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Attendance, drug use patterns, and referrals made from North America's first supervised injection facility

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Abstract

Background: North America's first government sanctioned supervised injection facility (SIF) was opened in Vancouver in response to the serious health and social consequences of injection drug use and the perseverance of committed advocates and drug user groups who demanded change. This analysis was conducted to describe the attendance, demographic characteristics, drug use patterns, and referrals made during the first 18 months of operation.

Methods: As part of the evaluation strategy for the SIF, information is collected through a comprehensive on-site database designed to track attendance and the daily activities within the facility. All users of the SIF must sign a waiver form and are then entered into a database using a unique identifier of their choice. This identifier is used at each subsequent visit to provide a prospective record of attendance, drug use, and interventions.

Results: From 10 March 2004 to 30 April 2005 inclusive, there were 4764 unique individuals who registered at the SIF. The facility successfully attracted a range of community injection drug users including women (23%) and members of the Aboriginal community (18%). Although heroin was used in 46% of all injections, cocaine was injected 37% of the time. There were 273 witnessed overdoses with no fatalities. During just 12 months of observation, 2171 individual referrals were made with the majority (37%) being referred for addiction counseling.

Interpretation: Vancouver's SIF has successfully been integrated into the community, has attracted a wide cross section of community injection drug users, has intervened in overdoses, and initiated over 2000 referrals to counseling and other support services. These findings should be useful for other settings considering SIF trials.

Keywords: Injection drug use; HIV/AIDS; Harm reduction; Supervised injection facility

1. Introduction

Reducing the adverse health and social consequences of injection drug use continues to present a major challenge to public health in Canada and elsewhere (Aceijas et al., 2004; Benotsch et al., 2004; Craib et al., 2003; Des Jarlais and Friedman, 1998). Although a number of existing programs have contributed to marked improvements in the health outcomes for many individuals who use injection drugs, success at a population level remains elusive (Cohen et al., 2004; Strathdee et al., 1998). In recent years, much of the focus has been on reducing the transmission of HIV and hepatitis C infections within networks of injection drug users (IDUs) with the provision of clean injection equipment via needle and syringe programs (Gibson et al., 2001; Hagan et al., 2000). This is recognized as an important component of a comprehensive approach to reducing harms among IDUs, but has not been sufficient to stop high risk activities, halt the transmission of HIV and Hepatitis C, or reduce widespread public drug use observed in large Canadian cities (Strathdee et al., 1997; Wood et al., 2002). The Downtown Eastside (DTES) of Vancouver has been the site of particularly explosive HIV and hepatitis C epidemics among IDUs with estimated prevalence rates of 30% and 90% respectively (Tyndall et al., 2003). The community is also notable for high numbers

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of overdose deaths (Tyndall et al., 2001), excessive use of emergency health care services (Palepu et al., 2001), and a highly publicized open drug scene (Wood et al., 2001).

North America's first government sanctioned supervised injection facility (SIF) was opened in response to the ongoing health and social consequences of injection drug use and demands from community advocates and the Vancouver Area Network of Drug Users (VANDU) that the HIV and overdose epidemics were unacceptable. In fact a peer-driven injection site called the Back Alley was established by VANDU between February and October 1996 and this was followed by another "unsanctioned" injection site, the 327 SIS that was open between April and October 2003 (Kerr et al., 2005a). These initiatives, along with other peer-driven projects (Wood et al., 2003), brought an urgency to the debate and were critical to the eventual opening of the current SIF. In addition, reports of the success of similar facilities in many European cities, and more recently Sydney, Australia, pushed policy makers into considering the role of an SIF in dealing with problem drug use in Vancouver (de Jong and Weber, 1999; Broadhead et al., personal communication). Vancouver's SIF was opened in September 2003 and, as part of the approval process, a comprehensive evaluation plan was proposed to assess a number of health and community impacts (Wood et al., 2004b), including changes in public injecting practices, overdose deaths, uptake of addiction treatment, and HIV infection rates. To date, we have shown that the opening of the SIF has been associated with improvements in community levels of public disorder (Wood et al., 2004c), reductions in syringe sharing among those using the SIF (Kerr et al., 2005b), and that the SIF attracts IDUs with histories of high risk behaviors (Wood et al., 2005).

This SIF trial is important for Canada and will largely dictate whether this approach is adopted as a standard component of a comprehensive harm reduction strategy in other Canadian cities. The aim of this analysis is to describe the initial uptake, client characteristics, drug use patterns, and referrals made from the SIF during the first 18 months of operation.

2. Methods

The justification and methods for evaluating the SIF have been outlined previously (Wood et al., 2004a, 2004b). Briefly, there are several components to the evaluation including a database that operates at the SIF, the recruitment of a large prospective cohort of SIF participants, a comparison cohort of injection drug users who are not using the SIF, and studies evaluating the impact of the SIF on community residents and businesses.

This analysis uses the information collected from a comprehensive on-site database that is designed to track daily activities within the facility. The SIF has 12 individual stations for injecting and is open for 18 h each day, from 10 a.m. to 4 a.m. The staff is highly trained and consists of community outreach workers, nurses and other health care professionals, drug and alcohol counselors, and peers. All users of the SIF are included in the database and are assigned a unique identifier that is used at each visit. The participant may choose to use their actual name or an alias that is unique to the system. They are then assigned a number that is used to monitor activities within the site. There are no restrictions to the type of drug(s) that are brought into the SIF, although the clients are required to report on the drug(s) they intend to inject and any concerns that the staff may have would be discussed with the client prior to injection. This is also necessary to properly intervene were any adverse reactions to occur following the injection. There is a limit of one injection per visit, although multiple visits are allowed during the same day. At each visit a new needle, syringe, alcohol swab, water container, and cooking spoon is provided. There is a site coordinator with extensive community and management experience; a receptionist who signs people into the site; a community worker who records the drug being used, hands out the injection kits, and directs the participant to the next available station; one or two nurses who supervise the injections, help with injection techniques, and intervene in any overdoses; a community worker that supervises the post-injection "chill-out" area; a counselor who provides onsite counseling services; and several community workers and peers that are available to perform general duties. In addition to the sign-in data, separate computer stations record the drug(s) being injected at each visit, nursing and staff interventions, on-site counseling, and referrals to other community services.

The system of data collection has been devised to cause minimal interference in client flow and to protect the identity and confidentiality of the participants. During the first 6 months of operation (September 2003 to February 2004), the computerized system registration was slowly introduced in order to minimize any real or perceived obstacles to using the SIF (Wood et al., 2004a). Over time, as the users of the facility gained confidence in the staff and procedures, the more formal computer-based data collection system was established. Although potential users of the SIF are not turned away due to refusal to provide demographic information, all participants must provide a unique identifier that is used at each visit, as well as sign a waiver form that explains the purpose of the SIS along with responsibilities and liabilities. The information from the database is tabulated each month and transferred to a central database where reports are generated, stratified by gender, attendance, and drug use patterns.

The data is securely stored off site and analyzed at the BC Centre for Excellence in HIV/AIDS. The evaluation has received ethical approval from the University of British Columbia/Providence Health Care Clinical Research Ethics Board and Health Canada.

3. Results

From 10 March 2004 to 30 April 2005 inclusive, there were 4764 unique individuals who registered at the SIF. The monthly attendance, as well as the number of new participants, is shown in Fig. 1. The number of individuals visiting the SIF was relatively consistent from month-to-month, and included a steady flow of new participants. It should be noted that March 2004 data was based on just 22 days of observation. Visits to the SIF between 10 March 2004 and 30 April 2005 numbered 243,701 for a monthly average of 17,874 visits.

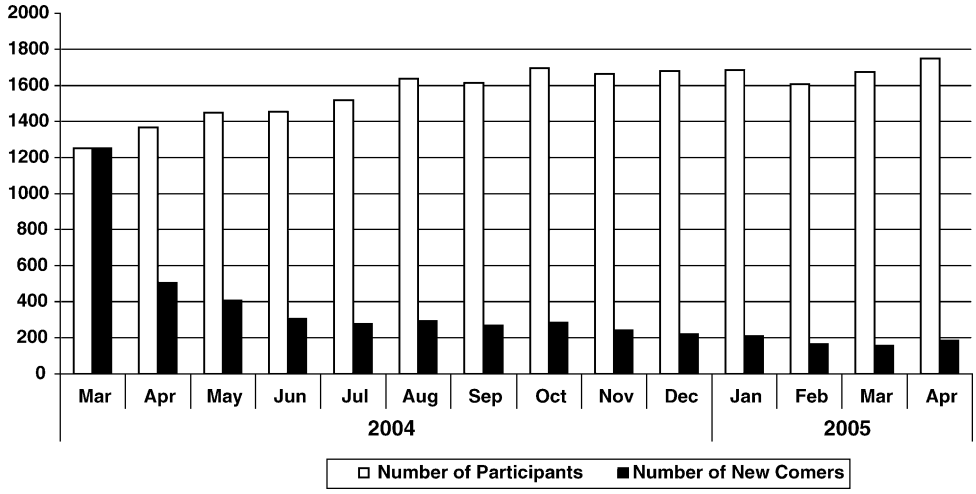

Fig. 1. Total number of people attending the SIF each month, including the number of first time SIF users.

The frequency of injections performed at the SIF each month was recorded on an individual basis. Between March 2004 and April 2005, an average of 27.5% of all SIF users attended the facility only once during the month, 31.5% attended 2–5 times a month, 28.5% attended 6–25 times, 7.5% attended 26–50 times, 4% attended 51–100 times, and 1% attended over 100 times in a month. These monthly attendance patterns were very consistent over the entire period of observation.

Seventy-three percent of the registered users were males and the median age was 40 years. Females were younger with a median age of 36 years. The ethnic distribution was similar to the injection drug users in this community with 73% Caucasian,

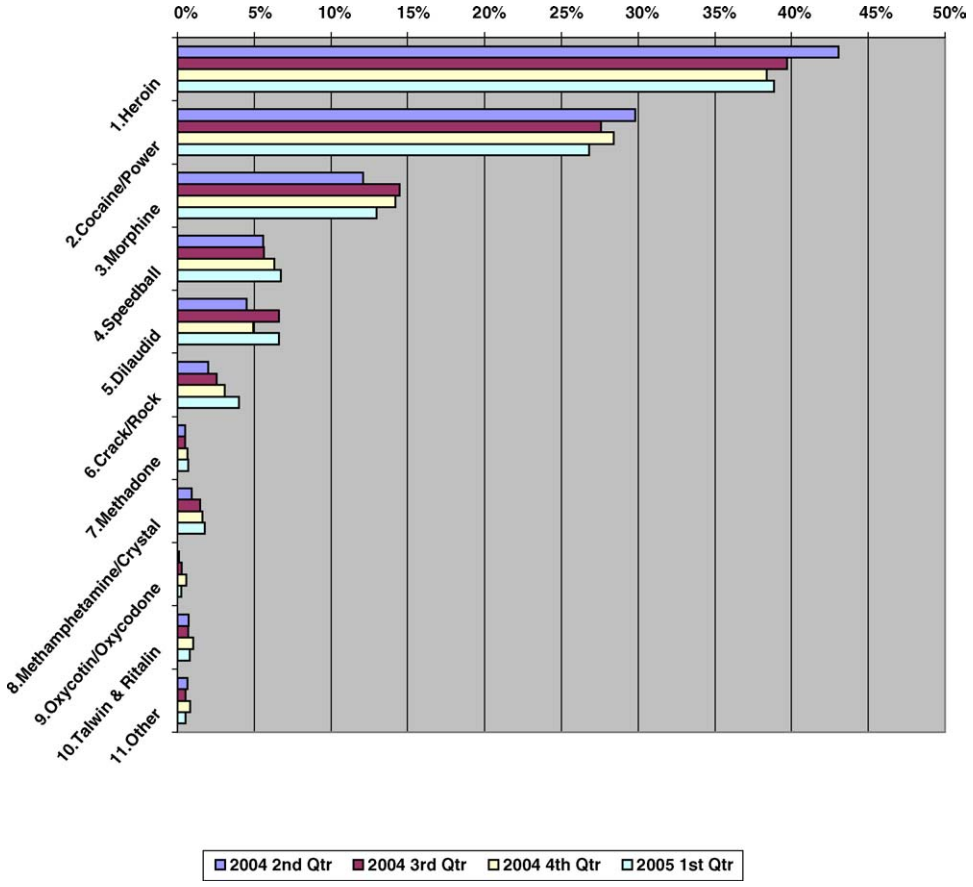

Fig. 2. Type of drugs injected at the SIF stratified by yearly quarter: April 2004–2005.

Table 1
Referrals made from the SIF stratified by quarter

Referral programs	2004			2005
	Second quarter	Third quarter	Fourth quarter	First quarter
1. Addiction counselling	121 (28%)	126 (33%)	251 (45%)	314 (39%)
2. Community clinics	97 (22%)	53 (14%)	77 (14%)	108 (14%)
3. Hospital emergency	62 (14%)	42 (11%)	60 (11%)	68 (9%)
4. Detoxification bed	56 (13%)	58 (15%)	52 (10%)	71 (9%)
5. Community services	41 (10%)	36 (9%)	32 (6%)	99 (13%)
6. Housing	27 (6%)	36 (10%)	44 (8%)	101 (12%)
7. Methadone	13 (3%)	16 (4%)	24 (4%)	31 (4%)
8. Recovery house	17 (4%)	12 (3%)	14 (3%)	9 (1%)
Total	434	379	554	804

18% Aboriginal, 2% Hispanic, 2% Black, 1% Asian and 3% other ethnicities (Tyndall et al., 2001). Aboriginal ethnicity was 25% among females compared to just 10% among males, which is consistent with the demographic characteristics of the injection drug using community.

The majority of the visits (79.2%) were to inject at the site, while a smaller proportion of individuals registered but did not inject. Those who did not inject following sign-in were at the SIF to see counselors or other staff (9.3%), to obtain clean injection equipment only (6.4%), left due to the actual or perceived waiting times without obtaining clean injection equipment (3.1%), and left due to waiting times with injection equipment in hand (2.0%). The median time spent in the injection room per visit is 20 min. As the SIF has 12 injection booths and is open for 18 h, the capacity is for 648 injections per day and the daily injections are consistently running at just over 600.

Fig. 2 shows the types of drugs that were brought to the SIF to inject. Heroin was used in 40.0% of all visits while other opiates were used with less frequency including morphine (13.2%), dilaudid (6.0%), and oxycodone (0.5%). Speedballs, a combination of heroin and cocaine, were used in 6.3% of all injections. There was a significant amount of powder cocaine being injected (28.2%), as well as a smaller amount of cocaine that was brought into the SIF as crack cocaine (3.0%) and crushed. Crystal methamphetamine (1.5%) and Talwin/Ritalin (1.0%) were injected at the SIF very infrequently.

There were 273 recorded overdoses at the SIF between March 2004 and April 2005, with no overdose deaths recorded at the facility during this period of observation. A detailed evaluation of the causes of overdose, staff responses, and outcomes is ongoing.

Referrals from the SIS, stratified quarterly, are shown in Table 1. There were 804 individual referrals made during the first quarter of 2005 and 2171 referrals in total. The majority (37%) of the referrals were for addiction counseling. This occurred either at the SIF or at one of several community clinics. For those occurring at the SIF, the service was set up for rapid access, either the same day or later in the week. Referrals by an SIF nurse to medical services, either community health clinics (16.0%) or hospital emergency rooms (11.3%), were also common. Direct referrals to a detoxification bed (11.7%), other community services (9.4%), housing services (9.0%), methadone maintenance treatment (3.7%), and longer-term abstinence-based group housing, known as recovery houses (2.7%) were also conducted.

4. Discussion

The present study demonstrates that attendance at the SIF has been consistently high since the opening and the facility is operating near capacity at most times. During 14 months of computerized observations, the SIF has attracted over 4700 injection drug users, has intervened in 273 witnessed overdoses, and made 2171 referrals. The attendance patterns indicate that although most participants are returning, there are still new people using the SIF each month. The overall number of visits is quite consistent from month-to-month and further increases are not likely within the current space. The attendance figures clearly illustrate that more capacity is needed for supervised injections. This can be done through extending the hours of operation from 18 to 24, and adding more injection spaces through expansion of the existing SIF and/or opening new sites.

Although attendance is high, it is apparent that only a small proportion of participants use the SIF on a consistent basis, with most people still performing the majority of their injections outside of the SIF. This has implications for some of the community health impacts that are being monitored. The frequency of attendance in relation to the number of injections performed is likely an important factor when evaluating the transmission of infectious pathogens and the incidence of other adverse health consequences. Users of the SIF should therefore be encouraged to use the site more consistently although limited capacity is a major concern, and barriers to regular use require further investigation.

The drugs injected at the SIF include a range of substances that reflect what is available on the street, although the majority of SIF participants are using opiates, mainly in the form of heroin. As cocaine is the most commonly injected substance in this community, and associated with the highest risk of HIV transmission, it was critical that cocaine users are attracted to the site (Tyndall et al., 2003). As the pattern of cocaine use is often characterized by repeated injections there was some concern that cocaine users would be discouraged from using the SIF where only one injection is allowed per visit. It is possible that the use of the SIF actually influences the intensity of cocaine

use by limiting repeated injections, although further analyses are required to determine this effect. Methamphetamine, that has become increasingly available in cities across North America (Boddiger, 2005; Urbina and Jones, 2004), was injected infrequently at the SIF. There may be a population of methamphetamine injectors who are not using the SIF, but more likely the injection of methamphetamine in not as common in this community.

One of the major outcomes of interest is the proportion of people who can be contacted through the SIF and be directed to addiction services and treatment. The SIF may well be the only point of contact for many injection drug users who exist at the margins of society and avoid contact with health services (Amirkhanian et al., 2005). The majority of referrals to date have been to addiction counseling that has occurred either on site or at surrounding clinics. The ongoing evaluation will be tracking the impact of the counseling that is conducted as a result of SIF attendance. The numbers of individuals who are engaged in addiction counseling is increasing each quarter, which indicates a willingness to be involved and suggests that building trust and relationships over time may result in more opportunities for interaction and referrals. The SIF also offers an important point of contact to identify and attend to medical problems, and referrals to both community clinics and the hospital emergency department are common. Improving access to health care among IDUs is highly relevant to this community (Kerr et al., 2005c).

The relatively low numbers of individuals referred directly to longer-term recovery houses reflect the requirement of most residential facilities in the province of British Columbia for a period of abstinence before admission. As the individuals coming to the SIF are not abstinent, there are few opportunities to be referred directly to recovery houses. Although the availability of detoxification beds and other addiction treatment services are expanding in the community there is still excess demand (Wood et al., 2004d), although a number of SIF participants were referred directly to a detoxification bed. Although direct referrals from the SIF to methadone maintenance treatment (MMT) are extremely low, this is likely a reflection of the way MMT is distributed rather than a lack of access. The MMT programs are generally integrated into primary care clinics and a clinic physician would start some of the clients who are referred to community clinics on MMT. However, a process that allows eligible clients more rapid access to MMT should be considered.

There are a number of potential limitations to the data collection at the SIF. Firstly, although participants are asked to provide a consistent identifier, it is not possible to confirm the identity of all clients at each visit. This can result in misclassification and would tend to over-estimate the number of individuals using the site. The staff attempts to verify all visits using the database and since new clients are asked to fill in a waiver form there is a disincentive to register on multiple occasions. In addition, the staff becomes familiar with participants over time and encourages them to always use the same identifier. Secondly, the referrals and other interventions provided may be under-estimated due to the high volume at the site. Further, the follow-up data on the referrals is not routinely collected in this database and other linkages will be required to confirm that the participant actually made it to the referral. Finally, the information collected on the type of drug injected at the facility is self-reported, although there should be no disincentive to accurately report the type of drug to the staff.

The SIF will require ongoing evaluation in order to assess the impacts on infectious disease transmission, public drug use and health outcomes. A cohort study of over 1000 randomly selected individuals who have used the SIF has been assembled in order to allow more in-depth evaluation of health outcomes. In addition, qualitative research studies are ongoing to assess the activities in and around the SIS, with respect to public disorder issues and the impact on the surrounding communities (Wood et al., 2004c).

During the first 18 months of operation, Vancouver's SIF has successfully been integrated into the community, has attracted a large number of injection drug users, including women and Aboriginal people, has intervened in overdoses, and provided a wide range of services and referrals. The public health impacts of the SIF and the longer-term health outcomes of individuals using the facility are part of the ongoing evaluation.

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