What is the effectiveness of supervised injection services?

Question
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Key Take-Home Messages

- The use of supervised injection services can lead to reductions in injecting behaviour and an increase in the number of clients accessing addiction treatment services.
- Supervised injection services can be cost saving when the analysis takes into account their capacity to reduce transmission of blood-borne diseases, namely HIV and HCV.
- People who inject at supervised injection sites feel safer than those who inject publically.
- Overdose morbidity and mortality are reduced when clients inject at supervised injection sites. Clients who inject at supervised injection sites receive education on safer injecting practices that helps reduce injection-related morbidity.
- When nursing care is provided at supervised injection sites, clients access nursing services frequently.
- Supervised injection sites do not lead to any significant disruptions in public order or safety in the neighbourhoods where they are located.
- Supervised injection sites pose a few challenges based on their operating models and regulations: if capacity does not meet demand there may be long lines that dissuade some clients from injecting at the facility; there will still be times when clients have no choice but to inject elsewhere when facilities are not open 24 hours per day, 7 days a week; some clients cannot inject independently and will not use supervised injection services that prohibit assisted injections; and when facilities prohibit splitting or sharing drugs on site, some clients might be excluded.
Supervised injection sites (SISs) are “legally sanctioned and supervised facilities designed to reduce the health and public order problems associated with illegal injection drug use” (1). They “enable the consumption of pre-obtained drugs in an anxiety and stress-free atmosphere, under hygienic and low risk conditions” (1). Commonly, the purpose of SISs are to reduce public disorder and enhance public safety, reduce overdose morbidity and mortality, reduce transmission of blood-borne infections, and improve access to other health and social services (1).

First established in Europe in the 1970s (1), there are roughly 45 SISs currently operating there with the majority located in the Netherlands, Switzerland and Germany (1). On average, European SISs report between 25 and 400 visits per day (2). There is one SIS in Australia, the Sydney Medically Supervised Injecting Centre, and two in Canada, Insite and the Dr. Peter Centre – both located in Vancouver where there is a visible and well known public drug use scene. Insite is a stand-alone SIS that allows anyone to inject drugs on-site. Insite sees a large volume of clients: roughly 700 injections are performed on site each day (3). The Dr. Peter Centre is an integrated health centre for people living with HIV and substance use issues. It offers day programs, a range of therapy programs, a meal program and a long-term residence as well as supervised injection services for its registered clients.

Each SIS has a unique set of rules and regulations (2,3). The sites in Canada and Australia have undergone numerous evaluations and are discussed in several peer-reviewed publications; however, in general, the English language peer-reviewed and grey literature describing these centres and their effectiveness is limited.

SISs are highly controversial and have been the subject of debate in Ontario for several years (4). Opponents frequently suggest that SISs condone or promote drug use and cause people who use drugs to congregate in one neighbourhood which disrupts the community, or dissuades people who use drugs from accessing addiction treatment programs (1,4).

**What We Found**

*Reduction in Harmful Behaviours*

Evidence from Insite shows that the introduction of a SIS led to a reduction in harmful drug-related behaviours. One study found that 75% of Insite clients reported a change in their injecting behaviour as a result of using their services (5). Another study found that 23% of respondents who had been Insite clients had stopped injecting by the end of the study period, and another 57% had entered addiction treatment (6). Wood et al. found that one year after Insite opened, 30% of clients reported using detoxification services (7). Clients at Insite and the Sydney Medically Supervised Injecting Centre also reported preferring to inject at the facility whenever possible (8,9). At the Sydney Medically Supervised Injecting Centre, 16% of clients who received referrals for addiction treatment services confirmed actually participating in addiction treatment programs; however, 20% of clients at Insite indicated that waiting lists prevented them from accessing the addiction programs they had been referred to (10,11).

Insite clients were also more likely to report less risky sexual practices (1,12). For clients with regular sexual partners, 25% used condoms regularly before they began injecting at Insite compared to 33% two years after Insite opened (12). Similarly, 62% of clients regularly used condoms with casual partners before they...
began injecting at Insite compared to 70% two years later (12). Clients visiting SISs in Europe also report more consistent condom use after using SISs (2).

Cost Effectiveness
Studies showed that 17% of Insite clients tested positive for HIV and 88% were positive for Hepatitis C (HCV) (13,14). Rates of HIV at the Sydney Medically Supervised Injecting Centre are lower – although 94% of clients had been tested within the last 12 months, self-reported prevalence among all clients was 2%, with self-reported prevalence among MSM at 23% (15). Although estimates vary widely, Insite is predicted to aver to up to 84 new HIV infections annually (16–19). A study of a prospective SIS in Montreal found that 11 cases of HIV and 65 cases of HCV could be prevented each year in that city (20). SISs can prevent the spread of blood-borne infections, including HIV and HCV, and can therefore decrease the burden on the healthcare system of extensive lifetime costs associated with these infections. The annual cost savings as a result of HIV infections prevented at Insite are estimated to be between $2.85 and $8.55 million (16). Another study found an average of $17.6 million in lifetime medical expenses saved for each year that Insite is operational (18). All of these estimates of savings greatly exceed Insite’s annual operating cost of $3 million.

Client Safety
Several qualitative studies reported that clients who visited SISs felt safer while injecting than those who injected in other public or private spaces (21–23). Respondents, especially women, frequently explained that there is a risk of being taken advantage of while intoxicated in a public space (21). Study participants had been robbed of money or drugs and subjected to physical violence while injecting or intoxicated (8,21). When injecting in public, some reported being obliged to share drugs and encountering violence if there were disputes (21).

In addition to the decreased risk of encountering violence, clients reported less concern about being arrested while injecting (8,21,23). This allows them to take more time to inject and minimizes problems related to rushed injecting (e.g., infection, overdose, etc.) (21,23–25). Clients also report that they prefer to inject at Insite if they are unsure about the quality or nature of their drugs, or if they inject opiates (which carry a greater risk of overdose) (22,24). In one study, respondents who indicated they visited Insite showed changes in their injecting behaviour – 80% reported less rushed injecting (5). One study participant also noted that she would inject more if she knew she was safe in order to avoid having any leftover drugs confiscated by police (24). Another reported taking more time to inject a small amount initially to ‘test the strength’ of the drug, before proceeding to inject an appropriate amount.

Improved Access to Overdose Care and Reduced Overdose Fatalities
Milloy et al. reported that Insite staff successfully intervene, on average, in two to 13 potentially fatal overdoses each year (26). These overdoses account for six to 37% of the overdoses that occur in Vancouver’s downtown east side (26). Notably, those who used Insite for more than 75% of their injections did not have greater rates of non-fatal overdoses than those who used the site less frequently (27). Reports from Europe also suggest a decline in overdose fatalities following the opening of SISs (1). European SISs reported zero overdose deaths and a rate of non-fatal overdose of one to 36 per 10,000 visits (2). Similarly, ambulance calls related to overdose emergencies in the neighbourhood surrounding the Sydney Medically Supervised Injecting Centre declined significantly after the facility opened, and remained lower during their opening hours (28).
Clients at Insite and another unsanctioned facility in Vancouver repeatedly noted that they believed the service saved lives (8,24,29). Many had personally experienced an overdose at Insite, or had witnessed a friend overdose. In all cases, clients reported that Insite staff intervened swiftly and competently and ultimately averted deaths (8,24). Clients noted that it is easier for medical personnel to locate an overdose requiring attention at Insite than at an indeterminate location in an alleyway or behind a dumpster (24). SIS clients also reported observing fewer fatal overdoses in the streets (8).

The sites provide people who inject drugs an opportunity to inject privately without facing the risks of overdosing while injecting alone (24,30). Many prefer to inject alone because they do not have to share drugs, but acknowledge that if an overdose occurs in a public injecting setting it is unlikely that an onlooker will seek medical attention (24). Many participants in the studies reported they had been robbed of drugs or money during a non-fatal overdose in the streets (24).

**Nursing Care**

In addition to receiving information on safer injecting practices and overdose intervention, SIS clients also access other nursing services, namely care for abscesses and other injection-related wounds and infections, assistance with accessing transportation to other health and social service sites, psychosocial support, and referrals to other services (1,8,31,32). Clients especially appreciated being able to access all services at one location (31). Some clients reported difficulties finding time to access medical care in any other setting, and others reported not being able to recognize the severity of their condition without advice from an Insite nurse (32). Lloyd-Smith reported that 65% of individuals visiting Insite nurses for services other than supervised injection sought care for injection related wounds or infections, 7% sought psychosocial support, 6% sought foot care, 3% sought respiratory care, 2% sought a pregnancy test, and 17% sought other health services (33). Clients who receive these nursing services are more likely to be female, have unstable housing conditions, and/or inject heroin daily (33). Small et al. reported that 94% of Insite clients accessed non-medical services on site, 44% accessed medical services, and 24% indicated they would not have accessed these services if they had not been made available at Insite (31).

Clients at the Dr. Peter Centre who required care reported instances of leaving hospital settings against medical advice the Centre began offered supervised injection services (30). Reasons for leaving medical care included inadequate pain and withdrawal management and policies prohibiting drug use (30). Dr. Peter Centre clients indicated that they were able to receive the nursing care they needed without feeling worried about discussing their drug use with care providers (30). Clients reported that accessing this care without entering the chaos of withdrawal or hidden drug use had a stabilizing effect on their lives and improved their ability to adhere to HIV medication regimens (30).

Many referred to Insite and other SISs as a ‘safe haven’ or a ‘refuge’ for people who inject drugs (8,23). They reported feelings of empowerment and a sense of community, and described relationships with staff that were trusting and non-judgemental (8,22,29,31,32,34). These relationships are important in being able to have open conversations about health and drug use, and in facilitating timely care and connections to other health and social services (8,22).

**Safer Injection Education**

In a survey of clients who visited the Sydney Medically Supervised Injecting Centre, 29% reported a history of injection related problems, injury, or disease (35). These included difficulties finding a suitable vein, scarring or bruising, swelling of the hands or feet, abscesses, skin infections, thrombosis,
septicaemia, and endocarditis (35). Many reported that the nurses were an excellent source of information on correct injecting technique, which helped clients minimize injection-related infections and injuries and facilitated a more comfortable injecting experience (22,36). In one study of Insite clients, more than 40% had received safer injection education from staff (37). Although respondents acknowledged that this information was likely available before, many indicated that it had only existed outside of their drug using environments and was therefore less accessible (36). Some reported continuing to implement safer injection techniques even when they injected outside the site or shared the new information with others who injected elsewhere (8,36).

Clients who were accustomed to receiving injection assistance, reported empowerment and increased independence when taught how to properly inject without assistance (21). These clients reported that relying on someone else to perform their injections meant that they were easily controlled by that person (29).

In a quantitative study, Kerr et al. found that accessing Insite was independently associated with reductions in needle sharing (38). In qualitative interviews, people who accessed Insite reported sharing needles less frequently (8,23). Clients of SISs in Europe also reported reductions in needle sharing when they had access to a SIS (1).

**Public Safety and Disorder**

Law enforcement officials in some jurisdictions, including Vancouver, are supportive of SISs and help divert public injecting and drug-related activities to the local SIS (39). One Vancouver study reported that 17% of respondents had been referred to Insite by police, and that 2% had first heard about the service from the police (39). In a survey of clients using an SIS in Hannover, Germany, 94% reported no negative experiences with law enforcement officials in the neighbourhood (1). Law enforcement officials in other jurisdictions may stand in opposition to SISs or may not have a formal publicized stance on the subject (4).

Petrar et al. found that among Insite users whose injecting behaviour had changed as a result of accessing Insite, 71% reported fewer public injections and 56% reported less unsafe needle disposal (5). Another study found that the opening of Insite was independently associated with reductions in public injecting, publicly discarded needles, and other injection related litter in Vancouver’s downtown east side (40). In this observational study, an average of four injections were observed daily in public spaces prior to the opening of Insite, followed by only two after the opening (40). Similarly, 12 needles were found discarded in public spaces each day before the facility opened, followed by five after it opened (40). Respondents to a survey about SISs in Europe also believed that the facilities had reduced the incidence of public injecting and injection litter (2). There was no evidence of increased rates of robbery, theft, drug-related loitering or drug-related criminal offences in the surrounding neighbourhood following the opening of the Sydney Medically Supervised Injecting Centre (41). Five years after its opening, local business owners reported a significant decrease in public injecting or publicly discarded injecting equipment, and no change in offers of drugs for purchase in the neighbourhood (42). Similarly, SISs in Switzerland and Germany have reported reductions in the visibility of their public injecting scenes (1). Respondents from surveys in six of 15 neighbourhoods with SISs in Europe perceived an increase in drug dealing in the vicinity of the facilities or incidents of violence in the neighbourhood (2).


Challenges

There are several key issues that SIS clients have raised during evaluative studies:

- Lines can be long, especially during the weeks that social assistance cheques are distributed (5,8,34). This can be especially problematic for clients who are experiencing symptoms of withdrawal (24). At the busiest times, Insite clients may have to wait 15-30 minutes for a booth to become available, and almost 10% of clients leave while waiting for a booth (3). Only 20% of clients would prefer to wait than to inject outside sooner (34).

- While many clients find relationships with SIS staff beneficial, some report that their relationships with staff deter them from using the SIS because they do not want to disappoint staff (22).

- Few SISs are open 24 hours, which leaves clients with some hours during the day during which they must find another place to inject, or inject publically (1,5,34).

- Most SISs, including Insite, do not permit assisted injection to take place on the premises. This is problematic for people who require injecting assistance – often women who receive assistance from male partners, people with disabilities, people who are experiencing withdrawal, or people who are already intoxicated (3,29,34). Up to 50% of clients at Insite would like the option to receive injection assistance (34). Some clients reported attempting to self-inject at Insite and found that after a lengthy period of unsuccessful attempts their drugs coagulated and they needed to return to the street to acquire a new batch (29). Because Insite does not permit assisted injecting, these individuals were forced to rely on a partner (29). This can lead to violence, theft or use of unclean injecting equipment (3,29).

- Clients are not generally permitted to split or share drugs on SIS premises. Clients report that this presents a barrier to using Insite, because people commonly purchase drugs together with the intention of sharing them (3). Drugs that come in the form of a pill may need to be prepared in a liquid solution before they can be divided, so it is not possible to split in advance of injecting.

- Some clients found the SIS environment too clinical and sterile (34)

Clients also cited several reasons for not using SISs, or not always using SISs, especially if they had an alternate private venue for injecting available:

- The experience of ‘nodding off’ can be more enjoyable at home (24). SIS staff may try to rouse clients who are in drug-induced sleep to prevent overdose, which some clients found disrupting (24).

- Certain drugs, like cocaine, can make a person feel very suspicious and paranoid. In these cases, clients may prefer to be at home (22).

- Clients may have difficulty traveling to the SIS (1,5)
Factors That May Impact Local Applicability

The nature of the injection drug scene in a particular locale will have significant impacts on the harm reduction measures that will be explored. The injection drug scene in Vancouver’s downtown east side, for example, is highly visible and concentrated. In other regions, like Toronto or Ottawa, the injection drug use ecology is less concentrated. Studies are exploring the integration of supervised injection services into existing community health centres as a model that is more compatible with the ecology of drug use in these regions. Support from political leaders, law enforcement officials, and community members will also seriously impact the feasibility of implementing supervised injection services in a particular community or region.

What We Did

We searched PubMed for articles using a combination of text terms in the title or abstract: (((supervised OR safe OR safer[Title/Abstract])) AND (injection OR consumption[Title/Abstract])) AND (site OR facility OR room OR service OR services[Title/Abstract]). A separate search was conducted for “Medically Supervised Injecting Centre”.