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Research Paper

Initiation, cessation and resumption of attendance at the Melbourne supervised injecting room among a cohort of people who inject drugs

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ABSTRACT

Background: Supervised injecting facilities (SIFs) reduce drug-related harms and associated costs, but evidence is limited to a few settings. This study estimates rates of initiation, cessation, and resumption of Melbourne's Medically Supervised Injecting Room (MSIR) use among a cohort of people who inject drugs.
Methods: Data were drawn from SuperMIX, an ongoing cohort study since 2008. Participants complete baseline and annual surveys, including MSIR use since its opening on 30 June 2018. We reported baseline characteristics and calculated incidence rates (IRs) of MSIR initiation, cessation, and resumption, stratified by recent homelessness and opiate agonist therapy (OAT) use, per 1000 person-years (PY).
Results: Of 1650 eligible participants, 685 (42%) reported MSIR use at baseline. MSIR attenders were slightly older (median 43 vs. 41 years) and less often female (28% vs. 35%) than non-attenders. Most (71%) were infrequent attenders (<50% injections at MSIR). Frequent attenders (n = 202) injected more often (median monthly injections = 50) than infrequent (median = 30) and non-attenders (median = 20). The MSIR initiation rate was 525 per 1000 PY, similar between frequent and infrequent attenders (RR 1.10, 95% CI 0.94–1.28). The cessation rate was 264 per 1000 PY, with no difference between attendance groups (RR 1.11, 95% CI 0.60–2.04). The resumption rate was 250 per 1000 PY, also similar across infrequent and frequent attenders (RR 0.99, 95% CI 0.47–2.09).
Conclusions: We found high MSIR service uptake, relative to cessation. Attendance was higher among men, Aboriginal and/or Torres Strait Islander people, and those recently homeless, with frequent attenders injecting more often and those on OAT less likely to attend frequently.

Introduction

Supervised injecting facilities (SIFs; a model of drug consumption room [DCR] for injecting use only) are an important harm reduction intervention (European Monitoring Centre for Drugs and Drug Addiction, 2018; Levengood et al., 2021). In these facilities individuals inject pre-obtained drugs under the supervision of trained healthcare professionals. SIFs aim to reduce drug-related harms, such as overdose

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death, infectious disease transmission and skin and soft tissue infections while also connecting clients to health care and social services (European Monitoring Centre for Drugs and Drug Addiction, 2018). At the end of 2024, SIFs were legally operating in 18 (mostly high income) countries (Harm Reduction International, 2024).

Existing studies evaluating SIFs have reported that SIF use is associated with reductions in all-cause and drug-related deaths (Kennedy, Hayashi, et al., 2019; Marshall et al., 2011), ambulance attendances for overdose (MSIR Review Panel, 2020; Salmon et al., 2010), HIV risk behaviour (Kerr et al., 2005), and increased uptake of substance use treatment programs (Wood et al., 2007). Studies assessing the effectiveness and economic benefits of the Vancouver SIF, Insite, (established in 2003), reported substantial impacts on lives saved, HIV and hepatitis C infections averted and annual cost savings in the context of reductions in healthcare services and prevented deaths (Andresen & Boyd, 2010; Bayoumi & Zaric, 2008; Jozaghi et al., 2013; Jozaghi et al., 2014; Pinkerton, 2011). Studies have estimated that the Vancouver SIF had an economic benefit of CAD$18 million and 1175 life-years gained over 10 years (Bayoumi & Zaric, 2008), and that it has been effective in preventing new cases of HIV and deaths, with an annual economic saving of more than CAD$6 million (Andresen & Boyd, 2010). In France, modelling suggested that attending a DCR would significantly prevent adverse health events among people who inject drugs and reduce related healthcare costs, with the largest cost savings shown from averted cases of infectious endocarditis and reductions in emergency department visits and overdose events (Cousien et al., 2024).

While existing studies provide important evidence for the effectiveness and cost-effectiveness of SIFs, most have been undertaken in a limited number of settings. Evaluations in settings with varying infectious disease transmission, different drug market characteristics and overdose risk profiles are crucial to address the ongoing public and political controversy of SIFs and support larger scale implementation across a range of contexts (Levengood et al., 2021). In addition, little is known about how people initiate use of SIFs, as well as the patterns of stopping and resuming use, and the factors that influence frequent service engagement. Gaining a clearer understanding of SIF initiation and ongoing service use is critical for optimising service delivery and ensuring that SIFs are responsive to changes in drug use and service need, and for evaluating the population-level impact and cost-effectiveness of SIFs.

The Melbourne supervised injecting room

The Melbourne Medically Supervised Injecting Room (MSIR) was established in 2018 on an initial five-year trial basis in North Richmond, in Melbourne's inner-city with an established street drug market. The MSIR is located on the grounds of Melbourne's largest public housing estate and is co-located with a community health service, offering a range of on-site health services including blood-borne virus testing and treatment, opioid agonist treatment, and several social support services. An 18-month review conducted in 2020 conclude that the MSIR facility was effective in achieving its legislated aims by averting 21–27 deaths, reducing emergency healthcare ambulance attendances for overdose by 36% during MSIR opening hours, providing 284 hepatitis C tests (36% RNA positive, 26% initiating treatment), and delivering 10,540 additional services beyond supervised injecting (MSIR Review Panel, 2020). Improving neighbourhood amenity in the vicinity of the service was the only service objective that had not been achieved, with residents reporting no change to discarded injecting equipment. A second service review was completed in 2023, resulting in the Victorian Government legislating the MSIR as an ongoing service.

The current study

Although several studies have examined the impact of SIFs on drug-related outcomes, few have explored patterns of SIF attendance as characterised by the profile of clients (Kennedy, Klassen, et al., 2019; Van Den Boom, Del Mar Quiroga, et al., 2021). Our study builds on existing evidence by addressing key knowledge gaps related to service engagement and the client characteristics associated with different patterns of SIF use. Specifically, we aim to estimate the incidence of initiation, cessation and resumption of MSIR attendance, stratified by the frequency at which people attend. Further, we aim to estimate the incidence of transitioning between infrequent and frequent use, and initiation and cessation of MSIR attendance among key sub-populations of people who inject drugs.

Methods

Study design and setting

Data come from the Melbourne Injecting Drug User Cohort Study (SuperMIX), a community recruited open prospective cohort of people who inject drugs in Melbourne and the Greater Geelong region established in 2008 and is ongoing. Participants are eligible for SuperMIX if they are at least 18 years old, report monthly injecting in the past six months, primarily inject heroin and/or methamphetamine, and can provide informed consent. Participants complete baseline and annual follow-up surveys and consent to administrative data linkage to health and social records. Surveys include questions about demographic characteristics, current and historical drug use, and health service use, as well as use of the MSIR. SuperMIX methodology has been detailed in full elsewhere (Horyniak et al., 2013; Van Den Boom, Quiroga, et al., 2021). For this study, we used self-reported data collected from June 2018 (when the MSIR opened) to November 2024.

The SuperMIX study was approved by the Alfred Hospital Human Research Ethics Committee (599/21).

Participants

For this study, SuperMIX participants were eligible if they completed at least one survey following the opening of the MSIR on 30 June 2018. Participants were excluded from analyses if they did not respond to survey questions relating to MSIR use following the opening of the MSIR and/or reported cessation of injecting drug use at study baseline; defined as the first survey following the opening of the MSIR.

Variables

This study has three primary outcomes drawn from self-reported survey data: 1) initiation and use of the Melbourne MSIR, 2) ceasing MSIR attendance, and 3) resuming MSIR attendance.

For outcome 1, MSIR initiation and use (no, yes), participants were asked *'have you used the MSIR?'*. At cohort enrolment, this referred to lifetime use, while at follow-up surveys, it referred to use since the last survey. A participant's first reported use of the MSIR was considered their point of initiation. For outcomes 2 and 3, cessation (no, yes) and resumption (no, yes) of MSIR attendance, participants were classified based on changes in their response to whether they had used the MSIR since their last survey, compared to their response at the previous survey.

The primary exposure of this study was frequency of MSIR attendance (infrequent, frequent), for which participants were asked *'what proportion of your injections took place inside the MSIR in the last month?'*. Those who reported that less than 50% of their injections took place inside the MSIR were classified as infrequent attenders and those reporting that $\geq$50% of their injections took place inside the MSIR were classified as frequent MSIR attenders. MSIR attendance and frequency of attendance was determined based on participants self-reported use at baseline. Transitions of frequency of MSIR attendance was measured across multiple subsequent study visits.

Participant characteristics were included based on previous studies

from Vancouver and Sydney exploring characteristics of SIF clients (Kimber et al., 2003; Van Den Boom, Del Mar Quiroga, et al., 2021; Wood et al., 2006). Characteristics were based on responses from participants baseline surveys and included age at baseline (in years); participant sex (male, female); identification as Aboriginal and/or Torres Strait Islander (no, yes); exposure to homelessness (no, yes) defined by reporting current accommodation as homeless, squatting, or sleeping rough; prescribed opiate agonist therapy (OAT; no, yes); frequency of injecting in the past month (total number of injections); recent non-fatal overdose (opioid and methamphetamine; no, yes); and non-fatal opioid overdose (no, yes).

Statistical analysis

Descriptive statistics were used to summarise participant characteristics overall, and by any MSIR use and frequency of MSIR use at study baseline.

To calculate incidence rates (IRs) per 1000 person-years (PY), the number of events was divided by the corresponding PY at risk. For MSIR initiation, time-at-risk began at the opening of the MSIR (30 June 2018). If initiation was reported at baseline, follow-up ended at the midpoint between the MSIR opening and the survey date. If reported after baseline, follow-up ended at the midpoint between the survey where initiation was reported and the preceding survey. Participants who never initiated were censored at their last survey or the survey where they reported ceasing injecting. Initiation rates were calculated overall and stratified by initiation frequency (infrequent or frequent), homelessness, and current OAT use at baseline. Risk ratios (RRs) and 95% confidence intervals (CIs) were reported.

For transitions in MSIR use frequency (i.e., frequent to infrequent and vice versa), participants with at least two surveys reporting frequency of use were included. Time-at-risk started at the first report of MSIR use and ended at the midpoint between the survey where a change in frequency was reported and the previous survey. Participants with no transition were censored at their last survey.

For cessation of MSIR use, participants with at least two surveys were included. Time-at-risk began at the first report of MSIR use and ended at the midpoint between the cessation report and the prior survey. Those who did not report cessation were censored at their last survey. For resumption of MSIR use, participants with at least three surveys, including prior reports of initiation and cessation, were included. Time-at-risk began at the survey reporting cessation and ended at the midpoint between that survey and the survey where resumption was reported. Participants who did not resume were censored at their last survey.

Rates for transitions in frequency, cessation, and resumption were stratified by type of transition (e.g., ceasing from or resuming to infrequent or frequent use). For all time-varying outcomes, participants could contribute multiple events, with PYs at risk restarting after each event. All analyses were performed using RStudio version 2024.12.1, with $p < 0.05$ used to determine statistical significance where relevant.

Results

Participant characteristics and MSIR use at study baseline

Of the 2090 participants in the SuperMIX study, 1640 were included in the analysis. A total of 450 were excluded, including 440 for not completing a survey after the MSIR was established, and a further 10 for ceasing injecting drug use prior to its establishment. Of the 1640, 685 (42%) reported using the MSIR at baseline, of which the median age was 43 years (IQR 36–48) compared to 41 years (IQR 36–47) among those who had not attended at baseline, and 28% ($n = 191$) reported female sex at birth, which was a lower proportion than non-attenders (35%, $n = 330$). One in four individuals (26%, $n = 177$) with Aboriginal and/or Torres Strait Islander heritage reported MSIR use, compared to 13% ($n = 126$) of those not attending at baseline. One fifth (20%, $n = 138$) who reported homelessness reported MSIR use, compared to 14% ($n = 137$) of those not attending, and 42% ($n = 288$) who reported current OAT use reported MSIR use, compared to 46% ($n = 439$) of those not attending.

Most (72%) participants who reported MSIR use at baseline were classified as infrequent MSIR attenders (<50% of their injections taking place inside the MSIR; $n = 483$). The median number of injections in the past month was 20 (IQR 6–45) among non-MSIR attenders, increasing to 30 (IQR 12–80) among infrequent MSIR attenders, and further to 50 (IQR 20–90) among frequent MSIR attenders (Table 1).

Similar proportions for participant characteristics were observed when any MSIR use was stratified by infrequent and frequent attendance (Table 1).

Rate of initiation, frequency transitions, cessation and resumption of MSIR use

From the MSIR's opening until the end of the study, 838 individuals (51%) reported attending the MSIR at least once, of whom 193 (23%) consistently reported attendance in at least two surveys since its establishment. Participants included in calculating the initiation rate contributed a median of 2 surveys (IQR 1–6), spanning 1596.26 PY of observation and an overall MSIR initiation rate of 524.98 per 1000 PY (Table 2). Among MSIR service attenders ($n = 838$), there was no evidence to suggest a difference in the initiation rate between frequent and infrequent MSIR attendance (IRR 1.10, 95% CI 0.94–1.28). Almost all individuals (97%, $n = 815$) who began attending the MSIR reported opioid use in the past 12 months (data not reported in table).

There were 191 transitions between different states of frequency of MSIR attendance. The rate of transitioning from infrequent to frequent MSIR attendance was 321.09 per 1000 PY, which was similar to the rate of transitioning from frequent to infrequent attendance (IR 301.09 per 1000 PY; IRR 0.94, 95% CI 0.71–1.25).

Overall, 73 people reported ceasing using the MSIR during the study and participants included contributed a median of 4surveys (IQR 3–6) to calculating cessation. There were 166 cessation events, and the overall IR of cessation of MSIR attendance was 264.41 per 1000 PY. There was no evidence to suggest a difference in the rate of ceasing MSIR attendance by the frequency at which people were attending prior to ceasing (IRR 1.11, 95% CI 0.60–2.04; Table 2). The most common reasons for ceasing attending the MSIR were, having a safe place to inject, preferring to inject at home, and the MSIR is located too far from where drugs are purchased or too far from where participants live (data not reported in the table).

Overall, 38 participants resumed attending the MSIR after a period of non-use during the study. These individuals contributed a median of 6 surveys each (IQR 5–7) to the calculation of the resumption rate. A total of 38 resumption events were recorded, corresponding to a rate of 250.49 per 1,000 person-years. There was no evidence of a difference in the likelihood of resuming as either infrequent or frequent attenders (IRR: 0.99, 95% CI: 0.47–2.09).

Rates of initiation and cessation by recent homelessness and recent OAT use

The IR of MSIR initiation among individuals reporting exposure to homelessness at baseline was 587.35 per 1000 PY, which was similar to those not reporting recent homelessness (IR 512.52 per 1000 PY; IRR 1.15, 95% CI 0.96–1.36; Table 2). The IR of MSIR initiation among individuals recently prescribed OAT was 580.45 per 1000 PY, which was higher compared to individuals not recently prescribed OAT (IRR 1.20, 95% CI 1.01–1.37). Only 23 individuals (of 838) who initiated MSIR use reported no use of opioids in the 12 months prior to MSIR initiation, instead reporting methamphetamine and other drug injecting.

There was no evidence to suggest a difference in the rate of ceasing MSIR use by exposure to recent homelessness (vs. no; IRR 0.90, 95% CI

Table 1
Participant demographics at study baseline, overall and by any MSIR use and frequency of MSIR use ($N = 1640$).

	Total ($N = 1640$) *n* (%)	Non-attenders ($n = 955$) *n* (%)	MSIR attenders ($n = 685$) *n* (%)	Infrequent attenders ($n = 483$) *n* (%)	Frequent attenders ($n = 202$) *n* (%)
Median age at study baseline, (IQR)	41 (36–48)	41 (36–47)	43 (36–48)	43 (36–48)	43 (35–48)
Sex assigned at birth					
Male	1119 (68.2)	625 (65.4)	494 (72.1)	343 (71.0)	151 (74.8)
Female	521 (31.8)	330 (34.6)	191 (27.9)	140 (29.0)	51 (25.2)
Aboriginal and/or Torres Strait Islander					
No	1339 (81.6)	829 (86.8)	508 (74.2)	359 (74.3)	149 (73.8)
Yes	301 (18.4)	126 (13.2)	177 (25.8)	124 (25.7)	53 (26.2)
Recent homelessness					
No	1365 (83.2)	818 (85.7)	547 (79.9)	391 (81.0)	156 (77.2)
Yes	275 (16.8)	137 (14.3)	138 (20.1)	92 (19.0)	46 (22.8)
Recently prescribed OAT					
No	913 (55.7)	516 (54.0)	397 (58.0)	266 (55.1)	131 (64.9)
Yes	727 (44.3)	439 (46.0)	288 (42.0)	217 (44.9)	71 (35.1)
Injecting frequency past month, median (IQR)	25 (8–60)	20 (6–45)	35 (12–84)	30 (12–80)	50 (20–90)
Recent non-fatal overdose (opioid or stimulant)	95 (5.8)	54 (5.7)	41 (6.0)	26 (5.4)	15 (7.4)
Recent non-fatal opioid overdose	87 (5.3)	48 (5.0)	39 (5.7)	24 (5.0)	15 (7.4)

Notes
1. Analysis includes all participants with at least one survey conducted after the establishment of the MSIR (June 30, 2018).
2. MSIR attendance, including frequency categorisation, was determined based on reported MSIR use at study baseline (i.e., the first survey after the MSIR was established).
3. Recent homelessness and recent OAT prescription were determined by self-reported exposure at study baseline.
4. Injecting frequency is defined as the total number of injections reported in the past month.
5. Recent non-fatal overdose includes opioid and stimulant overdoses reported within the past 12 months at study baseline.

0.50– 1.61) or being recently prescribed OAT (vs. no; IRR 1.07, 95% CI 0.77– 1.48; Table 2).

Discussion

Building on previous research assessing service uptake and characteristics of SIF clients (Kennedy, Klassen, et al., 2019; Kimber et al., 2003; Wood et al., 2006), this study aimed to identify client characteristics and estimate rates of initiation, changes in frequency of attendance, cessation and resumption of attending the Melbourne MSIR. Half of our SuperMIX community-recruited cohort of people who inject drugs reported attending the Melbourne MSIR, with three in four using the MSIR for less than half of their injections. While some individuals ceased attendance, the cessation rate was lower than initiation and matched the resumption rate, indicating stable overall use and highlighting the importance of low-barrier access to support service re-engagement. MSIR attendance was higher among men, people with Aboriginal and/or Torres Strait Islander heritage, and people recently exposed to homelessness. Almost all individuals who attended the MSIR at least once reported opioid use in the past 12 months. Those prescribed OAT were less likely to report frequent attendance at the MSIR, while frequent attenders reported injecting more often than infrequent attenders.

In our study, males accounted for almost three quarters of people reporting use of the MSIR, which is consistent with studies describing characteristics of SIF clients in Sydney and Vancouver (Kimber et al., 2003; Wood et al., 2006), and broadly matches Australian surveillance data among people who inject drugs, where the 2024 national sample was 69% male (Sutherland et al., 2024). Further, previous research has also reported that harm reduction sites (including overdose prevention sites) are often perceived as 'masculine spaces', which may hinder women's access and could explain why fewer women report attending the MSIR (Ayon et al., 2018; Boyd et al., 2018). For example, injecting risk behaviours that are more commonly reported by women, such as assisted injecting (Mitra et al., 2022), are often prohibited in SIFs (Ivsins et al., 2023). Experiences of violence and stigma among women who inject drugs are often higher than among men (Sutherland et al., 2024) and can serve as barriers to accessing harm reduction services (Brener et al., 2024). Gender-responsive design of SIFs is needed to address the heightened stigma and violence experienced by women who inject drugs (Boyd et al., 2018; Shirley-Beavan et al., 2020). Women-only SIF models, such as SisterSpace in Vancouver (Boyd et al., 2020), could increase access and engagement for women who may not access mainstream services.

Individuals reporting recent exposure to homelessness commonly reported attending the MSIR, a finding that is consistent with previous studies of SIF clients conducted in Australia and Canada (Van Den Boom, Del Mar Quiroga, et al., 2021; Wood et al., 2005). Homelessness has been linked to infectious disease acquisition and higher risk injecting practices such as sharing injecting equipment and public injecting, the latter associated with an increased risk of fatal and non-fatal overdose (Arum et al., 2021; Khezri et al., 2025; Topp et al., 2013). This demonstrates the success of the MSIR in attracting people with complex social needs. Future expansion of SIFs should prioritise locations and service models targeting people exposed to housing instability and elevated overdose risk. Consistent with findings in Canada (Wood et al., 2006), our study also found that individuals who were being prescribed OAT were less commonly frequent MSIR attenders, which may be explained by lower injecting frequency and greater social stability experienced among people receiving OAT (Amato et al., 2005; DeBeck et al., 2011).

We found that half of our study population initiated MSIR attendance over the study period, demonstrating a high level of service uptake and indicating that the MSIR is an accessible and acceptable service. Previous research has demonstrated strong acceptance of SIFs among people who inject drugs (Kral et al., 2010), which is especially evident among people facing barriers to healthcare access or who are exposed to unstable housing (Duncan et al., 2022; Harris et al., 2018). This broad acceptance of SIFs, combined with the high initiation rate in our study highlights the critical role of SIFs in meeting the needs of people who inject drugs and engaging those most at risk of injection-related harms. Our study found that individuals who attended the MSIR for more than half of their monthly injections reported higher injecting frequency than those who used it less often. However, the majority of individuals were infrequent MSIR attenders, using the MSIR for less than half of their monthly injections. This underscores the need for future research to understand where the remaining injections take place and whether limited service coverage is a contributing factor.

Table 2
Rates for initiating use, transitioning in frequency of use, ceasing and resuming use of the MSIR among SuperMIX participants ($N = 838$).

	Events	Person-years (PYs)	Incidence rate/1000 PY	Rate ratio (95% CI)
Initiation of MSIR use				
Overall	838	1596.26	524.98	-
Initiation to infrequent use	616	1202.55	512.24	Ref
Initiation to frequent use	222	393.71	563.87	1.10 (0.94–1.28)
Recent homelessness				
No	682	1330.66	512.53	Ref
Yes	156	265.60	587.35	1.15 (0.96–1.36)
Recently prescribed OAT				
No	450	927.81	485.01	Ref
Yes	388	668.45	580.45	1.20 (1.01–1.37)
Transitions of frequency of MSIR use				
Infrequent to frequent use	87	270.95	321.09	Ref
Frequent to infrequent/no use	104	345.41	301.09	0.94 (0.71–1.25)
Ceasing MSIR use				
Overall	166	627.82	264.41	-
Infrequent use to ceasing use	155	589.93	262.74	Ref
Frequent use to ceasing use	11	37.89	290.31	1.11 (0.60–2.04)
Recent homelessness				
No	154	577.69	266.57	Ref
Yes	12	50.13	239.38	0.90 (0.50–1.61)
Recently prescribed OAT				
No	54	213.27	253.20	Ref
Yes	112	414.54	270.18	1.07 (0.77–1.48)
Resumption of MSIR use				
Overall	38	151.70	250.49	-
Resuming to infrequent use	29	115.52	251.04	Ref
Resuming to frequent use	9	36.18	248.76	0.99 (0.47–2.09)

Notes:
1. Initiation rates were calculated for all participants with at least one survey after the establishment of the MSIR (30 June 2018).
2. Frequency of use transitions and cessation rates were calculated for participants who used the MSIR at least once during the study period (not necessarily at baseline) and had at least two surveys after the MSIR was established.
3. Resumption rates were calculated for participants who used the MSIR at least once during the study period and had at least three surveys after the MSIR establishment (30 June 2018).
4. Recent homelessness and recent OAT prescription were defined based on reported exposure at the time of the event (i.e., MSIR initiation or cessation).

One in four people in our study ceased attending the MSIR during the study period. The high initiation relative to the observed cessation highlights ongoing need for the MSIR and the importance of maintaining low-threshold access to support MSIR service engagement for people who inject drugs. While our study did not primarily explore reasons for cessation, participants commonly cited already having a safe place to inject, preferring to inject at home, or the MSIR being too far from where they live or buy drugs. In Canada, discontinued SIF use has been linked to injecting cessation or OAT uptake (Kennedy, Klassen, et al., 2019), but in our study, while OAT was associated with infrequent MSIR attendance, it was not associated with cessation. Nonetheless, some cessation may still reflect engagement with drug treatment, supported by the high volume of drug treatment and information services provided by the MSIR (445 in the first 18 months) and evidence linking SIF use to increased treatment uptake (Gaddis et al., 2017; Kimber et al., 2008; MSIR Review Panel, 2020). The resumption of MSIR attendance observed in our study suggests that service use is not static but instead may reflect dynamic changes in drug use and social circumstances. Resumption may indicate renewed injecting following incarceration, abstinence or treatment, loss of stable housing, or shifts in drug market conditions, highlighting the importance of maintaining low-threshold, flexible services that support re-engagement as individuals' needs evolve.

While this study generates important evidence in relation to client characteristics and patterns of MSIR attendance among people who inject drugs, there are several limitations. All data were self-reported, which may introduce recall or social desirability bias. However, prior research shows strong concordance between self-report and biological measures of illicit drug use, supporting the reliability of self-reported data (Bharat et al., 2023). Frequency of attendance is classified at the first survey following the opening of the MSIR, meaning some participants may be misclassified if changing their frequency of use following this survey. Rate calculations may be underestimated with exact dates of MSIR initiation, frequency transitions, cessation, and resumption events unknown, and rates calculated using the mid-point method. The mid-point method assumes the event occurred exactly at the mid-point of the interval, which may overestimate time at risk. Transition rate calculations between infrequent and frequent MSIR use were based on self-reported use in the past month, collected during annual surveys. As a result, any transitions occurring in the remaining 11 months of the year were not captured. Rate calculations for ceasing and resuming MSIR use required at least two and three valid surveys following the establishment of MSIR, respectively, which reduced the sample size, and the number of events observed. Duration of MSIR use was not assessed in cessation estimates, which may lead to inaccurate conclusions about clients that are ceasing use and the effectiveness of the MSIR. Finally, this study involves a community-recruited cohort of people who inject drugs in Melbourne and results may not be generalisable to other settings.

Conclusion

Among a cohort of people who inject drugs, this study demonstrates high uptake of the MSIR service relative to service cessation rates. MSIR use was more commonly reported by men, individuals with Aboriginal and/or Torres Strait Islander heritage, and those experiencing homelessness. Participants attending the MSIR for more than half of their injections also reported higher monthly injecting frequencies compared to infrequent attenders. Further research is needed to identify the determinants of injection coverage and to understand the factors driving initiation, cessation, and resumption of MSIR service attendance, with the goal of optimizing uptake of these effective and life-saving interventions.

Data statement

The data used to generate the findings of this study are not publicly available due to ethical constraints relating to the privacy and confidentiality of study participants, but data are available from the corresponding author or principal investigator upon reasonable request.

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CRediT authorship contribution statement

Ashleigh C Stewart: Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Kasun Rathnayake:** Writing – review & editing, Methodology, Formal analysis. **Adelina Artenie:** Writing – review & editing, Methodology, Conceptualization. **Matthew Hickman:** Writing – review & editing, Methodology, Conceptualization. **Jack Stone:** Writing – review & editing, Methodology. **Daniel O'Keefe:** Writing – review & editing, Methodology. **Thomas Kerr:** Writing – review & editing. **Paul Agius:** Writing – review & editing, Methodology. **Amanda Roxburgh:** Writing – review & editing. **Peter Higgs:** Writing – review & editing, Data curation. **Lisa Maher:** Writing – review & editing. **Nico Clark:** Writing – review & editing. **Belinda Bravo:** Writing – review & editing. **Mark Stoove:** Writing – review & editing. **Paul M Dietze:** Writing – review & editing, Methodology, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Paul Dietze reports a relationship with Australian Research Council that includes: funding grants. Paul Dietze reports a relationship with City of Melbourne that includes: funding grants. Paul Dietze reports a relationship with State Government of Victoria that includes: funding grants. Paul Dietze reports a relationship with National Health and Medical Research Council that includes: funding grants. Peter Higgs reports a relationship with Harm Reduction Victoria that includes: board membership. Mark Stoove reports a relationship with Gilead Sciences Inc that includes: funding grants. Adelina Artenie is an editor at the International Journal of Drug Policy but was not involved in the peer-review or editorial decision-making process for this manuscript. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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