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# Estimating the Effects of Closing Supervised Consumption Sites in Toronto

## Use of Services

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# Summary


## Introduction

Supervised consumption sites have a strong evidence base for improving the health of people who use drugs but remain politically controversial. The Government of Ontario has announced plans to close 5 of 10 sites in Toronto by March 2025, and another site is likely to close after its lease expires. We estimated the impact of site closures on potential or actual use of SCSs.

## Methods

We estimated the number of people who use drugs in Toronto, where they were located, and how many would lose potential access to SCS. We also estimated the number of people who currently use SCSs, the number of current clients who would lose access or shift their use to a different SCS, and the extra capacity required to address these service losses. We used administrative health data, data reported by SCSs to the Ontario Ministry of Health, and data reported directly by SCS operators. We analyzed data by forward sortation area (FSA) and under varying assumptions of each SCS's service radius (the distance clients would travel to access services, analyzed at 500, 1000, and 2000m).

## Results

We estimated that, in 2022, 37,144 people used opioids or stimulants and had an encounter with health care in Toronto. People were located across the city, including many FSAs without an SCS. Over 90% of people who used opioids or stimulants and had an encounter with health care are located more than 500m from an existing site and over 75% are located more than 1000m away. Assuming 4 SCSs remain open and the service radius for an SCS is 500m, we estimated that 636 people (47% of current clients) would lose access if remaining sites were able to accommodate all clients within their service radius. Our results were sensitive to assumptions about the number of sites that remain open, the service radius, and the increase in capacity at sites that remain open.

## Conclusions

SCSs in Toronto are currently accessible to only a small minority of people who use opioids and stimulants, and closing SCSs would exacerbate this disparity. Slated closures will result in large proportions of existing clients losing access. Sites that remain open would need to expand capacity considerably to accommodate clients who will lose access. Even with large increases in capacity among sites that remain open many current clients will remain very distant from an open SCS and are therefore likely to lose access to supervised drug consumption services once sites close.

# Key Points

- Supervised consumption sites (SCSs) are environments where supervised drug consumption services are available.
- Supervised consumption may include injection, smoking/inhalation, and oral consumption.
- Supervised consumption sites have been associated with many health benefits, including fewer overdoses and decreased mortality.
- The Government of Ontario has announced plans to close SCSs in Ontario, including 5 of the 10 Toronto sites. An additional site may close when its lease expires, as it may not be approved to open in a new location.

## People who used opioids or stimulants with a healthcare encounter in 2022

- We estimated that, in 2022, 37,144 people used opioids or stimulants and had an encounter with health care in Toronto.
- Existing SCSs are concentred in south-central Toronto and in forward sortation areas (FSAs) that had moderate to high rates and absolute numbers of people who use opioids and stimulants.
- Of people who used opioids or stimulants and had an encounter with health care in Toronto in 2022, 3,558 (9.6%) were located within 500m of an existing SCSs.
- If 5 sites were to close, we estimated the number of people who would be within 500m of a site would decrease 44% from current levels. If 6 sites close (4 remain open), the decrease would be 48%.

## Individuals who used SCSs in Toronto in 2022-2023

- We estimated that, on average, 1,366 unique individuals used SCSs each month in Toronto between April 2022 and March 2023 (95% confidence interval 1,303 to 1,429).
- Of 561 clients of a site that will close, we estimated that 35 are located within 500m of a site that will remain open and 526 will be beyond this radius and thus, will lose access; this represents 38% of current clients. This assumes that sites that remain open can accommodate the 35 clients who will lose access.
- If 6 sites close, and with the same assumptions, 47% would lose access.
- We repeated these calculations assuming the service radius for the sites was 1000m (31 to 34% would lose access) or 2000m (20 to 22% would lose access).
- If 4 sites remain open and the service radius is 1000m, service capacity would need to increase by more than 50% to maintain services for 60% of clients of current sites.

# Introduction

Supervised consumption refers to situations in which people use drugs in an environment where they are observed by trained personnel, where sterile supplies are available, and where overdoses can be immediately treated. Supervised consumption sites (SCSs) refer to environments where supervised consumption services are available, which may include injection, smoking/inhalation, and oral consumption. In systematic reviews, supervised injection was associated with: decreased risky injection practices that are associated with transmission of bloodborne infections; increased adoption of safer sex practices that can prevent transmission of sexually transmitted infections; increased treatment rates for skin and soft tissue infections; decreased public injection and public litter associated with injecting; increased referral to other social and health services, including treatment for substance use disorder.[1-4] Studies in Toronto and Vancouver have demonstrated decreased mortality in neighbourhoods that have implemented supervised consumption services.[5-7] However, SCSs continue to be controversial, with critics citing safety and security concerns.[8-10]

On August 20, 2024, the Government of Ontario announced plans to close 10 SCS sites throughout Ontario by March 31, 2025.[11] The government has indicated it will introduce legislation prohibiting SCSs within 200 meters of schools and childcare centres. Furthermore, the Government of Ontario also announced that sites whose circumstances change (for example, if their lease expires) will not be renewed, that Urgent Public Health Needs (UPHN) sites (which operate within shelters) will also be subject to the proposed legislation, and that other harm reduction initiatives (such as federally funded safer opioid supply programs, needle and syringe distribution within HART Hubs, and municipal decriminalization initiatives) will be prohibited. In short, the government's effects are likely to have a widespread impact on access to supervised consumption services and broad approaches to harm reduction in Ontario.

Toronto has 10 supervised consumption sites that serve community clients, the largest number of any city in Canada. An additional supervised consumption site serves inpatients of Casey House, a specialty hospital, and several UPHNs operate in Toronto shelters. Of the 10 community sites, 5 are listed as being mandated to close under the government's directive. An additional site may close as its lease will expire and it may not be approved to open in a new location.[12] To date, no study has estimated the impact of the planned site closings on the services delivered by SCSs. We studied this potential impact from 3 perspectives: all people who use drugs in Toronto, current clients of SCSs in Toronto, and increased demands on the 4 or 5 sites that will remain open after March 2025.

# Methods

We aimed to estimate the impact of potential SCS closings on people who use drugs in Toronto with respect to their potential or actual use of SCSs. Our study had 4 objectives:

1. To visualize the geographic distribution of people who use drugs across Toronto in relation to supervised consumption sites, before and after anticipated site closings.
2. To estimate the population of people who use drugs who are located near a supervised consumption site, before and after anticipated closings, and calculate the anticipated number who would lose potential access.
3. To estimate the number of people currently using SCSs in Toronto.
4. To estimate the number of people currently using SCSs in Toronto who will lose access to services due to anticipated site closing and the increased need for capacity at sites that remain open.

Objectives 1 and 2 focus on estimating the number of people who use drugs in Toronto and then estimating how many would lose potential access to SCS. Objectives 3 to 4 start with estimating the number of people who currently use SCSs and then estimate the number of current clients who would lose access or shift their use to a different SCS.

## Data Sources

For each SCS, we sought to collect the number of unique client visits per month and the number of interactions for consumption visits per month. We obtained this information both directly from SCS operators as well as from the Ontario Ministry of Health (2022 data). Some data elements were missing for some sites (most commonly, the number of unique clients), which we estimated probabilistically (see below). In our baseline analyses, we assumed that 6 sites would close; we also included supplementary analyses assuming only 5 sites would close.

We used data from ICES to estimate the following outcomes related to opioid or stimulant use in Toronto. ICES data sources are listed in the Appendix. These datasets were linked using unique encoded identifiers and analyzed at ICES. We calculated outcomes at the level of forward sortation area (FSA), the first 3 digits of the postal code:

- The number of people who have an opioid-dependence related emergency department visit or hospitalization.
- The number of people who have an opioid-toxicity related emergency department visit or hospitalization. Toxicity is also sometimes called overdose or poisoning.
- The number of people who have a stimulant-dependence related emergency department visit or hospitalization.
- The number of people who have a stimulant-toxicity related emergency department visit or hospitalization.
- The number of people who have at least one outpatient physician visit related to substance use.
- The number of people who were dispensed at least one dose of opioid agonist therapy (OAT).
- The number of deaths due to opioid toxicity, stimulant toxicity, or both.

We calculated these numbers for each FSA and each year from 2018 to 2022, except for opioid and stimulant toxicity deaths, for which data were only available up to December 31, 2021.

## Estimating the number of people who use opioids or stimulants

To estimate the total number of people who use opioids or stimulants and who might be potential clients of a supervised consumption site, we counted the number of unique individuals who had one or more outcome. Given the nature of our data sources, a single outcome measure may only include a portion of people who use drugs. In contrast, a global outcome measure gives us the best estimate of how many people who use drugs in Toronto and the distribution of people within each FSA.

## Mapping drug use in Toronto

We constructed choropleth maps of the rate (number of people who use opioids or stimulants per population) for each FSA in Toronto using 2022 data, overlaid with SCS locations. Our interpretation of these maps was descriptive. We also generated maps of the absolute number of people who use drugs by FSA for 2022. Each map tells a different story: rates are important for estimating the concentration of drug use in neighbourhoods, while numbers are important for determining the required capacity of SCSs by neighbourhood. We also repeated maps using the average of rates and the total numbers of people over all years of the analyses.

## The number of people who use opioids or stimulants near any SCS

We estimated the number of people who use opioids or stimulants who are within 500m of an existing SCS. This estimate includes both current clients as well as potential clients. This approach estimates the potential of supervised consumption services at defined locations to address the needs of all people who use drugs in Toronto. We drew a 500m radius around each SCS and calculated the proportion of each intersecting FSA's area within that circle. We avoided double-counting by assigning overlapping circles equally among the SCS that are part of the overlap. As a simplifying assumption, we assumed that the population in each FSA was uniformly geographically distributed. Thus, the product of the proportion in intersecting areas and the FSA population of people who use opioids or stimulants yielded the estimate of the population who were within 500m of an SCS. We summed this number across all FSAs to estimate the number of people across Toronto who were within 500m of any SCS.

Next, we repeated these observations assuming that the SCSs that are slated to close were not operating. The difference between these estimates therefore indicates the number of people whom we expect to lose potential or actual access to an SCS after site close.

Because the distance that people will travel to use a SCS is uncertain, we repeated these analyses using distances of 1000m (1 kilometer) and 2000m (2 kilometers).

## Estimating the number of unique clients of SCSs

Our data sources included the number of unique clients who visited an SCS for 6 sites; this includes visits for consuming drugs as well as other visits from April 2022 to March 2023. We also had data on the total number of visits and the number of visits specifically for drug consumption. For each site with available data, we used regression models to investigate the association between the number of unique clients and the number of total visits, the number of visits specifically for drug consumption, and calendar month. We also explored running the regression models for all sites or restricting to those in Toronto. Finally, we noted that one site was an outlier; we additionally explored models where we included an indicator for that site. We compared and selected regression models using model fit statistics.

We used the following approach to estimate the number of unique clients in the 4 sites which did not report these outcomes but did report the total of number of visits by calendar year. We distributed these client visits across months, assuming the distribution was identical to that observed in sites with monthly data. We explored applying distributions from Toronto sites and from all Ontario sites (Toronto distributions yielded a better model fit). Next, we forecasted the number of unique clients using the regression model results and the method of predictive margins.[13] We checked to ensure that the observed and predicted number of unique clients at sites with complete data were reasonably close. Finally, we summed the total number of predicted clients across all 10 Toronto sites, with 95% confidence intervals (95CI) calculated using the delta method.

These estimates may be imprecise for several reasons. First, we may have included visits that are not related to consumption, leading to an over-estimate. Second, we based our estimates on monthly reports, but the annual number may be greater than twelve times this estimate since some clients may use sites only in some months, leading to an underestimate. Third, some clients may use more than one site, leading to an overestimate.

To address these uncertainties, we asked staff members at each SCS to comment on the face validity of the estimates of the mean number of visits for consumption per month, the mean number of unique clients per month, the proportion of clients who use the site monthly relative to the number who use the site annually, and the proportion who use the staff member's site as well as other sites. Based on the feedback we received from 9 sites, we revised our estimates in two ways. First, one of the sites with the largest number of clients reported that: 1) their monthly estimate, calculated as the number of annual clients divided by 12 was significantly larger than our estimate; and 2) about 40 to 50% of clients used multiple sites. We calculated the proportion of clients who would go to another site each month, assuming this was constant across months. Because our estimate (43%) was within the range of the estimate of clients using multiple sites, we assumed that these clients were counted in our estimates of clients visiting over sites. Second, one of the sites with fewest clients reported that our regression-based estimate (40 clients per month) was double their estimate; we used the site-reported estimate (20) without accounting for uncertainty. For all other sites, our estimates were close to site reports; we assumed that the relatively small number of clients using multiple sites that we did not account for was unlikely to meaningfully change our overall results (in some cases, the proportion using multiple sites was high, but the absolute number was low as the sites had small volumes).

### Projecting accessibility of SCS services for current SCS clients

We projected how many current SCS clients would lose access to SCS services. To do so, we made several assumptions. First, we assumed that clients who are within distance of multiple SCSs would be equally distributed between those sites. Second, we assumed that current SCS clients would stay at that SCS. Third, we assumed that clients at SCSs that close who are within 500m of another SCS will move to that SCS (if multiple sites are within 500m, we assumed equal number of clients would go to each site). Finally, we assumed that clients who currently use an SCS that closes and who are further than 500m of remaining open SCSs will lose SCS access. We initially assumed that sites that remain open had no limits in their ability to increase capacity, by which we mean an increase in the number of clients (we did not assess how this capacity could be achieved, such as changing operating hours or the number of booths). We next repeated these analyses assuming sites could only increase capacity by 10% or 20%. We repeated each of these analyses using distances of 1000m (1 kilometer) and 2000m (2 kilometers).

Finally, we examined how the proportion losing access varied across a range of assumptions about increase in site capacity (across all sites). This analysis focusing on identifying threshold increases site capacity that are necessary to minimize specified losses in access. Note that we did not address site-specific capacity constraints.

# Results

### People who used opioids or stimulants with a healthcare encounter in 2022

We estimated that, in 2022, 37,144 people used opioids or stimulants and had an encounter with health care in Toronto. Assuming that people lived close to where they had these encounters, people who used opioids or stimulants were geographically distributed across Toronto (Figure 1 and Figure 2). The existing SCSs were concentred in in the south-central Toronto and were located in forward sortation areas (FSAs) that had moderate to high rates of people who use opioids and stimulants (Figure 1). All SCSs were located in FSAs that had moderate to high absolute numbers of people who used opioids or stimulants, including sites that are slated to close (Figure 2). Our results were similar if we used estimates averaged across 5 years (2017 to 2022, Figure S1 and Figure S2).

**Figure 1:** Choropleth map of the rate of people who use opioids or stimulants per 1000 population by FSA in 2022, overlaid with location of SCSs. Sites slated to remain open are indicated by a green dot, those slated to close by a red dot, and the site whose status is uncertain by a yellow dot.

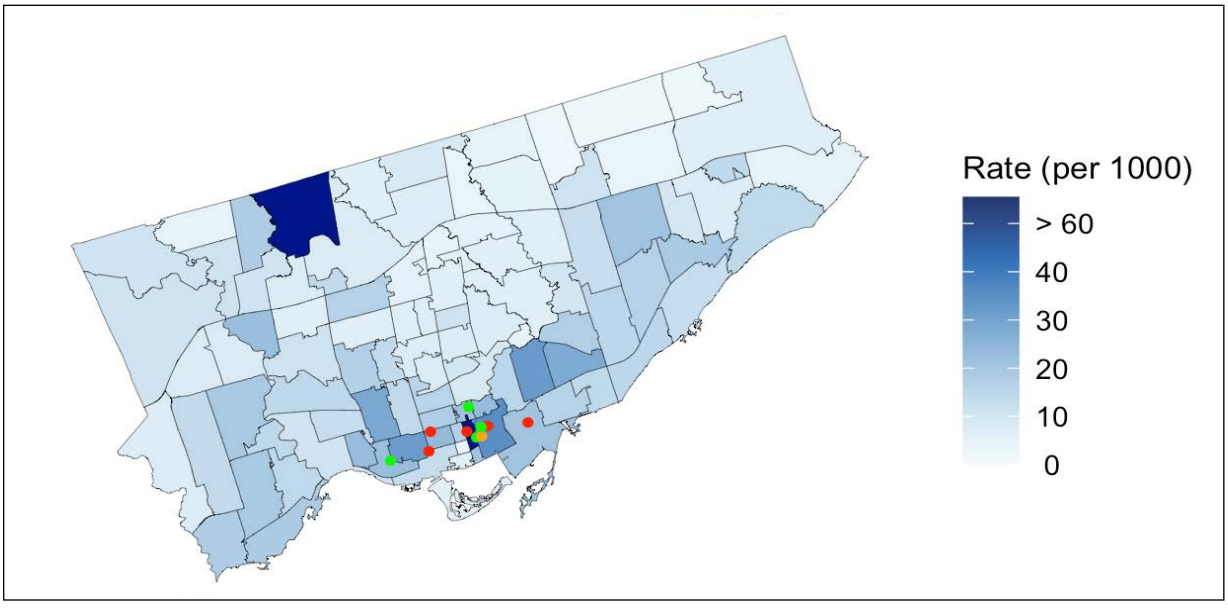
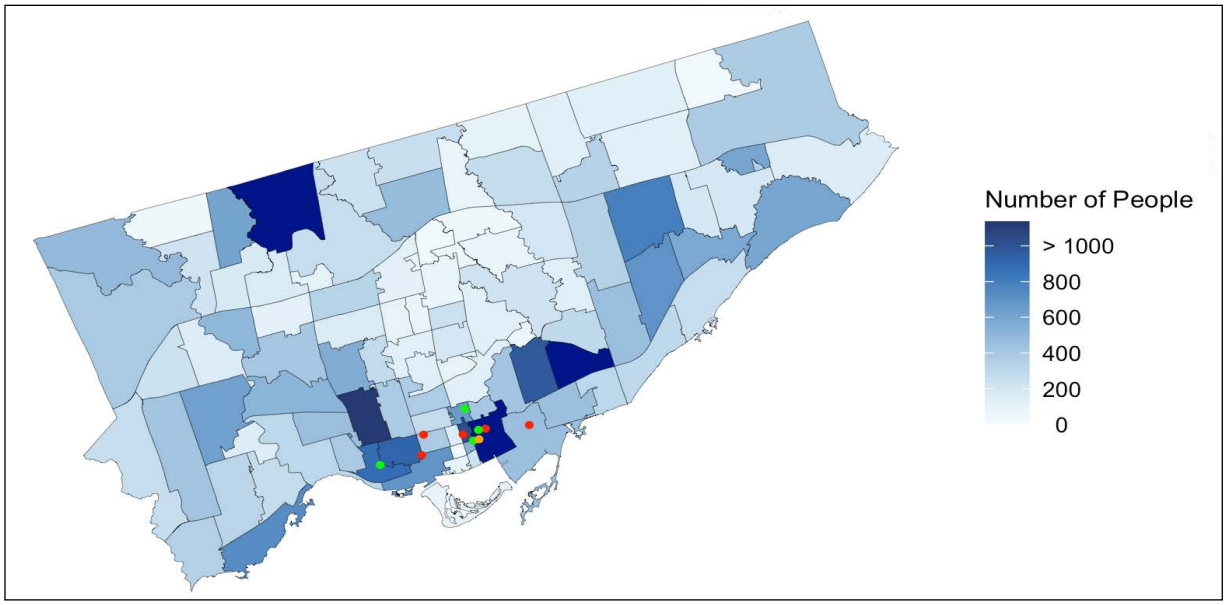


**Figure 2:** Choropleth map of the absolute number of people who use opioids or stimulants by FSA in 2022, overlaid with location of SCSs. Sites slated to remain open are indicated by a green dot, those slated to close by a red dote, and the site whose status is uncertain by a yellow dot.




Of the 37,144 people who used opioids or stimulants and had an encounter with health care in Toronto in 2022, 3,558 (9.6%) were located within 500m of an existing SCSs (Table 1). If 5 sites were to close, we estimated the number of people who would be within 500m of a site would decrease to 1978 (1,580 people previously within 500m would now be located more distantly), a 44.4% decrease from current levels. This represents a 4.7% relative increase in the number of people who are located beyond the service radius. If 6 sites were to close (i.e., 4 remain open), we estimated that the number of people who would be within 500m of a site would decrease to 1,886 (1,692 would now be beyond 500m), a 47.6% decrease from current levels. Using a service radius of 1000m, the relative decrease in the number of people located within the service radius was 30.3% (5 sites close) and 32.0% (6 sites close); with a service radius of 2000m, the corresponding estimates were 24.6% and 25.6%.

**Table 1:** Relative change in number of people who use opioids or stimulants who encountered health care within 500m of an SCS after anticipated closures.

| Number of open sites | Total | Number (%) within service radius | Change within service radius after SCS closure | Relative decrease in number within service radius | Relative increase in number outside of service radius |
|---|---|---|---|---|---|
| **Service Radius: 500m** | | | | | |
| **10** | 37,144 | 3,558 (9.6%) | | | |
| **5** | | 1978 (5.3%) | 1580 | 44.4% | 4.7% |
| **4** | | 1866 (5.0%) | 1692 | 47.6% | 5.0% |
| **Service Radius: 1000m** | | | | | |
| **10** | 37,144 | 9,116 (24.5%) | | | |
| **5** | | 6,350 (17.1%) | 2766 | 30.3% | 9.9% |
| **4** | | 6,200 (16.7%) | 2916 | 32.0% | 10.4% |
| **Service Radius: 2000m** | | | | | |
| **10** | 37,144 | 17,051 (45.9%) | | | |
| **5** | | 12,855 (34.6%) | 4196 | 24.6% | 20.9% |
| **4** | | 12,680 (34.1%) | 4371 | 25.6% | 21.8% |

## Individuals who used SCSs in Toronto in 2022-2023

We next focused on the number of current clients of SCSs in Toronto. We estimated that there were, on average, 1,366 unique individuals who used SCSs each month in Toronto in 2023 (95CI 1,303 to 1,429). Of these, 805 (59%) are clients of one the 5 sites that are slated to stay open (Table 2). Of the 561 who are clients of a site that will close, we estimated that 35 are located within 500m of a site that will remain open and 526 will be beyond this radius and thus, will lose access; this represents 38% of current clients. We repeated these calculations assuming that 4 sites would remain open (6 would close); in this scenario, 636 current clients (47%) would lose access. Finally, we repeated these calculations assuming the service radius for the sites was 1000m (31 to 34% would lose access) or 2000m (20 to 22% would lose access).

**Table 2:** Estimated number and percent of SCS clients who would lose access to services after anticipated closures

| Number of open sites | Current clients | Number at a site that remains open | Number at site that will close | Number at a site that is closed but within service radius of a site that is open | Number (%) losing access |
|---|---|---|---|---|---|
| **Service Radius: 500m** | | | | | |
| **10** | 1,366 | | | | |
| **5** | | 805 | 561 | 35 | 526 (38%) |
| **4** | | 585 | 781 | 144 | 636 (47%) |
| **Service Radius: 1000m** | | | | | |
| **10** | 1,366 | | | | |
| **5** | | 805 | 561 | 138 | 423 (31%) |
| **4** | | 585 | 781 | 320 | 461 (34%) |
| **Service Radius: 2000m** | | | | | |
| **10** | 1,366 | | | | |
| **5** | | 805 | 561 | 284 | 277 (20%) |
| **4** | | 585 | 781 | 484 | 297 (22%) |

Our calculations in Table 2 assume that sites that remain open will have unrestricted capacity to accommodate clients from sites that close. We repeated these analyses assuming that the total capacity across sites can increase by 10%; across a range of assumptions about the number of sites remaining open, service radius, and increase in site capacity, the number losing access ranged from 410 (30%) to 735 (54%) (Table 3).

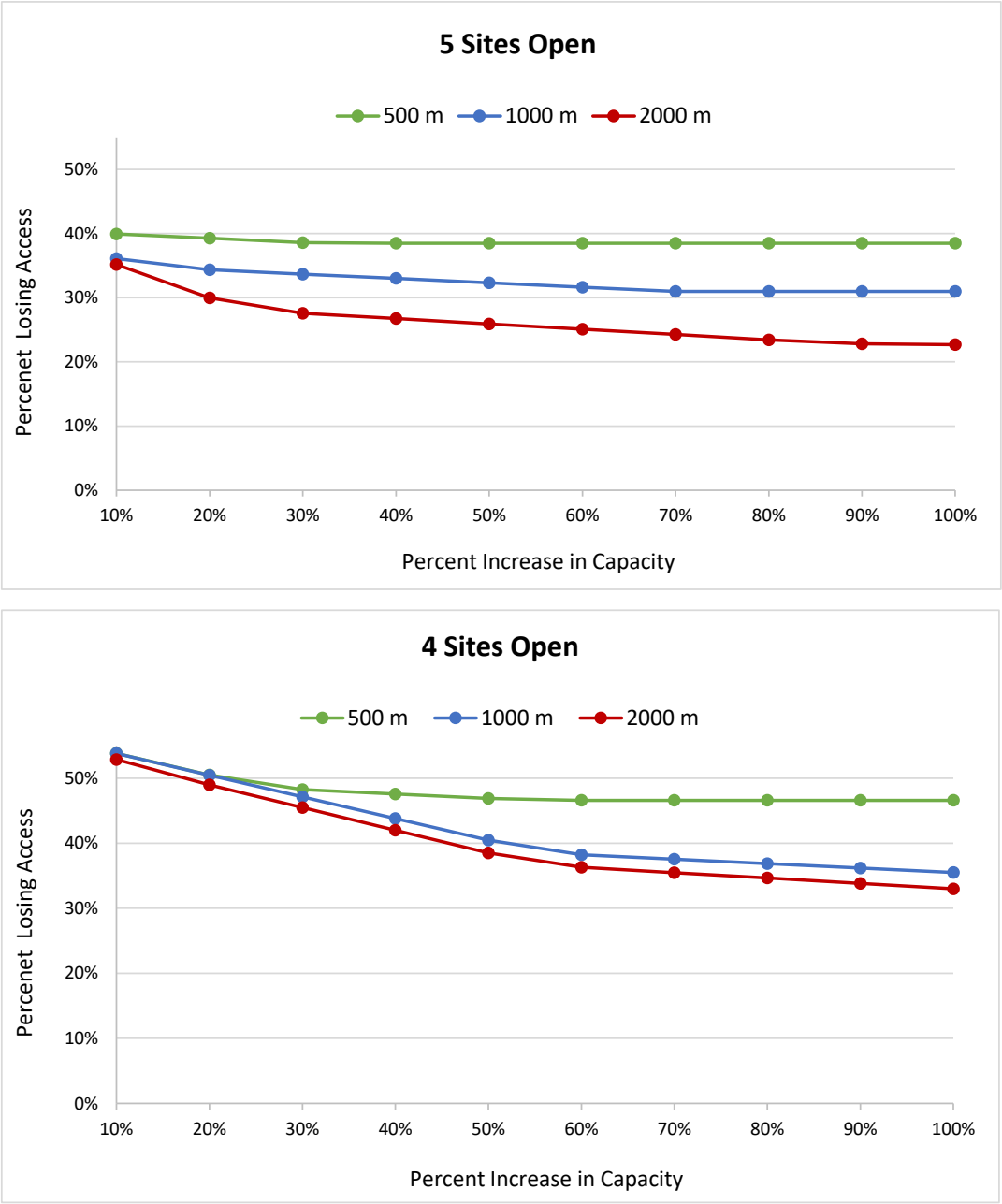
**Table 3:** Estimated number and percent of SCS clients who would lose access to services after anticipated closures, incorporating maximum increases in site capacity.

| | 5 Sites Remaining Open | 4 Sites remaining Open |
|---|---|---|
| **Service Radius** | **Number (%) losing access** | **Number (%) losing access** |
| **10% Increased Capacity** | | |
| **500m** | 545 (40%) | 735 (54%) |
| **1000m** | 493 (36%) | 735 (54%) |
| **2000m** | 480 (35%) | 722 (53%) |
| **20% Increased Capacity** | | |
| **500m** | 536 (39%) | 690 (50%) |
| **1000m** | 469 (34%) | 690 (50%) |
| **2000m** | 410 (30%) | 669 (49%) |

We also explored how the number losing access would change across a range of increased capacity estimates, from 10% to 100% (Figure 3). If 5 sites remain open and the service radius is 500m, increasing capacity will have little effect on the proportion of people who lose access, since most clients will be located beyond the service radius. If the service radius is 1000m, service capacity would need to increase by more than 100% (i.e., double) to decrease the proportion losing capacity to close to 30%; if the service radius is 2000m, service capacity would need to increase by 20% to reach this threshold. The large proportion who would still lose access represents clients who are located outside of the service radius.

If 4 sites remain open and the service radius is 500m, increasing capacity above 20% will have minimal effect on the proportion of people who lose access, since most clients will be located beyond the service radius. If the service radius is 1000m, service capacity would need to increase by more than 50% to decrease the proportion losing capacity to 40%; if the service radius is 2000m, service capacity would need to increase by about 50% to reach this threshold.

**Figure 3:** Change in percent of SCS clients losing access to services based on the anticipated percentage increase in capacity of remaining sites and distance from services, assuming 5 (top) or 4 (bottom) sites would remain open.



# Discussion

We analyzed the potential effects of the Government of Ontario's proposed closing of supervised consumption sites in Toronto. Our analyses are based on population-based administrative health data as well as data reported by SCSs, uses recent (2022) estimates, and includes multiple sensitivity analyses to address the robustness of our findings.

Our analysis yields several lessons that can inform the current policy discussion about site number and location. First, existing SCSs serve people in south central Toronto but are not geographically accessible (i.e., within a reasonable service radius) to the large majority of people who use opioids and stimulants in Toronto. Over 90% of people who use opioids or stimulants are located more than 500m from an existing site and over 75% are located more than 1000m away. Thus, in contrast to the proposed policy of closing sites, expanding SCSs accessibility by opening locations in additional neighbourhoods could support a larger population of people who use opioids and stimulants across the city. Second, even in neighbourhoods with an existing SCS, the slated closures will result in 25 to 48% of current or potential clients losing accessibility. Third, among existing SCS clients, we anticipate 20 to 47% will lose access after sites are closed, assuming that sites that remain open can accommodate clients from closed sites within their service radius. If the increase in capacity among existing sites is constrained (for example, by budget, staffing, and space considerations), the expected losses are greater. For example, if capacity can only increase by 10%, the site service radius is 500m, and 4 sites remain open (6 close), we predict that 735 clients (54%) will lose access.

A key factor in our model is the distance that individuals will travel to use supervised consumption services. Data on distance travelled to an SCS is unavailable for sites in Toronto. However, a 2006 survey of people who inject drugs in Toronto found that 51% would not travel more than 10 blocks (approximately 500 to 600m) and 72% would not travel more than 1000m to an injection site; for a smoking site, the percentage who would travel up to 10 blocks and 1000m were 49% and 60%, respectively.[14] In a survey of people who inject drugs in London, the proportion who would not walk more than 20 minutes (roughly 1.5 km) was 60% in the summer months and 84% in the winter months.[15] A study of site clients in Sudbury found that many reported that needing to walk 20 minutes was a significant barrier to accessing the site.[16] Given these uncertainties, we provide estimates across a range of distances (500, 1000, and 2000m). While we have not modeled a distribution of willingness to travel, previous data suggest that our estimates using service radii of 500 and 1000m will include most clients.

Our study is one of the first to estimate the absolute number of people who use opioids, stimulants, or both in Toronto. Our estimate of 37,144 people is likely conservative (i.e., an underestimate), since it includes only people who have encountered the health care system through a physician visit, hospitalization, prescription for opioid agonist therapy, or death. Nevertheless, our estimate has face validity; given a July 2022 population of 3,025,647, our estimate is that at least 1.2% of the population (1.4% of the population over aged 16) uses opioids, stimulants, or both.[17] These estimates are consistent with other population-based estimates.[18, 19] Importantly, this estimate includes: people with a range of use patterns (for example, one-time use to daily); people who use drugs by injection, inhalation or orally; and people with a spectrum of social supports (for example, housed, living alone, or homeless). For example, our finding of a neighbourhood in north Toronto with high rates of stimulant/opioid use may reflect the location of a concert site at which many drugs are consumed. The value of supervised consumption services to each individual will depend on their drug-use related risks, which include the factors noted above, and others. Nevertheless, our estimated monthly client numbers (1,366) relative to the population size (37,144), suggests that increasing accessibility of supervised consumption sites has the potential to reach a large proportion of people who might benefit from, but are not currently accessing, these services.

We explored the potential demand on sites that are expected to remain open to meet the increased demand from clients of supervised consumption sites that are slated to close. We found that, across all sites, capacity would need to be increase by at least 20% to meet the needs of about 30 to 50% of clients losing access. Importantly,

this estimate represents an increase in capacity across all open sites; analysis with more detailed site-specific data would likely indicate heterogeneity in capacity demands across sites. Our analysis also indicates that increasing capacity by more than 50 to 60% may have little impact on meeting the needs of clients who lose access due to the distance of those clients from the remaining sites. Therefore, meeting the needs of clients at sites that close requires addressing both the capacity and geography.

Our analysis focused on estimating the number of clients – both prospective and current – who would be affected if SCSs were to close in Toronto, but did not estimate the effects on the number of fatal and non-fatal overdoses or other health outcomes. Such estimates require additional analysis and modeling approaches and are a topic for future research. We also did not estimate other neighbourhood effects, which have become the focus of much of the current controversy around SCSs in Toronto, including neighbourhood disorder, discarded injection equipment and other litter, and crime.[20] However, the existing literature indicates there is not a strong relationship between SCSs and deleterious neighbourhood effects and suggests that SCSs may decrease neighbourhood crime. Indeed, if drug use is primarily a function of neighbourhood and the impact of SCS is to shift drug use out of public spaces, closing SCSs may have the unintended impact of increasing public drug use; this is an important topic for future research.

The Government of Ontario's strategy is to establish Homelessness and Addiction Recovery and Treatment (HART) Hubs alongside the closure of SCSs. We have not modelled how HART Hubs might substitute for some of the services that SCSs currently offer as our analysis has focused only on supervised drug consumption, which HART Hubs will not be allowed to offer. HART Hubs may offer some of the "wrap-around" social services that SCSs currently offer, such as housing and income support. We have not included non-consumption related visits in our analyses. We also have not accounted for potential increased access to 'recovery' (i.e., abstinence-based) services within HART Hubs and how this may decrease demands for supervised consumption services. However, there is no evidence to indicate that clients will seek abstinence-based services as an alternative when supervised consumption services are closed.

Our analysis has some additional limitations to those mentioned above. We have focused on counting the number of monthly visitors, rather than annual visitors to SCS in Toronto. Because some people may visit SCSs only in some months, the number of annual visitors will be higher than our estimate. We also have not accounted for changes in the number of unique clients over time. Notably, some sites reported increasing numbers of clients and visits in 2023. Overall, we feel that our estimates of the number of clients is conservative. We also did not consider UPHNs, whose services are limited to shelter residents. Finally, as noted above, we have classified individuals by the location of health services that they used, which may not correspond to the location of the SCS that they would use. Nevertheless, health service location is likely a more accurate indicator of location than address, given the large number of people who use drugs who experience homelessness, unstable housing, and frequent relocation.

In summary, our analysis indicates that there are likely to be significant impacts on clients from the closure of SCSs in Toronto. Many clients will to travel for more than 1 or 2 kilometers for services that are currently located close to where they access supervised consumption services. Because it is likely that many people will not travel far distances, we project that a large proportion of people – almost 50% in some scenarios – will lose access to an intervention with a strong evidence base for improving their health and well-being. Our analysis underscores the urgency of reconsidering the planned SCS closures.

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# Appendix

## ICES Data Sources

We used the following ICES data sources:

- Canadian Institute for Health Information (CIHI) Discharge Abstract Database, which is a database of acute inpatient hospital discharges
- CIHI National Ambulatory Care Reporting System, which is a database of emergency room visits
- Ontario Drug Benefit Database, which is a database of dispensed medications that are publicly funded, including all naloxone kits distributed by pharmacies
- Drug and Drug/Alcohol Related Death Database, which is a database of substance-use toxicity deaths
- Narcotics Monitoring System, which is a database including all opioids dispensed from community pharmacies
- Ontario Health Insurance Plan (OHIP), which is a database of physician billings
- Registered Persons Data Base (RPDB), which is a database of basic demo- graphic information
- Postal Code Conversion File (PCCF), which is a database of Statistics Canada standard geographical area

**Figure S1:** Choropleth map of the average rate of people who use opioids or stimulants per 1000 by FSA from 2018-2022, overlaid with location of SCSs and colour-coded by status (red – closing, green – open, yellow – unsure).

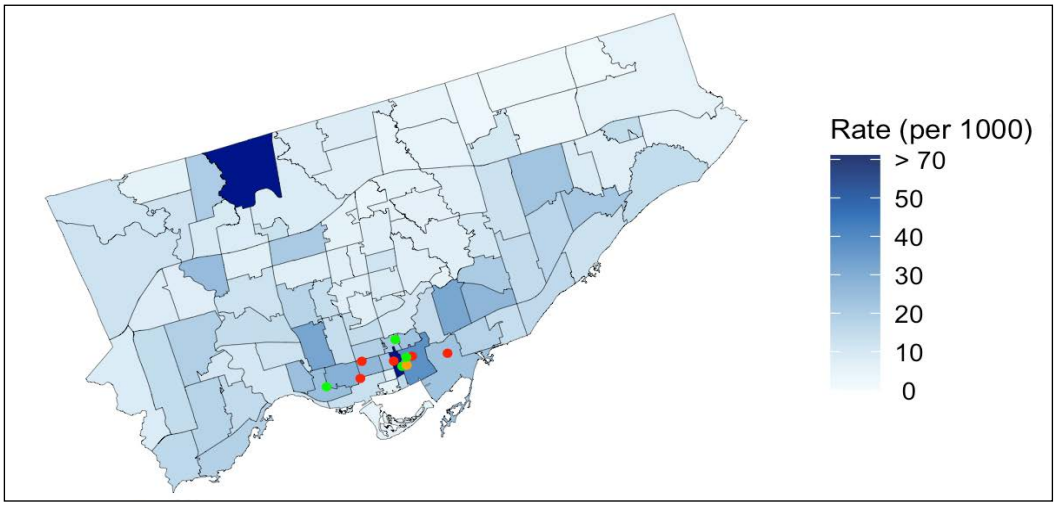


**Figure S2:** Choropleth map of the total absolute number of people who use opioids or stimulants by FSA from 2018-2022, overlaid with location of SCSs and colour-coded by status (red – closing, green – open, yellow – unsure).