



Public Health  
England

Protecting and improving the nation's health

# **Knowledge & Library Services (KLS) Evidence Briefing**

**What is the current evidence for the efficacy of drug consumption  
rooms?**

Rachel Gledhill  
29<sup>th</sup> March 2019

## Question

This briefing summarises the evidence on the efficacy of drug consumption rooms from 1<sup>st</sup> January 2003 to 11<sup>th</sup> March 2019.

## Key messages

- Research has found consistent evidence of effectiveness of drug consumption rooms (DCRs) in reducing harms associated with drug use, particularly high-risk injection behaviours. Provision of sterile equipment to reduce infection transmission is a core function.
- DCRs have contributed to lower rates of fatal overdoses.
- Areas where DCRs are operating have had reductions in public drug consumption and publicly discarded drug-related litter, e.g. syringes.
- People who use drugs are more likely to use a DCR if they are homeless, or without a fixed address.
- DCRs have been used to provide people who use drugs with education on safer drug use, access to medical services and referrals to other health and social care services. Staff build harm reduction principles into all their conversations with clients.
- Some studies have shown that DCRs have decreased incidences of syringe and pipe sharing, though this is not consistent across all research.
- Ambulance call-outs for overdoses are generally reduced in the vicinity of a DCR.
- Crime rates have not increased in areas where DCRs operate.
- DCRs are generally predicted to be cost-effective, in terms of net saving and life-years. However, more economic evaluation studies would complement the current literature.
- Local police gained a mechanism to address public injection drug use in a way that promotes public safety.

Evidence briefings are a summary of the best available evidence that has been selected from research using a systematic and transparent method in order to answer a specific question.

### What doesn't this briefing do?

The findings from research papers summarised here have **not** been quality assessed or critically appraised.

### Who is this briefing for?

This briefing is for a Health and Wellbeing Programme Manager, to examine the evidence relating to drug consumption rooms.

### Information about this evidence briefing

This briefing draws upon a literature search of the sources Emcare, Embase, Global Health, Health Management Information Consortium (HMIC), Medline, NICE Evidence, PsycINFO, Social Policy and Practice, TRIP Database Pro, and Google and OpenGrey for grey literature from January 2003 to March 2019.

**51 highly relevant citations were used to produce this evidence briefing.** 111 additional papers were considered to be 'of interest' and details can be obtained on request.

PHE staff may request any publications referred to in this briefing from [libraries@phe.gov.uk](mailto:libraries@phe.gov.uk)

### Disclaimer

The information in this report summarises evidence from a literature search - it may not be representative of the whole body of evidence available. Although every effort is made to ensure that the information presented is accurate, articles and internet resources may contain errors or out of date information. No critical appraisal or quality assessment of individual articles has been performed. No responsibility can be accepted for any action taken on the basis of this information.

## Introduction

The focus of this evidence briefing is to identify current evidence on the efficacy of drug consumption rooms. A literature search using a range of international terms for 'drug consumption rooms' was carried out on the following databases: Emcare, Embase, Global Health, Health Management Information Consortium (HMIC), Medline, NICE Evidence, PsycINFO, Social Policy and Practice, TRIP Database Pro, and Google and OpenGrey for grey literature. Out of 2492 papers retrieved, 51 were deemed highly relevant, and a further 111 were considered to be of interest (reference lists are available upon request).

## Background

Drug consumption rooms (DCRs) are legal facilities that offer safe and hygienic conditions for people who use drugs (PWUDs) to use pre-obtained illicit substances under medical supervision ([1](#), [2](#)). There is a range of terminology used, such as supervised consumption sites or services and safer injection facilities, and the services can focus on a single method of drug intake, or several. For the purpose of this briefing, all types of services have been considered to create a broad overview of the efficacy of such facilities and will be referred to as 'drug consumption rooms' throughout for clarity. The services provide users with sterile injecting or inhalation equipment and access or referral to health and social care services. DCRs have been implemented in many settings with locations across Western Europe, Australia and North America ([1](#), [3](#)).

The overarching aims of implementing DCRs are:

- To create a safer environment for PWUD and reduced the amount of high-risk injection behaviours that lead to health problems (e.g. blood-borne viruses)
- To reduce both fatal and non-fatal overdoses ([4](#))
- To create greater opportunities for healthcare workers to work with PWUD, enabling them to access health and social care services such as primary medical care, addiction treatment, screening services
- To reduce the rates of public injecting in PWUD
- To reduce the amount of injection-related litter in public spaces ([2](#)).

The majority of available literature shows that DCRs have been found to reduce overdose mortality, attract high-risk PWUD, decrease syringe and pipe sharing, decrease rates of public consumption, and improve engagement in addiction treatment programs ([5](#)).

One of the most rigorously evaluated examples of a supervised injection facility is *Insite*, which opened as a pilot programme in September 2003 in Vancouver, Canada. It is open 18 hours every day of the week and includes 12 individual rooms

## What is the current evidence for the efficacy of drug consumption rooms?

for injection. Nurses are present on-site to supervise injections, provide basic primary care, and intervene in the event of an overdose. An addiction counsellor works within the facility, providing counselling support and referrals to external services (6). There will be references to *Insite* throughout this briefing because the research into the effectiveness of the facility enabled Health Canada to approve several further sites throughout the country, with more proposals currently under review. *Insite* was particularly effective as it was opened in an area with a high density of PWUD, 'estimated at nearly 5000 people within a few square kilometres', though it has been noted that for dispersed populations, mobile sites or smaller, multiple facilities may be more cost-effective (7) (p228).

### Harm reduction

Since opening in 2003, over 3 million clients have attended *Insite* and over 5000 overdoses have been reversed without a single death (7). The majority of DCR staff interviewed in a survey perceived that the operation of their DCR had contributed to a reduction in overdose deaths and events, as well as a reduction in HIV risk behaviour, discarded injecting equipment, and public injecting (8-10). One study estimated that between March 2004 and July 2008, the potentially fatal overdoses in *Insite* could have resulted in between 8 and 51 deaths had they occurred outside the facility (11).

Self-reported changes in activity from a survey of 41 participants who attended a DCR in Copenhagen, Denmark showed that PWUD found taking drugs to feel less rushed (n = 26), that they injected outdoors less (n = 23), no longer shared needles (n = 22) and cleaned the site of injection more often (n = 18) (12). Attendance at the DCR also reduced the likelihood of PWUD disposing of used syringes in harmful ways, e.g. dropping them on the ground, or giving them to another user. Before the DCR opened 14 participants said they would return the syringe to a needle exchange after injecting, and after attendance at the DCR this number increased to 36. There was no significant increase in frequency of injecting.

A Spanish study found that use of a DCR was associated with a reduction in sharing some equipment, mostly syringes. However, indirect sharing behaviour – such as sharing cookers, filters, cleaning liquid and swabs – was still common, and PWUD showed resistance to reducing this, as it was not perceived that sharing such equipment was related to the transmission of blood-borne infections (13).

A Public Health Emergency was declared in British Columbia (BC), Canada in April 2016 due to a rapid increase in opioid-related overdoses. There were 993 illicit drug overdose deaths in BC in 2016 (20.9 deaths per 100,000 individuals) and 1448 in 2017 (30.1 deaths per 100,000 individuals) (14) (p582). Injection was the mode of drug administration in only 32.8% of overdose deaths in Fraser Health Authority, BC, between 2011 and 2016, with other routes including oral 30.6%, smoking 28.8% and

## What is the current evidence for the efficacy of drug consumption rooms?

intranasal 24.2%. This highlighted that drug use behaviours varied from injection and so a 'supervised *injection* facility' would not be the most appropriate way to respond to the crisis. *SafePoint* opened in Surrey, Canada in 2017 and received an exemption from Health Canada to allow oral and intranasal consumption, allowing for a wider demographic of PWUD to be reached. In their first year of opening, 1480 unique clients made 55,554 visits to the facility, with 577 overdoses managed (14).

Service providers currently engaging users in harm reduction in Alberta, Canada also found that PWUD were asking for a place where they could safely inhale drugs, as 'people who smoke crack or methamphetamine want to do so out of the public eye in a private and safe space, away from law enforcement and social violence' (3) (p212). In the first four months of opening a facility that included the opportunity to inhale drugs under supervision, there were 11 overdoses from inhalation: 7 related to opioids, treated with oxygen administration or Naloxene; 4 related to methamphetamine, which required ambulance call-outs. Clients' self-report of substances being used showed that there were 8381 instances of inhalation, 709 instances of intranasal/oral and 16,941 instances of injection. However, the ability to ingest drugs through inhalation has allowed staff at the site to actively encourage clients to choose a safer form of drug use than injection, as part of moving them down the treatment continuum. Staff build harm reduction principles into all their conversations with clients. Anecdotal evidence from clients at the facility shows that people are being encouraged to transition from injection to smoking, and more data is being collected over time to document this (p214).

Before *Insite* opened, 15% of intravenous drug users in the area were treated for skin infections. After the opening of the facility, 9% were admitted with cutaneous injection-related infections. In addition, though more PWUD were referred to hospital by the facility's medical staff, the average length of stay decreased from 12 days to 4 (15). One study evaluated that between 2 and 12 cases of lethal overdose have been avoided each year since the facility opened (16).

There is a paucity of studies reporting the relationship between the rate of HIV and the implementation of DCRs, due to methodological problems and the facilities' limited coverage of the target population (17, 18), though one model has estimated that *Insite* may prevent 5-6 infections per year (19).

Prevention of hepatitis C in DCR settings has not been extensively explored, however a 2018 questionnaire sent to currently operating DCRs aimed to determine the range and scope of prevention and treatment options in these services. Estimated prevalence rates of hepatitis C were 60% among clients. Of the 49 DCR services that responded, 65% offered hepatitis C testing onsite and 54% offered liver monitoring or disease management (20).

## What is the current evidence for the efficacy of drug consumption rooms?

It has also been noted that it is highly unlikely DCRs represent the sole place of injecting for many users, which makes it difficult for the facilities to consistently ensure reduction of infection or viruses:

'While for some health aspects, such as damage to veins or the development of abscesses, capturing only a proportion of injecting episodes will still bring significant benefits, for other health aspects, such as hepatitis C, preventing contraction of the virus within the DCR may appear of limited value if all it takes is one instance of sharing injecting (or drug preparation) equipment outside the DCR to lead to infection' (21) (p43).

However, DCRs present an opportunity to create points of contact with individuals who may not currently be participating in treatment for their condition. For example, between December 2003 and April 2005, *Insite* gained blood samples from attendees and found HIV infection in 170 out of 1007 participants (17%) (22). Ensuring these people are aware of their status and providing sterile equipment to reduce transmission is a core function of many DCRs.

### Ambulance attendance for overdoses

Public injecting by PWUD has been shown to be associated with an array of health risks; one of these is elevated risk for overdose (23). A study in Oslo, Norway examined ambulatory data on attendance for overdose and found that one third of the total opioid overdoses attended by emergency medical services occurred at the DCR. However, most of these patients were not transferred for further treatment; 85% were assessed to be stable on-site. In addition to this, there was a reduction in overdoses in public locations during the DCR's opening hours (5).

A similar effect was found in Sydney, Australia when a 'medically supervised injecting centre' opened. During the centre's operating hours there was a 68% decrease in the average monthly number of ambulance attendances in the vicinity of the centre (24) (p678). 'Average monthly ambulance calls with naloxone treatment for suspected opioid overdose decreased from 27 to 9 (relative risk reduction of 67%)' (15) (p866).

An unsanctioned supervised injection site in the United States saw 2 overdoses (from more than 2,500 injections) and in both instances staff reversed this on site using naloxone (25).

### Accessing health and social care services

People who use drugs are more likely to rely on acute and emergency care. This is due to less knowledge of how to access services, ability to afford healthcare, long



## What is the current evidence for the efficacy of drug consumption rooms?

wait times at medical facilities, and the amount of time spent acquiring and consuming drugs (6).

Qualitative interviews with users of *Insite* showed that the facility had provided easier access to health and social care services for PWUD because it combines non-judgemental, integrated care. Aspects of this that were highlighted by users of the DCR as positively influencing their transactions with healthcare services include:

- Timely access to primary healthcare and referrals – no "waitlisting"
- On-site care for abscesses and other injection-related infections
- Healthcare staff in the facility more familiar with the infections that are common among PWUD, making diagnosis and treatment easier and faster
- Referrals and assistance with transportation to hospital for more serious health conditions
- Information as to how to access counselling and social services (6).

Some participants stated that they would not have accessed this care without the staff at the DCR; medical care was given to 44% of the total of 50 study participants at *Insite*, and 94% accessed other non-medical services at the facility. Furthermore, '24% of participants reported that they would not have accessed the services they obtained at the [DCR] had *Insite* not been available' (6) (p344). This study showed that users of the facility viewed *Insite* as mediating barriers that may restrict PWUD in seeking or accessing health and social care services. Ability to access various forms of care at one location that participants regularly visited was shown to be a benefit of the DCR. In addition, 'those who attended the facility on one or more occasions per week were also more likely to enter into a detoxification program than other users, and more likely to make contact with the facility's addiction counsellor' (9) (p236).

DCRs are also an ideal place to target educational messages about safer injecting. Participant narratives indicate that significant gaps in knowledge exist regarding safer injecting practices, but within a DCR the information is given as part of the drug use cycle, allowing for demonstration of techniques at the time a client is experiencing difficulties (26). More than 30% of users of *Insite* reported receiving safer injecting education from nurses between May 2003 and October 2004 (27).

### Attendance and acceptability among people who use drugs

Studies that discuss the willingness to attend DCRs have been undertaken directly with people who use drugs. In the UK, 301 attendees of a needle exchange programme were asked if they would use a DCR if available and 84% responded positively (28). Another investigation of 90 methadone-maintained outpatients recruited from a London clinic showed 89% would willingly use a DCR, largely

## What is the current evidence for the efficacy of drug consumption rooms?

including acceptance of rules such as no drug sharing, no assistance with injecting and compulsory handwashing (29).

A systematic review of perceptions of DCRs found the most commonly stated benefit for PWUD was the provision of a safe place from the risks of being on the street, such as potential theft, assault, and police harassment (30), as well as providing social acceptance (31). This theme was especially prominent among females. A thematic analysis of qualitative interviews with women who attended *Insite* showed that they found it to be a refuge from interpersonal and structural violence, and that they had improved control over their own drug resources and the injection process (32).

A cross-sectional survey that took place in a mid-sized city (London, Canada) showed that there was a high level of willingness to use DCRs, particularly during daytime hours and in private cubicles. Of 197 people who inject drugs, 170 were willing to use a DCR, particularly those who injected daily, injected in public, or were experiencing an unstable housing situation (33). Another study with a similar methodology found that of young adults surveyed in Rhode Island, New York, 63% would be willing to use a DCR. Compared to participants who answered 'No' or 'Unsure', participants willing to use a DCR were more likely to have been homeless in the last six months, have used heroin, or have accidentally overdosed (34).

A quantitative survey of 602 injecting drug users in San Francisco showed that 513 of the respondents would use a DCR if it were convenient for them, and analysis of the respondents' characteristics suggested that this was most likely in those who had injected in a public space in the past 6 months (23). However, the rules for use of the DCR would have an effect on this number. For example, less than half of the positively-responding study participants would use the DCR if they had to show identification to be able to do so, if there was video surveillance onsite, or if they had to live in the neighbourhood to be eligible.

The potential to implement a DCR in New York City was put forward in 2003, but the results of a set of interviews carried out at a needle-exchange facility to ascertain potential use of the DCR was inconclusive. The only significant outcome from the sample was that PWUD who 'inject in public and are homeless, are more likely to use a [DCR] than those who inject in public but are not homeless' (2). Further studies into acceptability of such facilities suggest that both PWUD and healthcare professionals generally hold positive views about their potential to reduce public injecting and improve the overall health of PWUD (35-40).

Common features that limit the attendance of PWUD at a DCR are:

- Travel time to the DCR
- Limited operating hours



## What is the current evidence for the efficacy of drug consumption rooms?

- Lack of assisted injections
- Prohibition of sharing drugs
- Waiting times to access the DCR ([41](#), [42](#)).

### Public order and community response

The expectation that DCRs could 'diminish all visible drug-related problems is neither realistic nor adequate' ([43](#)) (p665), but there is evidence to show that they reduce disruption of public order. Suspected drug dealing did not increase near *Insite*, and public drug use declined. 'Police statistics during the year before versus the year after the facility opened showed that crime rates remained stable in the neighbourhood where the facility is located' ([27](#)) (p1403). This outcome is consistent with a study of Australia's first DCR, which concluded that there was no increase in the proportion of drug use or supply offences after the facility's opening ([10](#), [27](#)).

Reduction in the public visibility of injecting drug use has been suggested to be, 'the most probable reason for public tolerance of supervised injecting facilities in Europe' ([44](#)) (p272). This includes reductions in drug litter, such as discarded syringes, and instances of public injection drug use ([7](#)).

Community perception research shows that there is a concern that DCRs may increase risks within communities, particularly relating to public nuisance ([45](#)). There were some feelings that DCRs are condoning drug use and facilitating the congregation of drug users and drug dealers ([8](#)). A survey of 1004 adults in the United States showed that 57.6% of respondents thought that DCRs should be illegal because they thought funding should be spent on treatment and recovery, and 56.3% thought they should be illegal because opioids are illegal ([10](#)).

### Relationships between drug consumption rooms and police

International research has been undertaken directly with 10 supervised consumption service managers and 6 police liaisons, across 10 cities. Semi-structured interviews highlighted behaviours and planning that contributed to co-operative relationships:

- Early engagement and dialogues – allowed the police time to prepare for changes in how the community will be policed in relation to drugs
- Supportive police chiefs – added credibility to the plans and provided an authorised voice to communicate with community stakeholders and politicians
- Dedicated police liaisons – acted as a mediator between police and the facility
- Negotiated boundary agreements – this was regarded as the most crucial feature, including boundaries such as police consistently adhering to the legal exemptions near the DCR site, underscored by the need to preserve a sense of safety and trust among PWUD ([46](#)).

## What is the current evidence for the efficacy of drug consumption rooms?

A study in Vancouver aimed to determine if local police impacted utilisation of *Insite*, and findings showed that approximately 17% of participants reported having been referred to the facility by police officers when they were found injecting in public (47). Those engaged in sex work and frequent cocaine injection were more likely to be referred. Overall this study suggests that local police gained a mechanism to address public injection drug use in a way that promotes public safety.

### Cost-effectiveness

Cost-effectiveness of current DCRs have not been rigorously evaluated, however some estimations have been made. In brief, these are:

- On the base assumption that decreased needle sharing is the only effect of *Insite*, incremental net savings of almost \$14million (CDN) and 920 life-years could be gained over 10 years (48).
- Mathematical modelling used to estimate the reduced number of new HIV infections and deaths prevented each year by *Insite* provided a societal benefit in excess of \$6million (CDN) per year after programme costs (49).
- Potential savings of a San Francisco DCR through averted HIV and hepatitis C infections, reduced skin and soft tissue infections, averted overdose deaths, and increased medication-assisted treatment uptake was estimated at \$2.33 (USD) for each \$1.00 spent. Total annual net savings of \$3.5million for a single 13-booth DCR were predicted (50).
- A proposed DCR in Montreal used mathematical modelling to predict that 11 cases of HIV and 65 cases of hepatitis C could be prevented each year. This translates into a net cost saving of \$0.686million (CDN) for HIV and \$0.8million for hepatitis C per year (51).

### Limitations

Literature discussing the effectiveness of DCRs in Europe is often unavailable in English, and so could not be included in this briefing.

What is the current evidence for the efficacy of drug consumption rooms?

### Example search strategy

#### Ovid Medline

1. "drug consumption room\*"
2. "drug consumption facilit\*"
3. safe\* ADJ2 (injection OR injecting OR consumption)
4. public\* ADJ2 (injection OR injecting OR consumption)
5. supervise\* ADJ2 (injection OR injecting OR consumption)
6. (injection OR injecting) ADJ2 facilit\*
7. (safe\* OR supervise\*) ADJ2 inhalation
8. 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7

### Inclusion/exclusion criteria

#### Inclusion criteria

- Studies with drug consumption rooms as their focus
- English language

#### Exclusion criteria

- Published pre-2003
- Opinion pieces
- Policy papers
- Syringe and needle exchange services

## What is the current evidence for the efficacy of drug consumption rooms?

### References

1. Mitra S, Rachlis B, Krysowaty B, Marshall Z, Olsen C, Rourke S, et al. Potential use of supervised injection services among people who inject drugs in a remote and mid-size Canadian setting. *BMC public health*. 2019;19(1):284.
2. Broadhead RS, Borch CA, Van Hulst Y, Farrell J, Villemez WJ, Altice FL. Safer injection sites in New York City: A utilization survey of injection drug users. *Journal of Drug Issues*. 2003;33(3):733-50.
3. Bourque S, Pijl EM, Mason E, Manning J, Motz T. Supervised inhalation is an important part of supervised consumption services. *Canadian journal of public health = Revue canadienne de sante publique*. 2019;110(2):210-5.
4. Kerr T, Tyndall MW, Lai C, Montaner JSG, Wood E. Drug-related overdoses within a medically supervised safer injection facility. *International Journal of Drug Policy*. 2006;17(5):436-41.
5. Madah-Amiri D, Skulberg AK, Braarud A-C, Dale O, Heyerdahl F, Lobmaier P, et al. Ambulance-attended opioid overdoses: An examination into overdose locations and the role of a safe injection facility. *Substance abuse*. 2018:1-6.
6. Small W, Van Borek N, Fairbairn N, Wood E, Kerr T. Access to health and social services for IDU: the impact of a medically supervised injection facility. *Drug and alcohol review*. 2009;28(4):341-6.
7. Young S, Fairbairn N. Expanding supervised injection facilities across Canada: lessons from the Vancouver experience. *Canadian Journal of Public Health*. 2018;109(2):227-30.
8. Kimber J, Dolan K, Wodak A. Survey of drug consumption rooms: Service delivery and perceived public health and amenity impact. *Drug and Alcohol Review*. 2005;24(1):21-4.
9. Boyd N. Lessons from INSITE, Vancouver's supervised injection facility: 2003-2012. *Drugs: Education, Prevention & Policy*. 2013;20(3):234-40.
10. Barry CL, Sherman SG, Stone E, Kennedy-Hendricks A, Niederdeppe J, Linden S, et al. Arguments supporting and opposing legalization of safe consumption sites in the U.S. *International Journal of Drug Policy*. 2019;63:18-22.
11. Milloy MJS, Kerr T, Tyndall M, Montaner J, Wood E. Estimated drug overdose deaths averted by North America's first medically-supervised safer injection facility. *PLoS ONE*. 2008;3(10):e3351.
12. Kinnard EN, Howe CJ, Kerr T, Hass VS, Marshall BDL. Self-reported changes in drug use behaviors and syringe disposal methods following the opening of a supervised injecting facility in Copenhagen, Denmark. *Harm Reduction Journal*. 2014;11(1):29.
13. Bravo MJ, Royuela L, De la Fuente L, Brugal MT, Barrio G, Domingo-Salvany A. Use of supervised injection facilities and injection risk behaviours among young drug injectors. *Addiction*. 2009;104(4):614-9.
14. Patterson T, Bharmal A, Padhi S, Buchner C, Gibson E, Lee V. Opening Canada's first Health Canada-approved supervised consumption sites. *Canadian Journal of Public Health*. 2018;109(4):581-4.
15. Ng J, Sutherland C, Kolber MR. Does evidence support supervised injection sites? *Canadian Family Physician*. 2017;63(11):866.
16. Potier C, Laprevote V, Dubois-Arber F, Cottencin O, Rolland B. Supervised injection services: What has been demonstrated? A systematic literature review. *Drug and Alcohol Dependence*. 2014;145:48-68.
17. Des Jarlais DC, Arasteh K, Hagan H. Evaluating Vancouver's supervised injection facility: Data and dollars, symbols and ethics. *Canadian Medical Association Journal*. 2008;179(11):1105-6.
18. European Monitoring Centre for Drugs and Drug Addiction. Drug consumption rooms: an overview of provision and evidence. *Perspectives on drugs*. 2018.
19. Pinkerton SD. How many HIV infections are prevented by Vancouver Canada's supervised injection facility? *International Journal of Drug Policy*. 2011;22(3):179-83.

## What is the current evidence for the efficacy of drug consumption rooms?

20. Belackova V, Salmon AM, Schatz E, Jauncey M. Drug consumption rooms (DCRs) as a setting to address hepatitis C - findings from an international online survey. *Hepatology, medicine and policy*. 2018;3:9.
21. Independent Working Group on Drug Consumption R, Runciman R. The report of the Independent Working Group on Drug Consumption Rooms. 2006.
22. Tyndall MW, Wood E, Zhang R, Lai C, Montaner JSG, Kerr T. HIV seroprevalence among participants at a Supervised Injection Facility in Vancouver, Canada: Implications for prevention, care and treatment. *Harm Reduction Journal*. 2006;3:36.
23. Kral AH, Wenger L, Carpenter L, Wood E, Kerr T, Bourgois P. Acceptability of a safer injection facility among injection drug users in San Francisco. *Drug and Alcohol Dependence*.
24. Salmon AM, van Beek I, Amin J, Kaldor J, Maher L. The impact of a supervised injecting facility on ambulance call-outs in Sydney, Australia. *Addiction (Abingdon, England)*. 2010;105(4):676-83.
25. Kral AH, Davidson PJ. Addressing the Nation's Opioid Epidemic: Lessons from an Unsanctioned Supervised Injection Site in the U.S. *American Journal of Preventive Medicine*. 2017;53(6):919-22.
26. Fast D, Small W, Wood E, Kerr T. The perspectives of injection drug users regarding safer injecting education delivered through a supervised injecting facility. *Harm Reduction Journal*. 2008;5:32.
27. Wood E, Tyndall MW, Montaner JS, Kerr T. Summary of findings from the evaluation of a pilot medically supervised safer injecting facility. *CMAJ*. 2006;175(11):1399-404.
28. Hunt N, Lloyd C, Kimber J, Tompkins C. Public injecting and willingness to use a drug consumption room among needle exchange programme attendees in the UK. *International Journal of Drug Policy*. 2007;18(1):62-5.
29. Butler G, Chapman D, Terry P. Attitudes of intravenous drug users in London towards the provision of drug consumption rooms. *Drugs: Education, Prevention & Policy*. 2018;25(1):31-7.
30. Lange BCL, Bach-Mortensen AM. A systematic review of stakeholder perceptions of supervised injection facilities. *Drug Alcohol Depend*. 2019;197:299-314.
31. Kappel N, Toth E, Tegner J, Lauridsen S. A qualitative study of how Danish drug consumption rooms influence health and well-being among people who use drugs. *Harm Reduction Journal*. 2016;13(1):20.
32. Fairbairn N, Small W, Shannon K, Wood E, Kerr T. Seeking refuge from violence in street-based drug scenes: Women's experiences in North America's first supervised injection facility. *Social Science & Medicine*. 2008;67(5):817-23.
33. Mitra S, Rachlis B, Scheim A, Bardwell G, Rourke SB, Kerr T. Acceptability and design preferences of supervised injection services among people who inject drugs in a mid-sized Canadian City. *Harm Reduction Journal*. 2017;14(1):46.
34. Bouvier BA, Elston B, Hadland SE, Green TC, Marshall BDL. Willingness to use a supervised injection facility among young adults who use prescription opioids non-medically: A cross-sectional study. *Harm Reduction Journal*. 2017;14(1):13.
35. Wolfson-Stofko B, Elliott L, Bennett AS, Curtis R, Gwadz M. Perspectives on supervised injection facilities among service industry employees in New York City: A qualitative exploration. *International Journal of Drug Policy*. 2018;62:67-73.
36. Leon C, Cardoso L, Mackin S, Bock B, Gaeta JM. The willingness of people who inject drugs in Boston to use a supervised injection facility. *Substance abuse*. 2018;39(1):95-101.
37. Harris RE, Richardson J, Frasso R, Anderson ED. Perceptions about supervised injection facilities among people who inject drugs in Philadelphia. *International Journal of Drug Policy*. 2018;52:56-61.
38. Folch C, Lorente N, Majo X, Pares-Badell O, Roca X, Brugal T, et al. Drug consumption rooms in Catalonia: A comprehensive evaluation of social, health and harm reduction benefits. *International Journal of Drug Policy*. 2018;62:24-9.

## What is the current evidence for the efficacy of drug consumption rooms?

39. Cleirec G, Fortias M, Bloch V, Clergue-Duval V, Bellivier F, Dusouchet T, et al. Opinion of health professionals and drug users before the forthcoming opening of the first drug consumption room in Paris: a quantitative cross-sectional study. *Harm reduction journal*. 2018;15(1):53.
40. Bardwell G, Scheim A, Mitra S, Kerr T. Assessing support for supervised injection services among community stakeholders in London, Canada. *International Journal of Drug Policy*. 2017;48:27-33.
41. Petrar S, Kerr T, Tyndall MW, Zhang R, Montaner JSG, Wood E. Injection drug users' perceptions regarding use of a medically supervised safer injecting facility. *Addictive Behaviors*. 2007;32(5):1088-93.
42. Small W, Ainsworth L, Wood E, Kerr T. IDU perspectives on the design and operation of North America's first medically supervised injection facility. *Substance use & misuse*. 2011;46(5):561-8.
43. Zurhold H, Degkwitz P, Verthein U, Haasen C. Drug Consumption Rooms in Hamburg, Germany: Evaluation of the Effects on Harm Reduction and the Reduction of Public Nuisance. *Journal of Drug Issues*. 2003;33(3):663-88.
44. Hall W, Kimber J. Being realistic about benefits of supervised injecting facilities. *Lancet (London, England)*. 2005;366(9482):271-2.
45. Kolla G, Strike C, Watson TM, Jairam J, Fischer B, Bayoumi AM. Risk creating and risk reducing: Community perceptions of supervised consumption facilities for illicit drug use. *Health, Risk and Society*. 2017;19(1-2):91-111.
46. Watson TM, Bayoumi AM, Hopkins S, Wright A, Naraine R, Khorasheh T, et al. Creating and sustaining cooperative relationships between supervised injection services and police: A qualitative interview study of international stakeholders. *International Journal of Drug Policy*. 2018;61:1-6.
47. DeBeck K, Wood E, Zhang R, Tyndall M, Montaner J, Kerr T. Police and public health partnerships: evidence from the evaluation of Vancouver's supervised injection facility. *Substance abuse treatment, prevention, and policy*. 2008;3:11.
48. Bayoumi AM, Zaric GS. The cost-effectiveness of Vancouver's supervised injection facility. *Canadian Medical Association Journal*. 2008;179(11):1143-51.
49. Andresen MA, Boyd N. A cost-benefit and cost-effectiveness analysis of Vancouver's supervised injection facility. *International Journal of Drug Policy*. 2010;21(1):70-6.
50. Irwin A, Jozaghi E, Bluthenthal RN, Kral AH. A cost-benefit analysis of a potential supervised injection facility in San Francisco, California, USA. *Journal of Drug Issues*. 2017;47(2):164-84.
51. Jozaghi E, Reid AA, Andresen MA. A cost-benefit/cost-effectiveness analysis of proposed supervised injection facilities in Montreal, Canada. *Substance abuse treatment, prevention, and policy*. 2013;8(1):25.