

Comparing Models of Drug Checking Services in Canada

Models of drug checking services (DCS) in Canada differ in important ways, including targeted subpopulations of people who use drugs (who can access the service and when) and the technology used for analysis of samples (which impacts how long it takes to receive results and what information is available from the analysis). This resource aims to provide an overview of select DCS in Canada that are harmonizing research protocols and approaches for the purpose of ensuring nationwide comparability of collected evidence.

| | British Columbia | | | Ontario | | |
|------------------------------|-------------------------------------|--|--|-------------------------------------|---|---|
| | Regional Health Authorities | Vancouver and Surrey (BCCSU) | Nelson (ANKORS, in partnership with BCCSU) | Regional Health Authorities | Ottawa (SHCHC) | Toronto (CDPE) |
| Location | All SIS and OPS in BC | Two SIS, and select music festivals and events | One community organization, and select music festivals and events | SIS and OPS in Ontario | One CHC offering SIS | Three frontline harm reduction agencies (including CHCs) offering SIS |
| Access Restrictions | OPS/SIS clients | None | None | None | SIS clients only at point of injection | None |
| Status | Operating | Operating | Operating | Operating | Operating | Forthcoming |
| On-Site Technique | Fentanyl test strips | Combination method: FTIR spectrometer and fentanyl test strips | Combination method: FTIR spectrometer, fentanyl test strips, and reagent tests | Fentanyl test strips | Mobile mass spectrometer (portable ion scanner) | N/A |
| Turnaround Time | >5 minutes | 5 minutes | 5 minutes | >5 minutes | 20 seconds | N/A |
| Information Available | Presence / absence of fentanyl only | Most qualitative, limited quantitative | Most qualitative, limited quantitative | Presence / absence of fentanyl only | Some qualitative | N/A |
| Offsite Technique | N/A | qNMR, LC-MS, and GC-MS | N/A | N/A | N/A | GC-MS and LC-MS |
| Turnaround Time | N/A | 7 days, expected to decrease to 4 days | N/A | N/A | N/A | Approximately 2 hours |
| Information Available | N/A | All qualitative and quantitative | N/A | N/A | N/A | All qualitative and quantitative |

British Columbia

Regional Health Authorities. DCS using fentanyl test strips are available to clients of most supervised injection services (SIS) and overdose prevention sites (OPS) in British Columbia through regional health authorities.

Vancouver and Surrey. The [BC Centre on Substance Use \(BCCSU\)](#) offers DCS at two SIS and select music festivals and events using more advanced techniques. This program is located in the front entrance area of a SIS in Vancouver and a SIS in Surrey, and DCS are not limited to SIS clients. At music festivals and events, DCS are typically limited to event patrons. Drug samples are analyzed onsite using a Fourier-transform infrared (FTIR) spectrometer in combination with fentanyl test strips, a process that takes approximately 5 minutes for the client to receive qualitative information on the composition of their sample. FTIR can identify any substance in its library, although there are limitations to what can be qualitatively detected (e.g., substances present below the limit of detection of approximately 3-5% may not be detected). Fentanyl test strips are an important complementary technique – especially given current drug market trends – as this enables the detection of fentanyl at quantities that would not be detected by FTIR, though test strips are limited to targeted qualitative analysis (i.e., these provide information about the presence or absence of fentanyl and a limited number of fentanyl analogs). Neither of these onsite techniques are designed to provide quantitative (i.e., potency) information on drug samples; however, estimates can be made using FTIR spectroscopy. For example, FTIR provides some information on proportions depending on signal strength (i.e., peaks on the spectrograph), although the availability of this information varies by sample and skill of the operator, and the proportions are not exact.

The BCCSU also provides the option to test samples offsite using quantitative nuclear magnetic resonance (qNMR), gas chromatography mass spectrometry (GC-MS), and liquid chromatography mass spectrometry (LC-MS) through partnerships with LifeLabs, Health Canada’s Drug Analysis Service labs, and Provincial Toxicology Centre labs. Precise information on composition and potency is made available to clients approximately 7 days after sample collection, although this is expected to decrease to 4 days. These data are primarily valuable for drug market monitoring and to confirm the accuracy of results provided at point-of-care through use of FTIR and fentanyl test strips, as few clients currently access updated analysis results.

The BCCSU expects to offer DCS outside of supervised consumption settings (i.e., at OPS designated for drug checking purposes only) within the next few months.

Nelson. [ANKORS \(AIDS Network Kootenay Outreach and Support Society\)](#) offers DCS to clients at their office in Nelson. In addition to employing a FTIR spectrometer (provided through a partnership with BCCSU) and fentanyl test strips, ANKORS also uses reagent tests to complement these techniques in some cases (e.g., for LSD blotters). Different reagent tests detect different substances and, based on the colour and timing of the reaction, can provide insight into the composition of drug samples. Reagent tests provide some qualitative information, but do not provide any quantitative information. ANKORS also provides DCS using these techniques to patrons at select music festivals and events.

Ontario

Regional Health Authorities. DCS using fentanyl test strips are available to clients of SIS and OPS in Ontario through regional health authorities.

Ottawa. DCS are available at the [Sandy Hill Community Health Centre \(SHCHC\)](#) in Ottawa to SIS clients. Clients prepare their injection in the SIS and a drop of their shot is inserted into a mobile mass spectrometer (portable ion scanner) for analysis prior to proceeding with their injection. Targeted qualitative information (i.e., instrument surveys against a list of common substances and indicates detection) is available in 20 seconds. Substances outside of this list can be looked for specifically with qualitative information available in 2-5 minutes. Qualitative capabilities will be expanded to capture a greater number of common substances in the targeted analysis by mid-summer. This technique is not intended to provide quantitative information on the potency of drug samples; however, estimations of potency are anticipated to be made available to clients in late summer or early fall. No offsite or confirmatory testing is undertaken.

Toronto. DCS in Toronto are being centrally coordinated by the [Centre on Drug Policy Evaluation \(CDPE\)](#) at St. Michael's Hospital and will be made available at three frontline harm reduction agencies also offering SIS, two of which are also a community health centre (CHC). Anyone can access DCS at these sites (i.e., services are not limited to SIS clients). Drug samples will be collected from clients onsite and transported for analysis offsite at partnering hospital laboratories using GC-MS and LC-MS, the gold standards in forensic drug analysis. It is anticipated that analysis results, including information on composition and potency (i.e., qualitative and quantitative), will be available to clients in approximately 2 hours.

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