



Toronto's Drug Checking Service

Coordinated by the **Centre on Drug Policy Evaluation**

10 key findings related to the impact of Toronto's Drug Checking Service

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Authors:

Karen McDonald, MPPAL PMP, Lead, Toronto's Drug Checking | Research Program Manager, St. Michael's Hospital site of Unity Health Toronto

Hayley Thompson, MSc, Project Manager, Toronto's Drug Checking Service | Research Coordinator, St. Michael's Hospital site of Unity Health Toronto

Dan Werb, PhD, Executive Director, Centre on Drug Policy Evaluation | Research Scientist, St. Michael's Hospital site of Unity Health Toronto

On behalf of the members for Toronto's Drug Checking Service:

- Centre for Addiction and Mental Health
- Moss Park Consumption and Treatment Service
- Parkdale Queen West Community Health Centre
- South Riverdale Community Health Centre
- The Works at Toronto Public Health
- TRIP! Project
- Unity Health Toronto

Report contributors include:

- Canadian law enforcement community
- Drug Strategy Network of Ontario
- LifeLabs
- META:PHI
- National Safer Supply Community of Practice
- Office of the Chief Coroner for Ontario
- Ontario's Centre of Forensic Sciences
- Registered Nurses' Association of Ontario
- Toronto Opioid Overdose Action Network

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We acknowledge the members of our community that have lost their lives – both in the ongoing toxic drug supply crisis and long before – due to policies of drug criminalization.

We acknowledge that the land on which we operate Toronto’s Drug Checking Service is the traditional territory of many nations, including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee, and the Wendat peoples, and is now home to many diverse First Nations, Inuit, and Métis peoples.

We acknowledge that racialized communities and survivors of colonization are disproportionately impacted by unjust drug policies. We strive to support the development of equitable drug policies that are responsive to the needs of racialized people who use drugs – including Black, Indigenous, and People of Colour – and their communities.

We know that many of the samples we check are linked to both fatal and non-fatal overdose, as well as adverse health events. We acknowledge the people and pain behind the data we share.

Our work would not be possible if people who use drugs did not access our service and, as a result, advocate for themselves and help develop solutions that impact them. We thank the community of people who use drugs in Toronto who provide ongoing feedback on the design and implementation of Toronto’s Drug Checking Service, as well as our members, partners and collaborators, and funders for their ongoing commitment.

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About Toronto's Drug Checking Service

[Toronto's Drug Checking Service](#) is a free and anonymous public health service that aims to reduce the harms associated with substance use and, specifically, to prevent overdose by uncovering the toxicity and potency of the unregulated drug supply.

Launched in October 2019, the service has operated as a pilot program within the [Centre on Drug Policy Evaluation](#) at the [St. Michael's Hospital site of Unity Health Toronto](#), in collaboration with its [member organizations](#), and with support from Health Canada's Substance Use and Addictions Program, Ontario's Ministry of Health, the Public Health Agency of Canada, and the St. Michael's Hospital Foundation.

Toronto's Drug Checking Service provides service users with detailed information on the contents of their drugs via community health agencies that offer supervised consumption (i.e., collection sites), helping them to make informed decisions related to their substance use. Beyond educating individual service users, results for all samples are collated and analyzed to perform unregulated drug market monitoring, then translated and [publicly disseminated every other week](#) to communicate unregulated drug market trends to those who cannot directly access the service, as well as to inform care for people who use drugs, advocacy, policy, and research.

By way of [exemptions from Canada's Controlled Drugs and Substances Act](#), Toronto's Drug Checking Service has piloted what is known as "offsite drug checking", where controlled substance samples are collected in the community at collection sites and transported daily by bike courier to partnering laboratories (i.e., analysis sites) for analysis using gas chromatography- and/or liquid chromatography-mass spectrometry. These technologies provide precise information about which drugs are found in each sample and some information about how much of each drug is present (i.e., qualitative and quantitative results). Within 1 to 2 days, detailed results are returned to the site that collected the sample and communicated to the service user in person, by phone, or by email, along with tailored strategies to reduce harm and referrals to drug-related, health, and social services.

Between October 2019 and March 2023, the service checked more than 9,000 samples from the unregulated drug supply and identified over 400 unique drugs – many of which can be directly linked to overdose. The service has uncovered an unregulated opioid supply that is highly contaminated and volatile: its toxicity and unpredictability are driving drug-related morbidity and mortality.

This report summarizes 10 key findings related to the impact of the pilot period, which are consistent with the learnings of those implementing and evaluating similar programs in British Columbia ([BCCSU Drug Checking Program](#) and the University of Victoria [Substance](#) project) and elsewhere.

10 key findings related to the impact of Toronto's Drug Checking Service

1 **Drug checking provides potentially life-saving information to those at highest risk of overdose.**

People who use opioids are at the highest risk of overdose and drug-related harms. Of the 9,000 samples checked by Toronto's Drug Checking Service between October 2019 and March 2023, half were expected to be (i.e., got or bought as) opioids. Of the opioid samples checked, 10% (446 of 4,471) were reported as being associated with an overdose. Drug checking services provide direct information about how the contents of a drug sample contributed to an overdose or adverse health event.

2 **Drug checking facilitates behaviour change.**

At minimum, 34% (291 of 851) of service users surveyed by Toronto's Drug Checking Service reported intending to do something different based on the information they received from the service. This included: giving feedback to their seller (24%: 70 of 291), using at a supervised consumption site (21%: 61 of 291), using with a friend rather than using alone (21%: 60 of 291), using with naloxone handy (17%: 49 of 291), or doing a small test dose first (10%: 28 of 291). Additionally, 21% (60 of 291) reported intending not to use the drug they had checked after learning what was in it. Note that only 27% (16 of 60) of those that reported not intending to use the drug were checking opioids, which carry the highest risk of overdose and drug-related harms compared to other drug types.

Furthermore, 38% (970 of 2,533) of service users surveyed by Toronto's Drug Checking Service disclosed integrating drug checking into their drug using routine by waiting for their drug checking results before using. Again, it is important to note that just 16% (157 of 970) of those respondents were checking opioids and thus at highest risk of overdose and drug-related harms. Unfortunately, many people who use opioids are not able to wait for substantial periods before using their drug, let alone a day or two, due to physiological dependence and the pain of withdrawal. People who use other drug types are more likely to be in a position to do so.

3 **Drug checking provides a gateway to accessing harm reduction services.**

Among service users surveyed by Toronto's Drug Checking Service, 42% (742 of 1,762) had never accessed harm reduction services prior to accessing the program. This means that drug checking is acting as a gateway to harm reduction services and, in turn, a gateway to referrals to treatment and other drug-related, health, and social services. Among those that had never accessed harm reduction services before, 25% (183 of 742) were checking opioids and, therefore, at highest risk of overdose and drug-related harms.

4 **Drug checking services enable monitoring of the unregulated drug market and public dissemination of drug market trends in real time. They generate the only source of**

unregulated drug supply data that can accurately report contamination of drugs, rather than combinations of drugs only (as compared to drug seizure data, urine drug screen data, and coroner's data). Toronto's Drug Checking Service has identified more than 400 unique drugs in samples checked, including over 30 fentanyl-related drugs, over 20 benzodiazepine-related drugs, eight nitazene opioids, five synthetic cannabinoid-related drugs, veterinary tranquilizer xylazine, and many other drugs that can be directly linked to overdose. Indeed, the number of unique drugs identified far outnumbers the expected drugs service users have submitted to be checked, which is evidence of just how contaminated and unpredictable the unregulated drug supply is. Many of these drugs were introduced into the unregulated drug supply during the period of implementation for Toronto's Drug Checking Service, and likely would have gone undetected had the service not been active.

Results for all samples are collated and analyzed to perform unregulated drug market monitoring, then translated and **publicly disseminated every other week** by Toronto's Drug Checking Service to inform those who cannot directly access the service, as well as care for people who use drugs, advocacy, policy, and research (see subsequent sections). There are currently over 1,200 individuals across Ontario and Canada, and internationally receiving regular and direct communications from Toronto's Drug Checking Service.

Beyond routine dissemination and education, drug checking services also facilitate public alerts of dangerous changes to the unregulated drug supply on an emergency basis. For example, in May 2021, Toronto Paramedic Services attended one of the worst five-day periods of suspected opioid overdose-related calls involving deaths (13) since they began monitoring such data in 2017. Drug samples were promptly set aside by harm reduction staff and analyzed by Toronto's Drug Checking Service, which found that drugs being sold as fentanyl were instead etonitazene, a nitazene opioid roughly 10 times stronger than fentanyl, in combination with other opioids or central nervous system/respiratory depressants. Within 24 hours, an **alert** was developed by Toronto's Drug Checking Service and disseminated by **Toronto Public Health**, enabling people who use drugs, the harm reduction community, clinicians, and others who care for people who use drugs to plan and act accordingly.

Toronto's Drug Checking Service works closely with and regularly compares data against other sources of unregulated drug supply data across Canada, including the **BCCSU Drug Checking Program**, the University of Victoria **Substance** project, and **Health Canada's Drug Analysis Service**. Toronto's Drug Checking Service has also become a central contributor to the Canadian Centre on Substance Use and Addiction's **CCENDU alerts and bulletins**. Furthermore, Toronto's Drug Checking Service has recently been invited to join a pilot project led by the Pan-Canadian Toxicology Laboratory Response Network (Tox-LRN): a member of **Health Canada and the Public**

[Health Agency of Canada's Toxicovigilance Canada](#). Tox-LRN is a network of over 25 forensic and clinical toxicology laboratories that support health authorities across Canada in detection, early warning, assessment, and management of toxic exposures of public health concern.

- 5 Drug checking informs clinicians and care.** Clinicians report using drug checking findings to better understand their patients' withdrawals, adverse effects, and tolerances, as well as to retain them in meaningful and informed care, including treatment.

[META:PHI](#), a program that supports the delivery of high-quality care for Ontarians that use substances, as well as oversees the province's Rapid Access Addiction Medicine (RAAM) clinics, shares in a letter supporting Toronto's Drug Checking Service that "accurate information on the composition of the unregulated drug supply is integral to being able to provide safe and appropriate care for people who use drugs. Data from Toronto's Drug Checking Service can inform care plans, including medication choices and doses, by helping clinicians and patients better understand what is in the supply and impacting withdrawal symptoms and tolerance...The information provided by Toronto's Drug Checking Service allows clinicians to warn patients about the risks of contamination and to take steps to avoid it. It also helps clinicians with emergency management."

[LifeLabs](#), the largest provider of clinical urine drug testing to addiction clinics and primary care physicians in Ontario, uses unregulated drug supply information generated by Toronto's Drug Checking Service to update their urine broad spectrum toxicology screen menu. In a letter supporting Toronto's Drug Checking Service, they share: "We cannot get such local and timely information [about the appearance of new drugs or drug trends] any other way. Up-to-date urine drug screen menus ensure patients will get the most relevant information for their clinical management."

The [National Safer Supply Community of Practice](#), an interdisciplinary group of over 1,300 pharmacists, physicians, nurse practitioners, nurses, social care providers, and others, shares in a letter supporting Toronto's Drug Checking Service that "the benefit of [the service] to our membership extends far beyond the direct specific benefit to our community members who bring their drugs in to be tested...Earlier this year, for example, safer supply clinicians (as well as community members who use drugs) saw what looked like unexpected benzodiazepine withdrawal in people who had been only using fentanyl purchased from the street supply. Checking Toronto's Drug Checking Service's [noteworthy drug trends \[visualization\]](#) for the past few quarters, we could confirm that the amount of benzodiazepines in Toronto's fentanyl street supply had dropped. This information helped substantiate what people were seeing, helping inform patient care decisions."

Furthermore, safer supply clinicians have disclosed using drug checking results to inform prescribing of viable pharmaceutical alternatives for their patients in an effort to effectively transition them off the unregulated drug supply.

In a letter supporting Toronto’s Drug Checking Service, the [Registered Nurses’ Association of Ontario](#) shares that “the data published by [the service] supports the work of numerous registered nurses, nurse practitioners, and other healthcare providers in consumption and treatment service sites across the province. The services provided by Toronto’s Drug Checking Service have been lifesaving in the midst of Ontario’s deepening overdose crisis. Expanding these drug testing services throughout the province will save even more lives.”

The [Toronto Opioid Overdose Action Network](#), a collaboration between hospitals, community-based agencies, clinicians, researchers, Toronto Public Health, and people who use drugs working to address the ongoing drug poisoning crisis at a systems-level, acknowledges in a letter supporting Toronto’s Drug Checking Service the development of a joint tool to translate drug checking findings to clinicians and confirms “clinicians to administrators to people who use drugs have voiced their support for the timely and invaluable information yielded by [the service].”

6 Drug checking findings improve health and social services. Information generated and publicly disseminated by Toronto’s Drug Checking Service benefits a variety of health and social service providers. For example, [Ontario’s Centre of Forensic Sciences](#), a government laboratory that provides forensic services to the Office of the Chief Coroner for Ontario and the Ontario Forensic Pathology Service, as well as to justice sector partners, shares in a letter supporting Toronto’s Drug Checking Service that “timely dissemination of [unregulated drug market] data and direct communication from [the service] allows the Centre of Forensic Sciences to ensure that our testing methods are relevant and cost-effective, and this furthers the Centre of Forensic Sciences’ evidence-based approach to expanding our testing capabilities.” Additionally, it stated that “further expansion of drug checking services within Toronto and to other geographical regions within Ontario...would provide the Centre of Forensic Sciences with more data from which to evaluate our testing capabilities which would in turn ensure that we are providing timely and relevant services to support public safety through our involvement with death and criminal investigations.”

In a letter supporting Toronto’s Drug Checking Service, a member of the law enforcement community shares that “awareness of the potential presence of [new and emerging] drugs in the illicit drug supply, and/or as the cause of toxicity in people who use drugs, is beneficial to first responders (including law enforcement personnel) and may assist in the administration of

appropriate life-saving interventions (such as increased, and or repeated doses over time, of naloxone).” Furthermore, regarding the information Toronto’s Drug Checking Service shares about the [amounts of certain drugs found](#) in samples checked, they said, “This information can be beneficial in identifying trends towards higher concentrations of analytes that pose a potentially greater risk of toxicity. As quantitative analysis can be time-consuming and expensive, there are generally few sources of this type of information pertaining to the illicit drug supply in Canada.”

The [Office of the Chief Coroner for Ontario](#), responsible for the province’s death investigations and inquests, confirms in a letter supporting Toronto’s Drug Checking Service that they benefit greatly from information generated by the service. They share that “public dissemination of detailed and timely trends in the unregulated drug supply supports our understanding of emerging substances...[Quantitative information shared](#) (e.g., the average amount of fentanyl presenting in fentanyl samples) can help contextualize overall trends in post-mortem concentrations among drug-related death investigations.”

Toronto’s Drug Checking Service also provides drug education to the [Toronto Police Service’s Drug Squad](#) and works collaboratively with the [Ontario Poison Centre](#).

7 Drug checking empowers people who use drugs to advocate for themselves and help develop solutions that impact them. Drug checking services would not be possible if people who use drugs did not provide their substances to be checked. Service users for Toronto’s Drug Checking Service have disclosed using drug checking results to educate themselves and their peers, and advocate for changes to the substances they acquire. As above, 24% (70 of 291) of service users surveyed by Toronto’s Drug Checking Service who reported intending to do something different after accessing the service said they would give feedback to their seller. This means that there is a level of grassroots, informal regulation resulting from advocacy among the service users of Toronto’s Drug Checking Service.

Additionally, drug checking equips people who use drugs to have informed conversations with and advocate for themselves with their clinicians. For example, in their letter supporting Toronto’s Drug Checking Service, the National Safer Supply Community of Practice shares that “safer supply clients and other people who use drugs can take the test results they receive from Toronto’s Drug Checking Service to their clinicians to help inform patient/clinician discussions.”

8 Drug checking generates evidence to support advocacy for services and safer alternatives for people who use drugs. A [key challenge identified by Health Canada’s safer supply pilot programs](#) is that currently available prescribed pharmaceutical alternatives can fail to meet the

needs of people who use fentanyl from the unregulated drug supply. Drug checking data, such as the [median amount of fentanyl found](#) in expected fentanyl samples, identifies the equivalent medication doses needed for people who use drugs in order for safer supply programs to be most effective. Toronto's Drug Checking Service educates safer supply clinicians, primarily by way of META:PHI and the National Safer Supply Community of Practice, building awareness of these potential shortfalls and creating evidence to advocate for more suitable alternatives.

The [Drug Strategy Network of Ontario](#) – a collective of more than 40 local, cross-sectoral, community, municipal, or regional-based drug strategies representing more than seven million people across 160 of Ontario's urban, northern, rural, remote, and Indigenous communities who collaborate, share knowledge, and develop evidence-informed strategies to support community initiatives – relies on Toronto's Drug Checking Service's findings to develop “critical resources to be used for ongoing education and advocacy [for services to reduce the harms that can arise from substance use],” as per a letter supporting the service.

In terms of informing policy, the City of Toronto's [request for an exemption to Canada's Controlled Drugs and Substances Act to allow for the possession of drugs for personal use in Toronto](#) relies heavily on findings generated by Toronto's Drug Checking Service as evidence of an increase in unexpected, highly-potent drugs in Toronto's unregulated opioid supply.

- 9** **Toronto's Drug Checking Service has created turnkey solutions for other organizations and jurisdictions to establish local drug checking programs, increasing system efficiencies and limiting redundancy.** To date, Toronto's Drug Checking Service has provided comprehensive resources and expertise to over 50 health organizations looking to implement drug checking services [across Ontario](#) (Addiction Services of Thames Valley (London), Bancroft Family Health Team, Black Coalition for AIDS Prevention (Toronto), Brant County Health Unit, Casey House (Toronto), Fred Victor (Toronto), Grey Bruce Health Unit, Hastings Prince Edward Public Health, Homes First Society (Toronto), Kingston Community Health Centre, Lawson Research Institute (London), London InterCommunity Health Centre, Municipality of York (Public Health), Niagara Region Public Health, Northumberland County, Ontario Shores (Whitby), Peterborough Public Health and the Four Counties Addictions Services Team, Porcupine Health Unit, Public Health Sudbury, Regent Park Community Health Centre (Toronto), Sault St. Marie IDA Pharmacies, Seaton House (Toronto), Street Health (Toronto), Toronto East Health Network, University of Ottawa, Wellington Guelph Drug Strategy), [across Canada](#) (Alberta Alliance Who Educate and Advocate Responsibly, Alberta Precision Laboratories, BC Ministry of Health, Calgary Harm Reduction Leadership Network, Dopamine Montreal, GRIP Montreal, Peers Alliance PEI, Saskatchewan Health Authority, St. John Ambulance), and [internationally](#) (Addiction Switzerland, Alliance for Collaborative Drug Checking, Know You Stuff New Zealand, Thomas Jefferson

University (Philadelphia), University of North Carolina, University of Stirling (Scotland)). These resources and expertise reduce the barriers to offering drug checking services, while promoting standardization of program delivery, which is beneficial to service users and providers, as well as program funders and regulators by facilitating the most judicious use of resources.

Examples of [resources Toronto's Drug Checking Service shares](#) include information and guidance on existing and emerging drug checking technologies, collection and sharing results surveys to promote data comparison across jurisdictions, training materials, and terms of service. Importantly, with years of experience acquiring and managing seven exemption approvals from the Government of Canada's Office of Controlled Substances, Toronto's Drug Checking Service has developed step-by-step guides to apply for drug checking exemptions and "pre-approved" exempted processes that have been adopted or adapted by community health organizations across Canada. It took Toronto's Drug Checking Service four months to develop drug checking exemption applications. Following Toronto's Drug Checking Service process, collection and analysis sites can now do so in 15 minutes or less. Not only does this contribute significantly to a reduction in effort and the barriers associated with drug checking service provision, but it also fosters standardization of programs.

Furthermore, Toronto's Drug Checking Service worked with a local software development firm to build a custom web-based software, *earnest app*, to centralize and automate all drug checking processes, as well as data collection and management for the program. The software was built to be efficiently adopted by others associated with the program and effectively adapted to meet the evolving landscape of drug checking models and technologies.

10 Drug checking is valuable to people who use drugs. Overall, 99% (1,013 of 1,026) of service users surveyed by Toronto's Drug Checking Service found the program useful, saying:

"Stuff like this saves lives! You guys are the best!"

"Awesome service, going to tell my friends."

"Totally crazy, going to have to tell my seller that this batch is dangerous."

"Really glad I did this, really helpful."

"Very thankful for services like this. This could have been fatal because I don't take opiates at all."

"I have never heard of most of these drugs!"

"Amazing job, please continue the service."

Additionally, 83% (845 of 1,017) of service users surveyed reported intending to use Toronto's Drug Checking Service again and 72% (2,165 of 2,998) of service users surveyed were returning (i.e., had accessed Toronto's Drug Checking Service previously), further reflecting the value of Toronto's Drug Checking Service to the community of people who use drugs in Toronto.

Recommendations

As the unregulated opioid supply continues to become more toxic, more contaminated, and less predictable, and overdose rates continue to rise, drug checking remains an essential public health service for individuals and communities. In the absence of evidence-based responses that directly intervene with the toxic drug supply, such as legal regulation, it is imperative that drug checking services are sustained and scaled.

We recommend:

- 1. Formally integrating drug checking into the suite of harm reduction services in Ontario and across Canada.** In Ontario, this would be achieved by including drug checking in the province's strategy to respond to the toxic drug supply crisis.
- 2. Committing to sufficient and long-term funding to sustain Toronto's Drug Checking Service and scale drug checking service delivery across the province.** As of April 1, 2023, Toronto's Drug Checking Service is without a long-term funding commitment and has officially begun winding down various aspects of the service. As the only drug checking service in Ontario – and one of a few across the country – and given its positive and quantifiable impact on responding to Canada's overdose epidemic, Toronto's Drug Checking Service urgently requires a sufficient and long-term funding commitment to sustain and scale its operation. If you are interested in supporting us or learning more, please contact us at drugchecking@cdpe.org.