

Independent Working Group on Drug Consumption Rooms

Paper A

Indicators of the need for drug consumption rooms in the UK

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1 Introduction

Internationally, there is now a considerable accumulation of practical experience and research evidence relating to the operation of drug consumption rooms (Hedrich, 2004), which – in the English language literature – have variously been referred to as: safer injecting rooms (Nadelmann *et al.*, 1999), drug consumption facilities (Dolan *et al.*, 2000; Kimber *et al.*, 2003) and a range of variations on these terms. Although most drug consumption rooms are concerned to reduce the harms associated with injecting drug use, some programmes also address the harms associated with smoking crack cocaine and heroin or using other drugs, hence the adoption of a more widely embracing term. They differ considerably in the detail of their organisation and delivery but there is now a growing consensus on the use of the term drug consumption rooms (DCRs) to describe this group of related programmes, which have been defined as:

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

(Akzept, 2000)

In order to inform the question of how experience with DCRs might relate to public health and public order issues associated with drug use in the UK, this review provides a summary of the evidence regarding the nature and level of needs across a range of relevant indicators (sources of evidence). In doing so, it appraises the main sources of UK evidence that are identifiable and identifies other indicators that may be relevant within future research.

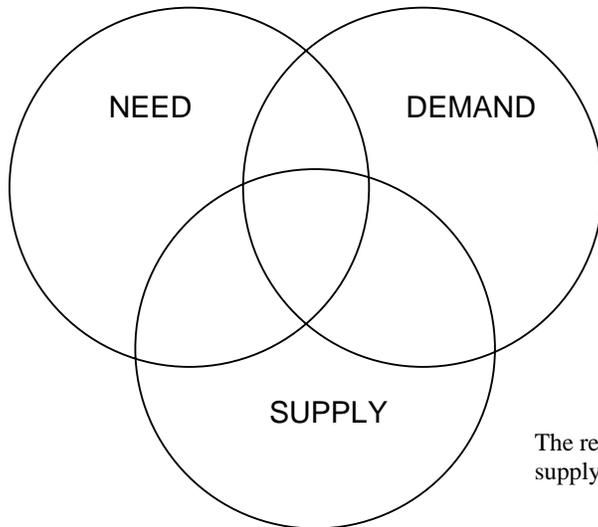
1.1 An epidemiological approach to needs assessment

Within evidence-based healthcare, the ‘epidemiological approach to needs assessment’ (EANA) is the main way in which needs assessment is understood and is an approach that has previously been applied to drug and alcohol services (Stevens *et al.*, 2004; Marsden *et al.*, 2004; Cook, 2004). The EANA regards the concept of *need* as a “population’s ability to benefit from health care”.

Need is distinguished from *demand* (want): as people may want treatments that do not work or have not yet been invented. So, it is meaningful to talk about *need* for a vaccination against hepatitis B

among injecting drug users (IDUs) but not for hepatitis C, as no such vaccination has yet been successfully developed.

Need is also distinct from *supply*; as people will sometimes provide services even though evidence would suggest that they are ineffective or detrimental, e.g. the earliest use of heroin or cocaine for treating opium or morphine dependence, which frequently compounded problems rather than alleviating them.



The relationship between need, demand and supply

(Stevens *et al.*, 2004)

The overarching aim within an epidemiological approach to needs assessment is therefore to maximise the overlap between *need*, *demand* and *supply* such that services which work are provided and used by the population with capacity to benefit from them. Strategically, this sometimes implies activities other than the development and provision of new, evidence-based services. It may sometimes also be necessary to *promote* the use of new interventions to a population with capacity to benefit, which is unaware of the treatment, does not understand its effectiveness or is misinformed about it – increasing the overlap between ‘need’ and ‘want’. Similarly, decommissioning and redeploying resources or ‘re-engineering’ services is sometimes implied – increasing the overlap between need and supply.

1.2 *The effectiveness of drug consumption rooms*

The epidemiological approach to needs assessment is predicated on having an understanding of the effectiveness of interventions. In reality, the evidence concerning effectiveness and the population’s capacity to benefit from any intervention is usually partial. In many

cases, the relevant research will have limitations with regard to the robustness of its design or its application to specific populations or cultural contexts. This is very much the case with regard to DCRs at present: where a plausible rationale exists for the way they might work and some evidence exists to show that they appear to confer benefits, in certain settings and to some degree, across a range of outcomes.

Several reviews of the evidence of the effectiveness of DCRs exist, such as those of Dolan *et al.* (2000), Kimber *et al.* (2003) and Hedrich (2004), which can readily be consulted in their original form. Furthermore, the evaluation literature has recently been updated and summarised in a companion report – *The evaluation literature on drug consumption rooms* (Hunt, 2006, forthcoming).

Consequently, this report does not focus on *effectiveness*. Instead, it suggests that evidence showing that DCRs may confer benefits in other countries exists to a sufficient degree for the question of their applicability within the UK to have become relevant. This paper therefore restricts itself to the question of what indicators of need arise across the range of areas where DCRs are currently thought to exert some effect.

1.3 Indicators of need

The impacts of DCRs occur in two broad areas: *health and social inclusion of drug users* and, *public order and crime*. Within each of these a number of specific concerns can be identified. Sections two and three of the review address these over-arching areas and consider them with reference to the question of what direct indicators might establish the extent of need in the UK. In each case, some of the more immediate, potential indicators are suggested. The review summarises the main, recent evidence for these. In some cases good evidence does not exist as some of these areas appear to have been under-researched. These are nevertheless included and discussed to encourage further research and to help better establish a level of need in the future, should others revisit this question subsequently. The review also includes findings from two pieces of research that were specially commissioned by JRF to remedy particular gaps identified in the evidence base with regard to a) the extent of public injecting by people attending needle and syringe programmes b) the social impact of public injecting.

Complementing these two sections, which form the main body of the review, section four briefly refers to a different indicator of need: need as evidenced through ‘bottom-up’ initiatives to try to introduce DCRs. Where local agencies have concluded that DCRs may meet the needs of people in their area, this may be viewed as an indirect indicator of need.

Finally, several reviews and reports have made direct recommendations concerning DCRs. Section five summarises these recommendations, which might also be viewed as indirect or ‘proxy’ indicators of need, insofar as others have drawn upon direct research evidence, the published literature, clinical experience, representations from local communities or other sources and directly concluded that DCRs may be of relevance.

2 Health and social inclusion of drug users

2.1 Hygiene and safety

Injecting and other drug use sometimes occur in environments that do not encourage good hygiene or safety. Acquiring blood-borne infections is one such risk, and is of such importance that it is considered independently, below. A number of the other risks nevertheless warrant consideration.

DCRs often target more marginalized drug users who inject or otherwise use drugs in public. Using drugs in public or quasi-public spaces typically means that hygiene is compromised. Clean water is often unavailable, opportunities for washing are frequently absent and maintaining a sterile, or even clean, environment is more difficult. Poor lighting and a need to consume drugs hurriedly further add to problems. Injecting in an unclean environment increases the risk of bacterial or fungal infection through injection sites, with accompanying problems such as cellulitis, endocarditis and abscesses. ‘Dirty hits’ – unexpected, acute adverse reactions to injecting – may also be attributable to poor injecting hygiene.

Some injection sites are more hazardous than others. For example, people who inject in the femoral vein have a heightened risk of hitting an artery or nerve, with corresponding risks of haemorrhaging or nerve damage. Other veins, such as those in the neck and fragile veins in sites such as the penis or breast, are also

riskier to use. DCRs provide an environment in which the more sustainable use of safer injecting sites may be promoted. For people who still inject in sites such as the femoral vein, DCRs might also enable a greater degree of care to be taken in a well-lit environment and in which a degree of privacy and dignity can be retained.

For people injecting drugs that require an acidifier – brown/base heroin and crack – there are risks of local tissue damage if too much of an acidifier, such as citric acid, is used. Conversely, using too little may mean that the drug is used inefficiently, meaning that more of the drug is required sooner. Again, DCRs are an environment in which better practice might be promoted.

Poor light and a lack of care when injecting may mean that veins are permanently damaged and collapse; problems that are also compounded by a poor understanding of the cardiovascular system and how to protect it by using good injecting techniques, such as by rotation of injection sites. Again, DCRs offer an environment in which better injecting techniques and vein care might be promoted.

In cases where batches of drugs with increased hazardousness are in circulation (once, for example, some injectors in Scotland were infected with clostridium infections from a contaminated source in 2000 or, exceptionally, where a batch of a drug has higher than usual purity) DCRs may provide a particularly effective environment for rapidly disseminating vital information to protect health.

By moving drug use into an environment that is free from harassment by police, the public or other drug users, greater care can then be taken. Hurrying the process introduces risks such as ‘missing veins’ and may mean that drugs are spilt or otherwise wasted. Although, superficially, it may appear that fewer drugs would be used and that this could be a possible benefit, in practice, for dependent drug users, it is more likely to mean that more drugs would be needed more immediately. If these are obtained through acquisitive crime or commercial sex work the exposure to risk and harms for the drug user or others may increase. Even where drugs are funded by legitimate income, wasting drugs may mean that a smaller amount of income is available for other expenses that

enhance the well-being of the drug user or their dependants, e.g. food or rent.

Hurrying drug use may, conversely, mean that too much is administered, with a corresponding risk of overdose (discussed separately). These considerations apply particularly to people who inject; however, they also have some application to crack and heroin smokers.

Hurried crack administration may result in the inhalation of the ash on which it is often prepared; potentially damaging the lungs. Administering crack through pierced drinks cans or other unsuitable equipment may mean that people also inhale smoke from paint or other contaminants, increasing the risk of harm. Where crack smokers are targeted, DCRs can also provide an environment in which transitions from a more intensive method of crack use (piping) can be encouraged towards a less intensive form (chasing).

The number of ways in which DCRs might enhance drug users' health and safety is extensive. This section cannot provide an exhaustive consideration of the issue but is more suggestive of the areas in which interventions might be possible, as outlined in the following list of potential indicators.

2.1.1 Injectors' basic hygiene when injecting, i.e. hand-washing and injecting site preparation

This has not commonly been a target for systematic research. Nevertheless, a recent study in Scotland used video data to investigate the detail of people's injecting practices. Out of 103 separate injections observed among 30 different people, there was only one instance where anyone washed their hands. In only 20/103 cases was a swab used to clean the injection site. On no occasion was the preparation surface wiped before use and on 15/65 occasions the surface was visibly unclean. Of the 57 filters used in the preparation episodes, none was disposed of and eight were kept in closed containers; a practice which is conducive to the multiplication of bacteria (Taylor *et al.*, 2004).

The Unlinked Anonymised Prevalence Monitoring Programme (UAPMP) has recently included an enhanced component that monitors injecting hygiene and found that in south west England,

less than one in five IDUs (68/402 – 17%) washed their hands before injecting (Health Protection Agency 2004) and only one-third (313/948 – 33%) always swabbed injection sites (Health Protection Agency, 2005).

2.1.2 Prevalence of local and systemic bacterial infections among people who inject

A retrospective case note study of soft tissue sepsis among 488 injecting drug users who attended an accident and emergency department in Glasgow found that in 150 cases (31%) there was evidence of either abscesses or cellulitis among patients presenting during the calendar year of 1986. The commonest sites were the wrist/forearm (31%), the antecubital fossa (the inner aspect of the elbow) (19%), fingers and hand (14%) and thigh or groin (11%) with infections also noted in the feet/toes, lower leg, upper arm, buttocks and neck (Stone *et al.*, 1990).

Within a local needs assessment in East London, Hunt (2002) used semi-structured interviews with 18 homeless and/or black and minority ethnic drug users to ask whether several forms of injecting-related harm had been experienced during the past year. Interviewees reported abscesses (10/18) and other infections (5/18) at the injecting site.

Additional qualitative data were gathered in response to the question:

As far as your general health and well-being is concerned what, if anything, do you see as your biggest concern at the moment?

“Having gangrene in my right leg.” (He showed the interviewers a gangrenous area 4 inches in diameter. He explained that he had been in hospital for treatment but signed himself out when they wanted to amputate.)

“I’ve got a slight abscess in my groin. I can’t find a GP to sign up with. There’s not enough information regarding stuff like that.”

In a welcome development, the *Health Protection Agency* (HPA)(2005) has recently begun trying to capture and

systematically report data on bacterial infections among people who inject because of a growth in awareness of the prevalence of these infections and corresponding public health concern. They have found that: three-fifths (555/952) of participants in their pilot work reported having a possible symptom of an infection at an injecting site in the past year, over a third (344/952) reported an abscess, sore or open wound; and over half of all respondents reporting one or other problem had sought medical attention (341/645).

The pathogens currently considered by the HPA are: staphylococcus aureus, of which Methicillin Resistant Staphylococcus Aureus (MRSA) is an important example, streptococcal infections and clostridial infections such as botulism, tetanus and clostridium novyii (summarised below).

Staphylococcus Aureus

Typically, staphylococcal infections are with the Methicillin sensitive strain that is relatively amenable to treatment. However, cases of MRSA are now also being noted:

Between April 2003 and March 2005 a total of 37 cases of injecting drug use related sepsis due to MRSA have been identified from geographically distinct areas throughout England and Wales. There were 25 males and 12 females; 20 presented with injection site abscesses or skin infection, 11 with bacteraemia, and two with endocarditis (clinical data were not available for four). Cases are continuing to be reported.

(Health Protection Agency, 2005)

Streptococcal infections

Group A streptococci (GAS) can cause skin sepsis, bacteraemia and necrotic infections among IDUs through infection of injecting sites. 25. Although routine laboratory reports of invasive GAS infections to Centre for Infections (Cfi) rarely contain information on risk factors, isolate referrals to the HPA's Respiratory and Systemic Infection Laboratory (RSIL) do contain such information. Monitoring of these has identified a rise in referrals from IDUs,

from less than ten per annum in the early to mid- 1990s to 81 in the first nine months of 2002. A total of 281 invasive GAS reports in IDUs were received in 2003 and 143 in 2004.

Most cases presented with skin sepsis, bacteraemia and evidence of tissue damage at the injection site, which ranged from extensive oedema to necrosis. The majority were sporadic cases but several clusters were also identified. Serotyping data has revealed a diverse range of types. The geographical and temporal dissemination along with the serological typing data do not suggest a drug contamination problem.

(Health Protection Agency, 2005)

Wound botulism

Although this is a more established problem in the USA (Passaro *et al.*, 1998), no recent cases had been identified in the UK prior to 2000.

...by the end of 2004 a total of 89 cases have been reported in the UK and Eire. Overall, 70 (79%) of the cases occurred in England, 13 in Scotland, 2 in Wales and the remaining 4 in Eire. No cases were reported from Northern Ireland. Overall, 40 (45%) of the 89 cases were laboratory confirmed by the detection of botulinum neurotoxin in serum (33 cases), or by the isolation of *C.botulinum* from wounds (25 cases). Based on the neurotoxin detected or the *C.botulinum* isolated from the 40 laboratory confirmed cases, 35 were due to type A, three to type B and two to types A and B.

During 2004, 41 cases were reported, and 36 of these were in England. There was some geographical clustering with cases being concentrated in two regions of England: Yorkshire and Humber, and London.

(Health Protection Agency, 2005)

Symptoms of botulism include blurred vision and difficulty in swallowing and speaking; it can also result in paralysis and death. However there is an effective antitoxin. When it infects wounds, including injecting sites, it causes wound botulism.

Tetanus

Similarly, tetanus had rarely been reported before 2000 but is now being encountered more often.

An outbreak of tetanus among in IDUs occurred in 2003 and continued into 2004 with 23 cases reported in England and Wales the majority had generalised tetanus and two cases died. There were also three cases in IDUs, one of whom died, notified in Scotland during 2003 and 2004. Most cases reported subcutaneous injection of heroin ('skin popping'), and the majority were in women with the male cases being older. Many cases were un-immunised or partially immunised and most had tetanus antibody levels below the protective threshold. The widespread distribution of the cases within the UK suggest that the outbreak may have been due heroin being contaminated with tetanus spores relatively high in the supply chain. This has led to vaccination guidance for IDUs being updated to ensure that their tetanus immunisation status is actively checked.

(Health Protection Agency, 2005)

Other Clostridial infections

During 2000 a widely publicised series of deaths were due to a clostridial infection (*Clostridium Novyi* in most cases) that was attributed to a batch of contaminated heroin (as was the tetanus outbreak above). In Scotland, 60 cases (23 definite/37 probable) were identified. Twenty out of twenty-three (87%) of the definite cases died (McGuigan *et al.*, 2002). In England, 26 definite or probable cases were identified, of whom 13 (50%) died (Jones *et al.*, 2002).

During 2003 there was also an outbreak of *Clostridium Histolyticum* across nine cities and towns across the UK.

Laboratory work has shown that *C. Novyi* spores can easily survive the "cooking-up" process prior to heroin injection. There have been reports of *Clostridium histolyticum* infection among IDUs, some of whom also had tetanus. Molecular typing has revealed that isolates from cases across the UK in 2003 were indistinguishable indicating a common source of contamination.

(Health Protection Agency 2004, 2005)

2.1.3 'Dirty hits'

'Dirty hits' are an acute, adverse reaction to the injection of a drug. Although they are quite commonly discussed by IDUs they have not been the subject of systematic study. They are not specific to any single substance, having been reported in connection with heroin and amphetamine. One ethnographic account reports that they "involve pain, raised temperature, a burning sensation leading from the injection site and felt moving around the body, stiffness, aches reminiscent of flu and a profound loss of energy". Their causation is unclear but they are attributed by injectors either to adulterants in the 'powder' or unclean injecting technique (Shelley *et al.*, 1993: 37–38). In some cases, measures employed to prevent them may increase risk, as in this account from Taylor *et al.*, (2004:18):

Licking the needle tip was observed on 12 occasions. When asked why they did this, one IDU replied: "It's a habit. I don't know why I do it. It removes dirt so I don't have a dirty hit."

In the east London study referred to previously, Hunt (2002) found that 13/18 interviewees reported experiencing 'dirty hits' during the past year.

2.1.4 Injecting sites, technique and the cardiovascular system

Taylor *et al.* (2004) found that "103 recorded administration episodes included 38 injections into the arm, 35 into the groin, 11 into the leg, nine into hands, seven into the neck, two into the 'blood bank' (under the upper arm) and one into the stomach. Six of the 30 participants injected into more than one area. One individual injected into her arm, hand, leg and stomach over five observations". As well as the risks inherent in using deeper, major blood vessels such as the femoral vein, poor injecting technique and vein care can cause 'collapsed veins', progressively requiring the use of more fragile or inaccessible veins and contributing to venous insufficiency.

Within a survey of 47 'groin injectors' in Bristol, approximately two-thirds of interviewees had experienced difficulty finding the femoral vein, with some participants reporting scar occlusion of the vein, swelling, pain, a history of infection and deep vein thrombosis (Maliphant and Scott, 2005). The extent of these problems within the wider population of injectors remains uncertain.

The study of soft tissue sepsis among IDUs by Stone *et al.* (1990) summarized earlier is indicative of the range of veins that are used to administer injections. Similarly, alongside a series of bacterial infection, Hunt (2002) found that eleven out of eighteen homeless and/or black and minority ethnic drug users reported that they had experienced 'collapsed veins' within the past year.

A study in Manchester has reported that among a sample of young homeless heroin users, injecting was common and injecting hygiene and technique was poor, with many people starting to inject in the femoral vein (Linnell *et al.*, 2001).

They would inject at a flat or friends house, in a toilet or just in the street. Heroin was cooked up on the street usually in a cut down coke can. This would be wiped 'clean' with a swab. It was rare to find people cleaning an injection site before a hit; swabs were used to wipe the site after injection. It was usual to inject in the crook of the arm to start off with, a large number were injecting in the groin even if they still had surface veins. Part of this was for cosmetic reasons; the groin is hidden even when wearing shorts. If they had no visible track marks they could get into a hostel and were less visible. Part of the reason was that older users were showing them how to inject in the groin, assuming it to be a better hit

"Some people go straight in the groin. They might not want people to know that they're injecting, especially in the summer because you want to wear a T-shirt and you're not going to do that with track marks all over your arms."

"It's the people who are in contact with their family, because they can go back to the family and they can't see any marks, they can hide it."

"I've seen people with holes in their groin that you could get 4 pins in."

"People miss loads of times. He's done it to me loads of times and missed. I miss because I don't know how

to do it and I've not read the Dig leaflet" (Lifeline injection guide he was looking at).

"They're not bothering to go in their arms, they're just going straight in your groin, cause it's quicker and easier. People think you get a better rush, it hits you faster."

Although selection of the smallest needle necessary successfully to find a vein, and aspects of injecting technique, such as the angle of the needle's penetration, are likely to relate to venous health, no studies of this aspect of injecting have been identified. Nevertheless, video data of 103 successful injections noted 79 corresponding, unsuccessful attempts to find a vein (Taylor *et al.*, 2004).

The use of acidifiers, such as citric or ascorbic acid, in the preparation of 'base' forms of heroin has an effect on injecting efficiency (Scott *et al.*, 2000). Similar acidifiers are used for crack/freebase cocaine. If used improperly, acidifiers may cause local irritation and fungal infections have been reported as a result of the use of lemon juice supplied for culinary use (Strang *et al.*, 2001). Improper use of such acidifiers is indicative of a need that might be met within DCRs alongside provision within conventional needle exchange programmes. Within a London sample, Strang and colleagues found that citric or ascorbic acid was used in 90% of cases where base/brown heroin was used, although it is uncertain how widely this reflects practice elsewhere in the UK. An evaluation of the provision of single-use sachets of citric acid to 360 IDUs in Scotland (Garden *et al.*, 2003) found that these achieved good acceptability and points to opportunities to meet needs of this kind within DCRs.

2.1.5 Rapidity with which information about hazardous batches of drugs is disseminated

Largely as a result of recent, often fatal, outbreaks of bacterial infections among IDUs (summarised above) the National Treatment Agency (NTA) has proposed that "Where apparently contaminated drugs (either bacterially or chemically) are available in a locality, messages should ideally be communicated to drug users via health and drug treatment providers as well as through the police and criminal justice system" and make some

recommendations about how this can best be coordinated (National Treatment Agency, 2004).

The potential for people to take effective self-protective actions is influenced by the speed with which they receive relevant information. Although DCRs might be an effective setting in which this could take place, at present there appear to have been no studies into the efficiency of existing communication systems, which would provide a baseline that would allow any such improvements to be measured.

2.1.6 Respiratory health of people who inject and crack/heroin smokers

Anecdotally, clinical accounts of the poor respiratory health of crack and heroin users are commonplace, with reports of impaired respiratory function, drug-specific phenomena ‘crack lung’ and neurological problems that seem contingent on heroin smoking (see Hill *et al.*, 2000 for a review of the latter). Shannon *et al.* (2006) also describe problems associated with crack smoking that they consider likely to be addressed within facilities that target crack smokers, e.g. sharing crack pipes, burns and inhaling debris. Nevertheless, no systematic population studies in this area seem to have been undertaken within the UK.

To compound these risks, tobacco smoking is the norm rather than the exception within populations of heroin and crack cocaine users and the NTA identifies ‘smoking related disease’ as a contributor to long-term causes of death among drug users. The NTA recommends that services provide “the opportunity to address nicotine dependence, including referral to specialist smoking cessation workers where necessary” (National Treatment Agency, 2004); a function that might be undertaken within DCRs as well as other drug services.

2.1.7 Wastage/efficiency of drug administration

In addition to the impact of acidifiers on injecting efficiency, when people miss the vein while administering an injection the drug may be wasted. However, no studies have been identified that quantify ‘missed hits’. It nevertheless seems worthy of note that in some areas, local authorities sometimes install blue lights to deter injecting in public amenities. These are intended to make it more difficult to find a vein and therefore deter injecting. No published

studies are available of the effectiveness of these lights and it seems likely that their impact is more likely to displace injecting rather than deter it. Whilst these lights might reduce the immediate nuisance in an area, if they work at all they may simultaneously have a detrimental effect on public health. For a discussion on the use of blue lights see Flemen (2003).

2.1.8 Injecting pills and other formulations that may occlude blood vessels

Under certain circumstances – where rules restricting their use are applied – DCRs could operate to discourage the use of crushed tablets and other formulations that carry increased risks. Conversely, DCRs may enable greater care to be taken to minimise the risks of such practices by permitting more careful preparation and filtration. Risks arise due to the introduction of particulate or highly viscous matter into blood vessels and their resulting occlusion, which impairs the circulation and can result in tissue necrosis.

Various opiate tablets can be injected, such as dihydrocodeine (DF118s), morphine sulphate (MST) and methadone. During the mid-1980s, the UK had particular problems with the injection of benzodiazepine tablets and a viscous formulation of temazepan (Gelthix)¹, the latter of which causes a particularly high rate of morbidity (Strang *et al.*, 1994). From their sample of IDUs gathered across seven treatment centres in the UK, the researchers found that 103/184 people who injected had done so with benzodiazepines.

More recent data on pill-injecting has not been identified. Nevertheless, the prevalence of pill-injecting is an indicator of a further specific safety issue that DCRs may help to address.

2.1.9 Drug users' comfort and sense of safety regarding their drug using environment

As has been noted, drug users' comfort and sense of safety may affect the efficacy of injecting and reduce risk. However, this does not appear to have been a target for research in the UK and no systematic studies have been identified for this review.

¹ This formulation has now been taken off the market because of this problem.

Nevertheless, qualitative responses within Hunt's study (2002) suggest a range of injecting hygiene-related risks and accompanying health problems among homeless, injecting drug users. Alongside these, there appears to be some expressed need for DCRs, with indications that, among other things, this sometimes relates to comfort/sense of safety:

Are there any services for you as a drug user that should be there but aren't?

"A place to go to inject so you're not on the street and worried about little kids and coppers seeing you. A little place you could go."

"Somewhere I can go and get medical treatment and advice about safer injecting. As a homeless drug user. Somewhere I can go and sit as a relief from the outdoors."

"They should open later and Sundays. Also give out vit C, filters and water cos that ain't always easy to get for free anyway. And it's murder when ya bangin it and ain't got what ya need to have a hit. I've had to use water from a puddle before. It looked clean. I suppose cooking it up cleans it a bit. It ain't good though is it? Someone to give homeless people advice on places we can go for food, to sleep and get advice in general. Help to fill in forms and that."

"Having to rush where there's nowhere to do it properly (inject) and you're worried about coppers coming."

2.2 Emergencies other than overdose

DCRs provide a managed environment in which first aid can be administered and emergency help summoned or provided. DCRs also enable help to be provided in the case of drug related emergencies that occur in their vicinity. Early intervention can reduce morbidity and mortality; it may also reduce the need for emergency services and hospitalisation.

Heroin overdose with respiratory depression is the main type of emergency that occurs in connection with illicit drug use. This is

considered in more detail within the section on overdose. Within studies of DCRs, attenders sometimes experience epileptic seizures and cocaine-related emergencies – hyperventilation, panic attacks and restlessness. Allergic reactions are rare but one fatality arising from anaphylaxis has been documented (Gerlach and Schneider, 2003).

Where people experience epileptic-type seizures, DCRs could enable injuries to be reduced as well as enabling a clear airway to be maintained. A supervised environment could also lead to better diagnosis, prevention and future management, as skilled observation may assist with subsequent care (loss of consciousness and post-ictal amnesia (after a fit) often means that the sufferers themselves are poorly placed to provide a good description of the event to a doctor).

In cocaine emergencies, better management may alleviate anxiety-related symptoms more rapidly. This could reduce the risk of cardiovascular events such as heart attacks, and also reduce the risks of behavioural hazards associated with agitation and irritability.

Within the rare cases of allergic and other acute reactions, effective, earlier intervention (e.g. adrenaline administration for anaphylaxis) could be possible.

Presentations to accident and emergency services associated with bacterial infection (previously discussed) are not necessarily true *emergencies* and may also reflect factors such as poor access to general primary care services or reluctance to use them. Nevertheless, a recent study in South West England has estimated the prevalence of illegal drug use among emergency department patients and aspects of the associated healthcare burden (Binks *et al.*, 2005). Time sampling was used to generate a sample spanning all 168 hours of the week and people were only omitted if their condition was life-threatening, if they had chronic mental impairment, or if they were unable to give informed consent. Consent was withheld in 11 further cases. An independent interviewer found that 55/801 (6.9%) cases were directly or indirectly drug related, of which 23 (2.9%) required hospital admission. The majority of problems were acute injuries, overdose and medical complications of drug use (e.g. cellulitis, chest pain

and deep vein thrombosis). It is not certain that all these cases would be averted if a DCR was available. Nevertheless, the results are suggestive of the size of the population that DCRs would have the potential to affect, and it seems likely that some of these emergency department attendances and hospital admissions could be prevented.

Emergencies may also become identifiable through other agencies, most obviously ambulance services and the police. With regard to emergencies other than overdose, the following indicators might also usefully inform the extent of problems in this area and provide baseline data that could allow any impact of DCRs to be evaluated: a) incidence of non-overdose, drug-emergency-related '999' calls; and b) severity of outcomes from non-overdose emergencies.

2.3 The extent of 'problem drug use' in different populations

'Problem drug use' (PDU) is defined by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) as "injecting drug use or long duration or regular use of opiates, cocaine and/or amphetamines" (EMCDDA, 2005: 60). It is these forms of drug use that are most commonly addressed within DCRs.

Extent can be examined with reference both to national samples and prevalence within particular populations, such as the homeless or commercial sex workers, whose drug use is often associated with heightened risks and needs for specialised health and social care services.

2.3.1 Prevalence of 'problem drug use' in general/national samples

The British Crime Survey (Roe, 2005: 28) is a national survey that measures the extent of use for different drugs across England and Wales. Because a number of key populations such as prisoners and the homeless are not included, this is thought substantially to underestimate true rates. Nevertheless, the 2004/2005 survey estimates that there were between 26,000 and 57,000 people who had used heroin, 21,000 to 50,000 who had used crack cocaine; and 382,000 to 485,000 who had used amphetamines.

The Health Protection Agency (2004) has summarized data on the prevalence of injecting within Great Britain, reporting that:

The National Survey of Sexual Attitudes and Lifestyle reported that for those aged 15 to 44 years 1.3% in 2000 had “ever injected” compared to 0.8% in 1990 (Wadsworth *et al.*, 1996; Johnson *et al.*, 2001). The number of opiate overdose deaths increased five-fold from 1990 to 2000 (National Statistics, 2004) and a pilot back-calculation model suggest that in 2000 there may have been between 100,000 and 150,000 current IDUs (0.5% to 0.7% of those aged 15 to 44) (De Angelis *et al.*, 2004).

It is noteworthy that the estimates generated by De Angelis *et al.*, (2004) also suggest that heroin use/injecting may be increasing and point to a possible threefold increase in England between 1990 and 2000. Such calculations may also mask considerable variation between different cities/towns. Hickman *et al.*, (2004) have recently estimated that in selected cities within England the prevalence of injecting ranges from 2.0% of those aged 15 to 44 years in Brighton to 1.2% in London, but these are believed to be high prevalence areas.

The most recent estimate of problem drug use for England calculated that there were 287,670 PDUs in 2001 (Frisher *et al.*, 2004).

More recent estimates exist for Scotland, where it has been estimated that there were 51,582 PDUs in 2003 (Information and Statistics Division, 2004).

Within Northern Ireland (population 1.7 million), McElwrath (2002: 33) has used several different estimation methods and produced a corresponding range of assessments of the number of ‘problem heroin users’ as follows:

Method	Estimate	Range
Capture-Recapture	828	695–1018
Mortality multiplier		1050–2100
Addicts Index Multiplier	1265	

There are no recent, published studies for Wales. However, if it is assumed that prevalence in Wales is the same as that for England (8.91 per 1,000 population aged 15–64) this would mean that there were an estimated 356,593 PDUs in the UK overall.

It is of note that the recent EMCDDA annual report shows that problem drug use in the UK occurs at a higher rate than in any other country in the European Union (2005).

2.3.2 Crack cocaine use

An important developing feature of problem drug use in the UK is the increasing use of crack cocaine. Surveys have shown increasing levels of crack use in the UK and increasing numbers of crack users are presenting themselves to treatment services (Home Office, 2002). Crack is frequently used alongside heroin: sometimes simultaneously in a single injection in the form of ‘speed-balling’ but more often as separate (but reinforcing) elements of a drug habit. While crack and cocaine are more often inhaled, they can also be injected, and primary cocaine injectors tend to inject more frequently than heroin users (Friedman *et al.*, 1990; Mann *et al.*, 1992; McCoy and Inciardi, 1995) and report higher levels of risk behaviours (HPA, 2005). Furthermore, users of both crack and heroin are associated with particularly high rates of offending among those arrested by the police (Holloway and Bennett, 2004).

2.3.3 The ‘homeless’

The term *homeless* may refer to different groups including the roofless/rough sleepers and people with no secure accommodation, e.g. people living in squats, hostels or transiently staying at friends’ houses. Often, ‘homeless’ people’s accommodation fluctuates between several of these alternatives.

A structured questionnaire was used to gather data from 389 *homeless* people from within inner London during 2000. Three hundred and twenty four respondents (83%) had used an illicit drug in the previous month; 157 of these recent illicit drug users (48%) had also injected in the previous month; 139 (36%) of the sample were also assessed as being dependent on heroin (Fountain *et al.*, 2003a, 2003b).

Studies of *Big Issue* vendors also give some indication of the prevalence of drug problems among the homeless. In 2000, 57% of 362 *Big Issue* vendors from Manchester, Leeds and Liverpool reported that they had drug problems (*Big Issue* in the North, 2000). Although no distinction is made within the data between different drugs, 'drug problems' seems likely to include a large proportion of people who inject or use heroin and crack cocaine.

There is also evidence that a significant proportion of users accessing treatment or admitted to hospital are homeless. The National Treatment Outcome Research Study (NTORS) showed that 7% of its cohort of over 1,000 drug users starting a new episode of treatment were homeless (Gossop *et al.*, 2001). Similarly, the Drug Outcome Research in Scotland (DORIS) study identified 15% of users initiating treatment as being homeless (McKeganey *et al.*, 2005). Neale (2001) found that 32% of a sample of 200 users who had been admitted to accident and emergency departments in Scotland following an overdose were homeless.

Research with an explicit focus on street drug use/street injecting in the UK is disappointingly rare within the literature. Nevertheless, during the first half of the 1990s Hilary Klee and colleagues produced several papers that examined 'street injectors' and focused on homelessness as a specific risk factor among injecting drug users. These are worth summarising in detail and were based on two studies in the north west of England: a semi-structured interview study of 303 injecting drug users drawn from across a range of drug services between March 1988 and July 1989; and a semi-structured interview study of 250 polydrug users interviewed in 1992.

Two papers discuss the earlier study:

- Klee H *et al.* (1990) Factors associated with risk behaviour among injecting drug users. *AIDS Care*. 2(2): 133–145.
- Klee H (1991) Homelessness among injecting drug users: implications for the spread of AIDS. *Journal of Community & Applied Social Psychology*. 1(2): 143–154.

And one paper discusses street injectors within the second study,

- Klee H and Morris J (1995) Factors that characterize street injectors. *Addiction*. 90(6): 837–841.

Study 1

In the first study, 35 out of 303 respondents were homeless. Marked, statistically significant differences emerged across a number of variables relating to drug use, injecting risk behaviours, drug treatment and crime, although the smaller size of the homeless population means that the confidence intervals for these variables are quite large.

The homeless respondents emerge as a group that:

- use larger amounts of drugs
- use drugs more frequently
- have far poorer treatment engagement
- have higher levels of disorganisation
- have poorer knowledge
- share injecting equipment far more often.

(See Appendix A.)

Klee *et al.* acknowledge that it is impossible to determine whether homelessness “*is symptomatic of tendencies towards a chaotic life-style or causa*”. Regardless, it was concluded that “*homeless individuals should be identified as people most at risk and special efforts should be made to stabilise their domestic environments*”. This begs the question of whether DCRs could contribute to this stabilisation by enhancing access to treatment and reducing sharing of injecting equipment for homeless injecting drug users.

Study 2

This study presented findings on 56/250 polydrug users who regularly injected in public places as follows: streets, parks and other open places (39), more sheltered places such as pub toilets and cars (38), both more exposed and sheltered settings (21). Analyses of ‘street injectors’ were conducted on the aggregated set of people who injected in one or both of these environments.

Of particular note here was the increased likelihood that street injectors:

- live with their parents
- are homeless
- use crack cocaine
- use high doses of temazepam
- inject more frequently
- are not vaccinated against hepatitis B
- have experienced a non-fatal overdose
- have vascular problems.

(See Appendix B.)

With regard to blood-borne virus risks, street injectors were also more exposed to risk than other people who inject and were more likely to:

- pass on used injecting equipment
- use other people's injecting equipment
- perceive sharing as safe
- inject with friends
- inject in a group
- have higher numbers of sexual partners
- have casual sexual partners.

(See Appendix C.)

These findings are strongly indicative of a need to reduce equipment sharing among street injectors, who are more likely to use collectively and have higher levels of sharing than other IDUs. If it were feasible to provide DCRs in a way that shifted people away from street injecting towards a managed environment these risks seem likely to be reduced.

Klee *et al.* also noted that injecting was performed soon after acquiring the drugs with locations chosen on the basis of convenience and privacy. This suggests that in common with observations elsewhere, were a pilot study of DCRs undertaken in the UK, locating said study near to the place where people obtain drugs is likely to determine the extent of its use and any eventual benefits.

Recently published qualitative work undertaken in the UK amongst homeless injecting drug users with a confirmed diagnosis of hepatitis C has highlighted the health risks of public injecting. Users reported picking up and using needles which had been discarded on the street; preparing drugs with water drawn from toilets, puddles or discarded bottles; and using discarded cigarette ends as filters (Wright *et al.*, 2005).

2.3.4 Commercial sex workers

The overlap between problem drug use and sex work has consistently been observed (McKeganey and Barnard, 1996; Ward *et al.*, 2000). A survey of 125 commercial sex workers (92 women and 33 men) who were working in a range of sectors (street-based, sauna, massage and escort service and from crack houses) in London found that the use of heroin and crack cocaine during the past year was common across all three age groups included in the study (Cusick *et al.*, 2003). Questions on injecting were not included. However, 98 respondents reported problematic use, of whom the majority (72%) mainly worked outdoors or as ‘independent drifters’.

	% Age 16–19	% Age 20–24	% Age 25+
Heroin	50	37	50
Crack cocaine	81	43	67

A separate study of commercial sex work within different settings across Leeds, Glasgow and Edinburgh has compared rates of drug use between women whose work is predominantly either outdoors or indoors and points to overlapping hazards between outdoor sex work and injecting (Church *et al.*, 2001).

Use within the past 6 months	Outdoors (<i>n</i> =115) <i>n</i> (%)	Indoors (<i>n</i> =125) <i>n</i> (%)
Heroin	90 (78)	6 (5)
Tranquillisers	43 (37)	99 (79)
Crack cocaine	37 (32)	5 (4)
Injected in past month	56 (49)	4 (3)
Experienced violence in past 6 months	58 (50)	32 (26)

2.4 Blood-borne viruses and risk-behaviours

Injecting is strongly associated with the transmission of blood-borne viruses (BBVs), most notably HIV, hepatitis B and C. Transmission occurs when injecting equipment is shared. The risks are almost certainly highest from the sharing of needles and syringes but are also thought to arise in connection with the sharing of other injecting paraphernalia that may be contaminated with blood: spoons/cookers, filters, water, acidifiers and tourniquets. After controlling for other factors, hepatitis C transmission has been demonstrated in association with 'cookers' and filters/'cottons' (Hagan *et al.*, 2001). Certain practices used to divide drugs between two or more people (frontloading and backloading) are also associated with HIV infection (Jose *et al.*, 1993).

DCRs provide an environment in which the sharing of injecting equipment is directly avoided by design and from which it might also be more generally discouraged within other settings. Similarly, viral testing with suitable pre and post-test counselling may be provided directly among the various ancillary services or sometimes via referral. Within the UK, which does not currently have whole-population coverage with hepatitis B immunisation, DCRs would be an additional setting in which immunisation might be provided.

To the extent that DCRs may have an impact on the risk behaviours known to contribute to the transmission of BBVs, these can be regarded as indicators of need. By contrast, any evaluation of the impact of DCRs should be concerned with changes in these rates and, ultimately, any associated decrease in the prevalence of BBVs. Need is also indicated by the proportion of an eligible population that has not received immunisation, viral testing or treatment for BBVs.

2.4.1 Prevalence of hepatitis C (HCV)

According to the national Unlinked Anonymised Prevalence Monitoring Programme (UAPMP), among IDUs the overall prevalence of hepatitis C (HCV) in England, Wales and Northern Ireland was 41% for 2004 and 20% for those who first injected in the past three years (Health Protection Agency, 2005). With the

sole exception of 1998 – the year in which HCV prevalence was first measured in the programme – HCV prevalence has risen consistently, year-on-year; an observation that is consistent with a recent study of new injectors that found an unexpectedly high incidence rate – 41.8 cases per hundred person years (Judd *et al.*, 2005).

In Scotland, HCV prevalence among people who had received confidential tests was 44% for 1999/2000 (Hay *et al.*, 2001) and incidence has most recently been estimated at 29 cases per hundred years' injecting (Wadd *et al.*, 2003).

2.4.2 Prevalence of HIV

In England and Wales, HIV prevalence among people attending drug services during 2004 was 3.9% for those in London and 0.6% for those elsewhere (Health Protection Agency, 2005). HIV surveillance among IDUs in Scotland suggests that HIV prevalence is also in the order of 0.5%. However, a recent cohort study in England has found a higher than expected anti-HIV rate among newer injectors – 3.4 cases per hundred person years – which has given concern that historically low rates may now be climbing (Judd *et al.*, 2005).

2.4.3 Prevalence of hepatitis B (HBV)

In 2004, 21% of participants from England, Wales and Northern Ireland in the UAPMP had evidence of previous or current hepatitis B infection (Health Protection Agency, 2005).

2.4.4 Prevalence of hepatitis A (HAV)

In recent years, outbreaks of HAV have increasingly been observed among people who inject. HAV may be transmitted through sharing injecting equipment but also via the oro-faecal route as a result of poor hygiene. Outbreaks have occurred within the South West, West Midlands, Yorkshire and Humber regions, Aberdeen and Ayrshire (Health Protection Agency, 2004).

2.4.5 Proportion of people who know their current status for HIV, hepatitis B and hepatitis C

Viral testing for people who have been exposed to risk is encouraged because it may help people take additional measures to reduce viral transmission and enables people to access treatment, as required. UAPMP data show that in 2004, 67% of

current and former injecting drug users in England, Wales and Northern Ireland had 'ever' had a voluntary confidential test for HCV (Health Protection Agency, 2005). Lifetime measures are somewhat insensitive as they do not reflect risk exposure since the last test. The hepatitis C strategy for England has a stated aim of increasing the "The proportion of those attending treatment and support agencies for injecting drug users who are aware of their hepatitis C infection" (Department of Health, 2002).

In 2004, 49% of anti-HCV positive IDUs from England, Wales and Northern Ireland within the UAPMP were unaware that they were infected. A similar proportion (50%) of people who were anti-HIV positive did not know of their HIV infection (Health Protection Agency, 2005).

2.4.6 Proportion of 'at-risk' drug users who are immunised against hepatitis B

Hepatitis B is a preventable infection for which a course of three vaccinations provides protection for most of the population. In 1999, the Department of Health recommended vaccination against hepatitis B for the following groups:

- current injecting drug users;
- those who inject intermittently;
- those who may 'progress' to injecting, for example people who are currently smoking heroin, heavily dependent stimulant users and non-injecting drug users currently living with injectors (particularly women who are living with male injectors);
- close household contacts (particularly sexual partners) of injecting drug users.

In a study conducted in 2000 of all 539 drug agencies in England and Wales, just 2 in 10 agencies said that they routinely offered hepatitis B vaccination (Winstock *et al.*, 2000).

Another study in 1996 of patients with hepatitis C attending a liver disease clinic, found that 60% of the people with a history of injecting drug use were still susceptible to hepatitis B infection, but none of them had been offered vaccination (Lamagni *et al.*, 1999). This was despite the fact that co-infection with both viruses is likely to increase the risk of serious liver disease.

In 2004, 51% of people who began injecting in the previous three years reported that they had been vaccinated against HBV (Health Protection Agency, 2005). For all current and former injectors this rate was higher at 56%, suggesting that a large proportion of people with capacity to benefit from immunisation do not currently receive it.

2.4.7 Sharing rates for needles/syringes and other paraphernalia including cookers, filters, water, tourniquets

Between 1992 and 1997 in England and Wales, sharing of needles and syringes remained at a relatively steady rate, just below 20%. In 1998 rates increased to around 30% and this rate has been maintained until 2004, which may explain the climbing HCV infection rate and indications of a recent increase in HIV infections.

Behaviour	Country	Population	%
Passing on or receiving used needles or syringes in the past month (self-report)	England, Wales and Northern Ireland	Current injectors	28
		Current injectors aged up to 24	36
		People who began injecting in the past 3 years	27
Sharing of needles/syringes in the past month	Scotland	Current injectors	34
Sharing of any equipment in the past month	England, Wales and Northern Ireland	Current injectors	55

Source: adapted from Health Protection Agency (October 2005)

2.4.82.4.8 Incidence of backloading/frontloading

The division of doses of drugs between syringes (syringe-mediated sharing) has been investigated by Hunter *et al.* (2000). Within a community-based sample of 1,214 IDUs they investigated risk behaviours within the previous four weeks and found the following reported rates:

Filled syringe with one that had already been used by someone else?

	Yes	Frequently	Sometimes	Hardly	Never
<i>n</i> = 1,206	20.8%	2.3%	7.9%	10.6%	79.2%

Let someone else fill their syringe from one that you had already used?

	Yes	Frequently	Sometimes	Hardly	Never
<i>n</i> = 1211	24.9%	2.1%	9.9%	12.9%	75.1%

‘Backloading/frontloading’ has also been directly observed in Scotland by Taylor *et al.* (2004).

2.4.9 Incidence of needlestick injuries among people who inject

Although it is more common to think of the risks of needlestick injuries that discarded injecting equipment pose for the general public, the population most at risk of experiencing needlestick injuries appears to be drug injectors themselves. A study of 179 IDUs in Kent found that 54 (30%) had ‘ever’ experienced a needlestick injury, with 32 of these (18%) having received a needlestick injury in the past year (Hunt, 1997). It seems likely that a proportion of IDUs who adopt self-protection behaviours and avoid sharing needles and syringes will still be at some residual risk of needlestick injuries from discarded or carelessly stored needles, suggesting that this is one of a number of specific health risks that DCRs may also help to prevent.

2.5 Overdose

When used in isolation or in conjunction with other central nervous system depressants such as alcohol or benzodiazepines, heroin (and other opioid) overdose is an important contributor to drug related deaths. Temporary anoxia, associated with non-fatal overdose, is also thought to contribute to additional morbidity among heroin users by starving the brain of oxygen and causing brain damage. Warner-Smith *et al.* (2002) have found that non-fatal overdose is associated with: physical injury, burns, assault

while unconscious, peripheral neuropathy, vomiting, temporary paralysis of limbs, chest infection and seizures. DCRs provide a managed environment in which signs of overdose can be recognised and responded to earlier; minimising anoxia and averting deaths. They also provide opportunities for promoting better prevention and management of overdose by drug users that can be applied in other settings, e.g. calling emergency services or applying CPR.

2.5.1 Drug related deaths

Drug related deaths are one of the most important headline indicators of drug related harm although data quality is subject to several well-known limitations (ACMD, 2000: 31).

Since 1996, the UK has consistently reported the highest number of drug related deaths in Europe (EMCDDA, 2005), although the number has declined slightly in recent years. In much of Europe, problem drug users have an annual risk of mortality of over 1%, which is fifteen or more times higher than the young adult (15–44) general population; potentially contributing over 10% of young adult mortality (Hickman *et al.*, 2003; Bargagli *et al.*, in press).

‘Overdose’ is not treated as a distinct category within mortality data published either by the Office for National Statistics or the National Programme on Substance Abuse Deaths (np-SAD) (National Statistics, 2005; Ghodse *et al.*, 2005). However, ‘overdose’ deaths contribute substantially to these and there is now an agreed protocol for monitoring drug related deaths that excludes deaths that would largely be outside the province of drug services, e.g. paracetamol overdose.

Fatal and non-fatal overdoses are relatively common occurrences among heroin injectors. In 2003, there were 1,388 drug related deaths in England and Wales, of which 591 involved heroin and morphine (National Statistics, 2005). Using a different monitoring system, the National Programme on Substance Abuse Deaths reported a similar number of deaths in 2004: 1,372 (Ghodse *et al.*, 2005). In Scotland in 2004, there were 356 drug related deaths, of which 225 were associated with heroin or morphine (General Register Office for Scotland, 2005); in Northern Ireland 21 deaths associated with heroin in 2000 (Annual Report to the Registrar General, 2001).

Drug related deaths do not occur uniformly across the UK. In England, Uren (2001) has summarised variations in mortality rates for 'drug related poisoning' over the period 1993–99. These vary by gender and substance. Fewer areas have significantly high mortality for females and the patterns for heroin/morphine are different from those for methadone (see appendix D).

Those areas with an age standardised rate (per million) of more than 50 for heroin/morphine or methadone were: Blackpool, Bournemouth, Brighton and Hove, Kingston upon Hull, Hastings, North East Lincolnshire, Norwich, Barrow in Furness, Manchester and Camden. These might highlight 'hot-spots' where need is greatest.

2.5.2 Incidence of non-fatal overdose

Increasingly, it is recognised that drug users frequently experience or witness non-fatal overdoses (Gossop *et al.*, 1996). From a community sample of 438 heroin users, 23% had experienced an overdose (the mean number of overdoses was 3.6). A subsequent study of 312 current injecting drug users found that 38% had experienced an overdose and 54% had witnessed an overdose (Powis *et al.*, 1999).

In Wales, non-fatal overdoses were reported by 31% of a sample of 52 injecting drug users and 58% had witnessed an overdose (Craine *et al.*, 2004).

2.5.3 Morbidity associated with non-fatal overdose

Despite the evidence that overdose is associated with other forms of morbidity, no UK studies of morbidity secondary to overdose have been identified. Nevertheless, it might be supposed that DCRs could potentially have an impact in this area.

2.5.4 Emergency calls related to overdose

Emergency calls seem likely to provide a further indicator of need and may help identify clusters where DCRs might be expected to have a greater impact. UK research reporting the prevalence of overdose-related calls to emergency services seems scant within the literature. Rather, studies mentioning overdose seem to relate to inappropriate calls and appears to relate primarily to non-opioid overdose (Marks *et al.*, 2002; Thakore *et al.*, 2002). Nevertheless,

this would seem to be a potentially useful indicator, for which information is likely to exist within ambulance service information systems and that might be collated quite easily.

2.6 Availability and use of services on-site/referrals to further services

DCRs provide an additional environment in which a range of allied services can be directly provided and referral to others may be facilitated. On-site services provided in DCRs include: needle and syringe programmes including sharps disposal (needle exchange), basic medical care, wound treatment, stress management and food and hygiene services (self-care and laundry). Brief and more extended counselling services are often available alongside verbal or written referral to medical, social welfare, housing, drug treatment and employment and training services, with opportunities for referral of 'treatment-naïve' drug users as well as people who have received treatment before.

Within a UK context, other specific activities might include support and advocacy to enable people to gain better access to primary care (GP registration), TB screening, assistance with managing TB, HCV and HIV treatment regimes and, targeted sexual health and family planning services, including condom provision. It is also possible that DCRs could provide a suitable context in which interventions to limit the involvement of current injecting drug users in the initiation of new injectors could be delivered. Within *Models of Care* (the national service framework for substance misuse services) the National Treatment Agency has an explicit requirement that needle exchange services promote access to this range of services and interventions (2002: 53–62), which raises the question of the extent to which DCRs could augment this function.

Besides the indicators considered earlier under 'Hygiene and safety' a wide range of other indicators become relevant here, many of which would be measures of participation and uptake rates of allied health and welfare services among drug users who have need of them. In each case, such measures could also serve as outcome indicators where DCRs have an explicit role of promoting referral, participation or treatment.

Studies quantifying shortfalls in uptake among eligible drug users for many services – unmet need – have not been identified. It is only comparatively recently that more reliable estimates of participation in drug treatment and syringe distribution have become available and so, with this exception, the following indicators are simply listed to highlight areas of possible relevance.

2.6.1 Participation in drug treatment and syringe distribution

Hickman *et al.* (2004) have worked from detailed estimates of the prevalence of injecting drug use in three cities to determine treatment participation rates. They calculate that only one in four IDUs are in treatment within the areas they studied: Brighton, Liverpool and London. Needle and syringe coverage was correspondingly poor with new needles being available for only 20–27% of injections.

2.6.2 Other potential service participation indicators

- participation rates in education and employment programmes
- proportion of drug users registered with GPs
- proportion of eligible people receiving treatment for BBVs
- proportion of eligible drug users receiving welfare payments
- treatment participation for drug users infected with sexually transmitted infections (STIs)
- utilisation of family planning services.

Alongside these, several other indicators of health and social inclusion may also be relevant:

- the extent of poor maternal and child health among drug users (including child protection arrangements)
- nutritional status of drug users
- housing rates among drug users.

3 Public order and crime

3.1 *Drug use in public/open drug scenes*

Whereas in many settings the health and welfare of drug users have been the more prominent drivers for the introduction of DCRs, public order and crime concerns are issues that can also underpin their introduction, notably in the Netherlands. Consequently, reducing street drug use or ‘open drug scenes’ are

common aims of DCRs. Additionally, DCRs have also been introduced where quasi-public drug scenes exist, e.g. the use of short-rent (an hour or less) hotel rooms as *de facto* DCRs in Sydney.

Although programmes that effectively attracted more drug users into treatment earlier could, theoretically, reduce drug related crime, in practice programmes have the more conservative aim of avoiding an increase in crime within their vicinity.

3.1.1 Rates of injecting in public places

Despite the relevance of the location in which injecting occurs, with regard both to hygiene/safety and public nuisance, this does not appear to have received attention within studies in the UK. Klee and Morris's (1995) study (summarised earlier) appears to be a unique study of 'street injectors' within the British literature but estimates of the extent to which injecting occurs in street settings are largely absent. The single exception identified occurs within unpublished data collected as part of a study reported by Judd *et al.* (in press)². A cross-sectional survey of 113 homeless IDUs in London in 2002 was included as part of their larger cohort study and asked two questions about public injecting environments and injecting risk behaviour. Inclusion criteria were that respondents:

- were aged under 30
- had injected in the last 4 weeks
- stayed in a night shelter or slept rough at least one night in the last 7 nights
- lived in London.

Where were you the last time you injected?

	Frequency
The place where I live	2
A sex partner's home	0
Home of a relative	1
A friend's home	5
Someone else's home	4
In a shelter or hostel	7

² We are grateful to Ali Judd of Imperial College for summarising these previously unpublished data and giving us permission to reproduce them.

At school or college	0
At a dealer's place	6
In a club or bar (or their loos)	6
<i>In a street or park</i>	33
<i>In a public toilet</i>	25
<i>In an abandoned building</i>	3
<i>In a car or similar vehicle</i>	5
Other (specify)	5
Total	102

Several response categories (italicised) could be collapsed to generate an overall rate for injecting in public places. This suggests that 66 people (64%) had their last injection in a public place, i.e. about two-thirds. Furthermore, in some respects this can be seen as a conservative question. Although, methodologically, it makes sense to ask about the last injection in order to minimise recall problems, it seems likely that the proportion of people who injected in a public space within, say, the past month would exceed this rate considerably.

Judd and her colleagues gathered additional data on whether the location was one where people gathered together to inject. On the one hand, this indicates increased potential for the sharing of injecting equipment. It also suggests the proportion of times where someone is on hand to assist should an overdose occur.

Is this a place where different people often congregate to inject?

	Frequency	Per cent
No	24	24.24
Yes	60	60.61
Don't know	15	15.15
Total	99	100.00

The Independent Working Group (IWG) was concerned that there was no more recent or comprehensive research on the key question of the extent and nature of injecting in public places. A study was therefore commissioned to address this issue. This research is outlined in the box below (for a full account see Hunt *et al.*, forthcoming).

IWG research on syringe exchange users

This study focused on a sample of 398 drug users obtaining sterile injecting equipment at a number of needle exchange projects and pharmacies in Glasgow, Leeds and London. The sample was mostly male (82%) and white (91%), with an average age of 34. Respondents were asked where they had injected over the past week and 42% responded that they had injected at least once in public areas, including public toilets, streets and parks. The extent of public injecting was clearly related to accommodation status. While 98% of the users sleeping rough ($N=46$) had injected in a public place in the past week, this was true of 49% of hostel-dwellers ($N=132$) and 24% of those living in their own accommodation. Thus, rough sleepers were considerably more likely to inject in public places than any other group and hostel-dwellers were twice as likely to do so than those living in their own home. However, the fact that nearly a quarter of the people living in their own home reported having injected in public in the past week is significant, given that they were the largest group attending the needle exchange facilities. Public injecting is therefore certainly not the sole preserve of the homeless.

The sample was also asked about the proximity of their main drug market to where they lived and just over half lived within half a mile. Just under a quarter lived around a mile from their main drug market; the other quarter two miles or more.

This research demonstrates for the first time that public injecting is very common among drug users accessing syringe exchange facilities. While the precise numbers are not known, a recent survey of needle exchange facilities in England estimated that around 3,218 such facilities existed in 2004–5 (including pharmacy services), seeing a total of 140,656 clients over a 12-month period (NTA, forthcoming). As the authors of this report point out, these estimates need to be treated with considerable caution, due to issues such as double counting. However, were there a similar proportion of all needle exchange clients injecting in public to that

found in the IWG survey, this suggests a very large number of drug users regularly using in public places. Moreover, there is an additional population of users who do not use needle and syringe exchange facilities but who also inject in public places. **It can therefore be concluded with some confidence that, in England alone, there are tens of thousands of injecting episodes per month occurring in public places.**

3.1.2 Installation of blue lights

The possible impact of the use of blue lights has been discussed previously in Section 2.1.7. As these are generally thought to be installed in response to nuisance associated with injecting, surveys of their utilisation may be indicative of local need. No such surveys have been identified within this review.

3.1.3 'Open drug scenes'

Although 'open drug scenes' (i.e. public settings where drugs are openly sold and used) are a feature of the drug situation in some other countries, there are no corresponding research reports of 'open drug scenes' in the UK. Nevertheless, media reports sometimes suggest that somewhat similar situations exist here³.

3.1.4 Use of short-rent rooms as *de facto* DCRs

As has been noted, within Sydney, one factor that led to the introduction of the Medically Supervised Injecting Centre in Kings Cross was the widespread use of local hotels, where rooms were rented for a short period by drug users in order to have somewhere off the street to inject. No reports of this practice within the UK have been identified. However, it is possible that this reflects a lack of awareness of the policy-relevance of this issue, rather than an absence of this practice.

3.2 *Public nuisance and discarded syringes*

Public nuisance from street drug use and open drug scenes, as perceived by local residents, businesses, police and other stakeholders, will often directly reflect public drug use or the existence of open drug scenes, but may also be influenced by

³ For example see:

<http://news.bbc.co.uk/1/hi/england/2550709.stm>

http://news.bbc.co.uk/1/hi/england/west_yorkshire/3248103.stm

media coverage and indirect accounts of the extent of street drug use.

One of the most common causes of concern is the occurrence of discarded needles/syringes and other paraphernalia associated with drug taking (including crack and heroin smoking); as well as condoms and other litter associated with commercial sex work.

3.2.1 Discarded needles/syringes and other drug-taking paraphernalia

Discarded drug litter is a problem associated with drug injecting that gives rise to the potential for needlestick injuries and infection among members of the general public and drug users. Periodic newspaper coverage of stories about drug litter in the British press is indicative of the public concern that these incidents generate⁴.

A recent study by the Institute for Criminal Policy Research, King's College, London (May *et al.*, 2005)⁵ reports rates of:

- discarded drug paraphernalia;
- observation of public heroin/crack use; and
- discoveries/sightings of needles.

Among 802 respondents:

- 192 (24%) thought drug paraphernalia had increased;
- 76 (10%) thought drug paraphernalia had decreased;
- 115 (14%) thought it had stayed the same; and
- 419 (52%) didn't know.

Concerning public heroin/crack use, 672 respondents reported that:

⁴ For example see the following BBC stories:

<http://news.bbc.co.uk/1/hi/uk/3176292.stm>

<http://news.bbc.co.uk/1/hi/england/staffordshire/3214021.stm>

<http://news.bbc.co.uk/1/hi/england/nottinghamshire/3040190.stm>

<http://news.bbc.co.uk/1/hi/health/1929068.stm>

http://news.bbc.co.uk/1/hi/wales/south_east/3497556.stm

<http://news.bbc.co.uk/1/hi/wales/mid/3049581.stm>

<http://news.bbc.co.uk/1/hi/scotland/911451.stm>

⁵ Additional data – Tiggey May, Personal correspondence.

- 17 (3%) had seen someone injecting heroin or crack;
- 57 (9%) had seen someone smoking heroin or crack;
- 493 (73%) had not seen anyone smoking or injecting in public; and
- 105 (15%) had seen both injectors and smokers in a public place.

Regarding found/seen needles:

- 210 (31%) had seen/found needles;
- 419 (62%) hadn't seen or found any needles; and
- 43 (6%) were unsure whether they had or hadn't found or seen any needles.

Across England, the ENCAMS survey of drug related litter has been carried out in 1998, 2001 and 2004 (ENCAMS, 2005). This shows a rapid increase in the annual number of needles collected in England over this period: from 3,570 in 1998/9 to 147,345 in 2003/4. While caution needs to be exercised in interpreting these statistics, given that local collection and recording procedures are inevitably variable and the proportion of local authorities responding to the survey has never been high, the most recent report concludes that "the quantity of needles found is increasing dramatically year on year". It is clear from this report that the problem is an increasingly widespread one, with growing numbers of rural and seaside authorities reporting finds. The sites reported by the most local authorities were parks/playing fields, public toilets, residential areas, car parks and footpaths. Over the three-year period up to 2004 there had been 169 recorded needlestick injuries, the majority of those injured being local authority employees (ENCAMS, 2005).

3.2.2 Police interventions regarding drug related nuisance

It seems possible that calls to the police and the day-to-day experience that they have in connection with street drug use may be a further indicator of drug related nuisance. However, no studies identifying the extent to which this occurs have been identified within this review.

3.2.3 Community concerns

Nuisance experienced by the general public and businesses from public drug use has contributed to the introduction of DCRs in several countries, such as the Netherlands and Australia. It has not been possible to identify published studies that have assessed this anywhere in the UK. However, one London Borough – Camden – that has had a concerted community campaign in response to the use of crack cocaine in street settings⁶ has submitted evidence to the Home Affairs Select Committee that effectively called for safer injecting rooms (see section 5.8).

The IWG was concerned by the lack of research regarding the *social impact of public drug use* within the UK. In order to help remedy this deficit, a project was tendered and commissioned to provide more systematic scrutiny of the impact of public drug use on the lives of community members.

This research (Taylor *et al.*, 2005, IWG Paper D) was carried out in four sites around the UK known to be associated with public use of drugs and involved interviews with local people, including council cleaners, toilet attendants, park keepers, local business employees and local residents. Interviews were carried out with 100 people, 61 of whom took the researchers on ‘walk-about tours’ of the local area, pointing out sites where they had seen people using drugs or found evidence of public drug use. It should be emphasised that this was a ‘purposive’ sample, selected because their jobs or place of residence meant that it was particularly likely that they had witnessed drug use or drug related litter.

Drug-using locations were identified in alleyways, car parks, derelict open spaces, neglected property, cafes, toilets, gardens and stairwells. Half of the participants reported drug dealing, over a third had seen people injecting and nearly four-fifths had seen at least one used syringe. Twelve of the 100 participants had witnessed drug users who had collapsed and/or overdosed.

Participants were annoyed by the drug litter and visible drug use – particularly when it occurred close to their own homes or where it could be observed by children. They were also intimidated by groups of users ‘hanging about’ – and referred to finding vomit and

⁶ See <http://www.crackcocaineincamden.co.uk/index.htm>

excrement that they associated with drug users, some of whom were sleeping rough. Respondents generally reacted to these issues with anger, disgust and fear. The relentlessness of these problems was often viewed as part of a wider social malaise, which included the sex industry, homelessness, begging and drug related crime.

The authors conclude that public drug use and related litter are associated with significant levels of community concern, reflected in feelings of reduced safety, public amenity and quality of life.

4 Need as evidenced by local proposals for the introduction of DCRs

Beyond the direct indicators of need that have been summarised, where a local service or community has proposed introducing DCRs, this can also be seen as a proxy-indicator of need. Such proposals might arise in a variety of ways and for different motives such as: at the instigation of services with an ideological commitment to seeing such developments or, in a more bottom-up way where a local community or service identifies DCRs as a potential solution to identified, local nuisance or health problems relating to drug use. It seems likely that where such proposals arise, these will reflect some mix of the more direct indicators described.

In developing this report, we have been informed of an heard evidence from several local initiatives where the possibility of introducing safer injecting facilities is actively being explored. Often these initiatives seem to be emerging from within inter-agency partnerships involving local authorities, the police and treatment services. Typically, there is a great deal of sensitivity about these plans because they are still in development and there is an awareness of the way in which they may be reported in the press. Consequently, it would not be appropriate to list them here or provide details beyond saying that the examples are geographically diverse, coming from Wales, South West England, South East England, Yorkshire and the Humber and London. We have not attempted to survey these systematically within this review, so there may well be other examples that are unknown to us. Regardless, if or when these become more visible, they may also be regarded as possible indicators of heightened need within different localities.

5 Reports and research publications that have made recommendations relating to safer injecting/drug consumption rooms within the UK

Finally, a number of publications relating to research and policy within the UK have included specific recommendations for the development and introduction of DCRs – almost invariably with careful evaluation as part of the proposal. Rather than being *direct* indicators of need, such recommendations are *indirect*, proxy-indicators, reflecting overarching judgements taken about whether a need for DCRs exists or pilot evaluation is justified. In some cases these are directly based on research evidence; in others they appear to be grounded in clinical experience, reviews of the published literature, derive from local-expressed community concerns or – in the case of the Home Affairs Select Committee – to be based on the conclusions of expert evidence. Whilst these conclusions should not be accepted uncritically, they are of note because of the way in which they largely appear to triangulate with the more direct indicators of need.

5.1 The Home Affairs Select Committee

Arguably, the most prominent call for these has come from the Home Affairs Select Committee (2002) in their recommendation:

186. We recommend that an evaluated pilot programme of safe injecting houses for heroin users is established without delay and that if, as we expect, this is successful, the programme is extended across the country.

The government's response to this recommendation was as follows:

The Government supports the provision of safe, medically supervised areas with clean needles for the administration of heroin prescribed as part of a comprehensive package of measures for treating heroin addicts, but not for those who have not been prescribed heroin.

This will be addressed by the expert consensus group referred to in the response to (v) above, in the guidance it is to publish before the end of the year.

The Government wishes to make it clear that it understands the intent and the objective of the Committee's recommendation, but that we aim to develop our policy of supervised consumption of prescribed drugs.

(Secretary of State for the Home Department, 2002: 20)

5.2 The Beckley Foundation

The Beckley Foundation is undertaking a range of thematic reviews across different aspects of drug policy, among which is a review of drug consumption rooms (Roberts *et al.*, 2004). This concluded that:

While the benefits of DCRs should not be exaggerated – and they raise issues of ethical and legal principle that cannot be solved easily – evidence is emerging that these can make a positive contribution to reducing drug related harms where they have the support of local services and communities.

5.3 Effective Interventions Unit, Scotland

Research examining the injecting practice of injecting drug users in Scotland led by Professor Avril Taylor of Paisley University used video data to examine injecting risks within naturalistic settings. This was the first study of its type within the UK. It revealed disturbing levels of injecting paraphernalia sharing and systematic and near universal failures of injecting hygiene and protection from risk across 103 injections among 30 people who inject. Among the implications for policy and practice it was recommended that:

Policy-makers should consider whether the provision of safe injecting rooms would help to address some of the particular needs of those injectors who have to inject outdoors.

(Taylor *et al.*, 2004)

5.4 British Medical Journal

Within the *BMJ*'s 'Education and Debate' section, primary care practitioners specialising in services for homeless substance users reviewed aspects of the international evidence concerning DCRs. They concluded that there should be a UK pilot study of a medically supervised injecting centre and emphasised the possibility that homeless injecting drug users had greatest capacity to benefit from such services:

The Home Office has endorsed prescribable heroin centres rather than medically supervised injecting centres as the basis for future policy. We believe that neither is a panacea and that holistic provision should include both methods. Prescribable heroin is most appropriate for long term heroin addicts who have not responded to traditional treatment. However, such users are different from the patient group targeted by a medically supervised injecting centre—people who are socially excluded and homeless. It is these vulnerable individuals who are least likely to access treatment services and most likely to inject unsafely in public places. In the Sydney evaluation report, the most common reason given for not using the medically supervised injecting centre was injecting in the privacy of their own home.

By targeting homeless, drug using populations, medically supervised injecting centres also have the potential to resolve the current conflict for housing professionals working with homeless drug users. Current legislation places a responsibility on housing providers (for example, staff working in homeless hostels) to remove residents who inject illicit drugs on their premises. This means that, currently, services providing care for homeless populations are able to dispense clean needles to drug users yet have a statutory responsibility to prevent injection in their services (whether housing, health, or social care services). Medically supervised injecting centres can help resolve this paradox and improve public health by minimising the risk of drug users injecting unsafely in public places.

(Wright and Tomkins, 2004)

5.5 Newham needs assessment: homeless, black and minority ethnic drug users

A needs assessment within one drug action team (DAT) area used privileged access interviewers to gather quantitative and qualitative information from 30 homeless, black and minority ethnic drug users in East London (Hunt, 2002). This study concluded that, if feasible, an evaluated trial of a 'supervised injecting room' was warranted:

The context of injecting is highly relevant to people's injecting hygiene. Perhaps controversially, one solution to

which these accounts point is to the need for an injecting room in which homeless people could inject more safely.

At present injecting rooms would technically be illegal under the revisions to section 8 of the Misuse of Drugs Act. Similarly, the provision of injecting paraphernalia other than needles and syringes (as discussed above) is also technically illegal under Section 9 of the Act. However, public health arguments generally mean that S9 of the act is not enforced and local agreements with the Police/Crown Prosecution Service provide the necessary protections to service providers and purchasers.

The issues concerning possible provision of a supervised injecting room should be debated and further investigated locally with a view to undertaking an evaluated trial, should this seem feasible. The discussion should take account of:

- changes in harm reduction practice and paraphernalia distribution in other parts of England;
- increasing importance being attached to harm reduction interventions by the NTA, which may signal a policy climate that would favour an evaluated trial of such a scheme;
- the current Home Affairs Select Committee review of the Misuse of Drugs Act, which has recommended that Section 9a (the paraphernalia laws) be amended and the Home Office's response to this; and
- the wider international developments in harm reduction services regarding the provision of paraphernalia and the health impact of providing 'injecting rooms' for the most marginalized drug users.

(Hunt, 2002)

5.6 Johnstone, Glasgow Caledonian University

Within an assessment of 'the feasibility of incorporating medically supervised injecting centres into UK public health policy', Johnstone had reviewed the international literature on the evidence of their effectiveness as programmes aiming to: attract the intended target group, reduce overdose, blood-borne viruses (BBVs) and their associated risk behaviour, and improve health and access to services. Concluding that there is evidence

suggesting that benefits may occur in each of these areas and that existing schemes seem to have a neutral impact on crime, her review favours their implementation, which she discusses with regard to political, cultural and financial (economic) considerations:

[Medically Supervised Injecting Centres] can be viewed as an indication of commitment to a broad based public health system. Nevertheless, the political, social and economic implications of such a programme are considerable. The establishment of MSICs within the UK would require not only changes of a political nature but also to the broad moral culture that currently dominates UK society. Given the potential gains, cultural objections should not serve to eliminate all discussion surrounding MSICs, but rather to ensure that this policy is approached in a sensitive manner. It is imperative to note, however, that this policy lacks thorough and comprehensive evaluation.

(Johnstone, 2004)

5.7 Malinowski, University of the West of England

Drawing on an educational visit to a Spanish safer injecting centre in Madrid and examination of the related evidence from Australia, Malinowski summarised previous UK experience with injecting rooms during the 1970s before considering whether they are viable within the UK and have any contribution to make. He concluded:

We need a pilot programme that is properly resourced and has a distinct role to play. We also need to clarify the current legal position in order to level the playing field. And finally, the government needs to be persuaded that safer injecting rooms/centres, at least in principle, offer a way forward in addressing the various challenges that addiction currently presents.

(Malinowski, 2002)

5.8 London Borough of Camden

Part of the evidence submitted by the London Borough of Camden to the Home Affairs Select Committee (2001) has, effectively, proposed that there should be a safer injecting room in response to the needs within their locality:

...a legal supply of injectable drugs is provided through the health service, with the provision of indoor space in which drugs, both legal and illegal, can be injected safely, and where trained professionals can offer access to appropriate and effective health and social care services. This should be backed up by more pro-active police efforts to discourage street dealing and linked anti-social street behaviour. While we feel that this will only "tinker with the edges" of the supply side, it will serve to reduce drug related crime significantly as well as improving the quality of life of both drug using and non-drug-using members of our communities.

(London Borough of Camden, 2001)

6 Conclusions

Within the UK, there is a wide array of evidence pointing to needs that may be addressed through DCRs. This includes the substantial death toll arising from drug overdoses annually and the escalating prevalence of hepatitis C, which is accompanied by an increased rate of needle/syringe sharing in recent years. It is also clear that poor injecting hygiene and bacterial infections are an important cause of risk and morbidity among IDUs.

Beyond health measures, there are various indicators of public drug use and nuisance associated with street injecting and crack cocaine smoking, although, hitherto, there has been a disappointing lack of systematic study in this area. Consequently, it has been necessary for the Joseph Rowntree Foundation to commission research that begins to remedy these gaps in the evidence. This new research points towards high rates of public injecting that are concentrated within – but by no means restricted to – the homeless, and which generates considerable concern within local communities.

Those studies that have focused on homeless and 'street injectors' point to alarmingly high rates of injecting/heroin use and also suggest that these socially marginalized populations are exposed to markedly heightened hazards to health. These groups would potentially be an important target population for DCRs within the UK.

For a number of other indicators that have been identified, current UK data is patchy, of equivocal quality, or absent and more research is warranted in these areas. This review may be useful as a pointer to targets for study that will improve the evidence base informing an understanding of need.

Although there are indications that facilities for crack and heroin smokers could be useful, harms are more obviously clustered among injecting drug users, who emerge as the group with greatest capacity to benefit from such programmes and therefore the priority for attention in any initial implementation.

Studies that have made geographical comparisons of indicators such as treatment participation and overdose show that need may be more pronounced in some localities and point to a possible case for selectively targeting DCRs rather than universal provision.

From a public health perspective, DCRs appear to have potential within the following most important areas of need: attracting and engaging the most marginalised IDUs; overdose prevention; and reducing the risks of viral and bacterial infections among IDUs. In doing so, it seems likely that DCRs could simultaneously reduce injecting related nuisance in areas where this is most prevalent.

Many of the indicators of need that have been identified within this review highlight measures that might also be examined for change with any implementation of DCRs, i.e. as outcome indicators.

The existence of a variety of indicators of need for DCRs does not mean there is any certainty about the extent to which they would reduce harm and alleviate problems. Without evaluation, this is unknowable and any impacts seem certain to be influenced by factors such as the way in which DCRs are targeted and the operational models that are employed, along with the quality of their implementation.

Any judgement about how society might optimally respond to the unmet needs identified is difficult. Although DCRs appear to present opportunities to enhance responses in the UK, it is uncertain to what extent these needs might be met by alternative responses such as improvements to the quality and coverage of needle exchange, increased targeting of overdose prevention

messages, or other improvements to primary care services targeting homeless and other of the most marginalised IDUs. Nevertheless, DCRs appear to have potential to provide uniquely high quality opportunities for attracting and engaging the most marginalised IDUs, intervening at the point of overdose and tailoring health advice and primary care to those people whose injecting is causing them most harm.

In terms of the *Epidemiological Approach to Needs Assessment* and evidence-based healthcare more widely, where there are rational and reasonable grounds for supposing that an intervention may be effective and that a population has the capacity to benefit, yet the evidence is imperfect, the ethically correct approach is generally to implement the intervention cautiously and to evaluate its impact in a way that develops the evidence base intelligently. The strength of the case for undertaking carefully evaluated pilots of DCRs within the UK should therefore be informed by the evidence within this report in conjunction with an appraisal of the evaluation literature from implementations in other countries; for which see Hunt (2006, forthcoming) IWG Paper B. *Drug Consumption Rooms: the evaluation literature*.

7 References

ACMD (2000) *Reducing drug related deaths*. London: The Stationery Office.

Akzept Bundesverband and Carl von Ossietzky Universität Oldenburg (ed.) (2000) *Guidelines for the Operation and Use of Consumption Rooms*. Lektorat: W Schneider & H Stöver, Materialien No. 4. Münster: Akzept.

Annual Report of the Registrar General (2001) Belfast: HMSO.

Bargagli A M, Hickman M, Davoli M, Perucci C A, Schifano P, Buster M, Brugal T and Vicente J (in press). Drug related mortality and its impact on adult mortality in eight European countries. *European Journal of Public Health*.

Big Issue in the North (2000) *Annual Survey of Vendors*. Manchester: Big Issue in the North Trust.

Binks S, Hoskins R, Salmon D and Bengner J (2005) Prevalence and healthcare burden of illegal drug use among emergency department patients. *Emergency Medicine Journal*. 22: 872–873.

Church S, Henderson M, Barnard M and Hart G (2001) Violence by clients towards female prostitutes in different work settings: questionnaire survey. *BMJ*. 322: 524–525.

Craine N, Walker M, Roberts D, Williamson S and Thomas C (2004) *Reducing risk of overdose: a peer intervention pilot project amongst injecting drug users in North West Wales*. Bangor: National Public Health Service for Wales.

Cusick L, Martin A and May T (2003) *Vulnerability and involvement in drug use and sex work*. Home Office Research Study 268. London: Home Office.

De Angelis D, Hickman M and Yang S (2004) Estimating long-term trends in the incidence and prevalence of opiate/injecting drug use and the number of ex-users: the use of back-calculation methods and opiate overdose deaths. *American Journal of Epidemiology*. 160: 994–1004.

Department of Health (1999) Health Service Circular 1999/036. Drug Misuse Special Allocation: 1999/2000. Funding and Guidance on the Modernisation Fund Element.

Department of Health (2002) *Hepatitis C Strategy for England*. London: Department of Health.

Dolan K, Kimber J, Fry C, Fitzgerald JL, McDonald D and Trautmann F (2000) Drug Consumption Facilities in Europe and the Establishment of Supervised Injecting Centres in Australia. *Drug and Alcohol Review*. 19: 337–346.

Cook C C H (2004) Alcohol Misuse. In (Eds) Stevens A, Raftery J, Mant J and Simpson S. *Health Care Needs Assessment: the epidemiologically based needs assessment reviews*. Oxford: Radcliffe Medical Press.

EMCDDA (2005) *The state of the drugs problem in Europe: annual report 2005*. Luxembourg: Office for Official Publications of the European Communities

ENCAMS (2005) *Drugs-related litter survey 2005*.
<http://www.encams.org/uploads/publications/Drugssurvey05.pdf>

Flemen K (2003) *Blue light blues: the use of coloured lights as a deterrent to injecting*. London: KFx Learning of Substance.

Fountain J, Howes S, Marsden J, Taylor C and Strang J (2003a) Drug and alcohol use and the link with homelessness: results from a survey of homeless people in London. *Addiction Research and Theory*. 11 (4): 245–256.

Fountain J, Howes S and Strang J (2003b) Unmet drug and alcohol service needs of homeless people in London: a complex issue. *Substance Use and Misuse*. 38: 377–393.

Friedman S R, Des Jarlais D C and Sterk C E (1990). AIDS and the social relations of intravenous drug users. *Milbank Quarterly*. 68 (suppl. 1): 85–110.

Frisher M, Heatlie H and Hickman M (2004) Estimating the prevalence of problematic and injecting drug use for Drug Action Teams in England: a feasibility study using the multiple indicator method. Home Office online report 34/04
www.homeoffice.gov.uk/rds/pdfs04/rdsolr3404.pdf

Garden J, Roberts K, Taylor A and Robinson D (2003) *Evaluation of the Provision of single use citric acid sachets to injecting drug users*. Edinburgh: Effective Interventions Unit.

General Register Office for Scotland (2005) *Drug-related deaths in Scotland in 2004*. Edinburgh: General Register Office.

Gerlach R and Schneider W (2003) *Consumption and Injecting Room (CIR) at INDRO*, Münster German: Annual Report 2002 (English Version), Münster: Indro (<http://www.indro-online.de/cir.htm>).

Ghodse H, Corkery J, Schifano F, Oyefeso A, Bannister D and Annan J (2005) *Drug Related deaths in the UK*. International Centre for Drug Policy, St Georges, University of London.

Gossop M, Griffiths P, Powis B, Williamson S and Strang J (1996) Frequency of non-fatal heroin overdose: survey of heroin users recruited in non-clinical settings. *BMJ*. 313: 402.

Gossop M, Marsden J and Stewart D (2001) *NTORS after Five Years Changes in Substance Use Health and Criminal Behaviour during the Five Years after Intake*. London: Department of Health.

Hagan H, Thiede H, Weiss N S, Hopkins S G, Duchin J S and Alexander E R (2001) Sharing of drug preparation equipment as a risk factor for Hepatitis C. *American Journal of Public Health*. 91(1): 42–46.

Hay G, McKeganey N, Hutchinson S, on behalf of project team. (2001) *Estimating the National and Local Prevalence of Problem Drug Misuse in Scotland*. Edinburgh: ISD.

Health Protection Agency (October 2004) *Shooting Up: Infections among injecting drug users in the United Kingdom 2003*. Health

Protection Agency, SCIEH, National Public Health Service for Wales, CDSC Northern Ireland, CRDHB, and the UASSG. London: Health Protection Agency.

Health Protection Agency (October 2005) *Shooting Up: Infections among injecting drug users in the United Kingdom 2004*. Health Protection Agency, SCIEH, National Public Health Service for Wales, CDSC Northern Ireland, CRDHB, and the UASSG. London: Health Protection Agency.

Hedrich D (2004) *European Report on Drug Consumption Rooms*. Lisbon: EMCDDA.

Hickman M, Carnwath Z, Madden P, Farrell M, Rooney R, Ashcroft R, Judd A and Stimson G (2003). Mortality and fatal overdose risk – pilot cohort study of heroin users recruited from specialist drug treatment sites in London. *Journal of Urban Health*. 90: 274–287.

Hickman M, Higgins V, Hope VD, Bellis M, Tilling K, Walker A and Henry J (2004) Injecting drug use in Brighton, Liverpool, and London: best estimates of prevalence and coverage of public health indicators. *Journal of Epidemiology & Community Health*. 58: 766–771.

Hill M D, Cooper P W and Perry J R (2000) Chasing the dragon – neurological toxicity associated with inhalation of heroin vapour. *Canadian Medical Association Journal*. 162 (2): 236–238.

Holloway K and Bennett T (2004) *The results of the first two years of the NEW ADAM programme*. Home Office Online Report 19/04.

Home Affairs Select Committee (2002) *The Government's drug policy: is it working?* Third Report.
<http://www.parliament.the-stationery-office.co.uk/pa/cm200102/cmselect/cmhaff/318/31802.htm>

Home Office (2002) *Tackling Crack. A national plan*. London: Home Office.

Hunt N (1997) Incidence of needlestick injuries among people who inject. *Addiction*. 92 (2): 219–220.

Hunt N (2002) *Homeless, Black and Minority Ethnic Drug Users in Newham: a needs assessment*. University of Kent at Canterbury working in collaboration with the Healthy Options Team (East London and the City Mental Health NHS Trust).

Hunt N (2006, forthcoming) IWG Paper B. The evaluation literature of drug consumption rooms. York: Joseph Rowntree Foundation.
<http://www.jrf.org.uk/bookshop/details.asp?pubid=749>

Hunt N, Lloyd C, Kimber J and Tompkins C (forthcoming) Public injecting among UK Needle and Syringe Programme (NSP) attenders. *The International Journal of Drug Policy*.

Hunter G M, Stimson G V, Judd A, Jones S and Hickman M (2000) Measuring injecting risk behaviour in the second decade of harm reduction: a survey of injecting drug users in England. *Addiction*. 95: 1351-1361.

Information and Statistics Division (2004) *Drug Misuse Statistics Scotland 2004*.

Johnson AM, Mercer CH, Erens B, Opas A J, McManus S, Wellings K, Fenton K A, Korovessis C, Macdowall W, Nanchahal K, Purdon S and Field J (2001) Sexual behaviour in Britain: partnerships, practises, and HIV risk behaviours. *Lancet*. 358: 1835-42.

Johnstone L (2004) Medically supervised injecting rooms: hero or heroin? (a paper assessing the feasibility of incorporating medically supervised injecting centres into UK public health policy). BA (Hons) dissertation, School of Law and Social Sciences, Glasgow Caledonian University.

Jones J A, Salmon J E, Djuretic T, Nichols G, George R C and Gill O N (2002) An outbreak of serious illness and death among injecting drug users in England during 2000. *Journal of Medical Microbiology*. 51: 978–984.

Jose B, Friedman S R, Neaigus A, Curtis R, Grund J P, Goldstein M F, Ward T P and Des Jarlais D C (1993) Syringe-mediated drug-sharing (backloading): a new risk factor for HIV among injecting drug users. *AIDS* 7(12): 1653–1660.

Judd A, Hickman M, Jones S, McDonald T, Parry JV, Stimson GV and Hall A J (2005) Incidence of hepatitis C virus and HIV among new injecting drug users in London: prospective cohort study. *British Medical Journal*. 330: 24–25.

Kimber J, Dolan K, Can Beek I, Hedrich D and Zurhold H (2003) Drug consumption facilities: an update since 2000. *Drug and Alcohol Review*, 22: 227–233.

Klee H, Faugier J, Hayes C, Boulton T and Morris J (1990) Factors associated with risk behaviour among injecting drug users. *AIDS Care*: 2: 133–145.

Klee H (1991) Homelessness among injecting drug users: implications for the spread of AIDS. *Journal of Community & Applied Social Psychology*. 1: 143–154.

Klee H and Morris J (1995) Factors that characterize street injectors. *Addiction*: 90: 837–841.

Lamagni TL, Davison KL, Hope VD, Luutu J W, Newham J A, Parry J V and Gill O N (1999) Poor hepatitis B vaccine coverage in injecting drug users: England 1995 and 1996. *Communicable Disease and Public Health*. 2 (3): 134–137.

Linnell M, Chohdri G, Huddleston B, Honor C and Murray J (2001) Communications for the Future: The drugs information needs of three groups of vulnerable young people. A report prepared by The Lifeline Project for Greater Manchester Drug Action Partnership.

London Borough of Camden (2001) *Memorandum 39*. Home Affairs Select Committee. Memoranda of evidence - Volume II (HC 318-II - published on 23 October 2001).

<http://www.parliament.the-stationery-office.co.uk/pa/cm200102/cmselect/cmhaff/318/318m01.htm>

McCoy C B and Inciardi J (1995) *Sex, Drugs, and the Continuing Spread of AIDS*. Los Angeles, CA: Roxbury Publishing Company.

McElwrath K (2002) *Prevalence of problem heroin use in Northern Ireland*. Belfast: Queens University.

McGuigan C C, Penrice G M, Gruer L, Ahmed S, Goldberg D, Black M, Salmon J E and Hood J (2002) Lethal outbreak of infection with *Clostridium novyi* type A and other spore-forming organisms in Scottish injecting drug users. *Journal of Medical Microbiology*. 51: 971–977.

McKeganey N and Barnard M (1996) *Sex Work on the Streets: Prostitutes and their Clients*. Buckingham: Open University Press.

McKeganey N, Bloor M, Robertson M, Neale J and MacDougall J (2005) *Abstinence and Drug Abuse Treatment in Scotland: Results from the Drug Outcome Research in Scotland Study*. Glasgow: University of Glasgow.

Malinowski A (2002) The vein in Spain: viability of safe injecting rooms. *Druglink*. 17 (6): 20–22.

Maliphant J and Scott J (2005) Use of the femoral vein ('groin injecting') by a sample of needle exchange clients in Bristol, UK. *Harm Reduction Journal*, 2:6 doi:10.1186/1477-7517-2-6.

Mann J D, Tarantola J M and Netter T W (1992) *AIDS in the World*. Cambridge, MA: Harvard University Press.

Marks P J, Daniel T D, Afolabi O, Spiers G and Nguyen-Van-Tam J S (2002) Emergency (999) calls to the ambulance service that do not result in the patient being transported to hospital: an epidemiological study. *Emergency Medicine Journal*. 19: 449–452.

Marsden J and Strang J, with Lavoie D, Abdulrahim D, Hickman M and Scott S (2004) Epidemiologically-based needs assessment: drug misuse. In, Stevens A and Raftery J (Eds) *Health Care Needs Assessment*, Oxford: Radcliffe Medical Press.

May T, Duffy M, Few B and Hough M (2005) *Understanding drug selling in communities. Insider or outsider trading?* York: Joseph Rowntree Foundation.

Nadelmann EA, Coffin P, Halingby L and Greenshields A (1999) *Safer Injection Rooms*. New York: Open Society Institute.

National Statistics (2004) *Deaths related to drug poisoning: England and Wales, 1998 –2002*. Health Statistics Quarterly No. 21. Spring 2004. London: Office for National Statistics.

National Statistics (2005: 52-59) *Deaths related to drug poisoning: England and Wales, 1999-2003*. Health Statistics Quarterly No. 25. Spring 2005. London: Office for National Statistics.

National Treatment Agency (2002) *Models of Care. Part 2: Full Reference Report*. London: National Treatment Agency.

National Treatment Agency (2004) *Commissioning services to reduce drug-related deaths*. National Treatment Agency. Resource pack for Commissioners. Briefing 11.2.

National Treatment Agency (forthcoming) Survey of needle exchange facilities in England.

Neale J (2001) Homelessness amongst drug users: a double jeopardy. *International Journal of Drug Policy*. 12: 353–369.

Passaro D J, Werner S B, McGee J, MacKenzie W R and Vugia D J (1998) Wound Botulism associated with black tar heroin among injecting drug users. *JAMA*. 279 (11): 859–863.

Powis B, Strang J, Griffiths P, Taylor C, Williamson S, Fountain J and Gossop M (1999) Self-reported overdose among injecting drug users in London: extent and nature of the problem. *Addiction*. 94 (4): 471–478.

Roberts M, Klein A and Trace M (2004) *Drug Consumption Rooms*. The Beckley Foundation/DrugScope, Briefing paper No 3.

Roe S (2005) Drug misuse declared: findings from the 2004/05 British Crime Survey. London: Home Office.

Scott J, Winfield A, Kennedy E and Bond C (2000) Laboratory study of the effects of citric and ascorbic acids on injections prepared with brown heroin. *The International Journal of Drug Policy*. 11: 417–422.

Secretary of State for the Home Department (2002) *The Government's Drugs Policy: Is It Working?* Government Reply to the Third Report from the Home Affairs Select Committee.

<http://www.official-documents.co.uk/document/cm55/5573/5573.pdf>

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

Shelley H, Jones K and Hunt N (1993) *Amphetamine Injecting: Risk, Sharing and Help-seeking (an Ethnographic Study)*. Maidstone: Maidstone Health Authority.

Stevens A, Raftery J, Mant J and Simpson S (2004) *Health Care Needs Assessment: the epidemiologically based needs assessment reviews*. Oxford: Radcliffe Medical Press.

Stone M H, Stone D H and MacGregor H A R (1990) Anatomical distribution of soft tissue sepsis sites in intravenous drug misusers attending an accident and emergency department. *British Journal of Addiction*. 85:1495–1496.

Strang J, Griffiths P, Abbey J and Gossop M (1994) Survey of use of injected benzodiazepines among drug users in Britain. *BMJ*. 308: 1082.

Strang J, Keaney F, Butterworth G, Noble A and Best D (2001) Different forms of heroin and their relationship to cook-up techniques: Data on, and explanation of, use of lemon juice and other acids. *Substance Use and Misuse*, 36: 573–587.

Taylor A, Fleming A, Rutherford J and Goldberg D (2004) *Examining the injecting practices of injecting drug users in Scotland*. Edinburgh: Effective Interventions Unit.

Taylor A, Cusick L, Kimber J, Rutherford J, Hickman M and Rhodes T (2005) *Social Impact of Public Injecting*. York: Joseph Rowntree Foundation.

<http://www.jrf.org.uk/bookshop/details.asp?pubid=749>

Thakore S, McGugan E A and Morrison W (2002) Emergency ambulance dispatch: is there a case for triage? *Journal of the Royal Society of Medicine*. 95: 126–129.

Uren, Z. (Autumn 2001) *Geographical variations in deaths related to drug misuse in England and Wales, 1993-99*. Health Statistics Quarterly No. 11. pp. 25–35. London: National Statistics.

Wadd S, Hutchinson S, Taylor A, Goldberg D, Ahmed S and Cameron S. High prevalence of Hepatitis C and associated risk behaviours in recent initiates to injecting drug use, Glasgow, 2002. *Proceedings of the 11th International Symposium on Viral Hepatitis and Liver Disease, April 2003, Sydney, Australia* (p. 280).

Wadsworth J, Hickman M, Johnson AM, Wellings K, Field J (1996) Geographic variation in sexual behaviour in Britain – implications for STD epidemiology and sexual health promotion. *AIDS*. 10: 193–199.

Ward H, Pallearos A, Green A and Day S (2000) Health Issues associated with increasing use of crack cocaine among female sex workers in London. *Sexually Transmitted Infections*. 76: 292–293.

Warner-Smith M, Darke S and Day C (2002) Morbidity associated with non-fatal overdose. *Addiction*. 97: 963–967.

Winstock AR, Sheridan J, Lovell S, Farrell M and Strang J (2000) National Survey of Hepatitis Testing and vaccination Services provided by Drug Services in England and Wales. *European Journal of Clinical and Microbiological Disease*, 19: 823–828.

Wright N M and Tompkins C N (2004) Supervised injecting centres. *BMJ*. 328: 100–102.

Wright N M, Tompkins C N and Jones L (2005) Exploring risk perception and behaviour of homeless injecting drug users diagnosed with hepatitis C. *Health and Social Care in the Community*. 13: 75–83.

7.1 Appendix A

	Homeless %	95% confidence interval	Not homeless %	95% confidence interval
<i>Drug amount – more than 1g per day</i>	60	(42-76)	34	(28-40)
<i>Frequency of use – daily</i>	94	(80-99)	77	(72-82)
<i>Recency of crime – less than 6 months</i>	91	(75-98)	66	(60-72)
<i>Treatment – on maintenance</i>	3	(0.1-15)	30	(24-35)
<i>Organisation – disorganised (disorganisation of daily life)</i>	39	(22-58)	21	(16-26)
<i>Knowledge of drugs problems – expert (respondents were allocated to four categories – expert, good, fair, poor – based on responses to a series of knowledge questions)</i>	26	(13-44)	50	(44-56)
<i>Giving equipment more than 50 times in last 6 months</i>	21	(9-39)	9	(6-13)
<i>Receiving equipment more than 50 times in last 6 months</i>	15	(5-32)	2	(0.6-4)

From: Klee H *et al.* (1990) Factors associated with risk behaviour among injecting drug users. *AIDS Care*: 2: 133–145.

7.2 Appendix B

Odds ratios and associated confidence intervals of factors associated with injecting in a public place:

demographic, drug-use and health variables

	OR	95% CI	p-value
Gender			
Male	2.25	(1.00-5.16)	0.053
Age			
< 25 years	2.56	(1.12-5.84)	0.021
Domicile (baseline--permanent accommodation)			
Parents	2.10	(0.96-4.61)	< 0.001
Homeless	3.88	(1.87-8.06)	
Drug use and health symptoms			
Crack-cocaine (baseline 0)			
1 rock	2.58	(0.38-3.97)	0.033
2-4 rocks	0.86	(0.22-3.33)	
> 5	3.43	(1.22-9.67)	
Temazepam (baseline 0)			
< 40 mg	2.00	(0.66-6.04)	0.012
50-180 mg	1.40	(0.52-3.76)	
> 180 mg	5.20	(1.62-16.60)	
Injecting frequency (baseline once in an average day)			
2 times a day	2.53	(0.74-8.63)	0.040
3 times a day	2.38	(0.67-8.43)	
4 times a day	2.14	(0.56-8.22)	
5 times a day	6.53	(1.76-24.2)	
6 times a day	4.96	(1.39-17.6)	
Use unknown drug			
Yes	1.93	(1.03-3.59)	0.034
Vaccinated hepatitis			
No	3.32	(1.10-9.96)	0.029
Overdosed			
Yes	2.29	(1.17-4.46)	0.013
Vascular problems			
Yes	2.22	(1.06-4.65)	0.030
Severe stomach cramps			
Yes	2.88	(1.06-7.83)	0.034
Memory Loss			
Yes	4.91	(1.42-16.9)	0.010

From: Klee H and Morris J (1995) Factors that characterize street injectors. *Addiction*: 90: 837-841.

7.3 Appendix C

Odds ratios and associated confidence intervals of factors associated with injecting in a public place: HIV-related risk variables			
	OR	95% CI	p-value
Injecting risk			
Passed on equipment (baseline < 3 times)			0.018
3-5 times	1.84	(0.89-3.81)	
> 5	2.94	(1.34-6.44)	
Used others' equipment (baseline 0)[a]			0.047
< 5	0.96	(0.40-2.33)	
> 5	2.58	(1.00-6.71)	
Safe to share			
Yes	1.39	(1.00-1.93)	0.045
Inject with friends			
Yes	4.84	(2.47-9.50)	<0.001
Inject in group			
Yes	12.19	(3.09-48.1)	<0.001
Visit friends			
Yes	3.42	(1.77-6.63)	0.001
Pubs with friends			
Yes	4.57	(2.27-9.19)	<0.001
Crime with friends			
Yes	4.05	(2.01-8.13)	0.002
Burglary			
Yes	1.95	(1.00-3.82)	0.046
Theft from cars			
Yes	2.42	(1.28-4.55)	0.005
'Buzz' from crime			
Yes	2.05	(1.08-3.90)	0.025
Sexual risk			
Number of different partners (baseline 0)			0.003
1 partner	1.23	(0.38-3.97)	
2 partners	3.43	(1.02-11.5)	
3 or more	4.46	(1.18-16.9)	
'Casual' partners			0.002
Yes	4.28	(2.25-8.13)	
Data refer to the 6-month period prior to interview.			

From: Klee H and Morris J (1995) Factors that characterize street injectors. *Addiction*: 90: 837-841.

7.4 Appendix D

Local authorities with significantly high age-standardised drug-related poisoning mortality rates (per million), England and Wales, 1993–99

Heroin/morphine				Methadone					
	Deaths‡	Rate*		Deaths‡	Rate*		Deaths‡	Rate*	
Males				Males					
Blackpool	61	112.4		Norwich			36		
67.2									
Bournemouth	40	73.0		Barrow-in-Furness			14		
59.1									
Brighton and Hove		65	62.0	Manchester			94		
54.3									
Kingston upon Hull		64	59.3	Camden			41		
50.2									
Hastings		16	55.3	Carlisle					
16	49.3								
North East Lincolnshire		28	52.0	Oldham			33		
42.7									
Denbighshire	14	48.0		City of Westminster			37		
41.4									
Manchester	81	47.5		Blackpool	20		38.5		
Norwich		21	41.0	Hastings					
10	36.5								
Lambeth		44	39.1	Denbighshire			10		
35.4									
Wyre	11	37.6		Tameside	28		33.5		
Scarborough	11	36.5		Blackburn with Darwen	17		33.0		
Bath and North East Somerset	20	34.8		Rochdale			23		
30.9									
Blackburn with Darwen	18	33.9		Wrexham	12		30.1		
Wrexham	14	33.8		Warrington	17		28.7		
Sheffield		71	33.3	Ipswich					
11	27.1								
Rochdale	25	33.1		Hammersmith and Fulham			20		
25.8									
Hammersmith and Fulham		24	32.8	Tower Hamlets			19		
25.6									
Preston		18	31.6	Kensington and Chelsea					
18	24.3								
Stoke-on-Trent		31	31.5	Lambeth					
26	23.0								
Cambridge	16	31.4		Plymouth			22		
21.9									

Indicators of the need for drug consumption rooms in the UK

Tameside	26	30.7	Sheffield	45	
21.3					
Bradford		54	30.1	Stockport	20
21.2					
Oxford	17	29.8	Brighton and Hove	21	
20.6					
Camden	24	29.3	Liverpool	37	
20.4					
Salford		24	28.2	Bradford	
31	17.4				
Plymouth		29	28.0		
Liverpool		47	26.9		
Nottingham	27	26.4			
Bristol		42	26.1		
Derby	23	26.1			
Leeds	58	20.2			

Females

Brighton and Hove	15	19.8
13	19.4	
Manchester	14	15.3
18.0		
Liverpool	11	9.3
12.5		
Blackpool	10	6.3
Oldham	9	11.2
City of Westminster	9	10.8
Rochdale	7	9.8
Brighton and Hove	8	8.2

Females

Islington		
Norwich		8
Manchester		20
Camden	9	11.8

‡ Number of recorded deaths between 1993-99

* Age-standardised mortality rate per million

Source: Uren, Z. (Autumn 2001) 'Geographical variations in deaths related to drug misuse in England and Wales, 1993-99'. *Health Statistics Quarterly* No. 11. pp. 25–35. London: National Statistics.