Independent Working Group on Drug Consumption Rooms

Paper B

The evaluation literature on drug consumption rooms

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Introduction

Increasingly, 'safer injecting rooms' (SIRs) and other 'drug consumption rooms' (DCRs) are being adopted as a component within national responses to the health and community safety problems that can accompany illicit drug use.

Although a range of terms have been used including: 'safer injection rooms' (Nadelmann *et al*., 1999); 'supervised injecting centres' (Kimber *et al*., 2002); 'safe injecting rooms' (Home Affairs Select Committee, 2002); and, 'medically supervised injecting centres' (MSIC) (Mattick *et al*., 2001), the term 'drug consumption rooms' is emerging as the preferred term within the scientific literature for the description of this broad type of facility, within which drugs are either injected or smoked.

One recent, published international review of DCRs defined them as "legally sanctioned low threshold facilities which allow the hygienic consumption of pre-obtained drugs under professional supervision in a non-judgemental environment" (Kimber *et al.,* 2003). Hedrich (2004), in the most comprehensive review to date for the European Monitoring Centre on Drugs and Drug Addiction (EMCDDA) – an EU body – uses the definition from Akzept (2000):

> *…protected places for the hygienic consumption of preobtained drugs in a non-judgemental environment and under the supervision of trained staff.*

The EMCDDA review examined peer-reviewed and 'grey' literature as well as conference proceedings. An expert advisory group comprising members from all countries in which DCRs operated at the time helped identify literature published in English and the language(s) of each country.

Because of the recency and breadth of the review for the EMCDDA, no attempt is made to duplicate it here. Instead, this review takes the form of: a summary of the main findings and Hedrich's conclusions with a commentary on these. These are then updated on the basis of a review of the identified English language literature that has since been published (appended).

Because the concern is with *effectiveness*, the focus is largely restricted to new research that adds to an understanding of whether or how DCRs are effective and with whom: it does not include more general commentaries on their desirability or otherwise, other than where these add to our understanding of the evidence or their effectiveness and how it should be generated or interpreted. Similarly, this review does not attempt to summarise the history of DCRs or the legal questions that surround their implementation.

2 The EMCDDA review: summary with commentary

This section summarises the main findings from the EMCDDA review: Hedrich D (2004) *European Report on Drug Consumption Rooms*. Lisbon: EMCDDA[1]. For clarity of presentation, page numbers are used to indicate where the information has been derived, tables that have been reproduced have similar attributions and direct quotes are indented with source shown.

The main objectives of DCRs are summarised as follows (Hedrich, 2004: 8):

> To reach as much of the target population as possible
> Health objectives:
>
> - to provide a safe environment that enables lower-risk, more hygienic drug consumption (short- term objective)
> - to reduce mortality and morbidity in the target population (medium-term objective)
> - to stabilise and promote the health of service users (long-term objective).
>
> Public order and safety/crime objectives:
>
> - to reduce public drug use and associated nuisance
> - to avoid increases of crime in and around the facilities.

[1] Available from: http://www.emcdda.eu.int/index.cfm?fuseaction=public.Content&nNodeID=4000&sLanguageISO=EN

This provides an overarching framework for considering the effectiveness of DCRs and informs the main headings under which the evidence is considered.

2.1 The history and distribution of DCRs

Evidence can only be generated where DCRs operate and evaluation research is funded. It is therefore useful to consider briefly the history and location of DCRs, as this indicates the constraints on where and when any evidence may have been produced.

Although unofficial or semi-official centres have been documented in the Netherlands (early 1970s), Switzerland (early 1980s) and the UK (1960s/1970s) these were different from DCRs as they are currently understood, insofar as the provision and use of sterile equipment was not one of their main objectives (p. 15).

DCRs currently operate within six countries (shown with the year of introduction in each country). Within Europe, the EMCDDA review identifies DCRs in Switzerland (1986), Germany (1994), the Netherlands (1990), and Spain (2000). Additionally, there are single instances of a *Medically Supervised Injecting Centre* that opened in May 2001 in Sydney, Australia and, a pilot *Supervised Injecting Site* has been operating in Vancouver, Canada since September 2003 (pp. 15–19). Because of the controversy surrounding their introduction there has been a particularly large investment in evaluation of the Australian and Canadian schemes.[2]

By the end of 2003, 62 different facilities were in operation in 36 cities across Europe. Those in Switzerland, Germany and the Netherlands include facilities for injecting, inhalation (smoking heroin or cocaine) or ‘snorting’ (intranasal use), whereas the smaller number of services in Spain, Australia and Canada cater exclusively for injecting drug users. These then, are the DCRs from which the evidence base is derived.

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[2] Services have since been established in Norway and Luxembourg. However, we have identified no evaluation research relating to these newest facilities.

Table 1 Availability of official drug consumption rooms in Europe end of 2003

(from Hedrich, 2004: 20)

Country	Number of supervised consumption facilities	Number of cities with supervised injecting facilities	Number of consumption facilities for injectors only	Number of facilities with injecting and inhalation areas
Switzerland	12	7	4	8
Germany	25	14	11	13
The Netherlands	22	12	0	22
Spain	3	3	3	0
Total	62	36	18	43

2.2 How do DCRs operate?

Although the collective term '*drug consumption rooms'* is used, this embraces a range of types of service, delivered in differing ways, targeting different populations, within different contexts. Hedrich distinguishes three main types: *integrated*, *specialised* and *informal* (pp. 11–12).

> **Integrated** facilities are the most common, as consumption rooms have frequently evolved as part of a wider network of services, being added on to and physically integrated into existing care facilities for homeless people or drug addicts. Supervision of consumption is provided in a separate area of the premises, to which access is controlled and which is open only to a limited group of clients, as just one among many other services provided. In integrated facilities, consumption room users are just one among several different groups of clients.
>
> **Specialised** facilities service exclusively consumption room users. They are much less common than integrated services. They are usually set up in close vicinity to other drugs services and located near important illicit drug markets with

> concentrated open drug scenes, where there is a high demand for the opportunity to take drugs in a safe and hygienic environment.
>
> …'**informal'** consumption rooms, (are) run by current or former drug users but tolerated by the police, and mostly restricted to drug smoking/inhalation, (they) have so far been described only for the Netherlands.

However, within this general typology, services vary considerably with regard to factors such as: their rules of conduct; the drugs and modes of administration that may be used, which is partly a function of local drug cultures; the ancillary services they directly provide; the skills/professional qualifications and levels of staff; and the wider provision of local services for drug users to which they can refer people or which can direct people to them. Such factors limit the extent to which comparisons can be made between the evidence from different types of DCR in different countries, and the socio-cultural and legal differences between countries also limits the extent to which we can be confident that the evidence may be applicable in the UK context.

2.3 Expected benefits and risks

The general objectives of DCRs can be translated into a description of their expected benefits and risks (see over) that, in turn, point to the main outcomes that are the primary focus of evaluations of their effectiveness (pp. 24–27). It should, however, be noted that some DCRs do not pursue all of the possible objectives.

Among the potential benefits and risks, there is a wide range of specific outcomes that are possible and, which have been investigated with differing degrees of rigour. Whereas some outcomes have been investigated relatively widely and consistently – such as immediate improvements to injecting hygiene – other putative outcomes that would be relevant to the UK context (e.g. DCRs' impact on hepatitis B immunisation rates) have rarely been studied. In this respect, the literature has a number of limitations that restrict what can be said about the likely overall effectiveness of DCRs if they were to be introduced in the UK: limitations that are

only ever fully to be addressed by evaluations that are undertaken within the UK.

Other than questions about the transferability of learning from other contexts to the UK and the limitation that some potentially relevant outcomes have not been the focus of study to any useful extent, several other methodological challenges have been identified (p. 29).

Objective	Expected benefits	Expected risks
To reach as much of the target population as possible	The services attract the target population and are run so that supervised consumption is acceptable to drug users and clients continue to attend regularly; sufficient capacity is provided at local level, in the right places and at the right times, to achieve coverage of the target population.	People other than the intended target group use the service and new people are recruited into drug use. Service policy makes it difficult for clients such as more marginalised or chaotic users to attend on a regular basis, reducing the impact of the room.
To provide a safe environment that enables lower-risk, more hygienic drug consumption	Immediate harms that can arise from drug consumption, especially those related to hurried drug injecting in public places are reduced by ensuring that drugs are consumed under hygienic conditions and safer use is facilitated; and that rapid care is available in the event of emergencies.	Better conditions for drug use increase levels of drug use or encourage riskier patterns of use.
To reduce morbidity and mortality among the target population	Health promotion and safe use education at consumption rooms result in sustainable improvements in knowledge and risk awareness among clients; reduced high-risk behaviour beyond the consumption room setting itself; reduced exposure to and transmission of drug-related infectious diseases; reduction in overdoses. Safer use and management of drug emergencies at consumption rooms contribute to a reduction in overdose-related deaths in the community.	Consumption rooms increase morbidity and mortality by 'condoning' injecting.
To stabilise and promote the health of service users	Clients' access to and use of basic medical care and counselling is increased through on-site services; uptake of drug treatment is improved; longer term improvements in clients' health and social functioning are promoted through referral to other services.	Clients use the consumption rooms only and are still 'not reached' by medical, counselling and treatment services. Consumption rooms foster service dependence and hold clients back from starting treatment by making drug use more 'comfortable'. They counteract the effects of treatment (e.g. allowing clients in oral methadone treatment to use the rooms for injection).
To reduce public drug use and associated nuisance	Reduced drug use in public, especially drug injection; reduced level of nuisance in neighbourhoods with visible drug scenes.	Pull effect – consumption rooms attract increasing numbers of drug users from other neighbourhoods or cities.
To prevent increased crime in and around consumption rooms	Cooperation agreements with the police prevent increases in acquisitive crime and drug-dealing in the neighbourhood. Drug dealing and other criminal activity inside the rooms is prevented by staff.	Consumption rooms are feared to be potential 'magnets' for drug users and dealers, resulting in more public nuisance and crime.

Table 2 Objectives and expected benefits and risks (from Hedrich, 2004: 26–7)

Table 3 Indicators per objective

(from Hedrich, 2004: 30)

Objective	Indicators
To reach as much of the target population as possible	Profile of service users; levels and patterns of use of consumption rooms; location and opening hours; coverage of target populations at city level
Immediate health objective: To provide a safe environment that enables lower-risk, more hygienic drug consumption	House rules on hygiene and safety; supervision and 'taylor-made' risk reduction advice; emergencies: types and outcomes; levels and patterns of drug use
Medium-term health objective: To reduce morbidity and mortality among the target population	Client knowledge of risks (overdose, infections); changes in risk-taking behaviour; incidence of infectious diseases; drug overdoses and deaths
Long-term health objective: To stabilise and promote client health	Availability of other services on-site; use of on-site services: e.g. medical care; client self-reports regarding health and satisfaction with services; referrals to treatment and other services
Public order objective: To reduce public drug use and associated nuisance	Client self-reports on locations fro drug consumption; neighbourhood surveys on public drug use and nuisance; police reports and observations; discarded syringes; data on clients' area of residence
Public safety/crime objective: To prevent increased crime in and around consumption rooms	Local crime surveys; police crime statistics and observations; reports and observations from consumption room staff; client surveys/interviews

Concerning causality, other services may contribute to any observed effect and, the time taken for any impact to be detected may exceed that available within evaluations, which are rarely long-term.

Coverage also has a bearing on impact: the extent to which this is achieved – temporally and geographically – will influence any outcomes.

Whereas it is fairly straightforward to specify indicators for some health related outcomes (e.g. incidence of fatal overdose, rates of needle/syringe sharing), there is less consensus about the indicators and methods that relate to *public nuisance*, which is experienced and defined in different ways. Similarly, local agreement is necessary about what aspects of nuisance a DCR can reasonably be expected to influence.

With these limitations in mind, the indicators examined in the EMCDDA review are summarised in Table 3. These provide the template for addressing the primary questions:

- To what extent do DCRs reach their target groups?
- What is their impact on health?
- What is their impact on public order and crime?

2.4 Reaching the target group

This section is in four parts:

- The objectives specified within the EMCDDA are reproduced.
- The findings from the review are summarised.
- The conclusions from the EMCDDA review are reproduced.
- A commentary on the findings.

First objective: to reach as much of the target population as possible

Target populations are typically defined as high-risk problem drug users, especially regular or long-term users of heroin and cocaine, drug injectors, drug-using sex workers, street users and other marginalised, often not in treatment, groups. To achieve their public health and order objectives, services must be used. They should thus:

- attract the target population and be run so that supervised consumption is acceptable to drug users and clients continue to attend regularly;
- provide sufficient capacity at local level, in the right places and at the right times, to achieve coverage of the target population.

Potential risks include:

- People other than the intended target group might use the service and new people could be recruited into drug use.
- Service policy may make it difficult for clients such as more marginalised or chaotic users to attend on a regular basis, reducing the impact of the room.

Box 1 Reaching the target group

(from Hedrich, 2004: 31)

Hedrich reviews 15 ‘key studies’ and selectively augments this information with findings from other research. The criteria for determining which studies should comprise ‘key studies’ are not specified. Data are largely derived from two methodologies: *client surveys* and *service monitoring systems*.

Client surveys
Eleven studies – Switzerland (5) Germany (5), the Netherlands (1) – reporting data for a total of 1,840 people under the following headings:

- Publication reference
- Sample size
- Age (average and range), gender
- Drug use history and current patterns
- Treatment experience, current contact with other services
- Other characteristics.

Service monitoring systems
Four studies – Australia (1), Spain (1), Switzerland (2) – reporting data for a total of 6,486 people under the following headings:

- Publication reference
- Sample size
- Average age
- Drug use history and current drug use upon registration at CR
- Treatment experience upon registration at CR
- Other characteristics.

2.4.1 Characteristics of service users

Age, sex and drug use
The typical user is:

- male (70-90%), other than where services target female commercial sex workers;
- over 30 (rarely under 20);
- has a history of heroin and/or cocaine use of more than ten years (rarely having a history of using for less than 1–2 years);
- frequent users (several times a week to several times a day);
- a substantial minority report recent public injecting prior to registration (Switzerland – last injection 20%; Australia – within last month 39%).

Where trend data exist, there are some indications that the population using DCRs is ageing.

Although admission criteria often exclude experimental/intermittent injectors, a Swiss study in 2003 found that 4/736 clients reported having their first injection at the facility and this was suspected in eight other cases. Other Swiss studies in 1995 and 2001 found that 4.5% and 2.7% of clients respectively reported having their first injection at a low threshold service with consumption room.

Housing and income
Unstable accommodation or homelessness is reported for a significant minority (5–33%) of all DCR users. Services in settings where homelessness is especially high (Spain) or, which target homeless drug users (the Netherlands) report rates of 42–67%. It is consistently found that no more than a quarter of the population have income from permanent employment.

Imprisonment
Lifetime imprisonment rates range from 38% (Spain) to 75% (Switzerland). Recent imprisonment (within the last 12 months/two years) ranges from 20–38%.

Place of residence
Concerns about a 'honey-pot' effect that draws in drug users from elsewhere mean that the proportion of service users who live locally is often investigated. Reported rates range from 63–93%. In Sydney a conservative measure for the immediate locality found a rate of 42% but 78% for the city as a whole. In some settings, selective police activity targeting non-locals seems associated with higher rates.

Previous treatment
Reported rates of previous treatment are:

- Spain – 50%
- Germany – 50% drug-free treatment; 43% substitution treatment (including many who had both)
- Australia – 66% at least once; 26% in the past year.

In Germany 15% had never been in any type of treatment and for 34%, DCRs were an entry point to the drug-help system.

Current contact with other services
Policies are variable concerning whether people in substitution treatment are prohibited or permitted to use DCRs. In Germany,

where this is usually prohibited, a self-reported rate of 11% was found; although a rate of 40% has been reported elsewhere in Germany where this rule was not applied. In Switzerland, where it is permitted, concurrent treatment utilisation has been reported by 72–80% of service users.

Complementary services such as needle and syringe programmes, medical and social care, counselling and housing services are often located nearby to encourage their use, which has been reported for 31–88% of clients.

2.4.2 Utilisation and coverage

Drugs used and route of administration

- Heroin and cocaine are the main drugs used, sometimes in combination.
- Injecting is the main mode, other than in the Netherlands where the majority of service users inhale, and all services have separate areas for those who inhale and those who inject.
- Inhalation facilities have recently been introduced in Switzerland and Germany in response to changing local drug use patterns, in order to promote less risky forms of consumption among injectors and to reduce health risks to those who inhale.

Utilisation

Eligibility criteria and rules vary according to the objectives of different programmes: highly targeted reduction of nuisance or population-wide health objectives.

- The average number of weekly episodes of drug consumption ranges between 50 and 2,000, largely in accordance with the number of places, the size of the local population and the eligibility criteria.
- Some services have relatively high turnover and low average rates of regular use – less than once a month – but with much higher utilisation rates among a minority of people (Australia and Spain).
- Studies in Germany and Switzerland suggest that many people use services an average of about 5 times a week.

- The Netherlands has a primary focus on reducing nuisance and greater targeting of homeless drug users with strict rules against public consumption for ‘card holders’. This achieves median attendance rates as high as seven days a week and twice a day (across four linked services).

Location, opening hours and coverage
Several lessons emerge clearly from the literature:

- Proximity to places where drugs are bought is important for success and, for commercial sex workers, locations close to working areas also encourages utilisation.
- There is little evidence that deliberate policies to move drug users to decentralised areas have so far been successful.
- In the Netherlands services are typically open for 8–9 hrs a day including weekends. In Madrid, the service is 24 hours a day and offers overnight accommodation.
- Opening times directly affect uptake, with experience in Spain and Germany showing that extending opening times can have a marked effect on the number of episodes of service use.
- New services in Germany, Switzerland and Australia have experienced rapid uptake but in one service in the Netherlands, where a more targeted approach was used, uptake has been slower.
- Case studies in three cities with open drug scenes show that drug use can be transferred into DCRs if sufficient outlets are provided for enough hours from Zurich (5 DCRS), Frankfurt (4 DCRs) and Hamburg (8 DCRs).

The range of studies included in the review uses a mix of methodologies, derives from five countries and has a cumulative sample of 6,486 clients. This provides a strong basis for considering the questions relating to the first objective.

Consumption rooms reach a population of often older, long-term users some of whom have had no previous treatment contact. Services appear particularly successful in attracting groups that are difficult to reach. No evidence was found to suggest that naive users are initiated into injecting as a result of the presence of consumption rooms.

Service users' sociodemographic data and drug use profile are similar across countries. Data show that the rooms reach the intended target groups of long-term addicts, street injectors, homeless drug users and drug-using sex workers and are thus facilitating contact with the most problematic and marginalised drug users. Demographic information also shows that these services can be successful in reaching long-term drug users with no previous contact with treatment services.

Many of those who use consumption rooms are simultaneously in contact with other low threshold drug and help services (i.e. shelters and needle and syringe programmes). This reflects the potential role of consumption facilities as integrated parts of a wider service network that reaches and maintains contact with this hard-to-reach population. It might also reflect a more general service dependence among the ageing population of problem drug users that uses these facilities.

Service utilisation is influenced by the accessibility of the service and its sensitivity to the life situation and needs of drug users. Given the profiles of the service users, it appears highly likely that many of the supervised consumptions would have taken place in public if the services had not been available.

Even in cities with large populations of drug users, the consumption room capacity required to satisfy the demand of the target population so that drug injecting in public is significantly reduced and open drug scenes are prevented is not huge. However, capacity should be adjusted to the needs and limitations of the target population (e.g. many older drug users are in poor physical condition, which restricts their mobility): services should be located near places of drug purchase, at day-care centres and at overnight shelters for drug users, and they should be open in the evenings and at weekends.

Box 2 Reaching the target group – EMCDDA conclusions (from Hedrich, 2004: 42)

Although the inclusion criteria for the 15 'key studies' are not specified, the implication is that all studies identified from the search of the peer-reviewed and grey literature are included. The breadth of the advisory group membership, the limited number of countries from which evidence may have been generated and the restricted period over which the evidence can have been produced all point to this conclusion. In the course of the present review, no omitted eligible studies have been identified. However, it was beyond the scope of this review to undertake a detailed search that could confirm the comprehensiveness of the studies included in the EMCDDA review.

Despite some differences that arise within patterns of drug use and the organisation of treatment services across the countries covered, many similarities remain. There is nothing to suggest that the evidence relating to other, established treatments such as needle/syringe provision programmes and opioid maintenance do not have a similar general applicability in each of the countries from which data derive. Notwithstanding the general cautions that are necessary when applying learning from one cultural context to another, this suggests that the findings on *Reaching the target group* are likely to be broadly applicable to the UK context. It is,

however, noteworthy that the scope and quality of the cumulative data vary. Whereas in some areas the coverage of the data is consistently collected, generally comparable and relates to most of the cumulative sample (e.g. basic demographic descriptors such as age/gender), in other areas (e.g. treatment history and housing situation) definitions are more variable and the data only derive from a subset of the studies.

An important example of an area where evidence appears to be derived from just one country concerns the potential risk of introducing new people to injecting. Swiss evidence points to cases where people report having their first injection in a DCR but Hedrich later concludes “there is no evidence that naïve users are initiated into injecting as a result of the presence of consumption rooms” (p. 74). Whether the presence of DCRs contributed to the initiation of this minority of people is open to debate. It may be that they would have started injecting anyway and that the existence of a DCR meant that this happened in a safer environment, with sterile equipment, in which they received better instruction and health advice than they otherwise would have. Ethically, and from a public health perspective, it is unclear whether enabling people who intend to begin injecting to do so in a DCR produces a net benefit to the population, as the proportion of new initiates who would nevertheless have begun injecting in a riskier context is unknown. However, exceptionally, this appears to be an area where the conclusions of the report may warrant more caution.

Conversely, one allied point that is suggested by trend data showing that some DCR populations are ageing – but not addressed in the discussion or conclusions – is the potential contribution that DCRs may make towards creating a boundary around injecting drug use that impedes the initiation of new people into injecting and reduces the incidence of new cases. The possibility of confounding ‘history’ effects and the absence of trend data in most countries means that this cannot be viewed as more than a hypothesis suggested by the current evidence. Nevertheless, the potential importance for public health of any programmes that can reduce the initiation of new injectors is hard to underestimate and this possibility deserves more study within future research.

2.5 Health

The EMCDDA review considers health in terms of immediate (hygiene and safety), medium-term (morbidity and mortality) and long-term (stabilisation and promotion of health) objectives. Each section is discussed in three parts:

- The objectives specified within the EMCDDA are reproduced.
- The conclusions from the EMCDDA review are reproduced.
- A selective summary and commentary on the findings is provided.

2.5.1 Hygiene and safety

Immediate health objective: To provide a safe environment that enables lower-risk, more hygienic drug consumption

Expected benefits are reductions in the immediate harms that can arise from drug consumption, especially those related to hurried drug injecting in public places. To achieve this, consumption rooms seek to ensure that:

- drugs are consumed under hygienic conditions and safer use is facilitated;
- rapid care is available in the event of emergencies.

Effects that might be considered risks include:

- Better conditions for drug use could increase levels of drug use or encourage riskier patterns of use.

Box 3 Hygiene and safety

(from Hedrich, 2004: 43)

Box 4 Hygiene and safety – EMCDDA conclusions (from Hedrich, 2004: 48)

> Consumption rooms achieve the immediate objective of providing a safe place for lower risk, more hygienic drug consumption without increasing the levels of drug use or risky patterns of consumption.
>
> Direct benefits of supervised injecting appear to be a reduction in some of the risk behaviours related to injecting, in particular improvements in injecting practice, use of sterile equipment and lack of opportunity for sharing drugs. Other benefits are that, if medical emergencies should occur, immediate medical intervention is possible, and the consumption equipment used in the rooms is correctly disposed of. Client surveys consistently show that service users appreciate the hygienic conditions, safety and peace that the rooms provide.
>
> Through direct observation of clients' risk-taking behaviour, safer use advice can be personalised. The observation of risks and experiences in the risk education of consumption room users could be useful in developing safer use messages for the wider population of drug users.
>
> Trained staff respond quickly to emergencies, which can usually be managed at the service level without hospitalisation. Some evidence suggests that outcomes of emergencies occurring within consumptions rooms are less severe than those taking place outside. Immediate medical emergency care reduces overdose morbidity and possibly also hospital admissions and therefore costs. There has been one death at a consumption room due to an allergic reaction, but there have been no reports of fatal overdoses.
>
> Levels of drug taking can fluctuate for a variety of reasons, including changes in the availability of drugs on the illicit market. No causal evidence exists about the link between decreases and increases of drug consumption, reported by a minority of clients, and the operation of consumption rooms.

Ensuring basic injecting hygiene (i.e. the use of sterile equipment in a clean environment without sharing it) is structured into the operation of DCRs and should therefore be expected to occur in all cases. Given the large number of injections that now occur in these settings, one important outcome is the proportion of these injections that would not otherwise have occurred hygienically among populations, which includes a number of homeless and otherwise marginalized drug users. In general, this important outcome seems to receive little attention, with more emphasis being placed on *overall* sharing rates and related risk behaviours or increases in risk related knowledge (discussed later). In this respect the evidence, and consequently the EMCDDA review, appears to understate the most immediate outcome – the number of unhygienic injections prevented.

The emphasis on the possibilities for personalising risk advice is important; no existing treatment modality provides comparable opportunities for achieving this. In Scotland, the valuable learning

that has been derived from the use of video data of injecting is indicative of the transformation in understanding of risk that direct observation allows (Taylor *et al.,* 2004). However, within the evidence to date there seems to be little detailed consideration of how often and how well personalised risk-reduction messages are deployed within DCRs and more emphasis is placed upon aggregated improvements in knowledge and risk at the population level.

The large majority of reported emergencies within DCRs are overdoses relating to heroin, with smaller numbers of cocaine overdose and epileptiform seizures. For injecting, reported emergency rates vary from 0.5 to 7 emergencies per 1,000 injections (Hedrich, 2004: 45). However, emergencies associated with inhalation are very rare. Where DCRs are located near to open drug scenes, staff sometimes also provide emergency aid to people outside of services (four times as many as inside the DCR at Madrid). So, although the incidence of emergencies varies, the evidence shows that DCRs consistently fulfil a function of enabling rapid care to be provided.

Within the outcome of whether *rapid care is available in the event of emergencies* a more elaborated outcome hierarchy could be considered regarding the extent to which:

- DCRs actually prevent emergencies from occurring;
- emergencies are managed earlier than would otherwise have occurred;
- emergencies are managed with lower intensity interventions than would otherwise have been necessary; and
- DCRs reduce morbidity and mortality from emergencies.

At present, other than reporting the overall incidence of emergencies, the evidence is largely restricted to descriptive findings of the proportion of cases in which different interventions occur (e.g. ambulances called to 50–70% of emergencies); outcomes which vary according to the extent to which nursing or medical staff are employed within DCRs. Although this gives some indication of the extent to which *rapid care is available in the event of emergencies* the existing evidence says little about the extent to which DCRs might prevent emergencies in the first place (by enabling greater care to be taken). Or indeed whether having care

on hand encourages complacency or greater risk-taking, which seems at least theoretically possible and might even increase the number of emergencies.

Similarly, the extent to which different arrangements prevent the need for more intensive interventions is currently unclear. For heroin overdose this might mean that, say, artificial assistance with respiration and the administration of oxygen (bagging) is used rather than the administration of naloxone, or that an emergency is managed in a DCR rather than calling an ambulance or requiring a hospital admission; with potential impacts on both clinical and cost-effectiveness.

Of several studies that have examined possible effects on levels of drug use – usually relying on self-reported data – most find a minority of people (up to 16%) who report increased frequency of drug use since using the DCR and others who report decreased use (up to 22%). There are considerable difficulties with understanding any causal role that DCRs may play in reducing or increasing levels of drug use in the context of natural fluctuations in people's drug-taking. An allied measure that does not seem to have been examined is whether the amount of drugs used at each administration changes. Does the ease and absence of harassment/urgency of administering drugs in the DCR environment mean that people moderate their dosage? Or, do people use riskier amounts or combinations because of an increased sense of safety derived from the presence of healthcare specialists? These hypotheses do not appear to have been examined.

Overall, despite some of the uncertainties referred to above, the finding that there has only been one reported death within a DCR since the first one was introduced in 1986 and that this death was, atypically, a case of anaphylaxis (p.46) seems to offer the most powerful comment on people's immediate safety within DCRs. Injecting is a highly risk-laden activity and for this to be the only documented death over 18 years of experience – alongside the evidence that hundreds of thousands of injections have been transferred into a hygienic environment – seem very noteworthy.

2.5.2 Reducing morbidity and mortality

Medium term health objective: To reduce morbidity and mortality

Expected benefits to be achieved through health promotion and safe use education at consumption rooms are:

- sustainable improvements in knowledge and risk awareness among clients;
- reduced high-risk behaviour beyond the consumption room setting itself;
- reduced exposure to and transmission of drug-related infectious diseases;
- reduction in overdoses.

Safer use and management of drug emergencies at consumption rooms should contribute to a reduction in overdose-related deaths in the community.

The following might be considered a possible risk:

- Consumption rooms increase morbidity and mortality by 'condoning' injecting.

Box 5 Morbidity and mortality

(from Hedrich, 2004: 48)

Health education at consumption rooms encourages sustainable changes in risk-taking behaviour by some clients and contributes to reducing drug-related health damage among a difficult to reach target group. No conclusions can be drawn about the direct impact on infectious disease incidence owing to a lack of studies and methodological problems associated with isolating the effect of consumption rooms. Where coverage is adequate, consumption rooms may make a contribution to reducing drug-related deaths at a city level.

Health education at consumption rooms can lead to increased risk awareness and reduced risk-taking behaviour among a target group of long-term drug users with risky drug use habits. Regular service users show an increased benefit from the repeated exposure to correct and consistent risk reduction messages. Direct, personalised training in injecting hygiene and technique increases the likelihood of sustained behavioural change. The development of targeted safer use education messages for the wider target group of drug users can be informed by consumption room experiences.

Despite the methodological limitations inherent in the studies (client self-report; cross-sectional samples; question of causality of behavioural change), it is likely that the direct and personalised safer use education in the setting of supervised consumption rooms contributes to a reduced risk of transmission of infectious diseases even outside the room. However, the extent to which subsequent risk behaviour is reduced merits further research attention. No conclusions can yet be drawn about the impact of consumption rooms on the incidence of infectious diseases because of a lack of long-term controlled studies.

Consumption rooms can contribute to a reduction in drug-related deaths at a wider, city level. The magnitude of their effect depends on several variables, including the extent to which they reach their target population and the number of deaths occurring outside the target population, e.g. in private and among socially more integrated users.

There is no evidence that the use of consumption rooms contributes to an increase in the risk of morbidity or mortality among drug users. On the contrary, the fact that no overdose-related death has yet occurred at these facilities despite the fact that millions of drug consumptions have been supervised and thousands of emergencies have been treated shows that they provide a high level of safety from overdose-death for those who use them.

Box 6 Morbidity and mortality - EMCDDA conclusions (from Hedrich, 2004: 55–56)

The evidence relating to medium-term health objectives concerning morbidity and mortality is generated from: follow-up surveys; comparisons between service users and people who have not used services; cross-sectional surveys of service users at different times; and studies that have asked retrospectively sought attributions about behaviour change.

Several follow-up surveys have demonstrated increases in risk related knowledge. Without controls it is difficult to be certain whether any such changes are simply due to maturation effects although in some cases the participants directly attribute the improvements to the impact of DCRs, which strengthens the confidence that might be had in such reports.

Comparisons of needle and syringe sharing before and after the introduction of a DCR identify falls in needle/syringe sharing from 16% in the prior 6 months to 4%. Falls in paraphernalia sharing were more modest, though still enviable from a UK perspective: spoons 49% to 33%; filters 38% to 24%; water 25% to 15%.

A comparison of service users with a community sample who did not use the DCR in Geneva found only one statistically significant difference for passing on used syringes (rates for DCR users were lower). Among DCR users, the trend over four years was nevertheless towards a lower aggregate rate of passing on used syringes. A 2002 comparison of DCR users with a small community sample of other drug users (*n*=18) found higher levels of injecting and sexual risk among DCR users, although the Sydney MSIC evaluation suggests that DCR users may have longer injecting histories and inject more frequently.

Interestingly, alongside a trend towards increased resistance to injecting with previously used syringes, Swiss data from Berne also point to increasing rates of using sterile injecting equipment for the first injection, which is suggestive that, as part of a broader network of low-threshold services, DCRs may have a wider impact.

The MSIC evaluation also examined incidence and prevalence of HIV, HBV and HCV associated with the introduction of the service in Sydney. No evidence of an increase or decrease in HIV, HBV or HCV incidence attributable to the MSIC was found. However, as the evaluators discussed at the inception of the project, the low incidence rate for HIV, HBV or HCV means that this was never very likely.

Given that much of the available evidence has modest sample sizes or uses designs that are relatively weak, the EMCDDA conclusions regarding risk behaviour and infectious diseases seem proportionate. In the UK a particularly important question would be whether DCRs could contribute to the reduction of HCV incidence. The tendency for DCR attenders to be older may mean that opportunities for this to happen are modest. Nevertheless, the Swiss evidence showing a trend towards an increase in the number of people who use sterile equipment for their first injection

is noteworthy and, as Hedrich concludes, this area merits further research attention.

The EMCDDA review includes two studies from Australia and Germany that examine the impact of DCRs on overdose deaths in the community.

The Australian MSIC study identified a number of prior limitations to the possibility of one service in a restricted area being able to demonstrate an impact on community overdose death rates and no reduction in overall death rates attributable to the MSIC were found. One unanticipated factor was that the study coincided with the Australian heroin drought that led to a fall in opioid overdose deaths nationally. Nevertheless, it was estimated that of 329 overdoses that occurred within the service, over an 18-month period, six deaths were prevented.

The German study examined drug related deaths between 1990 and 2002 and compared the trend nationally with trends in four cities in which DCRs had been introduced. Building in an assumption that any impact on overdose deaths would be lagged by six months, an ARIMA model (used to model time series data) found that the introduction of DCRs was followed by a larger reduction in overdose deaths than would otherwise be expected ($p < 0.05$). Although it is important to note that other changes were taking place in Germany as part of the response to drug problems, this study gives important support for the proposition that DCRs can help reduce overdose deaths. Additionally, by applying a mortality rate of 2% and assuming 1,000 consumptions per year it is estimated that 10 deaths a year are prevented from among the 500,000 drug consumptions that are supervised in Germany annually. Again, the EMCDDA conclusions concerning overdose deaths seem proportionate.

2.5.3 Stabilizing and promoting the health of service users

Long term health objective: To stabilise and promote the health of service users

Expected benefits of consumption rooms are that they:

- increase access to and use of basic medical care and counselling through on-site services;
- improve drug treatment uptake and promote longer term improvements in clients' health and social functioning through referral to other services.

The following might be considered to be possible risks:

- Clients use the consumption rooms only and are still 'not reached' by medical, counselling and treatment services.
- Consumption rooms may foster service dependence and hold clients back from starting treatment by making drug use more 'comfortable'.
- They might counteract the effects of treatment (e.g. allowing clients in oral methadone treatment to use the rooms for injection).

Box 7 Stabilising and promoting health

(from Hedrich, 2004: 56)

By increasing access to drugs and health services, consumption rooms promote the social inclusion of a group of extremely marginalised problem drug users.

Besides service delivery related to the supervision of drug consumption, a range of other services are usually delivered on-site. Low-threshold medical care and psychosocial counselling services are especially well used and contribute to the stabilisation and improvement of the somatic and psychological health of service users.

Consumption room staff make referrals to further services, including to drug addiction treatment services. For frequent users in particular, the rooms act as a link to the wider system of care, facilitating access to treatment.

Referral data should be further standardised, and should be interpreted with regard to the size of the client population, which is currently often unknown (for reasons of client confidentiality).

Box 8 Stabilising and promoting health – EMCDDA conclusions

(from Hedrich, 2004: 60)

Although there are minor variations, DCRs tend to offer similar services alongside their basic functions of safer use education, supervision of injecting and management of emergencies i.e.

needle and syringe exchange; basic medical care,[3] counselling and referral to medical, social welfare, drug treatment and employment/training services. Most services have doctors on-site either part-time or full-time. Of those that don't, with a small number of exceptions, most have nursing staff on-site.

Clinical monitoring data from each country with DCRs provide robust evidence of the delivery of many episodes of: medical consultation; wound care services; and low-threshold counselling, which are provided on between 4.6% and 10.5% of all visits. Given the large number of visits to services, these rates translate into a large number of treatments, e.g. 6,244 wound treatments over two years in Zurich; 6,860 medical/psychosocial services across six DCRs in North Rhine-Westphalia over 15 months; 8,455 medical services in Madrid over 26 months; and 1,271 medical services in Sydney over 18 months.

During its evaluation, the Sydney MSIC provided an average of 2.7 services per client. German data suggest that up to 60% of clients receive medical services, although this includes 'infectious disease counselling with medical staff'. Using a more conservative measure of medical intervention, 37% of all clients received treatment of abscesses and small wounds: a rate that is also similar to that in the Netherlands.

DCRs also refer clients to other services. The Sydney MSIC referred 15% of all clients to other services, making one referral for each 41 visits (55% verbal referrals and 45% written referrals). Client referrals included drug treatment (43%), medical consultations (23%) and social welfare (16%). In the MSIC evaluation, a card system confirmed that one in five referrals presented at their referral destination, providing useful verification of this initial outcome. In Germany, 54% of clients of one service received referrals – a quarter for detoxification with a further fifth for social assistance and for therapy. Approximately a third of all clients at a Swiss service received referrals and in Spain 9% of clients were referred to other services during the first 26 months of the services operation.

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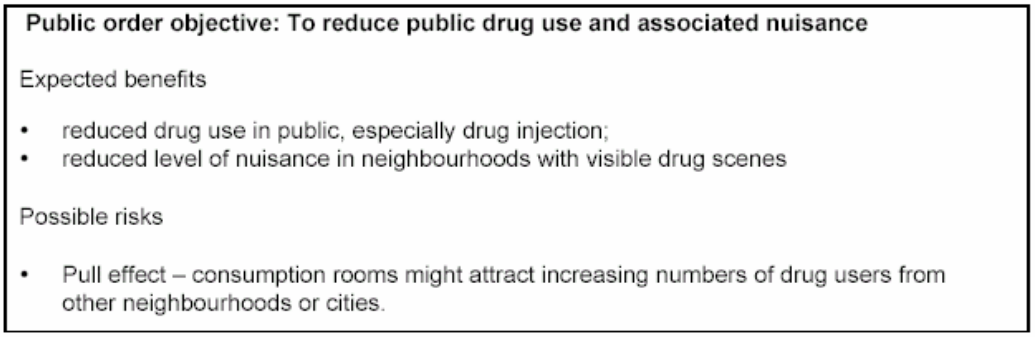
[3] Services include wound dressings, skin disorder treatments, treatment of abscesses and directly observed treatment for TB (to enhance treatment adherence).

Given that many people who use DCRs are highly marginalized and with poor access to healthcare services, this evidence strongly suggests that DCRs fulfil an important function in providing primary health care and low-threshold social interventions to a very needy population. In Switzerland, DCRs now comprise one of the 'four pillars' of their health policy for drug users.

Although, schematically, this domain is described by the EMCDDA as a "long-term health objective" the evidence actually seems to deal with more immediate primary care services and access to treatment. While this might have an impact on longer-term health and well-being, none of the evidence summarised has attempted to evaluate the longer term impact of services on attenders' health status. In time, such evaluations could be important; not least because they may help arbitrate on the important question of whether, by enabling drug use, people continue to use for longer and DCRs could have an adverse effect. Nevertheless, the evidence that many people are referred to drug treatment and detoxification services gives a clear indication that DCRs may sometimes help people work towards abstinence or stabilise their drug use and suggests that the conclusions by the EMCDDA from the current evidence seem apt.

2.6 Public order and crime



Public order objective: To reduce public drug use and associated nuisance

Expected benefits

- reduced drug use in public, especially drug injection;
- reduced level of nuisance in neighbourhoods with visible drug scenes

Possible risks

- Pull effect – consumption rooms might attract increasing numbers of drug users from other neighbourhoods or cities.

Box 9 Reducing public drug use and nuisance
(from Hedrich, 2004: 62)

Public safety objective: to prevent increased crime in and around consumption rooms

Consumption rooms have been considered as potential 'magnet' for drug users and dealers, resulting in more public nuisance and crime.

The rooms therefore aim to prevent:

- increases in acquisitive crime in the neighbourhood;
- increases in drug-dealing in the neighbourhood;
- drug dealing and other criminal activity in the rooms.

Box 10 Preventing increased crime around consumption rooms (from Hedrich, 2004: 68)

Consumption rooms can improve the local environment by reducing public nuisance, in particular the level of drug use in public places. Police recognise that consumption rooms play a role in decreasing and preventing open drug scenes. The extent to which this can be achieved depends on the coverage of the target behaviour and is determined by available capacity for drug consumptions that would otherwise take place in public and by police action that prevents open drug scenes but at the same time does not deter addicts from making use of the facilities.

Consumption rooms have greater impact where there is a political consensus on the rooms as part of a comprehensive local demand reduction strategy that acknowledges public and individual health objectives as well as the need to maintain an acceptable situation with regard to order and safety in the community.

The location of consumption rooms needs to be compatible with the needs of drug users but also with the needs of local residents. The facilities situated near illicit drug markets are not able to solve wider nuisance problems that result from these markets.

There is no evidence that the operation of consumption rooms results in a decrease or increase in the number of improperly discarded syringes and needles; it is even unclear whether syringe counts can be used as reliable indicator of the level of public injecting. Consumption equipment used at the facilities is collected and correctly disposed of on-site.

There is no evidence that the presence of consumption rooms leads to more acquisitive crime.

The services have no interest in drug dealing inside or outside their premises. No systematic data are available about infringement of the house rules that prohibit drug dealing, although it has been acknowledged by police that house rules against drug dealing are enforced and respected. Some small-scale drug dealing does take place in the vicinity of the services, which is not surprising given their locations.

Box 11 Preventing increased crime around consumption rooms – EMCDDA conclusions

(from Hedrich, 2004: 70)

Changes in public drug use

Self-report data from a series of studies identifies a preference for using DCRs and avoiding using in public among service users; some of whom regard injecting in certain public spaces, such as playgrounds, as particularly unacceptable. In one Dutch survey 80% of card holders report using drugs in public less often after they became registered service users and 30% of a German sample attributed reduced public drug taking to their use of a DCR.

Ongoing public use

Even when DCRs are opened, Swiss and German data point to some residual public use, which might well be expected where opening hours do not extend for all 24 hours or where geographical coverage is poor. Research in Hamburg, which found that 37% of respondents had used in public during the past 24 hours, identified withdrawal symptoms, in conjunction with long

waiting times, distance and limited opening hours as factors that were cited by respondents to explain continued public use.

Discarded syringes and public safety

Discarded syringes are an alternative indicator of public drug use and were measured as part of the MSIC evaluation. Discarded syringes fell after the opening of the service but it was impossible to ascertain whether this was explained by a coincidental reduction in heroin availability. One Swiss survey noted a slight increase in discarded syringes after the opening of a DCR even though a very high return rate (93.8%) was achieved. In this case, a coincidental increase in cocaine injecting has been suggested as a possible confounding factor. One Dutch survey of local residents using a before and after design found a reduction in discarded syringes after a DCR was opened.

Neighbourhood attitudes

DCRs in the Netherlands place a special emphasis on reducing *overlast* (a concept that includes objective and perceived nuisance), which means that this has generally received more attention than elsewhere. A series of studies using pre and post designs and gathering interview data from residents, police and key informants has consistently found nuisance reduces after the introduction of DCRs, without increases in crime and with a corresponding improvement in attitudes towards drug users.

Pull effects

Despite concern that DCRs might attract more drug users into an area, monitoring data usually finds that 80–90% of attenders are local residents living in the city or its surrounding area. In places where centralised drug markets attract people from a wider area, service utilisation tends to reflect this with high rates of attenders coming from outside of the local area. Services in Germany have introduced policies to exclude non-locals, foreigners and illegal immigrants, although there is no discussion of the success of these.

Acquisitive crime

Studies in three cities in the Netherlands and Switzerland (using police data) and as part of the MSIC evaluation (using a combination of police data and semi-structured interviews) have found no increase in acquisitive crime after the opening of DCRs.

Drug dealing in the vicinity
Several studies have identified small-scale drug trafficking in the vicinity of DCRs but also make the point that by locating DCRs in areas where drugs are sold makes it hard to assess whether such activity is affected by the arrival of a DCR. Dutch services sometimes use contracts with clients to try to avoid 'loitering' and the geographical arrangement of the Sydney service is organised, in part, to prevent loitering.

Drug dealing inside DCRs
Drug dealing in DCRs is usually forbidden by house rules, which are rigorously enforced. Some limited evidence from Germany concerning the exclusion of attenders points to the enforcement of these rules. The physical organisation of some services also limits the opportunities for dealing on the premises.

3 Additional evidence published since the EMCDDA review

As part of the process of updating Hedrich's review, additional evidence relating to effectiveness and published since the EMCDDA review was identified from the following sources:

- the ongoing distribution of new papers that became known to members of the Independent Working Group (IWG);
- contact with researchers known to be conducting work involving DCRs;
- targeted, manual searching of selected journals, i.e. *Addiction*, *International Journal of Drug Policy*, *Drug and Alcohol Review*, *Drugs: Education, Prevention and Policy* and the *Harm Reduction Journal*;
- a *Web of Science* search for papers published during the past 24 months using the terms <safer injecting>, <drugs and medically supervised> and <drug consumption room*>; and
- a manual search of the conference proceedings for the International Harm Reduction Association's annual conference in Melbourne 2004 and Belfast 2005.

The following two sections relating to 'Health' and 'Public Order and Crime', summarise key points of the identified research published since the EMCDDA review and relating to effectiveness.

Additional papers identified, which discuss theoretical, methodological and ethical questions but do not add to what is known of the *effectiveness* of DCRs are not summarised or further discussed but are listed in the Appendix.

3.1 Health: additional research on effectiveness published since the EMCDDA report

Since the EMCDDA review was published, an assortment of papers relating to the Vancouver, Canada service have become available. These are each summarised with a commentary on the learning they add.

Evaluation of the Supervised Injection Site Year One Summary (September 2004) BC Center for Excellence in HIV/AIDS
This summarises the overall evaluation methodology of the Canadian evaluation, presents early process data and reports some baseline measures that will be used for subsequent comparison.

During the first six months, operational concerns were prioritised and an emphasis was placed upon providing a low threshold anonymous service that people would trust and use, over the desire for monitoring information that would allow evaluation. A database that enabled the tracking and some description of client characteristics and service utilisation was introduced after six months of operation. Although it is reported that a paper-based record system was in operation for the initial six months, the scope and quality of this information is not reported and no findings are offered from this information. Findings from the database are reported for the second six months of year one's operation (March to August 2004). The evaluators comment that, with hindsight, this caution may have been unnecessary as the 'uptake' (which seems to imply registration with the formal information system) was substantial and immediate.

For the six-month period under report 3,036 different individuals attended the service – known as *Insite* – and administered 79,962

injections. The mean number of daily visits is 588, ranging from just over 400 to a peak of 845. Attenders made an average of 11 visits per month. Approximately 50% of visits are for the use of heroin and other street opioids; 25% for cocaine, with smaller numbers of people injecting methamphetamine/crystal and other drugs.

Although most people use the service for injecting, 262 referrals have been made to *Addiction Counselling Services*, with 78 referrals to withdrawal management programmes. Data on uptake are not presented but this nevertheless suggests that the service is a useful referral point to more intensive treatment services for a minority of attenders.

Preventing overdose is a primary objective of the service. Over the six months interventions were necessary for 107 overdoses occurring among 72 clients. The most common interventions were administering oxygen, calling emergency services or administering naloxone. Three people required the insertion of an airway and CPR was necessary in one case.

The evaluation includes a randomly selected cohort that is being followed up every six months for three years. Descriptive demographic data are available for the first 677 people enrolled in the study up until June 3004. The main findings from which are as follows:

- age – mean 39
- gender – female 30%, male 70%
- ethnicity – white 69%, first nations 21%, other 10%
- living locally – down town east side 68%, within 3 blocks 35%
- residence – hotel 35%, apartment 19%, NFA/street 225, other 24%.

In several respects these findings are in keeping with findings that have been reported elsewhere, i.e. attenders are older, mostly male, live locally and include a substantial minority who are homeless. They therefore confirm previous research regarding *Reaching the target group*. Furthermore, the service is evidently accessible to a proportion of first nation people and others from ethnic minorities although it is not possible to assess whether this

occurs in proportion to their presence in the general population or, specifically, among IDU.

Taken overall, this report suggests that, so far, the Vancouver DCR is having similar success in attracting injecting drug users as services elsewhere – including many people who are vulnerable or marginalized. The service enables a large number of injections to occur in a hygienic environment. The findings to date also show that timely interventions are made in many overdose situations that have the potential to be fatal.

Kerr T et al*. (2005) Safer injection facility use and syringe sharing in injection drug use. Lancet. 366: 316–318*
Kerr and colleagues draw on an established prospective cohort study that pre-dated the introduction of the safer injecting facility – The Vancouver Injection Drug Users Study – to investigate whether use of the service had a bearing on syringe sharing. The ongoing cohort study allows some analyses to be undertaken that have not previously been possible and, in this way, adds usefully to the literature.

The Safer Injecting Facility opened on 22nd September 2003. The study examines the outcome 'reported syringe sharing in the past 6 months'. Between 1 December 2003, and 1 June 2004, 49/431 active injection drug users (11·4%, 95% CI 8·5–14·3) had shared (defined as 'borrowed or lent a used syringe'). In logistic regression analyses, use of the facility was independently associated with reduced syringe sharing (adjusted odds ratio 0·30, 0·11–0·82, *p*=0·02) after adjustment for relevant socio-demographic and drug use characteristics identified in previous research: age, HIV sero-status, limited access to sterile syringes, need for help with injections, binge drug use, frequency of cocaine and heroin injection and methadone maintenance treatment. Use of the facility is associated with a marked reduction in syringe sharing.

A particular strength of the paper is that the ongoing cohort study meant that the researchers could assess whether selection effects confounded the results, with people who were already at lower risk electing to use the facility. However, rates of syringe sharing were similar in these populations before the opening (Chi squared 0·46, 1 degree of freedom, *p*=0·50), and the differences only emerged during follow-up after the facility had opened. This gives greater

confidence that the behaviour changes observed may be attributable to the service.

An accompanying commentary by Hall and Kimber (2005) notes the gulf between demonstrating behaviour change and the desired end-outcome: reduced blood-borne infections. Where an isolated service is provided, population coverage is correspondingly low and it is unlikely that population-level reduction in incidence of infection will be observed. Nevertheless, at a time when the potential impacts of DCRs are still being clarified, this design and the results of this study strengthen the evidence that they can reduce syringe sharing.

Wood E et al*. (2005) Factors associated with syringe sharing among users of a medically supervised safer injecting facility. American Journal of Infectious Diseases. 1 (1): 50–54*
Among people who use newly-provided safer injecting facilities (SIF), a degree of residual sharing continues among part of the population, as not all drug injecting occurs in the SIF. This study investigated factors that were associated with continued sharing within two groups: HIV positive and HIV negative injecting drug users who had used the facility.

Of the HIV-ve sample, 48/479 people had borrowed syringes and 17/103 HIV+ve attenders had lent equipment over the 6-month period March–October 2004.

For the HIV-ve sample, syringe *borrowing* was associated with:

- public drug use ($p<0.001$)
- needing help injecting ($p<0.001$).

For the HIV+ve sample syringe lending syringes was associated with:

- daily cocaine injection ($p=0.022$)
- shooting gallery use ($p=0.007$).

Among the 48 HIV-ve people who used the SIF exclusively during this period, no one reported injecting with a used syringe.

Within the lowered residual rate of sharing that persists among SIF users, this study points to risk factors that have implications for: service coverage, responses to people who have difficulty injecting themselves, cocaine injectors and the role of shooting galleries.

Wood et al*. (2005) Safer injecting education for HIV prevention within a medically supervised safer injecting facility. International Journal of Drug Policy. 16: 281-284*

DCRs provide opportunities for giving tailored health and safer injecting advice. The Scientific Evaluation of Supervised Injecting (SEOSI) cohort, which is central to the evaluation of the Vancouver service, is based on a representative sample of SIF users. The researchers examined the prevalence and correlates of receiving safer injecting education within the SIF using univariate and logistic regression analyses.

Between 31 May 2003 and 22 October 2004, 874 individuals of the SEOSI cohort completed the baseline questionnaire, among whom 293 (33.5%) received safer injecting education. In multivariate analyses, requiring help with an injection in the last 6 months (OR = 2.20 [95% CI: 1.62–2.98]) and sex-trade involvement in the last 6 months (OR = 1.54 [1.09–2.16]) were independently associated with receiving safer injecting education within the SIF.

Since the need for help with injecting has previously been associated with HIV incidence (see Wood *et al.,* 2005, above), it is encouraging that this risk factor was associated with receiving safer injecting education within the SIF. Further, prospective evaluation will be necessary to examine whether receiving safer injecting education is associated with reduced HIV risk behaviour and blood-borne disease incidence.

Kerr T et al*. (2006) Impact of a medically supervised safer injection facility on community drug use patterns: a before and after study. BMJ. 332: 220-222*

Within the debates about DCRs, there are concerns that their establishment may make relapse more likely and cessation of injecting less likely. Kerr and colleagues have drawn on an established prospective cohort study that pre-dated the introduction of the safer injecting facility – The Vancouver Injection Drug Users Study – to investigate whether the facility has an

adverse effect on variables including: rates of relapse to injecting and cessation of injecting.

The study examined behaviour changes across two year-long periods: one ending six months before the facility opened and one that spanned its opening. This enabled the researchers to look for adverse community drug use effects associated with the facility's opening. The nature of the data did not enable any formal significance testing but the researchers determined *a priori* changes exceeding 5% as being worthy of further investigation. Changes below this rate were deemed more likely to represent chance variations. Accordingly, the investigators found no difference between (% before SIF opened v % spanning SIF opening):

- relapse into injecting drug use (17% v 20%)
- rates of stopping injecting (17% v 15%)
- stopping binge drug use (58% v 63%)
- stopping crack cocaine use (12% v 14%)
- starting methadone (11% v 7%)
- stopping methadone (13% v 11%).

Based on the 5% threshold:

- fewer people started binge drug use (13% v 8%)
- more people started smoking crack (21% v 29%).

Although people who started smoking crack increased, this is not permitted at the service and it was not thought likely to be attributable to the service's opening. Beyond this, as most findings did not change substantially, yet substantially fewer people started binge drug use, the researchers concluded that the service's opening was generally not associated with wider negative changes to the pattern of people's consumption and there was no evidence of 'risk compensation', whereby provision of a safer environment enables higher intensity drug use.

Wood et al*. (2005) Prevalence and correlates of hepatitis C infection among users of North America's first medically supervised safer injection facility. Public Health. 119: 1111-1115*

As part of the SEOSI the investigators examined the prevalence and correlates of hepatitis C (HCV) infection among a representative cohort of Safer Injection Facility (SIF) users.

Users of the Vancouver SIF were selected at random and asked to enrol in the SEOSI cohort. At baseline, venous blood samples were collected and an interviewer-administered questionnaire was performed. Participants who were HCV-positive were compared with HCV-negative subjects using bivariate and logistic regression analyses.

Between 1 December 2003 and 30 July 2004, 691 participants were enrolled into the SEOSI cohort, among whom 605 (87.6%) were HCV-positive at baseline. Factors independently associated with HCV infection in logistic regression analyses included: involvement with the sex trade (adjusted odds ratio [AOR] 3.7, 95% confidence interval [CI] 2.1–6.1), history of borrowing syringes (AOR 1.8, 95%CI 1.1– 2.9), and history of incarceration (AOR 2.6, 95%CI 1.5–4.4). Daily heroin use was protective against HCV infection (AOR 0.6, 95%CI 0.3–0.9).

The SIF has attracted injection drug users with a high burden of HCV infection and a substantial proportion of uninfected individuals. Although cross-sectional, this study provides some insight into historical risks for HCV infection among this population, and prospective follow-up of this cohort will be useful to determine if use of the SIF is associated with reduced risk behaviour and HCV incidence.

Wood et al*. (2005) Do supervised injecting facilities attract higher risk injection drug users? American Journal of Preventive Medicine. 29 (2): 126–130*

This study examined whether the Vancouver SIF was attracting IDUs who were at greatest risk of overdose and blood-borne disease infection.

The investigators examined data from an ongoing community-recruited cohort study of IDUs – The Vancouver Injection Drug User Study (VIDUS). The prevalence of SIF use was determined based on questionnaire data obtained after the SIF's opening. Predictors determining initiating future SIF use were based on behavioural information obtained from questionnaire data obtained

before the SIF's opening. Pearson's chi-square test was used to compare characteristics of IDUs who did and did not subsequently initiate SIF use.

Overall, 400 eligible active injection drug users from the VIDUS returned for follow-up between 1 December 2003 and 1 May 2004, among whom 178 (45%) reported ever using the SIF. When behavioural data collected before the SIF's opening was examined, those who initiated SIF use were more likely to be:

- aged <30 years (odds ratio [OR]=1.6, 95% confidence interval [CI]=1.0 –2.7], *p*=0.04);
- public injection drug users (OR=2.6, 95% CI=1.7–3.9, *p*<0.001);
- homeless or residing in unstable housing (OR=1.7, 95% CI=1.2–2.7, *p*=0.008);
- daily heroin users (OR=2.1, 95% CI=1.3–3.2, *p*<0.001);
- daily cocaine users (OR=1.6, 95% CI=1.1–2.5, *p*=0.025); and
- those who had recently had a non-fatal overdose (OR=2.7, 95% CI=1.2– 6.1, *p*=0.016).

The researchers concluded that this study shows that the SIF attracted IDUs who have been shown to be at elevated risk of blood-borne disease infection and overdose, and IDUs who were contributing to the public drug use problem and unsafe syringe disposal problems stemming from public injection drug use.

3.2 Public order and crime: additional research on effectiveness published since the EMCDDA report

Since the EMCDDA review was published, several papers relating to the Vancouver, Canada and Sydney, Australia services have become available. These are each summarised with a commentary on the learning they add.

BC Center for Excellence in HIV/AIDS. Evaluation of the Supervised Injection Site Year One Summary (September 2004) BC Center for Excellence in HIV/AIDS

The Year 1 evaluation of the Canadian Supervised Injecting Site reports baseline measures of attitude to the service within a random sample of 117 local business people. Initial findings show that 46% were in favour of the service, 30% undecided and 34%

opposed; opposition being associated with greater distance from the service, shops with 'high traffic levels' e.g. corner stores and being located in Chinatown. Subsequent measures will show whether attitudes change with the continued operation of the service (BC Center for Excellence in HIV/AIDS, September 2004).

Wood et al*. (2004) Changes in public order after the opening of a medically supervised safer injecting facility for illicit injection drug users. Canadian Medical Association Journal. 171 (7): 731–734*
The EMCDDA report summarises a range of survey and self-report data that points to reductions in public drug use and a beneficial impact of public nuisance. Although these existing findings generally reinforce each other, pointing towards an effect in the desired direction, their designs often lack controls and are relatively weak or – in the case of Australia – are complicated by a confounding 'history effect' arising from a coincidental change in heroin availability.

By contrast, Wood and colleagues use a quasi-experimental design to compare a number of measures of public nuisance six weeks before and 12 weeks after the introduction of the Vancouver *Safer Injecting Facility (SIF)*. Furthermore, they control for several potentially confounding factors that might otherwise explain any observed effect.

Nuisance was operationalized using three indicators, each of which was measured consistently using geographical and time samples that were repeated throughout the study:

- the number of people injecting in public;
- publicly discarded syringes; and
- injection related litter.

The measures involve an exemplary rigour described in detail within the paper, using ethnographic mapping by a trained ethnographer.

Potential confounds included:

- number of suspected dealers in the area;
- police patrols; and
- rainfall.

The number of dealers did not differ between the two periods and could therefore safely be excluded from the analyses. Rainfall and police patrols – each of which can affect public drug use – were included in the models. The models for each indicator showed strong, significant reductions in nuisance after controlling for potential confounds.

	Predicted daily mean no. (and 95% CI)	
Measure	Before opening	After opening
IDUs injecting in public	4.4 (3.5–5.5)	2.4 (1.9–3.0)
Publicly discarded syringes	11.5 10.0–13.2)	5.4 (4.7–6.3)
Injection related litter	601 (290–613)	310 (3-5–317)

This study substantially improves the evidence concerning DCRs' potential to reduce nuisance. It increases the confidence with which policy makers can look towards DCRs as an effective means of reducing the amount of public injecting and injecting related litter in metropolitan settings that have high levels of drug use and deprivation.

Freeman et al*. (2005) The impact of the Sydney Medically Supervised Injecting Centre (MSIC) on crime. Drug and Alcohol Review. 24: 173–184*

This study used a before-and-after design and looked at the impact of the opening of the MSIC (in May 2001) on acquisitive crime and loitering by users and dealers. Crime reduction was not a primary objective of the MSIC. However, this study assessed whether the introduction of the service produced an unintended increase in crime.

Acquisitive property and violent crime was measured using time series analysis of a) theft b) robbery incidents. Effects on drug use and dealing (loitering) were measured using a) time series measures of proxy measures of loitering b) key informant interviews c) trends in drug offences recorded in the Kings Cross area. 'Drug related' and 'total' loitering was distinguished. Drug related loitering was defined as either a) involving offers of drugs b) involving known illicit drug users c) where the counter was more certain than not that the loitering was drug related. Loitering was

considered with reference to: the front of the building (a busy main street) where people enter the service and, the rear of the building (a quiet laneway with little pedestrian traffic) where people exit.

During the 3-year and 9-month period from January 1999 to September 2002, police data for the Kings Cross area and Sydney as a whole, showed no evidence that the MSIC led to either an increase or decrease in theft or robbery incidents.

Neither was there any evidence of increased 'drug related' loitering at the front of the MSIC. 'Total' loitering increased initially by 1.2 persons per observation but had returned to baseline levels after 18 months. A small, sustained amount of 'drug related' loitering (0.09 persons per observation) and 'total' loitering (0.37 persons per count) occurred behind the MSIC where people exited the building. Key informant interviews noted increased interviews across the road from the MSIC but this was not attributed to an influx of new users and dealers.

The researchers concluded that setting up an MSIC does not necessarily lead to an increase in drug related problems of crime and public loitering.

Thein et al*. (2005)Public opinion towards supervised injecting centres and the Sydney Medically Supervised Injecting Centre. International Journal of Drug Policy. 16: 275–280*

Thein *et al.* used a telephone survey with a before and after design to examine awareness and attitudes of residents and businesses located in the Kings Cross area in which the MSIC was established. In 2000 the survey involved 515 residents and 209 businesses. At follow-up in 2002, the sample comprised 540 residents and 207 businesses.

Two-thirds of the businesses and half the residents knew the correct location of the Sydney MSIC in 2002. The level of support for establishment of a MSIC in Kings Cross (68–78%, $p< 0.001$) and other areas of high drug use (71–80%, $p= 0.003$) increased significantly among residents between 2000 and 2002. Both groups were more likely to disagree than agree that SICs would encourage illicit drug injection.

The researchers concluded that public opinion towards Supervised Injecting Centres and the establishment of the MSIC generally was supportive in the short term but that further research is required to assess whether this level of support is sustained over time.

4 Conclusions

Internationally, there is now experience of the operation of drug consumption rooms dating back to 1986. At present, services operate in eight countries: Australia, Canada, Germany, the Netherlands, Spain, Switzerland, Norway and Luxembourg.

Each country operates somewhat different models of service provision and there is some variation in objectives, with differing emphases on health and public nuisance outcomes. This imposes some limits on comparability and the extent to which findings might apply within the UK context; nevertheless, there remains considerable overlap in the way services work, the populations they target and what they try to achieve. Most services are located in cities and large towns and, consequently, the existing research may not be generalisable to other provincial/rural settings. The evidence relates to the two main domains in which DCRs operate – health and public order/crime.

Health

The evidence unambiguously demonstrates that DCRs are effective at attracting their target population and enable many drug consumptions to occur within hygienic environments. Clients are typically older with more complex problems, including highly marginalized and vulnerable populations such as the homeless and commercial sex workers.

Beyond moving hundreds of thousands of injections into a hygienic environment, the evidence points towards beneficial effects on viral risk behaviours including the unique opportunities to tailor risk-reduction advice to people's needs that DCRs allow because their drug use is directly observed.

Recent Canadian research has strengthened the evidence, showing that DCRs reduce risk behaviours for infection and enable targeting of health advice to those most at risk of blood-borne infections and overdose. Furthermore, it is now clearer that this

can be achieved without adverse community effects regarding: relapse into injecting, cessation of injecting or treatment uptake. However, there remains an absence of studies that have fully evaluated any contribution DCRs might ultimately make to the incidence of HIV, hepatitis B and hepatitis C and this remains an important area to examine more carefully.

Responses to emergencies in DCRs – primarily opioid overdose – provides clear evidence that DCRs generate an environment in which early interventions such as administering oxygen or naloxone can be provided. Not all emergencies would be fatal but the evidence strongly indicates that a proportion of these interventions has directly saved lives. In Germany, the methodologically strongest study of the impact of DCRs (using a national trend analysis of mortality data) suggests that the introduction of DCRs in four cities was followed by reductions in mortality at the community level in each case.

DCRs also provide an effective low threshold environment in which a range of medical treatments are administered and referrals to drug treatment, health and social welfare services can be made. As such, they can provide a useful element of primary healthcare services for a population that generally has poor access to these by directly providing medical treatment and, by timely referral to other services. However, the evidence of how this might impact on people's longer-term health and well-being remains unclear.

Pubic nuisance and crime

Among the many people who otherwise use drugs in public, the evidence points to a general preference for consuming drugs within DCRs rather than street settings and indicates that DCRs transfer a proportion of public drug consumptions into a hygienic environment in which public nuisance does not occur. These effects are moderated and shaped by factors such as opening times, geographical coverage and waiting times. Recent Canadian evidence now gives very strong evidence that, within inner city settings with high levels of drug use, the opening of a DCR can effectively reduce public injecting, discarded needles/syringes and drug related litter.

There is little evidence that DCRs attract non-local people into their vicinity or are associated with an increase in acquisitive or other

drug related crime. Recent Australian research further confirms that: DCRs can be introduced without adverse effects on acquisitive crime or drug related loitering; and that public support tends to improve with time.

Cost effectiveness

Probably because of some of the challenges of evaluating the underlying *effectiveness* of DCRs, there is currently an absence of research that considers their cost-effectiveness. In time, it will be important to estimate the cost of such impacts in order to better assess whether or to what extent DCRs are worthwhile: judgements that are likely substantially to be affected by the delivery models that are chosen, as their costs vary considerably between large specialist services (e.g. the MSIC) and services that are provided as an adjunct to other low threshold services (e.g. those in Germany, Switzerland and the Netherlands).

Overall conclusions

The international evidence points to a number of ways in which DCRs exert beneficial effects on health and public nuisance and suggests that they do this without increasing crime. These effects are directly relevant to needs that have been identified among drug users and the communities in which they live in the UK, especially with regard to injecting drug users. However, it is impossible to predict the extent to which such impacts might ultimately be reproduced in the UK and, any outcomes will be contingent on various factors including: the model(s) of service delivery, the specific objectives of services and, how they are targeted. Nevertheless, the existing evidence seems persuasive that DCRs may produce benefits for both drug users and communities in the UK.

The many residual uncertainties within the evidence base point to a need for a cautious approach in which: pilot evaluations test how DCRs might best be implemented in the UK and, their impact is carefully assessed. From an evidence-based standpoint, this next step is essential to assess the broader question of whether DCRs can make a useful contribution within our response to drug problems across the UK.

5 References

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6 Appendix

The following papers were identified within the search for this review but not considered further as they either a) did not address the *effectiveness* of DCRs b) the findings were incorporated within other papers that were included in the review elsewhere. They are nevertheless listed here as a potential resource for others conducting work in this area.

Peer reviewed papers

Christie T, Wood E, Schechter M T and O'Shaughnessy M V (2004) A comparison of the new Federal Guidelines regulating supervised injection site research in Canada and the Tri-Council Policy Statement on Ethical Conduct for Research Involving Human Subjects. *International Journal of Drug Policy*. 15: 66–73.

Consideration of research ethics relating to supervised injecting sites.

Collins C L C, Kerr T, Tyndall M W, Marsh D C, Kretz P S, Montaner J S, Wood E (2005) Rationale to evaluate medically supervised safer smoking facilities for non-injection illicit drug users (Commentary). *Canadian Journal of Public Health*. 96 (5): 344–47.

Discusses the case for introducing safer-smoking facilities with reference to blood-borne disease transmission and preventing transition to injecting.

Fischer B, Turnbull S, Poland B and Haydon E (2004) Drug use risk and urban order: examining supervised injecting sites as 'governmentality. *International Journal of Drug Policy*. 15: 357–365.

Discusses supervised injecting sites from a social theory perspective.

Fry C L (2006) Applied ethical reflections on the operation of a Geneva drug consumption room: opportunities for enhanced

harm reduction practice (Editorial). *International Journal of Drug Policy*. 17: 1–2.

Commentary on Solai et al*. (2006).*

Kimber J, Dolan K and Wodak A (2005) Survey of drug consumption rooms: service delivery and perceived public health and amenity impact. *Drug and Alcohol Review*. 24: 21–24.

1999–2000 survey of service provision that predated the review by Hedrich (2004).

Rosenburg H, Melville J and McLean P C (2004) Non-pharmacological harm reduction interventions in British Substance misuse services. *Addictive Behaviors*. 29: 1225–1229.

Reports survey findings about acceptability to UK drug services of providing "safe place where ingestion allowed".

Shannon K, Ishida T Morgan R, Bear A, Oleson M, Kerr T and Tyndall M W (2006) Potential community and public health impacts of medically supervised safer smoking facilities for crack cocaine users. *Harm Reduction Journal*. 3: 1 doi:10.1186/1477-7517-3-1

*Survey concerning likely uptake and potential to reduce harm for crack smokers if 'safer smoking' facilities are introduce*d.

Small D, Palepu A and Tyndall M W (2006 – in press) The establishment of North America's first state-sanctioned supervised injecting facility: a case study in culture change. *International Journal of Drug Policy*.

Narrative account of the process by which the Vancouver SIF was developed.

Solai S, Dubois-Arber F, Benninghoff F and Benarayo L (2006) Ethical reflections emerging during the activity of a low threshold facility with supervised drug consumption room in

Geneva, Switzerland. *International Journal of Drug Policy*. 17: 17–22.

Discussion of ethical dilemmas that occurred within a Swiss DCR and their resolution.

Wood *et al*. (2004) Methodology for evaluating Insite: Canada's first medically supervised safer injecting facility for injection drug users. *Harm Reduction Journal*. 1: 9 doi:10.1186/1477-7517-1-9

Discusses aspects of the methodology for evaluating the Vancouver SIF.

Other publications

Roberts M, Klein A and Trace M (2004) *Drug Consumption Rooms*. DrugScope and The Beckley Foundation. http://www.internationaldrugpolicy.net/reports/BeckleyFoundation_BriefingPaper_03.pdf

Briefing paper that draws substantially on Hedrich (2004).

UKHRA stakeholder questionnaire survey (England) (2005) http://www.ukhra.org/Resources/UKHRA_Stakeholder_Questionnaire_Report_1_2.pdf

Survey of harm reduction stakeholders that identified 'safer injecting rooms' as the most important 'new or expanded response' for preventing blood-borne infections and overdose.

International Harm Reduction Association conference proceedings

Four presentations were identified from within the proceedings from Melbourne 2004:

735 T KERR ET AL. Missed opportunities in the establishment of safer injection facilities: reviewing the evidence to date

Methodological discussion.

1028 R MATTICK ET AL. Overview of findings from the Sydney Medically Supervised Injecting Center (MSIC) evaluation

Presented data already included in EMCDDA review.

508 H HAY ET AL. First supervised injection site in North America

Covered first 12-month activity data circulated to IWG.

1026 R HAEMMIG. Beyond safe injecting rooms: next steps in harm reduction incl. safe smoking rooms

Discussion of putative risks from fine particulate matter when injected.

Six presentations were identified from within the proceedings from Belfast 2005:

109 COLETTE MCGRATH. Lessons learnt from a medically supervised centres experience

Experiences from the perspective of the Clinical Services Manager of the Sydney MSIC.

159 JAKE RANCE. Working the floor: the role of the counsellor within Sydney's medically supervised injecting centre

Experiences from the perspective of a counsellor within the Sydney MSIC.

244 CHRIS BUCHNER. Peer involvement in North America's first sanctioned supervised injection site – accessibility and uptake

600 H H THEIN. Public opinion and community impact of a medically supervised injecting centre in Sydney, Australia

Community survey results – published paper discussed in section 3.2.

770 JO KIMBER. Estimating the size of the local IDU population using client visits to the Sydney Medically Supervised Injecting Centre

857 THOMAS KERR. Results from the scientific evaluation of Vancouver's medically supervised safer injection facility

Evaluation results covered within assorted published papers discussed in sections 3.1 and 3.2.