretations may vary. Multiple substances may be present in one sample and substances may be present in trace concentrations. *Expected active component. ¹Benzodiazepine (undifferentiated) results are based on a positive benzo strip test and are unconfirmed by paper spray.

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Quantification

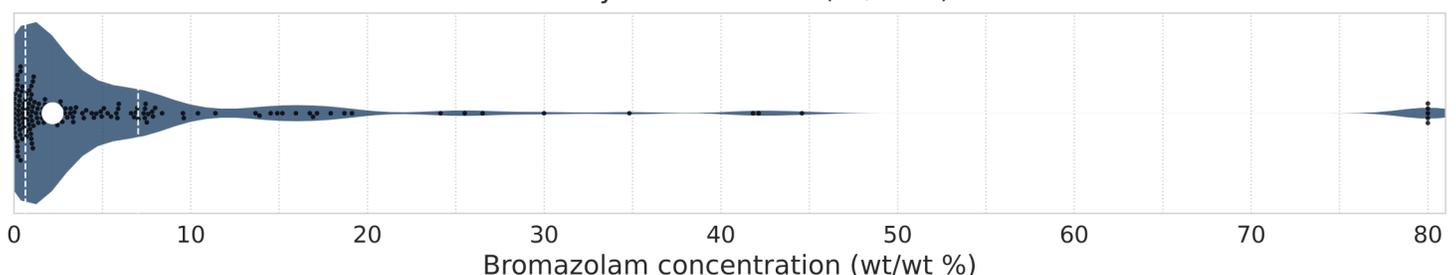
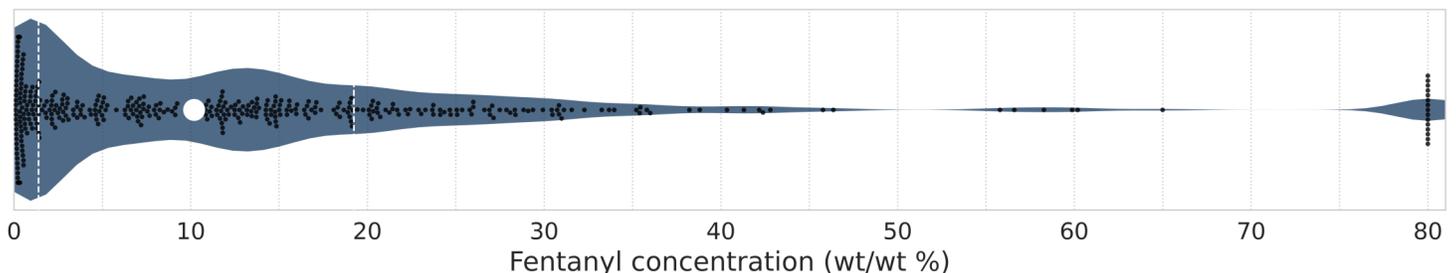
Using paper spray mass spectrometry (PS-MS) data, we were able to quantify low concentration compounds. These aggregate values are *inclusive to all expected drug categories* in which the active drugs are found. Weight percentage is reported below. "IQR" is the interquartile range: the concentration range that contains half of the quantified samples.

Compound	# Quant.	Median	Min	Max	IQR
Fentanyl	400	10.2%	0.1%	>80%*	1.4% - 19.2%
Fluorofentanyl	264	6.1%	0.0%	>80%*	1.7% - 18.1%
Bromazolam	157	2.2%	0.0%	>80%*	0.7% - 7.0%
Xylazine	20	1.1%	0.1%	29.1%	0.2% - 5.2%
Flualprazolam	18	0.3%	0.1%	1.3%	0.2% - 0.4%
Etizolam	10	3.0%	0.5%	>25%*	1.0% - 20.3%
Phenacetin	10	7.1%	1.1%	>80%*	2.3% - 30.1%
Heroin	6	60.1%	9.2%	>80%*	17.8% - >80%*
Acetylmorphine	6	2.7%	1.3%	30.9%	1.7% - 3.1%
5F-ADB	4	3.3%	1.3%	10.5%	1.6% - 6.3%
Carfentanil	2	0.89%	0.07%	1.70%	-

*There is a maximum concentration limit that the PS-MS can quantify for each compound of interest. If a sample contains a higher percentage of a compound than the PS-MS's limits, then only the upper limit will be reported. For example, the upper limit of reporting for fentanyl on the PS-MS is 80% - any sample containing more than 80% fentanyl will be flagged as ">80%".

Distribution of Fentanyl and Bromazolam Concentrations

The concentrations of fentanyl and bromazolam for every sample quantified across *all expected drug categories and service models* are illustrated below to highlight the variability in the unregulated drug market. **Black Dots** are individual samples, the large **White Dot** marks the median concentration, the **Dashed White Lines** bound half of the quantified samples (IQR), and the **width** of the coloured region is proportional to the number of samples in a concentration range.



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Opioid - Down Quantification by Service Model

Here we examine the regional variability in the unregulated market. The table below expands on the data presented on the previous page (*inclusive to all expected drug categories*) and focuses only on fentanyl, fluorofentanyl, carfentanil, bromazolam, and xylazine quantified within *expected opioid-down samples*, separated by collection location/model. Weight percentage is reported; "IQR" is the interquartile range: the range that contains half of the quantified samples.

Service Model	Compound	# Quant.	Median	Min	Max	IQR
Campbell River 5 total down samples 80% (4/5) benzo-positive	<i>Quantitative data is not available for these samples as no samples were sent for quantitative analysis via mass spectrometry. Benzo-positivity is based on immunoassay strips and detection of bromazolam via FTIR spectroscopy.</i>					
Comox Valley 9 total down samples 78% (7/9) benzo-positive	Bromazolam	6	10.0%	0.8%	41.8%	8.0% - 28.7%
	Fentanyl	7	15.0%	0.2%	28.3%	6.9% - 25.1%
	Fluorofentanyl	4	2.8%	0.6%	14.2%	1.4% - 6.6%
	Xylazine	4	0.7%	0.1%	9.9%	0.4% - 3.1%
Duncan 13 total down samples 92% (12/13) benzo-positive	Bromazolam	8	7.6%	0.2%	26.5%	2.3% - 15.4%
	Fentanyl	9	2.1%	0.4%	14.7%	0.7% - 6.6%
	Fluorofentanyl	3	15.1%	7.0%	25.0%	-
	Xylazine	1	-	-	21.6%	-
Port Alberni 20 total down samples 70% (14/20) benzo-positive	Bromazolam	8	2.0%	0.3%	7.5%	1.3% - 4.6%
	Fentanyl	12	0.3%	0.1%	15.4%	0.2% - 3.1%
	Fluorofentanyl	4	16.8%	11.4%	20.5%	15.1% - 18.1%
Substance 337 total down samples 35% (117/337) benzo-positive	Bromazolam	108	2.0%	0.0%	44.6%	0.6% - 5.9%
	Carfentanil	2	0.89%	0.07%	1.70%	-
	Fentanyl	303	11.5%	0.1%	>80%*	1.5% - 20.6%
	Fluorofentanyl	207	6.4%	0.1%	>80%*	2.1% - 21.1%
	Xylazine	10	0.7%	0.1%	29.1%	0.2% - 3.6%
Outreach 73 total down samples 22% (16/73) benzo-positive	Bromazolam	13	1.1%	0.0%	24.1%	0.2% - 3.2%
	Fentanyl	62	7.6%	0.1%	>80%*	1.9% - 15.5%
	Fluorofentanyl	39	3.5%	0.1%	60.9%	0.3% - 11.5%
	Xylazine	3	3.6%	1.1%	9.5%	-

*There is a maximum concentration limit that the PS-MS can quantify for each compound of interest. If a sample contains a higher percentage of a compound than the PS-MS's limits, then only the upper limit will be reported. For example, the upper limit of reporting for fentanyl on the PS-MS is 80% - any sample containing more than 80% fentanyl will be flagged as ">80%". Not all samples can be quantified.

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The Vancouver Island Drug Checking Project is based out of the University of Victoria and operates community-wide drug checking services within Campbell River, the Comox Valley, Duncan, Port Alberni, and Victoria, BC. We are continuing to offer drug checking services in response to the dual public health emergencies, and exploring new ways to better reach those who may benefit from this service. We have partnered with Dr. Chris Gill and the team at Vancouver Island University to improve detection and reporting using their methods for the paper spray - mass spectrometer.

See the blog portion of our website to view our more detailed interpretations of our reports.

Our project works on Indigenous land. We provide drug checking, harm reduction education and support across many territories on what is colonially known as 'Vancouver Island.' We also act as a resource for these services across the province colonially known as 'British Columbia.' We honour and offer respect to many nations for their stewardship, care and leadership on these lands.

Our project originated on the territories of the lək̓ʷəŋən speaking peoples, including the Songhees and Xwsepsum (Esquimalt) Nations, and the WSÁNEĆ (Saanich) Nations on whose land the University of Victoria is located. Some of the territories we are honoured to work across specifically include: Halalt, Lyackson, Meluxulh (Malahat), Punelux-utth', Quw'utsun, Stz-uminus, and Ts'uubaa-asatx; Hupačasath and Tseshaht; K'ómoks; and Laich-kwil-tach.

We acknowledge the inextricable links between research, colonization and racism against Indigenous peoples, which continue to this date. Ending the violence faced by people who use drugs cannot be achieved without actively working on decolonization.

For more information please visit: substance.uvic.ca

We gratefully acknowledge our partners and funders on this project

Our Partners



Our Funders

