NHS
Greater Glasgow and Clyde

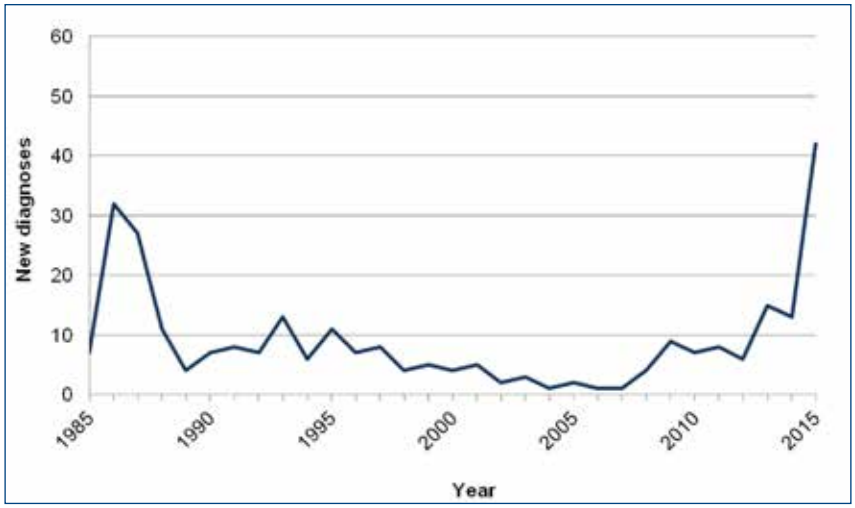
"Taking away the chaos"

The health needs of people who inject drugs in public places in Glasgow city centre

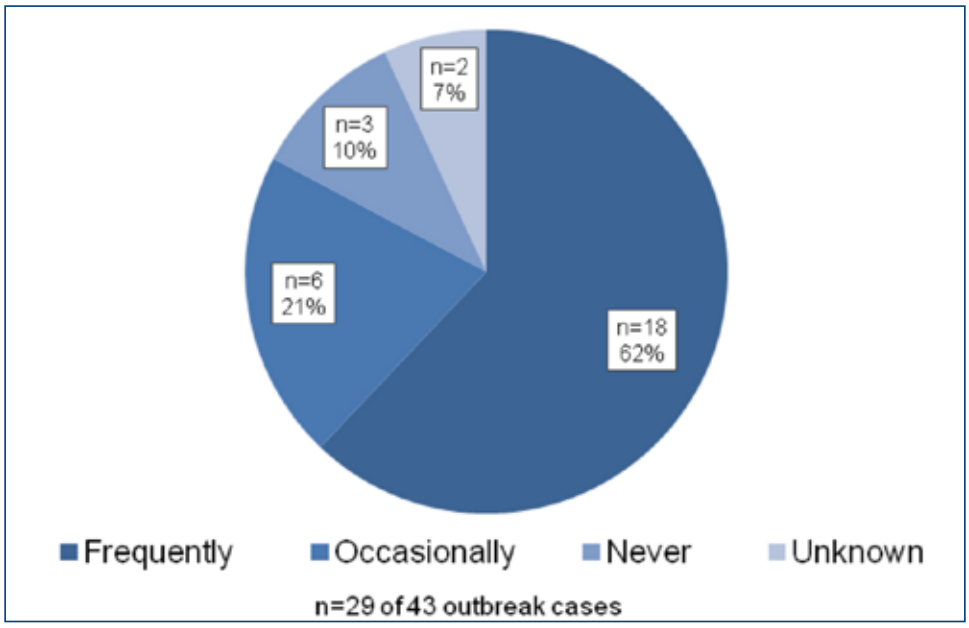
Background

2015 saw a significant HIV outbreak among people who inject drugs in Glasgow, with 47 new diagnoses compared to a previous annual average of 10. New cases continue to occur. Initial investigations suggested a link between the outbreak and injecting in public places in the city centre, with the majority of cases interviewed reporting this risk factor.

New HIV diagnoses among people who inject drugs in NHSGGC, 1985-2015.



History of public injecting among people diagnosed with outbreak strain of HIV during 2015 for whom structured questionnaires were completed.



This is the latest of several outbreaks of serious infectious disease among people who inject drugs in Glasgow, including botulism (2014-15) and anthrax (2009-10). Drug-related deaths in Glasgow have also been a persistent concern: though the rate per 1,000 problem drug users is below the national average, the size of this population locally means that the city experiences a high overall burden of drug-related mortality[1, 2].

Local residents and businesses have for some years voiced concerns that large amounts of discarded injecting equipment in public places in the city centre and neighbouring areas are negatively impacting on community safety and amenity.

There is therefore evidence that people who inject drugs in Glasgow continue to be vulnerable to significant health harms, with those involved in public injecting in the city centre at particular risk.

In response, NHS Greater Glasgow and Clyde (NHSGGC) and Glasgow City Alcohol & Drugs Partnership (ADP) initiated this project to review the health needs of people who inject drugs in public places in Glasgow city centre and to make recommendations for services.

Methods

There are a number of methodological challenges inherent to understanding this marginalised population with complex health and social needs. We therefore used a pragmatic approach, which triangulated information from three key sources.

1. Data from local and national services, including injecting equipment providers, a local Assertive Outreach team, specialist addictions care, the Scottish Ambulance Service, and Community Safety Glasgow.
2. A series of rapid literature reviews on the characteristics and needs of people who inject drugs in public places, and the evidence for potential interventions
3. A consultation exercise with key stakeholders, comprising six interviews with people currently involved in public injecting, a focus group with fifteen individuals in recovery from injecting drug use, and an online consultation with thirty-three staff from health & social services, patient and family organisations, and enforcement agencies.

Findings

There are few reliable data on the number of individuals who inject drugs in public places in Glasgow city centre. By applying published figures on the prevalence of public injecting to local data from injecting equipment providers, we estimate that approximately 400 to 500 people may be injecting in public places in the city centre on a regular basis: this is consistent with the number of individuals known to a local Assertive Outreach team set up to serve this population.

Data from existing services suggest that the majority are male, of Scottish or other British origin, and aged between 30 and 50 years. Many experience the combination of social vulnerabilities commonly referred to as 'multiple exclusion' or 'severe and multiple disadvantage', including homelessness, recent incarceration, and chronic poverty. A significant proportion continue to inject despite being in structured addictions treatment.

The characteristics of individuals involved in the HIV outbreak are very similar to those of individuals known to the Assertive Outreach team and city centre IEP outlets, and a substantial proportion of cases report public injecting.

Factors driving public injecting include immediacy and proximity to drug markets, homelessness, and concerns about assistance in the event of an overdose.

Public injecting in Glasgow is concentrated in lanes, closes, car parks, and public toilets of the south-east city centre and adjoining areas of the east end. Several informal drug consumption areas have been found in abandoned buildings and makeshift huts.

This population experiences multiple barriers to improving their health and to accessing existing services, foremost among which are the severity of their addiction and the precariousness of their social circumstances. Such factors are inextricably linked to health, and must be directly addressed if any response to public injecting is to succeed.

Nonetheless, a number of priorities for health service provision can be identified: the risk of blood-borne viruses, of overdose and drug-related death, and of other injecting-related complications, such as abscesses, wounds, and deep vein thrombosis. The link between public injecting and the recent HIV outbreak is particularly concerning, with 83% of cases interviewed reporting this risk factor.

From this work, two sets of recommendations emerge: firstly, for the development of existing services, and secondly, for the introduction and evaluation of new services.

Recommendations for the development of existing services

1. **Develop a strategy for multi-disciplinary co-ordination between the various agencies involved with this population, in order to address the multiple forms of disadvantage they experience and the wider social determinants of public injecting.**

   Public injecting is inextricably linked to the combination of adverse social circumstances often referred to as 'multiple exclusion' or 'severe and multiple disadvantage'. Several stakeholders therefore identified a need for better integration and communication across relevant sectors, including health, social care, housing, and criminal justice. Whilst any such initiative should be mindful of some service users' concerns about confidentiality and information sharing, a co-ordinated approach is essential to ensuring that services meet the needs of this population. Further work is therefore required locally to develop a multi-disciplinary response to the broader needs of this population, particularly in relation to housing.

2. **Support the development of a peer network for harm reduction aimed at current injecting drug users, analogous to – and linked with – successful local peer-led recovery initiatives.**

   Service users and providers alike spoke of stigma as a powerful barrier to accessing much-needed services among this population. Many people with active or former injecting drug use described a need for more person-centred care, and wanting more input into decisions about their care. We were struck by the strength and value of the existing peer network for people in recovery, and by the opportunities for empowerment, engagement, and harm reduction that a similar network could offer for people who inject drugs.

3. **Review models of delivery for specialist addiction services to ensure they are able to meet the needs of this population, with particular reference to access, engagement, and harm reduction.**

   While national and international comparisons suggest that the quality of specialist addictions provision in Glasgow is relatively good, these aggregate data may not be representative of the experiences of people who inject drugs, a subgroup of service users with particularly complex needs and at high risk of harm. Though it is anticipated that the novel services recommended below will contribute to greater engagement and harm reduction among people who inject drugs in public places, this project has also identified a number of opportunities to improve the ability of existing services to meet their needs. Staff highlighted a need for more flexible and intensive services, greater specialist outreach, and potentially, a dedicated city centre community addiction team. Both staff and service users also suggested there was scope for a greater focus on harm reduction across all tiers of service.

4. **Maximise the capacity of the existing Assertive Outreach service to provide injecting equipment during evenings, and shift existing contracts with city-centre outlets to sites with extended opening hours.**

   Current injecting equipment provision (IEP) in Glasgow city centre is widely acknowledged to be very good. Plans to expand the provision of route transition interventions – such as foil distribution and training – are an important and welcome addition to existing services. However, evidence from our work and that of the HIV Incident Management Team has indicated that there is room for improvement in relation to out-of-hours provision of injecting equipment. Though there is some evidence that vending machines are able to reach the target population, stakeholders generally preferred the option of extending the hours of staffed services, in order to maximise opportunities for harm reduction interventions.

   While a safer injecting facility in the city centre, as described below, could in future offer out-of-hours injecting equipment provision, there will inevitably be a significant lead time before it becomes fully operational. The most feasible and acceptable approach in the interim is therefore to build on existing services to meet out-of-hours demand. The efforts of the HIV Incident Management Team to facilitate evening IEP in the city centre and adjoining areas

of the east end are particularly valuable in this regard. Another potential means by which to enhance the capacity of existing IEP services would be to move provision from the Boots Queen Street pharmacy (open until 7pm) to the same company's Central Station outlet (open until midnight).

Recommendations for the introduction and evaluation of new services

Though the above changes to existing services are critical to an effective response to public injecting in Glasgow city centre, the scale and persistence of the problem means they are unlikely on their own to have a significant impact. A multi-faceted public health response is required, integrating evidence from international examples of best practice with considerations of local need. A number of novel interventions, supported by research evidence, local stakeholder feedback, and expert bodies, offer the potential to greatly reduce the health harms experienced by this group.

5. **Introduce and evaluate a pilot safer injecting facility in the city centre, to address the unacceptable burden of health and social harms caused by public injecting.**

   Safer injecting facilities are low-threshold harm reduction services which aim to minimise the risks of public injecting and help engage people with health and social care, including addictions treatment. A substantial body of international research evidence has accumulated over the past three decades to support their effectiveness in reducing the health and social harms associated with injecting drug use, and public injecting in particular. In our consultation, this proposal enjoyed widespread support by stakeholders from the target population, health services, and organisations representing drug users and their families.

   In contrast to other UK cities which have previously considered such a measure, the evidence presented here indicates that the scale of public injecting – and its associated health harms – in Glasgow city centre justifies the introduction of a pilot safer injecting facility. However, any such initiative would require a robust, prospective evaluation – including an economic component – to confirm whether the benefits observed in other cities are transferable to the local context. The facility should be established through co-operation between key local agencies and the wider community, and carefully integrated with existing services. Addressing the concerns expressed in our stakeholder consultation by colleagues from Community Safety and Police Scotland is an important challenge in this respect.

6. **Introduce and evaluate a pilot service for heroin-assisted treatment in Glasgow City ADP, for people who continue to use street heroin despite optimal opioid substitution therapy.**

   Heroin-assisted treatment refers to the prescribing of injectable, pharmaceutical-grade heroin, which is then administered in a specialist outpatient facility under clinical supervision and strict safeguards. There is high-quality evidence to suggest that it can improve individual and social outcomes when provided as a second-line treatment for people with chronic opiate dependency. Local data suggest that a significant proportion of people who inject drugs in public places in Glasgow city centre would be eligible for heroin-assisted treatment, with substantial potential benefits for both them and the wider community. This coincides with the consensus from our stakeholder consultation that the chaos and instability of addiction is a major barrier to better health among this population, and that prescribed injectable heroin would be a welcome addition to existing opioid substitution therapies. There is therefore a strong case for the expansion of the addictions services offered by Glasgow City ADP to include heroin-assisted treatment.

7. **Incorporate questions on public injecting into routine assessments in existing services (such as community addiction teams, via the new national database known as DAISy) and into ad-hoc surveys (such as NESI) in order to enhance our understanding of the prevalence of public injecting and to monitor the impact of new interventions.**

None of the existing sources of data on drug use and related harms in Scotland currently record place of use: efforts to address the needs of people who inject drugs in public places are therefore hindered by a lack of high-quality, locally relevant data on their number, characteristics and outcomes. Questions on public injecting should be incorporated into routine assessments in community addiction teams and injecting equipment providers, and into ad-hoc surveys, such as NESI. The development of DAISy, a new national database for collecting treatment and outcome information from community addiction teams, offers a particularly valuable opportunity for this information to be collected at a national level. Whilst limitations of the existing data are not a reason for inaction, given the powerful evidence of harm presented here, improving their quality will be essential to monitor the impact of the new interventions proposed.

These recommendations are intended to be complementary, addressing different aspects of public injecting through interventions at different levels of healthcare service provision.

Whilst none of the recommendations described above are a panacea, together they represent an evidence-based and person-centred approach to engaging users, reducing harm, and improving health. They are also likely to provide significant benefits for the wider community, through reduced costs and improved public safety and amenity.

Previous attempts to address the problem of public injecting in Glasgow have not curtailed the harms experienced by this population: new and innovative approaches are therefore required in order to meet their needs.

"You can put as many posters up as you like, saying that there is an increase in HIV in places. You need to think about it differently. That's where I think safe injecting routes and injecting heroin…you take away the chaos. Then you have a chance to work on the attitude."

Focus group participant (in recovery from drug use)

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Acknowledgements

We would like to express our sincere thanks to following for their help with this project:

- All those who took part in interviews, focus groups, and the online survey as part of our stakeholder consultation.
- Lauren Johnston (Scottish Drugs Forum) for advice on the stakeholder consultation.
- Rona Dougall (NHSGGC) for assistance with the design and analysis of the stakeholder consultation.
- Kevin Hattam and Christine Buntrock (both of Turning Point Scotland), for providing data on Assertive Outreach team activity, and to Thomas Hobbs (Simon Community), for facilitating the interviews with people currently injecting drugs.
- Laura Stewart and Alison MacDairmid (both of Turning Point Scotland), for providing the service user case studies.
- Leanne Carnevale, Debbie Murray, Steven Smyth, Emma Kinghorn and Denise Lyden (NHSGGC) for providing administrative support for the stakeholder consultation.
- Catriona Milošević (NHSGGC) and other members of the HIV Incident Management Team for providing data on the HIV outbreak.
- John Campbell (NHSGGC) & Anita Hannam (Neo360) for providing data on Injecting Equipment Providers.
- Tony Martin and Stephanie Dargan (NHSGGC) for providing data on drug-related deaths.
- Scottish Ambulance Service for providing data on overdose incidents, and Andy McAuley (Health Protection Scotland) for facilitating access to this data.
- Alison Munro (University of the West of Scotland) for providing data from NESI.
- Alisdair Clark, Douglas Gellan, and Robert Soutar (Glasgow City Council) for providing data on drug-related litter.
- Chris Mooney and Michelle Love (Community Safety Glasgow) for providing data on police reports of drug-related activity.
- Sharon Duncan (NHSGGC) for providing data on opioid substitution therapy prescribing.
- Paula Barton (NHSGGC) for mapping assistance.
- Andy McAuley and Norah Palmateer (Health Protection Scotland) for advice on the literature review.
- Janice Blair (NHSGGC) for carrying out the literature searches.

Contents

1. Background and context

Since early 2015, a significant increase in HIV transmission has been observed among people who inject drugs in Glasgow. As detailed below, initial investigations have indicated a link between the outbreak and injecting drug use in public places in the city centre.

Several other recent outbreaks of serious infectious disease among people who inject drugs – such as botulism (2014-2015) and anthrax (2009-2010) – have further highlighted the vulnerability of this group to significant harm.

Drug-related deaths in Glasgow have also been a persistent concern: though the rate per 1,000 problem drug users is below the national average, the size of this population locally means that the city experiences a high overall burden of drug-related mortality[1, 2].

Local residents and businesses have for some years voiced concerns that large amounts of discarded injecting equipment in public places in the city centre and neighbouring areas are negatively impacting on community safety and amenity.

In response to the accumulating evidence of poor health and injecting-related harm among people who inject drugs in public places in Glasgow city centre, NHS Greater Glasgow and Clyde (NHSGGC) and Glasgow City Alcohol & Drugs Partnership (ADP) initiated this project to review the health needs of this population and to make recommendations for services.

1.1. What is public injecting?

Public injecting in this context refers to the injection of recreational drugs in places potentially accessed by the general public: these include alleyways, car parks, parkland, public toilets, and closes. This definition does not encompass people gathering to inject drugs within private properties (sometimes known as 'shooting galleries').

As described in more detail in Section 4, the environment in which drugs are prepared and administered is influenced by individual and social factors with powerful impacts on health, such as severity of dependence, housing status, and societal attitudes to drug use. The consumption environment in turn acts as a key determinant of the harms of injecting drug use, for both the individual and the wider community[3].

Both the causes and consequences of public injecting therefore mean it is a powerful marker of heightened vulnerability to poor health.

This is illustrated by the following personal stories from people currently involved in public injecting, as told to outreach staff from Turning Point Scotland. Names and personal details have been changed to ensure anonymity.

James

James is in his early twenties. He originally lived and worked elsewhere in Scotland with his partner, but the relationship broke down when the couple lost a child to cot death.

Following this, James gave up his job, left his home town, and moved to Glasgow.

Due to his difficult financial situation and lack of employment, James was unable to find a permanent residence and started begging to fund accommodation in a local hostel, and eventually began sleeping rough.

He was befriended by other homeless people and within a few months began injecting heroin.

Peter

When the team met Peter, who is in his mid-thirties, he was sleeping rough in the city centre, having left a hostel due to threats of violence. He was walking with a limp due to nerve damage resulting from rough sleeping in cold conditions, and was severely malnourished. Though he previously had a supportive family, the relationship deteriorated due to his drug addiction and he found himself no longer welcome.

Peter encountered difficulties finding emergency accommodation and although case work referrals were made, he often missed early appointments as a result of sleeping rough the night before. As a result, Peter's physical and mental health deteriorated.

Peter has been in residential rehab on several occasions during the last few years, completing only one episode. Despite a year of abstinence following his most recent stay, he has recently relapsed and started using cocaine and heroin again.

Jessica

Jess is in her late thirties and is currently sleeping rough alongside her boyfriend, though she uses the winter night shelter when she can.

She has a long history of rough sleeping, but had previously been staying in temporary accommodation before being evicted for antisocial behaviour and rent arrears.

Jess has a history of physically and emotionally abusive, controlling partners. She begs for an income and is the main breadwinner in her relationship, prioritising her partner's needs over her own.

Although Jess is registered with homeless health services, she has not managed to meet with a case worker yet, due to the revolving cycle of withdrawal symptoms and finding funds to buy heroin.

1.2. HIV outbreak in Glasgow: association with public injecting

During 2015, a total of 47 cases of HIV were diagnosed among people who inject drugs in Glasgow, of whom 43 share the same strain (subtype C). This represents an almost fivefold increase on the previous annual average of 10 new infections, with laboratory testing indicating recent transmission in the majority of cases. There have been 13 further cases of HIV among people who inject drugs diagnosed during 2016 to date.

Transmission appears to be predominantly via injecting drug use, though a degree of sexual transmission cannot be ruled out. Such an outbreak is unusual in an area such as Glasgow which provides a range of prevention services, including low-threshold access to sterile injecting equipment, opioid substitution therapy, sexual health services, and HIV treatment.

Most of those affected are male, with relatively long histories of injecting drug use **(Figure 1)**. As **Figure 2** shows, most report multiple social vulnerabilities, including unemployment, homelessness, and offending. The combination of these factors is often referred to as severe and multiple disadvantage (SMD) and is increasingly recognised as a powerful marker for ill health and social exclusion[4].

In structured questionnaires completed by 29 cases, 24 (83%) of the affected individuals reported public injecting (Table A1, Appendix 3). Of these, the majority did so in the city centre (n=23, 96%), and on a regular basis (n=18, 75%). A number also reported sourcing or injecting drugs in areas of the east end adjoining the city centre, such as Bridgeton and Calton. One case described a makeshift hut on waste ground near the city centre, where people would gather to share drugs and injecting equipment in a sheltered place.

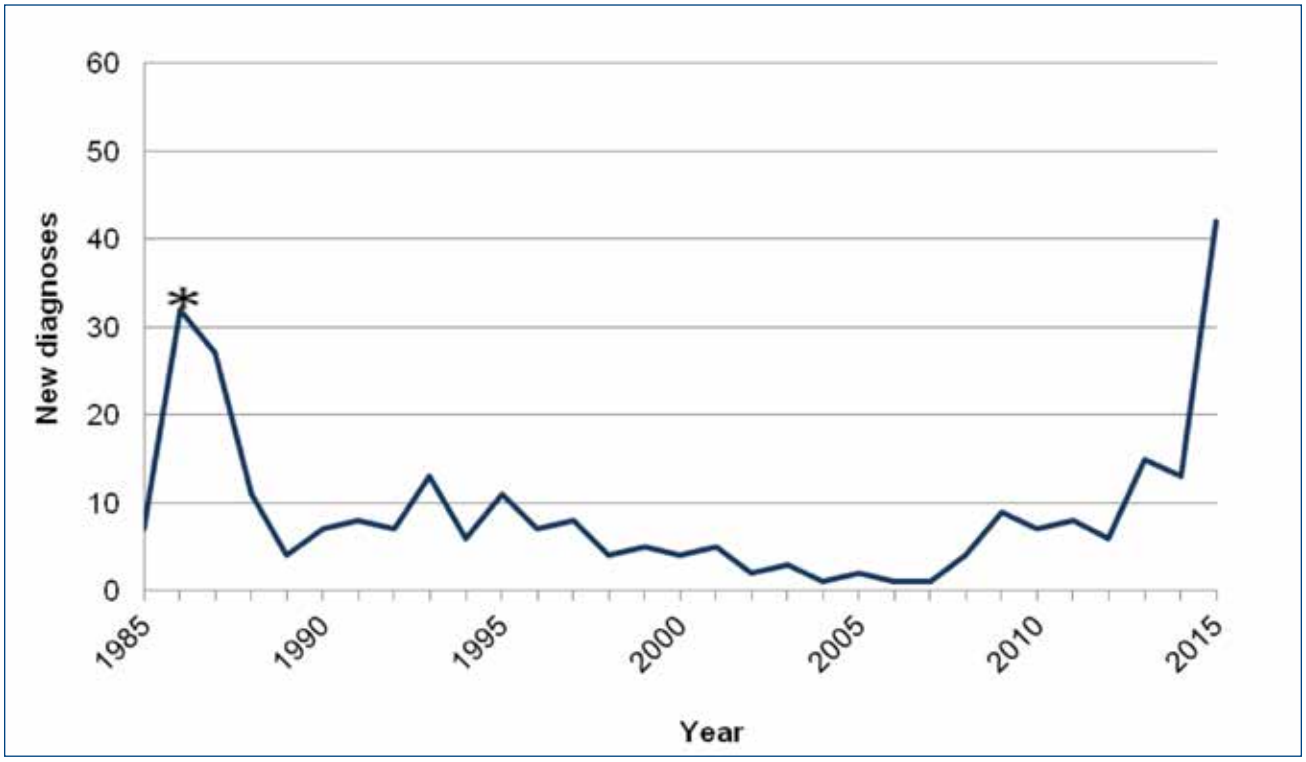
Most are known to addiction services but poorly retained in treatment. Similarly, efforts to engage this population in HIV care have met with little success: in early 2016, only one-quarter were estimated to be currently receiving anti-retroviral treatment. To date, two of those affected have died, both of causes unrelated to HIV.

In-depth interviews with five of the affected individuals have suggested that public injecting, and the sharing of injecting equipment, was predominantly driven by convenience and the desire to inject[5]. There was also a reluctance to carry needles for fear of being stopped by the police. Awareness of HIV was low, with many believing it was no longer a problem among people who inject drugs. In contrast, hepatitis C infection was considered ubiquitous and therefore inevitable. As a result, direct and indirect sharing of injecting equipment – for example, through preparation of communal batches of drugs or from using needles stored at public injecting locations – was commonplace.

All used both heroin and cocaine; since it has more short-lived effects, cocaine use can increase the number of injecting episodes and therefore the likelihood of complications. Other high-risk behaviours (such as groin injecting) and health complications (such as abscesses and septicaemia) were also reported by all five cases.

There is therefore evidence to suggest a close link between public injecting, HIV risk behaviour, and the current outbreak.

Figure 1. New HIV diagnoses among people who inject drugs in NHSGGC, 1985-2015.



* The first blood tests for HIV became widely available in 1985-1986; this peak therefore represents the detection of a large number of prevalent but previously undiagnosed cases.

Figure 2. Age and gender profile of people diagnosed with outbreak strain of HIV during 2015.

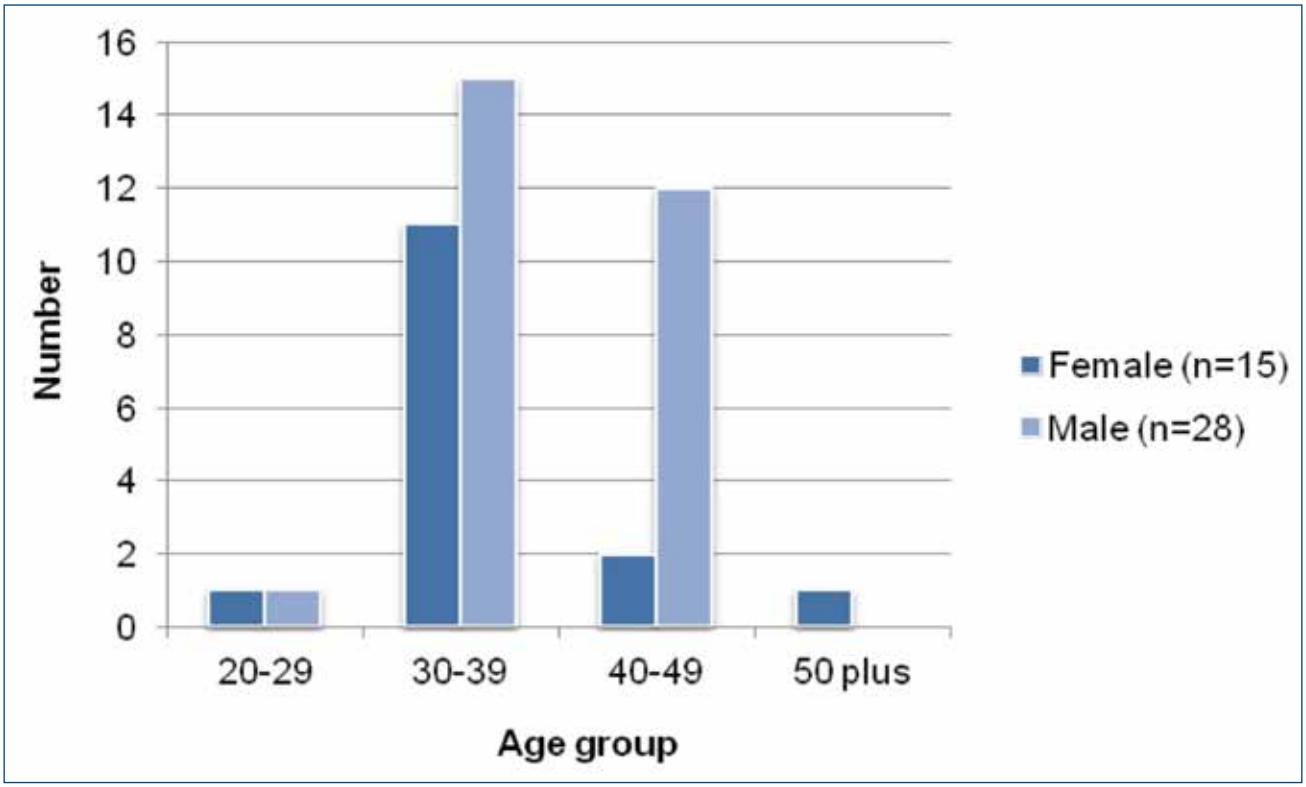
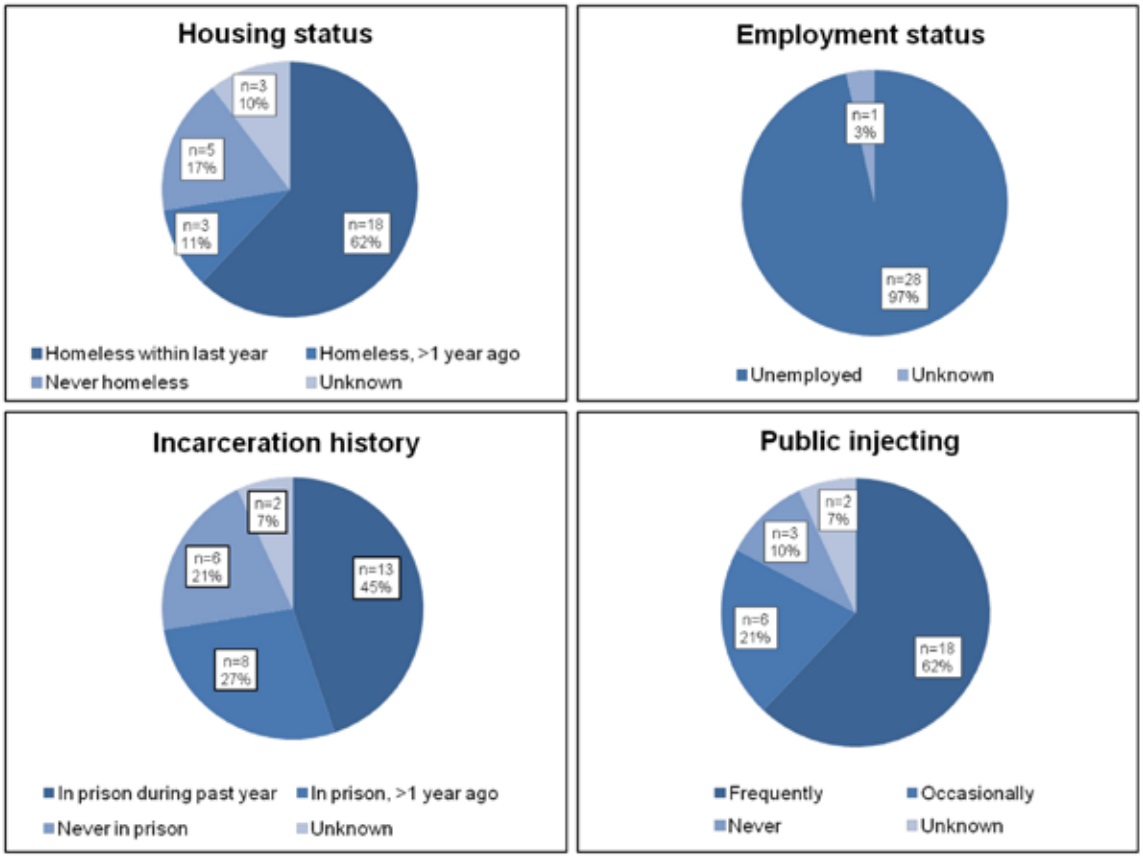


Figure 3. Characteristics of people diagnosed with outbreak strain of HIV during 2015 for whom structured questionnaires were completed (n=29):



1.3. Local, national, and international context

Local context

Public injecting in Glasgow city centre has been a concern for some years, with Glasgow City ADP highlighting it as a strategic priority for 2014-2017[6]. As described below in Section 1.3, an Assertive Outreach service was launched in June 2014 specifically to work with people who inject drugs in the city centre, in order to better understand the nature of the population, their needs, and their interactions with services.

Other previously commissioned work has attempted to estimate the size of the local population engaged in public injecting and to review international responses to the issue[7, 8]. However, some of the data sources used in previous estimates have been superseded and there remains a need for a comprehensive and up-to-date health profile of this vulnerable group.

National context

No current national policy or strategy makes specific reference to the issue of public injecting or associated health and social impacts.

The Scottish Government's 2008 drugs strategy "The Road to Recovery" emphasised a recovery-based approach to problem drug use[9]. As well as initiating service reform to reflect this new focus, the strategy identified priorities in the areas of prevention, enforcement, and care for children affected by substance misuse.

In line with its objective of reducing unintentional harms, the Scottish Government's Justice Strategy has identified the rate of drug-related deaths as a key outcome indicator[10]: actions to this end remain under the purview of "The Road to Recovery".

Reducing the transmission of blood-borne virus infections, and inequalities in their impact, are key outcomes for the National Sexual Health and Blood Borne Virus Framework, published in 2011 and updated in 2015[11,12]. In particular, the Framework describes the need to target

interventions towards the most vulnerable groups and to use the most up-to-date evidence to inform prevention approaches at the NHS board level.

Finally, although not a policy document itself, the Scottish Government's Guidelines for Services Providing Injecting Equipment highlights the importance of needs assessment – particularly for vulnerable sub-populations such as homeless people – in planning and delivering such services, and of choosing appropriate models of delivery in response to local need[13].

International context

International responses to the problem of public injecting have varied[8]. Enforcement and dispersal efforts have met with little success, tending to exacerbate the harmful individual and societal impacts of street drug use[14]. In contrast, there is an accumulating body of evidence to support those interventions that address underlying social vulnerabilities and provide safer routes and environments for drug use[8,15].

Box 1 describes one such case study from Vancouver, Canada.

Case study: HIV outbreak in Vancouver, Canada

During the mid-1990s, the Canadian city of Vancouver experienced an HIV outbreak among people who inject drugs of unprecedented scale[15]. At its peak, the rate of new infections reached 18 per 1,000 person-years, comparable to incidence rates seen in parts of sub-Saharan Africa. Up to 25% of the city's population of people who inject drugs became infected.

Those involved in the Vancouver outbreak had a similar age, gender and socioeconomic profile to that seen in Glasgow, with public injecting identified as a particular concern.

In response, local officials implemented a range of initiatives aimed at reducing the harms of injecting drug use and of public injecting, including increasing access to sterile injecting equipment, methadone maintenance, and HIV testing and treatment. Pilot services for supervised injecting and heroin-assisted treatment were also introduced.

This multi-faceted approach appears to have been successful, with rates of HIV and injecting risk behaviour having declined significantly since the height of the outbreak[16].

1.4. Existing local services

As shown in **Figure 4**, addiction services are typically conceptualised as a four tier framework, from the specialist to the generic[16].

In this section, we first describe existing services in Glasgow for people who inject drugs in public places using this framework. We then review the scope and quality of local service provision relative to national and international standards.

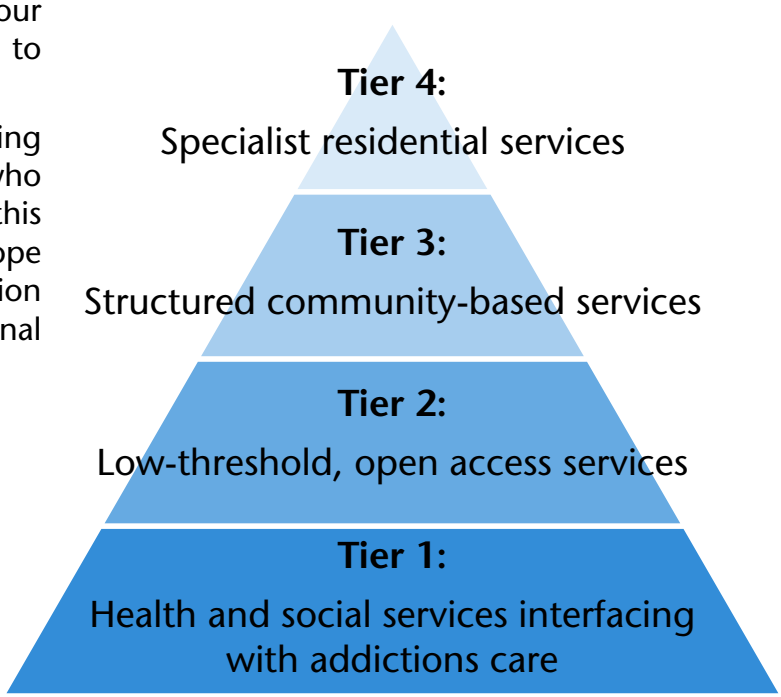


Figure 4. Four-tier framework for addictions services[16].

1.4.1. Current provision

Tier 3 & 4 services: Specialist addictions care

The majority of addictions care in Glasgow is provided by nine Community Addiction Teams (CATs), run by Glasgow Addictions Services as a partnership between NHSGGC and Glasgow City Council. CATs typically comprise a community addiction manager, medical officers, psychologists, nursing staff, social care workers, and administrative staff. They aim to provide a single point of access to individual needs assessments, harm reduction advice, opioid substitution treatment, psychological therapies, and case management (including referral to social services such as housing, welfare advice and employability).

Services are provided on a direct access basis, with self-referrals encouraged: initial assessments are available on a drop-in basis. After assessment, individuals are assigned a key worker – either a nurse or social care professional – who co-ordinates their treatment and care.

National targets mandate a maximum three-week wait between referral and commencing treatment; individuals at high risk of drug-related harm (for instance, because of severity of addiction or adverse social circumstances) are prioritised for assessment and treatment. The frequency of subsequent review is determined by service user need and treatment type, and varies from several times per week to every three months. Individuals who are on stable maintenance treatment and do not have significant physical or mental health co-morbidities may be considered for GP prescribing, through the Shared Care scheme; in such cases, the CAT key worker continues to act as a point of liaison and co-ordination.

With regard to tier 4 services, GAS also has access to 30 inpatient beds across the city and commission a number of residential and community rehabilitation centres.

In addition to CATs, several other specialist addictions teams offer services to subgroups with more complex needs:

- the Homeless Addictions Team (based at Hunter Street Homeless Services),
- the Drug Court Team (for offenders with substance use disorders), and
- the 218 Project (for female offenders).

Tier 2: Assertive Outreach team

Since June 2014, Glasgow City ADP has commissioned Turning Point Scotland and the Simon Community Glasgow to provide an Assertive Outreach service specifically aimed at meeting the needs of people who inject drugs in public places.

The Assertive Outreach team consists of four support workers who maintain a street presence in the city centre and neighbouring areas of the East End during afternoons and evenings, seven days a week. Activities include distributing injecting equipment; providing harm reduction advice and training; and supporting clients to engage with other services such as housing, social work, addictions, and specialist healthcare.

An external evaluation of this service, commissioned shortly after its introduction, found that it was well received by clients and that it appeared to be addressing previously unmet need in terms of injecting equipment provision. However, it also identified that there was scope for improvement in the areas of care planning, naloxone training, and reducing drug-related litter.

Since August 2015, an addictions nurse has also been seconded to the team for five days a week in order to provide health interventions and to liaise with existing health services.

[a] Injecting equipment provision services may also be known as needle exchanges, or needle and syringe programmes.

Tier 2: Injecting Equipment Provision

Injecting equipment provision[a] (IEP) aims to reduce the risk of injecting-related infections, including blood-borne viruses, by providing people who inject drugs with sterile injecting equipment such as needles, syringes, spoons, filters and sterile water.

Within Glasgow city centre, there are four fixed-site injecting equipment providers, all based in community pharmacies. There are also several sites in neighbouring areas such as Tradeston and Bridgeton, which are known to be frequented by people who inject in the city centre (Figure 5, page 21). Of these, only the Glasgow Drug Crisis Centre – located fifteen minutes' walk from the city centre – is open twenty-four hours a day, seven days a week. One IEP pharmacy – in Queen Street train station – is open from 7am-7pm, and another is open on Sundays; the remainder are closed during the evenings and on Sundays. In addition to these fixed-site outlets, the Assertive Outreach team actively seek out street injectors in the city centre in order to distribute injecting equipment.

These services form part of a wider network of 68 IEP outlets across NHSGGC, predominantly based within community pharmacies.

All provide a range of injecting equipment, including needles of different sizes, filters, spoons, single-use water ampoules, cleansing swabs, and citric acid. In order to maximise uptake, IEP services are free at the point of access and do not require a literal exchange of used for unused equipment. Most equipment is dispensed in the form of "One Hit Kits", in order to encourage single use, reduce wastage of unused equipment, and promote secondary distribution. IEP services also have a role in providing harm reduction advice and signposting clients to specialist addictions services. Multi-disciplinary training sessions in safer injecting techniques are regularly held for staff across all tiers of service.

Foil – to promote route transition away from injecting and towards inhalation – is also provided through community addiction teams and a small number of outlets: plans are underway to roll out foil provision and training across NHSGGC during 2016.

Tier 1: Primary health care

In addition to the existing network of general practices in Glasgow city centre and surrounding areas, Hunter Street Homeless Services provide a dedicated GP service for people who are homeless. Hunter Street also hosts a number of other primary care and allied health professional services, including dentistry, podiatry and occupational therapy, as well as secondary care services, including mental health and addictions (as described above). All have close links to social services such as housing, social work, and financial inclusion, through joint working arrangements.

Tier 1: Secondary health care, including blood-borne virus treatment and care

Acute inpatient health care services in Glasgow are based at Glasgow Royal Infirmary (for the north sector, including the city centre itself) and the Queen Elizabeth University Hospital (for the south sector); outpatient services are additionally provided at Stobhill Hospital, the New Victoria Hospital and Gartnavel General Hospital. In particular, specialist infectious disease services – including blood-borne virus care – are split between the Queen Elizabeth University Hospital (inpatients) and Gartnavel General Hospital (outpatients).

Acute Addiction Liaison nursing teams are available in all acute hospitals in Glasgow, and aim to provide a bridge between acute inpatient health care services and community addiction teams for people with drug and/or alcohol issues.

1.4.2. National and international comparisons

Scope of existing provision

The European Monitoring Centre on Drugs and Drug Addiction (EMCDDA) has identified a set of interventions which constitute evidence-based best practice for people who inject drugs[17, 18].

Most – but not all – of these are currently provided within the Glasgow City ADP area, including: opioid substitution therapy combined with psychosocial support; tapered opioid substitution therapy for detoxification; outreach-based harm reduction services; take-home naloxone for preventing overdose-related deaths; and low-threshold provision of sterile needles, syringes, and injecting paraphernalia.

Three EMCDDA-recommended interventions are not currently provided in Glasgow: safer injecting facilities (also known as drug consumption rooms); heroin-assisted treatment; or a comprehensive programme of peer-based harm reduction interventions.

Quality of existing provision

The Needle Exchange Surveillance Initiative (NESI) study has found that, among people attending injecting equipment provision (IEP) outlets in NHSGGC , the proportion of recent initiates to injecting drug use (onset of injecting within last 5 years) has declined, from 26% in 2008 to 17% in 2013[19]. The proportion of people injecting on a daily basis has also declined, from 61% in 2008 to 42% in 2013. This suggests that the incidence of injecting drug use – and the intensity of injecting – is declining over time locally.

National waiting time standards in Scotland mandate that at least 90% of people referred to alcohol and drug treatment services should wait no longer than three weeks before the start of appropriate treatment. In 2015, 96% of people referred to services in Glasgow City ADP started treatment for drug problems within three weeks of referral; this compares to a national average of 93.9%[20].

Local addictions services work to service standards and prescribing guidelines derived from the UK guidelines for the clinical management of drug misuse and dependence[21]. Estimates suggest that coverage of opioid substitution therapy (OST) in the Glasgow City ADP area – calculated by dividing the number of individuals prescribed OST by the estimated number of problem drug users resident in the area – is approximately 52%[22]. This is comparable to the UK and European average[23], and above the World Health Organisation threshold for 'high' coverage of OST, defined as >40%[17,18,24]. However, it remains lower than the highest performing countries, such as Austria, Luxembourg, and Switzerland[23,25].

As highlighted above, the crude rate of drug-related deaths in Glasgow – expressed as deaths per 1,000 population – is among the highest in Scotland. However, with respect to rates of drug-related death per 1,000 problem drug users – a metric which takes into account the underlying prevalence of problem drug use and therefore better reflects the performance of health services in harm reduction – Glasgow is below the national average (8.1 per 1,000 vs 9.4 per 1,000)[2].

Local IEP services fulfil the EMCDDA standard – and World Health Organisation recommendations – for low-threshold provision of sterile needles, syringes, and injecting paraphernalia, with a wide range of equipment available on an unlimited basis from a large number of outlets in diverse settings.

[b] Note that NESI data on these indicators are unfortunately not available at ADP area level.

Estimating the coverage of IEP services is methodologically challenging; this is particularly the case in Scotland, where estimates of the number of people who inject drugs have not been produced since 2006. Attempts to estimate local coverage – even using pragmatic definitions such as 'service utilisation', the number of needles distributed per injector per year[24] – produce very different results, depending on which estimate of the denominator population is used. However, NESI data from NHSGGC as a whole suggest that injecting risk behaviours – such as sharing of needles, syringes and injecting equipment – are declining over time[19]. For instance, the proportion of respondents reporting having injected with a needle or syringe previously used by someone else declined from 8% in 2008 to 3% in 2013. In keeping with this trend, hepatitis C antibody prevalence among recent initiates to injecting drug use (a marker of ongoing transmission) has also declined over time, from 32% in 2008 to 21% in 2013[19].

1.4.3. Summary

Local data suggest that the quality of service provision for people who inject drugs in Glasgow compares well to other areas of the UK and to international standards. There is also some evidence to suggest that both injecting drug use and its associated health harms are in decline across NHSGGC.

However, these aggregate data may not be representative of specific sub-populations at particularly high risk, such as people who inject drugs in public places. Indeed, the HIV outbreak indicates that this is a group who continue to experience significant drug-related harm despite existing provision.

Furthermore, existing provision in Glasgow does not include all the harm reduction interventions identified as best practice by the EMCDDA.

There is therefore a need to review the health needs of people who inject drugs in public places and to consider potential novel approaches to reducing harm.

2. Aims, objectives, and scope

Aims

Following the recent rise in HIV transmission among this population, this project aimed to review the health needs of people who inject drugs in public places in Glasgow city centre in order to inform service provision and planning.

Objectives

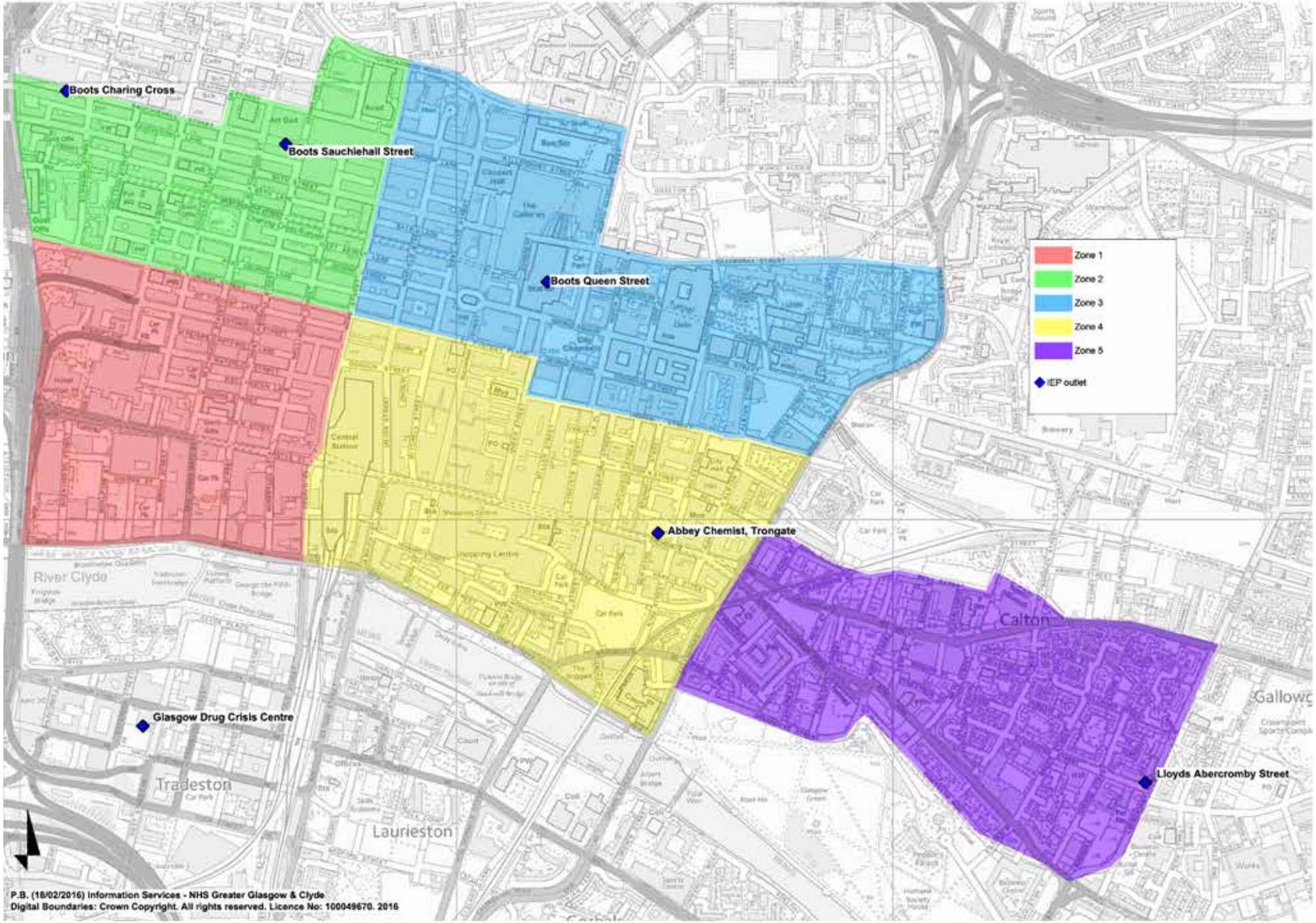
- To collate existing data on the nature of the population, their health experiences and needs
- To consult relevant stakeholders, including people who inject drugs and service providers
- To specifically explore the likely benefits and risks of implementing locally three interventions identified by previous scoping exercises[8] and international standards[17,18].
    - safer injecting facilities
    - heroin-assisted treatment
    - extending access to injecting equipment
- To make recommendations to guide service provision and planning.

Scope

Although public injecting has the potential to impact the health and wellbeing of the wider community, this needs assessment focused on the health needs of people who inject drugs themselves. It also focused on needs that could be addressed through health service provision, with particular reference to services not currently provided in Glasgow.

For the purposes of this project, the city centre was defined as the area served by the Assertive Outreach team, as shown in **Figure 5**, which is in turn based on stakeholder feedback about the locations most affected by public injecting.

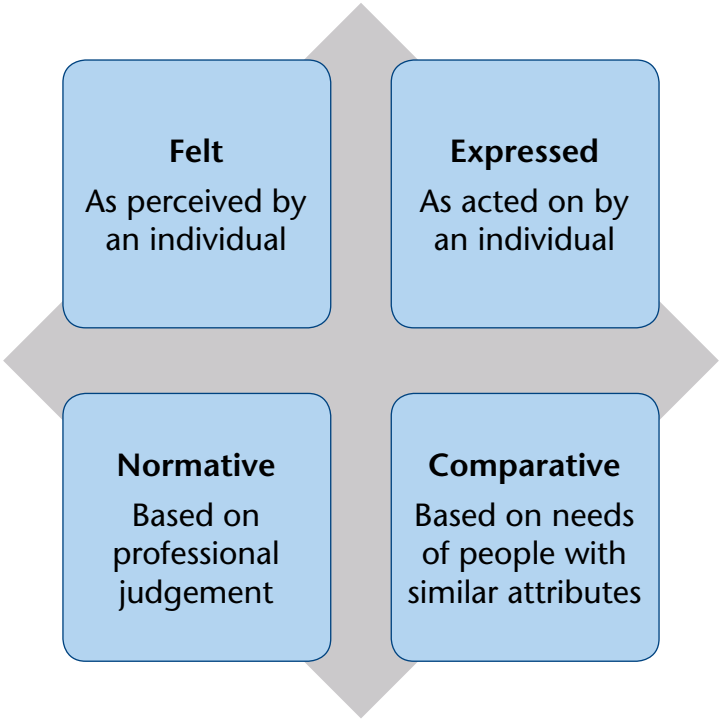
Figure 5. Map of area of interest, showing existing IEP outlets.



3. Methods

Various definitions of health need have been proposed; the most commonly adopted conceptualises need as 'the capacity to benefit' from an intervention or service. Need can be further classified into four types[26], as shown in **Figure 6**.

Figure 6. Bradshaw's typology of needs.



In assessing need, three parallel approaches are typically employed[27]:

- **Epidemiological:** collating data on the population, their health needs, current service provision, and the effectiveness and cost-effectiveness of available interventions
- **Comparative:** describing existing approaches to service provision in different populations
- **Corporate:** ascertaining the views of a range of stakeholders on the health needs of the population and how they could best be met.

However, the nature of public injecting poses several challenges to this process.

Injecting drug use – and public injecting in particular – is a stigmatised behaviour, predominantly practised by socially marginalised individuals who often have chaotic lifestyles and sporadic contact with services.

Place of use is not recorded by any of the existing routine or ad hoc data sources used to understand the epidemiology of drug consumption and related harms in Scotland, including household surveys, injecting equipment provision services, and community addiction teams.

Therefore, using Bradshaw's typology, among people who inject drugs in public places:

- 'felt need' may not always be translated into 'expressed need', for example due to stigma; difficulties accessing services; limited opportunities or skills for advocacy; and low priority accorded to health,
- 'comparative need' can be hard to assess, given a lack of information on the attributes of this group,
- 'normative need' may vary significantly around the world, given differing approaches to drug policy and to people who use drugs.

As a result, understanding the characteristics and needs of this population is more difficult than it would be for a population defined by a specific condition, statutory characteristic, geographical area, or socially acceptable identity.

The approach used here is therefore a pragmatic one of triangulating information from all three approaches – epidemiological, comparative, and corporate – in order to understand the population and inform the assessment of need.

3.1 Epidemiological approach

Information on the population, their health needs, and potential interventions was gathered from a range of local and national routine data sources and through a series of rapid literature reviews.

Routine data

Assertive Outreach service

Data on client demographic characteristics and reported needs were obtained from the Assertive Outreach service commissioned to work with people who inject drugs in Glasgow city centre. Due to recent changes in the team's care record system, detailed data were only available for the period November 2015 to January 2016 inclusive.

Injecting Equipment Provision (IEP)

Information on clients using injecting equipment provision (IEP) services in the area of interest during 2015 was obtained from the Neo database, which records IEP activity across NHSGGC.

Data were limited to those clients reporting injecting heroin and/or cocaine, in order to exclude users of performance- and image-enhancing drugs, who have a different epidemiological profile and set of health needs.

A degree of duplication may exist within the Neo system, with some individuals having registered on more than one occasion. A project by Health Protection Scotland to validate Neo data for the purpose of estimating the prevalence of injecting drug use is underway but results were not yet available for use in this report. Data are therefore presented separately for:

- all clients using any of the seven IEP outlets of interest during 2015
- those with ≥5 transactions during 2015 (denoted 'repeat clients'; a proxy for unique users)
- those clients with ≥50 transactions during 2015 (denoted 'high-frequency clients')

In the absence of direct information on injecting location, accessing IEP via the Assertive Outreach service is the best available proxy indicator for public injecting. Data on clients accessing IEP via this route, whilst included in the above categories, and in the data on Assertive Outreach clients as a whole, are therefore also highlighted separately.

To assess the extent to which people who inject drugs are travelling to Glasgow city centre from other areas in order to obtain and consume drugs, we analysed the postcode sectors of residence of clients attending Abbey Pharmacy, the busiest IEP outlet in the city centre.

Drug-related deaths

Information on drug-related deaths in the area of interest was obtained from Glasgow Addictions Services, who collate these data as part of the National Drug-Related Deaths Database initiative1. Deaths in public places were defined as those where either the pre-terminal episode of drug use or the declaration of death had occurred outdoors or in an area accessible to the general public.

Scottish Ambulance Service

Scottish Ambulance Service provided data on incidents attended within Glasgow City ADP boundary during the last five years where ambulance staff used the "Overdose/Poisoning" code and recorded that heroin or opiates were a factor. Data on use of naloxone by ambulance staff were also available. Unfortunately, data from this source for incidents within the city centre itself were not available.

Glasgow City Council Land and Environmental Services

Data on reports of drug-related litter made by members of the public were obtained from Glasgow City Council's Land and Environmental Services (LES) department, in order to gain an indication of the location and extent of public injecting in the area of interest.

Community Safety

Data on incidents of drug misuse recorded by police in the area of interest during 2015 were obtained from Police Scotland by Community Safety Glasgow. The data presented relate to incidents of drug misuse (code AB-27), excluding drug-related litter. Unfortunately, data relating specifically to injecting drug use could not be separately identified without the risk of duplicating LES data on drug-related litter.

Literature review

A series of rapid literature reviews were undertaken to better understand the health needs of people who inject drugs in public places, and to evaluate the evidence for relevant interventions not currently available in Glasgow. These interventions were selected based on a previous scoping review commissioned by Glasgow City ADP[8].

The review questions were:

1. What is the estimated prevalence of public injecting among people who inject drugs in high-income countries, and what are the health needs of this group?
2. What are the potential health impacts, social impacts and cost-effectiveness of implementing the following interventions in Glasgow city centre?
    a. Safer injecting facilities
    b. Heroin-assisted treatment
    c. Extending access to injecting equipment provision

For the first question, a literature search on the general topic of public injecting was undertaken, from which studies reporting prevalence estimates and/or data on associated health needs were extracted.

For the second set of questions, time constraints meant that a full review of the primary literature was not feasible. Instead, we undertook focused searches relating to these three specific interventions, from which were identified recent systematic reviews and/or meta-analyses. These were supplemented where necessary with articles identified from the same search which had been published subsequently or which related to specific outcomes of interest.

Searches were undertaken in four bibliographic databases – Medline, Embase, Cinahl and Health Management Information Centre – and a selection of grey literature sources. Search strategies are detailed in Appendix 1.

Results from each database were combined, then de-duplicated and screened for relevance using titles and abstracts. In all strands of the review, only English-language studies reporting research from Europe, North America or Australasia were included. Search results are detailed in Appendix 1.

3.2. Comparative approach

Information on services provided in other regions and countries for people who inject drugs in public places was gathered during the literature review stage of the needs assessment.

3.3. Corporate approach

A consultation exercise was undertaken to explore stakeholder views on the following three topics:

- Health needs of people who inject drugs in public places
- Experiences of current services
- Attitudes to potential novel services

Three key groups of stakeholders were consulted:

The views of people who currently inject drugs were gathered through a series of one-to-one semi-structured interviews, facilitated by the Assertive Outreach team. Six participants were recruited; all were clients of the Assertive Outreach service and identified by the team as being involved in injecting in Glasgow city centre. The interview schedule is included in Appendix 2.

The views of people in recovery from injecting drug use were gathered via a focus group with 15 individuals recruited through the Glasgow Recovery Network. The focus group schedule is included in Appendix 2.

The views of staff of relevant health and community services were gathered through an online Questback survey. The question schedule is included in Appendix 2. Staff from the following services were invited to participate:

- Glasgow Addiction Services
- Hunter Street Homeless Health Services
- Infectious Diseases (Brownlee Centre)
- Acute Addiction Liaison Team
- Assertive Outreach Team (Turning Point Scotland and Simon Community)
- Injecting Equipment Provision services
- Advocacy organisations representing people who use drugs and their families
    - Scottish Drugs Forum (SDF)
    - Scottish Families Affected by Drugs (SFAD)
- Community Safety Glasgow
- Police Scotland

A total of 33 responses were received, from staff in a range of job roles. The majority of respondents had been in post for a number of years, with 48% having more than 6 years of experience in their current role. Over 73% worked with people who inject drugs every day or most days; among healthcare professionals, this rose to 91% of respondents.

Analysis

Results from the consultation exercises were analysed using the framework method[28], with the support of an experienced qualitative researcher. Following synthesis of the transcribed data into analytic matrices, emerging themes and divergent views were identified on an iterative basis.

Illustrative quotations are included throughout the report. It should be noted that some professional stakeholders were unwilling to be quoted directly: their responses nonetheless informed the analysis and will be captured in the themes discussed in the text.

4. Results

4.1. Injecting drug use in Glasgow

Using data from specialist drug treatment services, hospital admissions, police, and social work, Information Services Division Scotland estimate that Glasgow City – along with Inverclyde – has the joint highest prevalence of problem drug use of any council area in Scotland[29]. In 2012/13, an estimated 3.2% of the population aged 15-64 years used opiates and/or benzodiazepines on a regular, long-term basis.

During that year, NHSGGC saw 2,096 drug-related hospital stays in acute and psychiatric services during 2012-13, of which 1,180 were attributed to opioid use[30]. This represents an age-standardised rate of 182.5 stays per 100,000 population; the third highest of any health board in Scotland.

Data on the prevalence of injecting drug use are more limited, since route of administration is not recorded by many routine sources of data on drug use. However, a modelling study from 2006 found that Glasgow was also above the national average in this respect, with an estimated 5,458 people injecting recreational drugs on a regular basis, representing 1.4% of the population aged 15-64 years[31]. The most commonly injected drug is heroin, though injecting of cocaine and other stimulants has increased in recent years[32, 33].

Approximately 70% of people who inject drugs are male, and a similar proportion are aged between 15 and 34 years[31,24]. The average age of this cohort is increasing over time, consistent with other data suggesting a decline in initiation into injection drug use[23, 32].There is a strong association between drug use and socioeconomic disadvantage. For instance, rates of drug-related hospital admissions are approximately 13 times higher in the most deprived compared to the least deprived areas of Scotland[30].

However, characterising the population of people who inject drugs in public places is more challenging.

4.2. Understanding the prevalence of public injecting in Glasgow

Estimates from the published literature

Published estimates of the prevalence of public injecting vary widely (**Table 1**), even among the five studies carried out in the UK.

Although this might partly be explained by differences in the definitions used, it is also likely to reflect substantial geographic and temporal heterogeneity in the phenomenon itself: Rhodes and colleagues have described how public injecting arises in a 'micro risk environment' created by the interplay between housing, socioeconomic circumstances, social networks, health service availability and access, law enforcement, and the physical environment[15].

Only one prevalence study including participants from Glasgow was identified[34]. Of 398 individuals recruited from injecting equipment provision services in Glasgow, London, and Leeds during 2005, 42% reported having injected at least once in public places during the last week. However, no breakdown by city was presented in this report, and in a subsequent journal publication arising from the study, the data from Glasgow were excluded due to 'sampling limitations'. It is also not known whether the prevalence of public injecting has changed in the decade since this research was undertaken.

Local data: Assertive Outreach service

Since the service was initiated in June 2014, the Assertive Outreach service has made contact with 470 unique individuals.

Due to changes in recording systems, only data on the most recent three month period (November 2015 to January 2016) are presented here.

During that time, the team made contact with 251 individuals in the city centre, of which 94

were new clients. Of those 251 individuals, public injecting was recorded as a 'presenting issue' for 89 (35%).

This figure is likely to be a substantial under-estimate, for a number of reasons. Since these data are derived from a longitudinal record of care rather than a cross-sectional survey, staff may have made contact with an individual but not yet had a conversation about injecting habits and health needs. There is no consistent definition for public injecting as a 'presenting issue' and it is not always recorded in the care plan even when known. Finally, the stigma associated with public injecting may cause under-reporting by clients.

Given the Assertive Outreach team's remit and target population, the majority of individuals they are in contact with are likely to be involved in public injecting. The total number of service users is therefore likely to be a more accurate indication of the population of public injectors than those for whom it is specifically recorded.

Local data: Injecting Equipment Provision services

During 2015, a total of 3,320 people who reported injecting heroin and/or cocaine accessed injecting equipment from the seven IEP outlets located in the city centre and neighbouring areas, including the Assertive Outreach team, who distribute injecting equipment to clients (Appendix 3, Table A2). The most frequented sites were Glasgow Drug Crisis Centre and Abbey Pharmacy.

As described in Section 3, IEP data has not yet been validated for the purposes of estimating the population of people who inject drugs, and may be artificially inflated by individuals using more than one identifier, however is the most comprehensive data for the purpose of estimating the population of people who inject drugs at our disposal. If limited to clients with at least five transactions in city centre pharmacies during 2015 ('repeat clients'), the figure falls to 1,025 (30.9% of total), suggesting a smaller population of unique clients using these outlets on a regular basis. Of these, 141 were 'high-frequency clients', with fifty or more transactions during 2015.

Client place of residence

Reports from drug users and professionals suggest that people travelling to the city centre to obtain drugs and/or injecting equipment generally tend to inject there before returning home: such journeys are usually made in response to withdrawal symptoms and few are willing to risk travelling whilst in possession of drugs or drug-related paraphernalia. The proportion of IEP clients living outwith the city centre may therefore provide an indication of the potential scale of public injecting in the area.

At Abbey Pharmacy, 72.3% (n=303) of all 'repeat clients' reported living outwith the city centre postcode sectors G1 and G2 (Appendix 3, Table A3).This figure is likely to be an under-estimate, since among the remainder will be included individuals who are roofless, homeless, or unwilling to disclose their postcode, and therefore registered using that of the pharmacy.

Extrapolating from published literature to the local population

By applying prevalence estimates of people injecting drugs in public places from Hunt's study of three UK cities[34] to data from IEP services and national modelling studies, a previous report from 2010 estimated that between 2,290 and 3,950 people in the Glasgow City area were likely to have injected drugs in public in the past week[7]. However, this was undertaken prior to the introduction of the current Neo data system in IEP outlets, which allows for more consistent identification of repeat clients, and was therefore felt to have over-estimated the scale of the problem. Given that public injecting is often a highly localised phenomenon, as described above, the application of a single prevalence figure across the Glasgow City council area may also be problematic.

Applying the same prevalence figure from Hunt's 2006 paper[34] to 2015 data from the seven IEP outlets in the city centre and surrounds yields an estimate of 1,394 people injecting in public places in this area on a weekly basis. However, when the IEP data is restricted to only 'repeat clients' (i.e. those with five or more transactions during 2015), the figure of people regularly

injecting in public places falls to 431.

Though consistent with both data from the Assertive Outreach service and the impressions of service providers in contact with this population, this estimate is likely to be a conservative one, given that it refers only to public injecting within the past week. It should also be noted that it is based on data from three UK cities, collected in 2005. There is therefore a need for high-quality, up-to-date data on the number, characteristics and outcomes of people involved in public injecting in Glasgow.

Summary

Data on the prevalence of public injecting in Glasgow are limited. However, the finding that the majority of clients using the busiest city centre IEP outlet live outwith the area suggests a substantial population of individuals who travel in to the city centre to acquire and consume drugs. By applying published prevalence estimates from 2005 to recent data from local IEP services, it is estimated that between 400 and 500 individuals who may be injecting in public places in the city centre on a regular basis. However, this estimate is accompanied by a number of caveats: reliable and up-to-date data on the scale of public injecting in Glasgow are required.

Table 1. Published estimates of the prevalence of public injecting among people who inject drugs.

Author & year	Setting	Recruitment	Definition	Prevalence
United Kingdom				
Klee 1995[35]	UK – Manchester, Liverpool	Health services & snowballing	Injected in public more than once in preceding 6 months	22%
Judd, cited in[15]	UK – London – homeless	Not specified	Most recent injecting episode took place in public	68%
Judd, cited in[15]	UK – London – non-homeless	Not specified	Most recent injecting episode took place in public	15%
Hunt 2006[34]	UK – London, Leeds, Glasgow	IEP services	Injected in public in preceding week	42%
Newcombe 2007[36]	UK - Manchester	IEP services	Usually or always inject in public	40%
United States and Canada				
Latkin 1996[37]	USA – Baltimore	Outreach & snowballing	Injected in public in preceding 6 months	35%
Wood 2001[38]	Canada – Vancouver	Outreach & self-referral	Injecting in public (not otherwise defined)	13.7%
Green 2003[39]	Canada – Montreal	IEP services & addiction services	Injected in public in preceding 1 month	59%
Navarro 2004[40]	Canada – Ottawa	IEP services, outreach, snowballing	Injected in public in preceding 6 months	65%
DeBeck 2009 [41]	Canada – Vancouver*	Outreach & self-referral	Usually or always inject in public	23%
Fairbairn 2008[42]	Canada – Vancouver*	Outreach & self-referral	Injected in public in preceding 6 months	72%
Heller 2009[43]	USA – New York	IEP services	Injected in public in preceding 1 month	49%
Boodram 2010[44]	USA – Baltimore & Chicago	Outreach & snowballing	Predominantly injecting in public in preceding 3 months	20%
Marshall 2010[45]	Canada – Vancouver*	Outreach & snowballing	Always or usually injecting in public in preceding 6 months	56%
Williams 2010[46]	USA – Philadelphia	Outreach	Most recent injecting episode took place in public	34%
Australia				
Van Beek 2000[47]	Australia – Sydney	IEP services	Most recent injecting episode took place in public	29%
Darke 2001[48]	Australia – Sydney	Outreach & snowballing	Injected in public in preceding 6 months	89%
			Most recent injecting episode took place in public	51%
Maher 2004[49]	Australia – New South Wales	Outreach & snowballing	Injected in public in preceding 1 month	75%
Continental Europe				
Havinga 2014[50]	Netherlands – various cities*	Addiction services, hostels, day centres	Injected in public in preceding 6 months	24%

*Study undertaken in a location and at a time where safer injecting site(s) were available.

4.3. Describing the characteristics of the population

Data from the published literature

A number of studies were identified which provide a demographic profile of people who inject drugs in public places; two were from the UK[34,35].

Most found that the prevalence of public injecting was higher among male injection drug users[35, 48, 49,] though some found no difference by sex[39, 51]. All found that people who inject drugs who reporting public injecting were on average younger than those who did not[35, 40, 51, 52].

A strong association between homelessness or unstable housing and public injecting was a consistent finding[35, 39-41, 45, 51, 53]. In Vancouver, DeBeck et al found that people who reported 'always' or 'usually' injecting in public places were ten times more likely to be homeless than those who did not[41].

However, several studies have highlighted that public injecting is not a phenomenon exclusive to those without access to private space[39, 51]. For instance, in Hunt's study of UK needle exchange attendees, the prevalence of public injecting among participants living in their own accommodation was 24%. Factors which might explain this finding are described in greater detail below in Section 4.4, and include distance from home to location of drug markets, immediacy, and privacy from family and friends.

Only two studies looked at educational or employment status; they found that people who inject drugs in public places tended to have a lower level of educational attainment and were less likely to be legally employed than people who injected drugs in private[40, 54].

Local data: Injecting Equipment Provision services

Table 2 shows the demographic and clinical characteristics of people using IEP outlets in Glasgow city centre during 2015 who report injecting heroin and/or cocaine.

These data demonstrate that the majority of people using city centre IEP outlets who report injecting heroin and/or cocaine are male, aged between 30 and 50 years, and of Scottish or other British origin. A significant proportion live in temporary or unstable accommodation or are sleeping rough. Rates of homelessness are particularly high among high-frequency IEP users and clients of the Assertive Outreach team, who are more likely to be public injectors.

Table 2. Characteristics of people using city centre IEP outlets during 2015 who reported injecting heroin and/or cocaine.

	All clients (%)	'Regular clients' ≥5 transactions (%)	'High frequency clients' ≥50 transactions (%)	Clients receiving IEP via Assertive Outreach[1] (%)
Age group[2]				
<20 years	10 (0.3)	2 (0.2)	0 (0.0)	0 (0.0)
20-29 years	318 (9.6)	87 (8.5)	21 (14.9)	43 (14.5)
30-39 years	1,423 (42.9)	444 (43.3)	54 (38.3)	132 (44.4)
40-49 years	1,297 (39.1)	394 (38.4)	54 (38.3)	104 (35.0)
≥50 years	272 (8.2)	98 (9.6)	12 (8.5)	18 (6.1)
Gender				
Male	2,702 (81.4)	850 (82.9)	118 (83.7)	244 (82.2)
Female	618 (18.6)	175 (17.1)	23 (16.3)	53 (17.8)
Ethnicity				
Scottish	3,075 (92.6)	956 (93.3)	133 (94.3)	277 (93.9)
Other white ethnic group[3]	181 (5.5)	48 (4.7)	7 (5.0)	14 (4.7)
Other ethnic group[4]	41 (1.2)	14 (1.4)	1 (0.7)	1 (0.3)
Unknown	23 (0.7)	7 (0.7)	0 (0.0)	3 (1.0)
Last recorded housing status[5]				
Owner or renting	2,448 (73.7)	697 (68.0)	79 (56.0)	121 (40.7)
Homeless	755 (22.7)	276 (26.9)	46 (32.6)	127 (42.8)
Roofless	114 (3.4)	52 (5.1)	16 (11.3)	46 (15.5)
Unknown	3 (0.1)	0 (0.0)	0 (0.0)	3 (1.0)
Total	3,320	1,025	141	297

1. Note that this is a subset of the total number of clients ('All clients') and will include individuals from the 'regular' and 'high frequency' client groups. It is shown separately to highlight the characteristics of this subset of IEP clients most likely to be involved in public injecting.
2. As recorded at most recent transaction.
3. Census codes 1B-1Z[55].
4. Census codes 2A, 3F-3Z, 4D-4Y, 5C-5Y, 6A-6Z[55].
5. As recorded at most recent transaction. Homeless defined as living in temporary or unstable accommodation; roofless defined as rough sleeping.

Summary

People who inject drugs in public places in Glasgow are predominantly male, aged between 30 and 50 years and of Scottish origin. Both local data and the published literature indicate that people involved in public injecting experience a combination of severe social vulnerabilities often referred to as 'multiple exclusion' or 'severe and multiple disadvantage': Homelessness and housing instability are particularly prevalent.

4.4. Why do people inject in public places?

Evidence from the published literature

Previously published work has described the choice of injecting location as a trade-off between immediacy and privacy, with proximity to local drug markets and withdrawal symptoms competing with powerful feelings of shame and stigma and consideration for other, non-drug using citizens[35, 56-58]. Other drivers may include a lack of private space[35, 51, 53] or a desire to keep one's addiction secret from family or household members[39, 41].

Other studies have identified that public injecting may be perceived by users to be safer, as the communal, shared nature of such spaces can provide opportunities for assistance with injecting technique or in the event of an overdose[59].This finding highlights that public injecting, which many would consider a threat to health or a public nuisance, may be seen by people who inject drugs as a form of harm reduction.

One published report identified access to paraphernalia to be a factor[59], which clearly has implications for the spread of blood-borne viruses and other infections.

Stakeholder consultation

These findings coincide with those of local interviews and focus groups with people currently or previously involved in injecting drug use.

Immediacy was a key theme, with people preferring to use near to where they had purchased drugs. This might reflect either withdrawal symptoms or a reluctance to travel whilst in possession of drugs. As one focus group participant, in recovery from drug use, put it, public injecting was driven by "desperation".

> ***"If I was rattling I'd go anywhere."***
>
> *Interviewee (currently injecting drugs)*

Another factor was the prohibition on drug use in hostels and temporary accommodation:

> ***"I had to go down below a bridge to inject with other using addicts, as a result of if I get caught doing it in the hostel, I would have been papped out. So what I was doing was putting myself at risk to HIV, blood borne viruses, et cetera, because I couldn't do it in the facility I was in."***
>
> *Focus group participant (in recovery from drug use)*

Rooflessness and housing instability were also highlighted by professional stakeholders as key drivers of public injecting:

> ***"If people are homeless or even living in [temporary] accommodation they end up injecting in lanes and public injecting sites [which] puts them at risk of infection and also of sharing equipment."***
>
> *Outreach worker*

Summary

Public injecting has multiple drivers, most notably a trade-off between the need to inject drugs immediately after acquisition and the desire for some degree of privacy. Lack of private space – through homelessness or unstable housing – is also a key factor.

4.5. Where and when is injecting occurring?

Data from the published literature

Previous studies have identified various settings for public drug use[41, 45, 48, 57, 59-62]. For instance, a mixed methods project in four UK cities, including Glasgow, identified that injecting locations fall into three general categories[63]:

- Open areas, such as alleyways, car parks and waste ground
- Neglected property, such as squatted or abandoned buildings
- Residential and commercial property, such as stairwells, toilets and gardens

The research evidence suggests that public injecting is not limited to any particular time of day or year, though often increases in intensity in evenings and weekends, and during the summer months.

Local data: Land and Environmental Services

A total of 226 reports of discarded injecting equipment in Glasgow city centre were made by members of the public to Glasgow City Council Land and Environmental Services (LES) during 2015 (**Figure 7, overleaf**). A number of sites where drug-related litter is known to accumulate are also cleaned on a regular basis by LES staff: these are marked on the map.

Reports of drug-related litter are recorded by LES as incidents, each of which represents an unknown and variable quantity of discarded injecting equipment. Completeness of these data depends to greatly on community members' willingness and motivation to report an incident. They also do not include clean-ups undertaken on private property by individuals or companies. LES reports are therefore likely to significantly under-estimate the scale of the problem, but are shown here to provide an indication of the extent and geographical distribution of public injecting.

These data support the impression that the city centre is disproportionately affected by public injecting, particularly the Central Station and Merchant City areas (corresponding to zone 4 of the Assertive Outreach team's catchment area) and, to a lesser extent, the area of the east end bordering the city centre (zone 5). No seasonal pattern in reports was apparent.

Local data: Community Safety Glasgow and Police Scotland

A total of 210 incidents of drug misuse were recorded by Police Scotland in Glasgow city centre during 2015 (**Figure 8, overleaf**). The majority of these incidents occurred in the south-east quadrant of the city centre or the adjoining area of the east end. Though not specific for episodes of injecting drug use, these data are consistent with the distribution of injecting-related litter reported to the City Council.

Figure 7. Number of drug-related litter incidents in the city centre and surrounding areas reported to Land and Environmental Services during 2015.

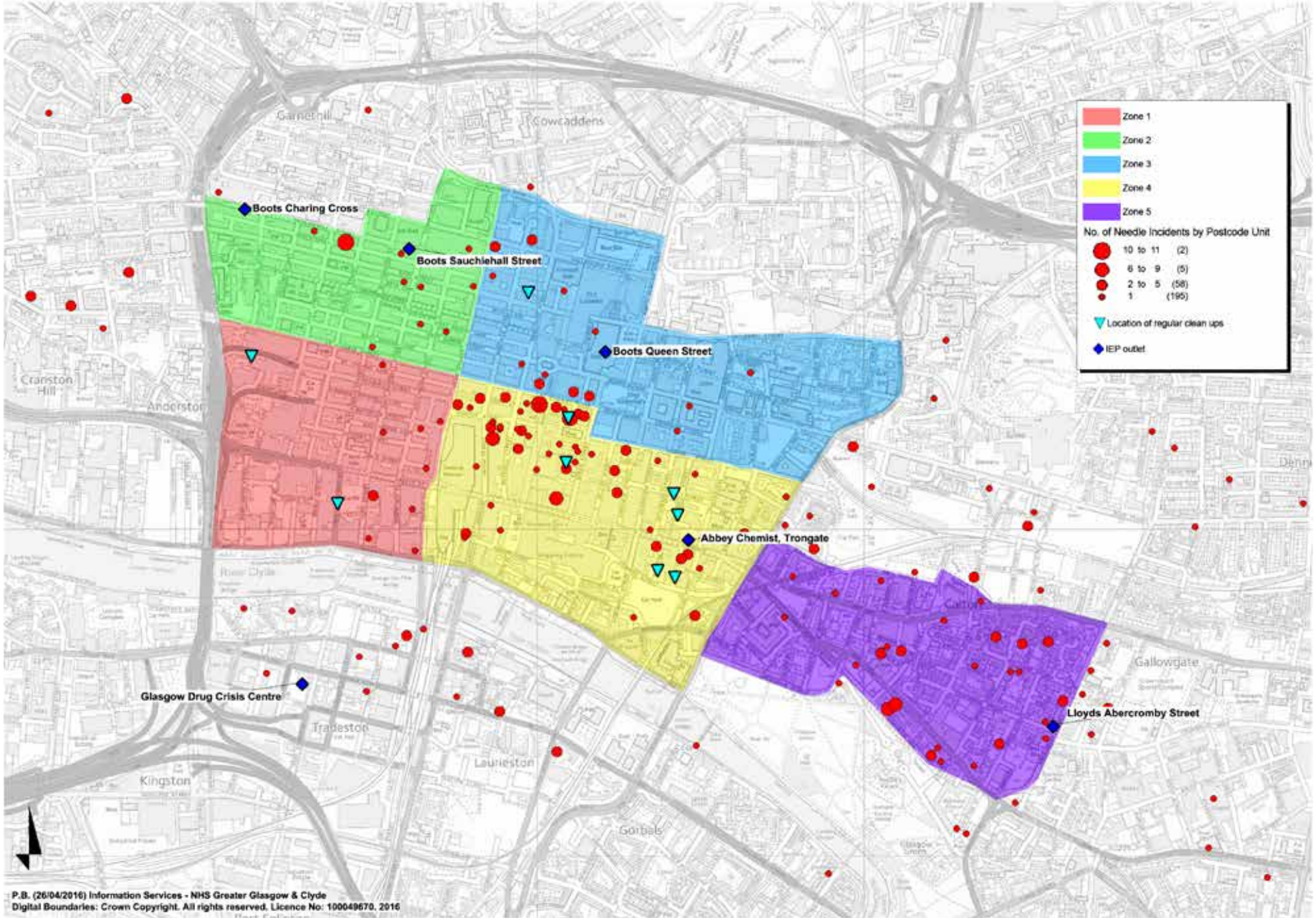
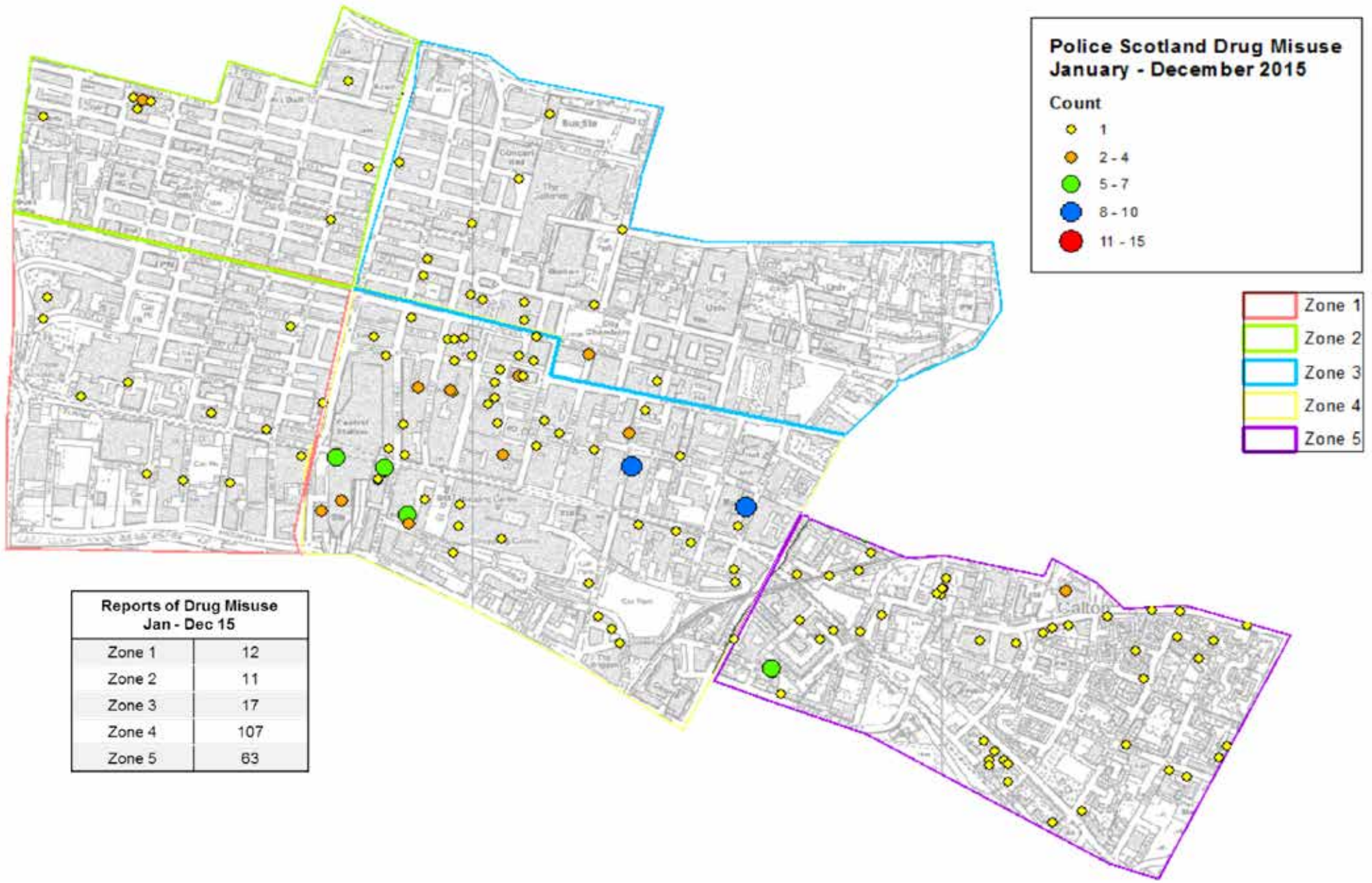


Figure 8. Number of drug misuse incidents in the city centre and surrounding areas recorded by Police Scotland during 2015.



Reports of Drug Misuse Jan - Dec 15	
Zone 1	12
Zone 2	11
Zone 3	17
Zone 4	107
Zone 5	63

Local data: direct observation and monitoring

Visits to known injecting sites by IEP management staff and members of the Assertive Outreach team have documented a significant quantity of discarded paraphernalia, with litter re-accumulating rapidly following clean-ups. **Figure 9** shows photographs from visits to known injecting locations in the area of interest during 2015.

Figure 9. Photographs from known injecting locations in the city centre and surrounding areas.

Credit: John Campbell.

The Assertive Outreach team made the following observations during visits to a number of known public injecting sites:

Waste ground:

"The area is well disguised but once accessed is a major injecting site and the discarded needles covered a large area. Although we did not observe activity there was evidence of current and significant historical activity".

Bin sheds:

"On the first few visits this was obviously and openly an area used for injecting drug use. There is no door on the shed, so no privacy; at the front was a table set out with 5/6 spoons and a couple of needles. The rest of the shed had a substantial amount of injecting paraphernalia spread among the other rubbish. On the last two visits from the team some attempt had been made to disrupt activity or make it more private. A door had been jammed across the front and on the most recent visit the door was pushed in and the table moved to the side with other rubbish on top. The area was still clearly being used for injecting."

Stakeholder consultation

Stakeholders with a history of drug use described a number of preferred locations for public injection: closes, car parks, lanes, the toilets of shops and restaurants, waste ground, and under bridges. Privacy was a recurring theme in choice of location, as was shelter from the elements. Access to running water was highlighted by one interviewee as a key factor in his preference for public toilets over outdoor locations.

Safety was frequently mentioned as key motivation for using closes or public toilets, but this appeared to refer to avoiding detection rather than potential complications of use.

Several people described wanting to protect the public – particularly children – from their injecting activity.

"There aren't really any places to go. As you say, it's like public toilets or things like that you're needing to go to, and obviously you're taking the chance of getting caught."

Interviewee (currently injecting drugs)

"Where it's kind of warm and there's seats and it's in shelter and it's oot the road o' the general public and naebody can see you."

Interviewee (currently injecting drugs)

"If you're on waste ground or something like that, not necessarily sheltered, it's not easy to use a lighter. Or if it's raining and you're trying to thingmy up something to inject, fresh rain's dripping into that at the same time as you're trying to do that ... But if you're in a public toilet or something, the only struggle you've got is just the fact of getting caught. But nothing else really comes into it, because you can get access to water and that in the toilet."

Interviewee (currently injecting drugs)

Summary

Public injecting in Glasgow is largely concentrated in secluded spaces of the south east quadrant of the city centre, and to a lesser extent the adjoining area of the east end. A range of locations were identified, including alleyways, car parks, stairwells, closes, public toilets, and wastelands. The choice of location is largely dictated by the geography of local drug markets and the desire for privacy, shelter, and – if possible – access to water.

4.6. What are the health needs of this population?

In this section, information from secondary data sources, published studies, and the stakeholder consultation is synthesised to provide a picture of the health needs affecting this population. The first section describes some general points about priority accorded to health and barriers to health, whilst subsequent sections explore specific needs in greater detail.

General considerations

The majority of stakeholders with lived experience of injecting drug use acknowledged that health was low on their list of priorities, with the need to acquire and use drugs overriding both the response to acute conditions and any proactive attempts to improve health.

Most participants currently injecting drugs described their health – both physical and mental – as poor. Each described at least several recent or ongoing injecting-related complications; of note, none mentioned any health needs unrelated to injecting drug use.

This coincides with the views of service providers, who identified injecting-related complications such as blood-borne viruses, other infections, overdose, and wounds as this population's most pressing health concerns.

Both current and former drug users identified a number of barriers to better health, including the demands of addiction, adverse social circumstances, the influence of peers, and a lack of awareness of available services. As one interviewee put it, when asked about barriers:

> ***"Just this life I've got just now. Terrible. Being homeless and all that, running about the city centre, shoplifting, begging, just doing anything to make money. There's nothing else to do."***
>
> *Interviewee (currently injecting drugs)*

A number of service providers also highlighted how immediate physical and mental health concerns in this population can be triggered or exacerbated by social vulnerabilities such as homelessness, financial exclusion, and previous trauma.

Participants with lived experience of injecting drug use often had a high level of awareness of its health consequences and the behaviours associated with a healthy lifestyle, but described how addiction limited their motivation or time to act on this knowledge.

> ***"I want to sit here and say "Oh its high, you know, I want to get fit and I want to go to the gym and I want to eat well and I want to stop smoking and I want to get off drugs" but if I'm honest with myself it's no very high on the list at all."***
>
> *Interviewee (currently injecting drugs)*

> ***"It's a full-time job when you're using. No time for anything other..."***
>
> *Focus group participant (in recovery from drug use)*

Some described a fatalistic attitude to health, dismissing potential risks such as blood-borne viruses because "The drugs are going to get me first" (focus group participant, in recovery from drug use).

Others described how the need to access care for their drug use or related complications was outweighed by concerns about potential repercussions if the police, social services, or addictions services were involved, though some acknowledged this may have reflected misperceptions on their part or no longer be the case.

> ***"Their [active users] priority isn't not catching a blood borne virus. That's at the bottom of their priority lists, it doesn't even factor in their priority list. Their priority lists maintaining their access to substitute prescribing, if they have got kids it's maintaining them in the house, that's what they need to feel safe from."***
>
> *Focus group participant (in recovery from drug use)*

"In addiction I would not have went near a service for fear of getting my weans took from me."

Focus group participant (in recovery from drug use)

Many highlighted stigma as a significant barrier to use of harm reduction or health care services:

"The nurses and doctors are not interested. You don't get the care you want or the care you need. So you go and tell your pal who is an addict and it stops them from going to the hospital, it stops them from going to the doctors and saying there is something the matter with me."

Focus group participant (in recovery from drug use)

However, participants acknowledged that this was not universal and that some of these experiences may have been historical. In particular, several participants felt that stigma was less of a problem in services in Glasgow than elsewhere.

Some current users identified advancing age, recent bereavement, imprisonment, and childcare responsibilities as potential triggers to change. Several focus group participants described how entering recovery alerted them to serious health issues that had been accumulating during periods of active drug use.

Summary

Among people who inject drugs in public, health is a low priority, despite a high level of need. A number of reasons for this were highlighted by participants: the demands of addiction; adverse social circumstances; fatalistic attitudes towards health; fears of potential repercussions from seeking help; and stigmatising attitudes from health professionals.

Addictions care

Data from the published literature

A number of published studies have indicated that public injecting is associated with a higher intensity of addiction. For instance, people who inject drugs in public tend to inject more frequently; to inject into a greater number of bodily sites; to use a greater number of drugs; and to have a higher score on validated indices of addiction severity [35, 39, 40, 48]. Findings with respect to receipt of addictions care vary, with two Canadian studies finding that public injecting was associated with a lower likelihood of having received substance use treatment or opioid substitution therapy, but another finding they were more likely to have sought substance use treatment.

Local data: Injecting Equipment Provision

Data from IEP services can provide information on drug consumption and addictions treatment among people using city centre outlets (**Table 4**).

During 2015, almost one thousand 'regular clients' of IEP services reported injecting heroin. Of these, 13% (n=127) reported also injecting cocaine. A much smaller number (n=34) report injecting only cocaine. These figures are similar among groups more likely to be involved in public injecting; i.e. 'high frequency clients' and those receiving IEP via the Assertive Outreach team. Heroin therefore appears to be the primary drug of choice for those injecting in the city centre, though a significant proportion also use cocaine. Unfortunately the data do not distinguish whether heroin and cocaine are injected together ('speedballing') or separately; the latter is often associated with increased injecting frequency.

Reporting of treatment status in IEP services is often limited, due to clients' concerns about anonymity and access to substitute prescribing. Nonetheless, a substantial proportion of people accessing injecting equipment are engaged in addictions treatment. For instance, among clients of the Assertive Outreach team – the majority of whom are believed to be involved in public injecting – more than one-third report current structured addictions treatment. This suggests the existence of a sizeable population for whom current treatment options may be failing to reduce street drug use.

Table 4. Characteristics of people using city centre IEP outlets during 2015 who reported injecting heroin and/or cocaine.

	All clients (%)	'Regular clients' ≥5 transactions (%)	'High frequency clients' ≥50 transactions (%)	Clients receiving IEP via Assertive Outreach (%)
Primary drugs of injection[1]				
Heroin only	2,682 (86.6)	826 (80.6)	113 (80.1)	237 (79.8)
Both heroin and cocaine	228 (6.9)	127 (12.4)	24 (17.0)	36 (12.1)
Cocaine only	187 (5.6)	34 (3.3)	1 (0.7)	3 (1.0)
Incomplete/unknown[2]	223 (6.7)	38 (3.7)	3 (2.1)	24 (8.1)
Last recorded treatment status[3]				
In structured treatment	538 (16.2)	219 (22.9)	44 (32.4)	109 (36.7)
Not in structured treatment	716 (21.6)	308 (32.3)	50 (36.8)	133 (44.8)
Prefer not to say	1,670 (50.3)	431 (45.0)	42 (30.9)	50 (16.8)
No answer	396 (11.9)	67 (7.0)	5 (3.7)	5 (1.7)

1. Individuals can have more than one primary drug of injection.
2. Primary drug of injection is not a mandatory field so may be left incomplete, even if information on drugs used by that client is available from other fields.
3. As recorded at most recent transaction. Structured treatment defined as tier 3 or 4 services (see Section 1.4).

Stakeholder consultation

When asked about their health needs, several interviewees referred directly to their addiction itself:

"To be honest, I'm just ravaged wi' addiction and when I'm ravaged I kind of cannae take care of myself."

Interviewee (currently injecting drugs)

Most described long histories of drug use, and were currently injecting around two to three times a day. Heroin was the primary drug of use for all, though some also used cocaine.

Several expressed a desire to change their pattern of use or to become abstinent.

"I need put back on my methadone so I can get off drugs, because they're killing me. I know they're killing me."

Interviewee (currently injecting drugs)

"I'm just using heroin every day, every single day. I want off it, definitely want to come off it."

Interviewee (currently injecting drugs)

Most participants had a good awareness of the existing addictions services on offer, and several acknowledged that provision in Glasgow was comparatively good relative to other areas. However, they described mixed experiences of specific treatment approaches, including opioid substitution therapy (OST), counselling and rehabilitation.

For instance, though participants appreciated the opportunities for stability and social inclusion that OST could offer, some had experienced gaps in continuity, resulting in relapse to street drug use; others described a lack of input to decisions about dosage. This illustrates a broader theme, particularly prominent among people in recovery, of a lack of person-centred care in existing addictions services:

"That is what we constantly do, we set up a safety net but then apply consequences to use the safety net; because we don't let users use the safety net on their terms, it's got to be on the services' terms."

Focus group participant (in recovery from drug use)

Addictions care was also identified by professional stakeholders as a key need among this population, with staff prioritising interventions that would reduce the need for street drugs and for injecting. For instance, several respondents highlighted a lack of access to low threshold opioid substitution therapy at optimal dosage. Others described the importance of holistic, person-centred addictions care and of addressing adverse social circumstances that can impede engagement with recovery.

Among the strengths of existing services were reported to be rapid assessment and treatment; experienced staff who often went 'above and beyond'; and a positive, non-punitive approach to retention.

However, many staff felt that addictions teams lacked the resources, training, and organisational structures required to meet the needs of this population. Staff recognised that users often found it difficult to navigate the existing system of fixed sites, office hours and appointments, but reported that recent cuts to budgets and staffing levels precluded the provision of more intensive or flexible support. This was also identified by primary care staff from Hunter Street Homeless Services, who identified resource constraints as a barrier to providing models of care – such as drop-in clinics – able to meet this group's needs.

As one respondent put it,

"The overly structured way of working creates very real barriers which hinder the most basic of engagement opportunities."

Senior staff, IEP services

Some professional stakeholders argued that the lack of a dedicated city centre community addiction team posed a geographical barrier for service users and hindered the development of specialist expertise among addictions staff. Others expressed a preference for greater specialist outreach from addictions services, but were pessimistic about achieving this given current resource constraints.

Several staff identified that services were particularly poor at meeting the needs of those who continue to inject, highlighting a lack of safer injecting facilities or of residential alternatives to abstinence-based rehabilitation. Some suggested there was also scope to improve harm reduction services within CATs, through provision of injecting equipment, foil, and naloxone.

Opinions on the effectiveness of links between addictions care and other health and social services were mixed. Some respondents highlighted the potential for better integration between addictions and blood-borne virus treatment services, and between the various statutory and third sector agencies involved with this population. Information sharing was highlighted as a particular barrier.

"It's too complicated and fractured. There are layers of services both statutory and non-statutory who work with this client group in various ways, but there is little data sharing or MDT approaches across services."

HIV professional

Summary

Public injecting is associated with a higher intensity of addiction. Local data sources suggest that those injecting in Glasgow city centre are predominantly injecting heroin, with a smaller number also injecting cocaine. A substantial proportion of this population report being engaged in structured addictions treatment, suggesting that for many, existing treatment options are failing to reduce street drug use.

Stakeholders generally felt that specialist addictions care in Glasgow had a number of strengths and compared favourably to other areas. However, some staff identified that existing organisational structures and ongoing resource constraints hindered their ability to provide sufficiently intensive or flexible care for this population, whilst others argued that there was scope for a greater focus on harm reduction for those who continue to inject. Shortcomings in person-centred care and a need for greater integration both within and outwith the health sector were also common themes.

Injecting risk behaviour and blood-borne virus transmission

Data from the published literature

In the most recent survey of IEP attendees in Scotland, carried out in 2013/2014, 7% reported having shared needles or syringes with others in the last six months, and 23% reported having shared other injecting equipment[32]; however, this survey did not ask about public injecting.

A large number of previous studies have found that people who inject in public places are more likely to share injecting equipment[35, 37, 39-41, 45, 59, 64], including one study in the UK[35]. A smaller number of studies have also found that people who inject in public tend to inject with a greater number of other people, particularly strangers[35, 39, 40]. Others have described an association between public injecting and improper needle and syringe disposal[45, 51, 65], highlighting the wider impact of this practice on community safety and amenity.

Conflicting evidence exists for the relationship between public injecting and uptake of injecting equipment provision services[39, 43]: this disparity may reflect access issues specific to the areas studied.

Fewer studies have investigated any association between public injecting and blood-borne virus transmission, though two studies have reported that hepatitis C antibody prevalence is between 1.6 and 2.7 times higher among people who inject in public[39, 44]. Blood-borne virus risk is strongly associated with some of the social vulnerabilities characteristic of people who inject in public, particularly homelessness[66-68]. Drug use in public and semi-public locations among dense social networks was also implicated in Vancouver's substantial HIV outbreak in the mid-1990s, as described in Section 1.3[62, 69].

Local data: Injecting Equipment Provision services

Data from NEO on the content and frequency of transactions, as shown in **Table 5**, can provide insights into injecting behaviours among people using city centre IEP outlets.

Almost half of the needles supplied were the longer needles preferred for deep vein injection; this figure reached 61% among clients of the Assertive Outreach team.

People using the city centre IEP outlets on a regular basis (≥50 transactions in 2015) and clients of the Assertive Outreach team tended to take fewer needles at each transaction. This suggests difficulties in storing needles or a reluctance to carry them on the person, and may indicate an increased risk of sharing. This coincides with the findings from interviews with public injectors affected by the HIV outbreak (Section 1.2).

The estimated number of needles returned was 27% of the total dispensed; even allowing for inaccuracies in the reporting and recording of returns, this indicates a significant rate of inappropriate disposal. Rates of return were particularly low among 'high-frequency' users (4.6%) and clients of the Assertive Outreach team (0.1%): this is consistent with the studies above which describe an association between public injecting and inappropriate disposal.

Stakeholder consultation

Among interviewees currently involved in public injecting, some described it as a solitary activity while others tended to inject with two or three other people. All described re-using their own needles, though most denied sharing injecting equipment with others.

Several participants in recovery from drug use acknowledged sharing injecting equipment, in circumstances where desperation outweighed their concerns about risk. As one participant put it, describing an instance of sharing with a friend he knew to be HIV-positive, "*The need to get the drug in overrides the consequences of what can happen*".

Current IEP services in the city centre were well regarded and widely used, with participants not making any specific suggestions for improvement. Those in recovery expressed mixed opinions on the ideal setting for IEP, with some prioritising anonymity and others preferring access through known providers such as GPs.

Reducing the sharing of injecting equipment was also identified as a priority need by service providers. Though the accessibility, coverage, and choice of items offered by existing IEP services were widely praised, injecting risk behaviour was recognised to persist, as a result of chaotic drug use and lack of safer environments for injection. Potential solutions suggested included re-introducing IEP services to the CAT setting and the establishment of safer injecting facilities.

With regard to care for those affected by BBVs, engagement was acknowledged to be low, with travel from the city centre to the outpatient HIV clinic highlighted as a particular barrier. Potential solutions offered included greater integration with addictions services, the establishment of decentralised clinics in other areas of the city, or individual support from peer workers or addictions staff.

Summary

Evidence from the published literature suggests that public injecting is associated with sharing of injecting equipment, blood-borne virus risk, and improper syringe disposal. Data from local IEP services suggest that those most likely to be involved in public injecting tend to take fewer needles at each transaction – a risk factor for sharing – and are less likely to return them to outlets for safe disposal. Feedback from our stakeholder consultation indicated that injecting risk behaviour is primarily driven by the desperation and urgency that characterise addiction and the low priority accorded to health, though learning from the HIV outbreak has also highlighted a lack of awareness of the risk of HIV. Engagement in blood-borne virus care for this population is also challenging, which has concerning implications for ongoing transmission.

Table 5. Transactions at city centre IEP outlets during 2015 made by clients who reported injecting heroin and/or cocaine.

	All clients	'Regular clients' (≥5 transactions)	'High frequency clients' (≥50 transactions)	Clients of Assertive Outreach team
Total number of transactions	31,298	27,526	13,735	2,325
Equipment provided				
All needles	262,480	189,752	69,365	12,778
Longer needles for deep vein injection	120,562 (45.9)	86,765 (45.7)	32,003 (46.1)	7,827 (61.3)
Water	158,387	133,683	56,720	12,343
Average number of needles taken at each transaction	8.4	6.9	5.1	5.5
Estimated number of needles returned* (% of total)	70,756 (27.0)	47,488 (25.0)	3,198 (4.6)	16 (0.1)

*Recorded by IEP staff based on client estimates.

Other injecting-related infections and injecting-related injuries

Data from the published literature

Injecting in public or semi-public places is recognised to increase the risk of infectious complications associated with injecting drug use, through a number of mechanisms. As well as the link with equipment sharing described above, there is evidence that the environment in which injecting takes place affects the preparation of drugs, the choice and preparation of injecting sites, and injection technique[59, 62]. A lack of clean water hinders hand-washing and drug preparation, heating and filtering are often omitted, and injection sites are rarely cleaned before use.

Other injecting-related complications – such as scarring, bruising, and arterial injury – also appear to be more common among people who inject in public[35, 48, 70] as a result of hasty injections, poor lighting, and the effect of cold weather on venous access.

Several studies have highlighted that groin injecting is widespread among people who inject in public[71]; though perceived to be more rapid and reliable, it can increase the risk of vascular complications, arterial puncture, and local or systemic infection.

Local data: serious infections among people who inject drugs

A number of other outbreaks of serious infectious disease affecting people who inject drugs have arisen in Glasgow in recent years :

- Botulism, December 2014 – December 2015
  - 26 cases resident in NHSGGC, of whom 2 died
  - 44 cases and 4 deaths across Scotland as a whole
- Anthrax, December 2009 – December 2010[72]
  - 35 cases resident in NHSGGC, of whom 9 died
  - 119 cases and 14 deaths across Scotland as a whole
- Clostridium novyi, April – August 2000[73]
  - 55 cases resident in Glasgow or surrounding areas, of whom 19 died
  - 60 cases and 23 deaths across Scotland as a whole

Although a potential association with public injecting was not specifically investigated in any of these outbreaks, many cases were identified to be part of a core group of particularly chaotic drug users with close links to the city centre and its drug scene.

Even outwith these high-profile outbreaks, serious bacterial and fungal infections remain a significant hazard among people who inject drugs. Among clients accessing injecting equipment provision services in Scotland during 2013-2014, 28% had experienced an abscess, sore or open wound during the past year[33]. A large outbreak of soft tissue infections occurred among people who inject drugs in Edinburgh during 2014 and 2015, with many of those affected requiring prolonged hospitalisation and surgical intervention[74]. NHSGGC are also currently investigating an apparent increase in *Staphylococcus aureus* bloodstream infections among people who inject drugs in Glasgow during the last year.

Stakeholder consultation

Among stakeholders with a history of injecting drug use, opinions varied as to whether injecting in public influenced preparation and hygiene routines. Some maintained it was the same as if they were injecting at home or in another indoor location, whilst others recognised that public injecting tended to be hastier, less hygienic, and more risky:

> ***"No, still the same. Exactly the same way, I still do it and I don't change it. It's still the exact same way I prepare and inject it."***
>
> *Interviewee (currently injecting drugs)*

[c] Numbers refer to confirmed or probable cases only.

"Aye, well, I use my swabs and that to wipe my hands before. I know they're not meant to be used for that, they're meant to be used for the injection site, but I just rub my hands with them. But I can safely say if you're in the house there's definitely a lot more hygiene inside than outside."

Interviewee (currently injecting drugs)

*"You're outside, you're freezing, you're desperate, you're in a hurry and you end up hitting an f***ing artery or something, do you know what I mean?"*

Focus group participant (in recovery from drug use)

"Because if you inject in your groin then it's a case of, you can get your groin easy, it's in, out, two seconds…but if you're trying to get a wee vein in your arms and you're needing to get warm and get tourneys [tourniquets] on, you can't do that kind of stuff in wee limited spaces or places you've got limited time."

Interviewee (currently injecting drugs)

Abscesses, wounds, septicaemia, and injecting-related ulcers or injuries – often requiring hospitalisation - were all commonly reported by participants. However, although awareness of existing health services was good, most acknowledged that during periods of active drug use they would tend to defer help-seeking for health conditions until the point of crisis. As described above, reasons for this included stigma, fatalism, and fear of repercussions:

"The only time I went to the GP was if something serious happened such as abscesses and a flesh eating bug from using drugs and things like that."

Focus group participant (in recovery from drug use)

"I can hardly walk about, my two feet are killing me all the time. One of my feet, there's something wrong with it just now. The doctor tried to send me to hospital last week but I refused to go. He was going to phone me an ambulance but I refused to go."

Interviewee (currently injecting drugs)

Many service providers also drew a link between public injecting and poor injecting hygiene, with complications such as wounds, abscesses, and systemic bacterial infections frequently mentioned among the most important health concerns of this group. As well as health problems in their own right, staff highlighted how wounds and ulcers could exacerbate social exclusion, isolation and mental health difficulties.

Summary

As demonstrated by recent outbreaks in Glasgow and Edinburgh, serious injecting-related infections remain an important cause of morbidity and mortality among people who inject drugs. Evidence from the published literature – and the experiences of those involved in our stakeholder consultation – draws a clear link between public injecting and the risk of injecting-related infections and injury: for instance, due to disrupted hygiene routines, difficulties with venous access in cold weather, and the rush to avoid detection. Such risks are exacerbated by factors which act to delay help-seeking among people who inject drugs, such as fatalism, stigma, and fear of repercussions.

Overdose and drug-related deaths

Evidence from the published literature

A number of articles have highlighted the link between public injecting and overdose. Studies from Canada have found a prevalence of non-fatal overdose in the preceding 6 months of 40% and 65% among public injectors[39, 42]. Estimates of the increase in risk associated with public injecting range from 1.3 to 4.7 fold: though the confidence intervals around these estimates indicate substantial uncertainty in the strength of the association, all found it to be statistically significant[35, 39, 42, 48, 75]. In the only UK study to investigate this question, Klee et al found the odds of recent overdose to be 2.3-fold higher among public injectors compared to their peers (95% confidence interval, 1.2 – 4.5, p=0.01)[35].

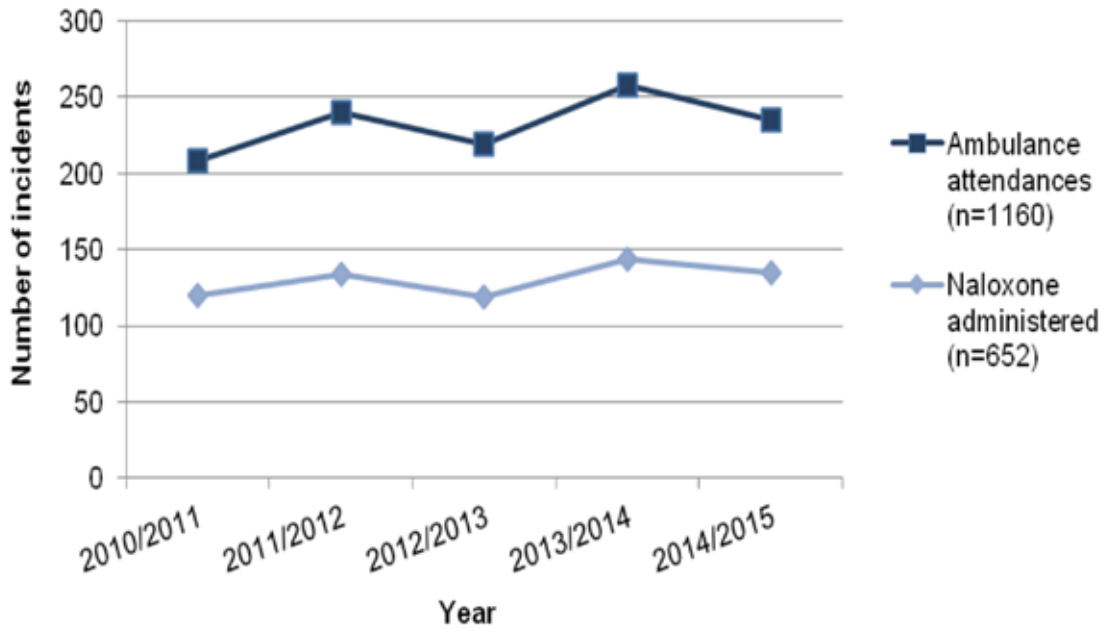
Qualitative research has drawn links between this risk and the haste that characterises most episodes of public injecting[45, 59, 62]: by rushing an injection to avoid detection by police or members of the public, individuals cannot assess the strength of their drugs or monitor their response.

No studies on the relationship between public injecting and risk of death – whether from overdose or other causes – were identified.

Local data: Scottish Ambulance Service incidents

Over the last five years, the Scottish Ambulance Service has recorded an annual average of 232 ambulance attendances at suspected overdoses in the area served by Glasgow City ADP (**Figure 10**). Naloxone was by administered by ambulance personnel at an average of 56% of incidents. Unfortunately, these data do not record the proportion of incidents occurring in public places, or within the specific area of interest in the city centre.

Figure 10. Ambulance attendances at suspected overdoses in Glasgow City ADP, 2010/2011 – 2014/2015.



Local data: Drug-related deaths

Between 2012 and 2014, there were a total of 338 drug-related deaths in the area served by Glasgow City ADP; an average of 113 per year (**Table 6**).

Table 6. Drug-related deaths in Glasgow City ADP, 2012-2014.

Year	Total drug-related deaths	Drug-related deaths occurring in public places[1] (%)
2012	121	6 (5.0)
2013	103	7 (6.8)
2014	114	2 (1.8)
Total	338	15 (4.4)
Annual mean	113	5 (4.4)

1. Defined as deaths in which the pre-terminal episode of drug use or the declaration of death occurred outdoors or in an area accessible to the general public.

Fifteen of the total deaths between 2012 and 2014 (4.4%) occurred in public places, of which heroin consumption was implicated in 14. At the time of death, 6 (40.0%) of these 15 individuals were in contact with specialist drug treatment services.

Since location of consumption may be poorly recorded, and consumption and death can occur at different locations, data on deaths occurring in public places may not accurately represent the number of deaths associated with public injecting. However, the demographic characteristics of the wider group of people dying from acute drug-related causes in Glasgow – predominantly males, aged 30 to 50 years – are very similar to those of people involved in public injecting.

These data include only those deaths resulting from the acute effect of drugs themselves, rather than from other injecting-related complications, such as serious infections or thrombo-embolic disease. They also relate to the Glasgow City area as a whole, rather than the specific area of interest. Nonetheless, they demonstrate a significant burden of acute drug-related deaths locally, with people who inject drugs in public places belonging to the population groups at highest risk.

Stakeholder consultation

Several consultation participants reported a history of overdose. Many agreed that public injecting was typified by haste and a fear of detection, though did not explicitly link this to overdose risk.

Overdose was also highlighted by professional stakeholders as one of the main health risks for people who inject in public. A range of potentially causal factors were highlighted, including rushed injections, inadequate provision of naloxone, and lack of access to optimal dose opioid substitution therapy.

Summary

In the published literature, public injecting is consistently associated with an increased risk of overdose: primarily due to rushed injections to avoid detection or interruption. Figures from Glasgow indicate a significant burden of overdose and drug-related deaths locally. Although existing data are insufficient to explore the relationship of these harms with public injecting, the demographic characteristics of people who inject drugs in public places locally closely match those of people at the highest risk of drug-related death.

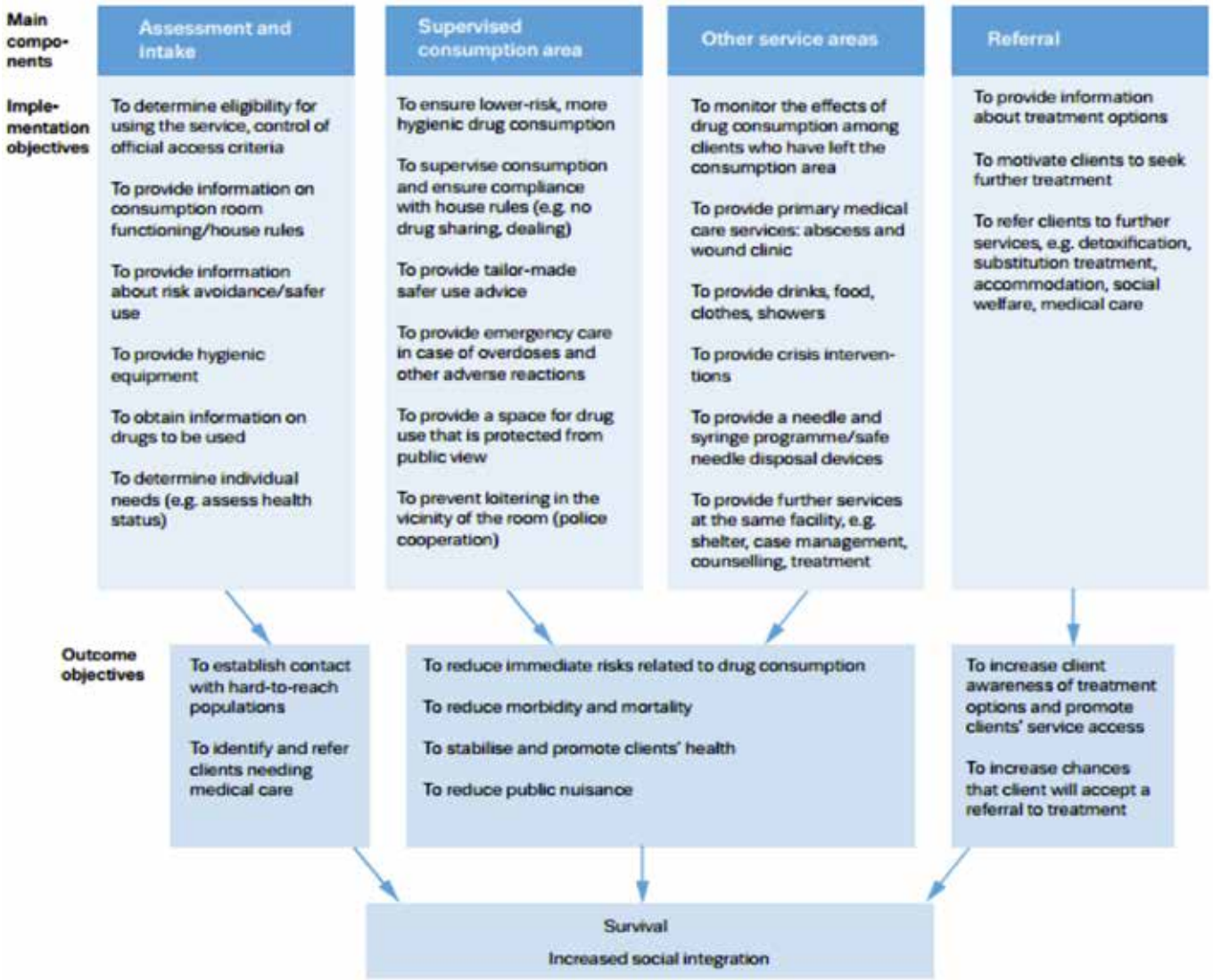
4.7. Potential novel interventions: safer injecting facilities

4.7.1. Nature of intervention

Safer Injecting Facilities (SIFs) – also known as supervised injecting sites, drug consumption rooms, or medically supervised injection centres – were initially developed in Europe in the 1980s, often in response to concentrated public injecting[76].

By allowing the consumption of illicit drugs, purchased off the premises, in a hygienic environment under clinical supervision, they aim to reduce the health risks of injecting drug use – and public injecting in particular (**Figure 11**). They provide sterile injecting equipment, advice on safer injecting technique, and rapid assistance in the event of an overdose, but also host on-site counsellors, case workers, or health professionals who can engage or re-engage clients in addictions treatment and other health and social services. SIFs are particularly targeted at the most marginalised and difficult-to-engage group of people who inject drugs, who may have least contact with existing services. They may be based within existing addictions service premises, or operate independently in stand-alone locations.

Figure 11. Service model for safer injecting facilities, from the European Monitoring Centre on Drugs and Drug Addiction[77].



International comparisons

It is estimated that over 90 official SIFs are now in operation in 61 cities worldwide. Though sites exist in Canada and Australia, the majority of SIFs are located in Europe, in particular in Germany (24 sites in 15 cities), the Netherlands (31 sites in 25 cities) and Switzerland (12 sites in 8 cities)[77]. Other European countries with SIFs include Spain, Luxembourg, Denmark and Norway. France and Ireland have both recently announced plans to establish such facilities over the coming months[77]. A number of 'unofficial' SIFs – that is, operating without legal sanction but run on a non-profit basis for harm reduction purposes – also exist in Eastern Europe and South East Asia.

There are few accurate records of how many people have ever used SIFs but most reviews estimate the number of injecting episodes hosted in SIFs to be in the tens of millions[77]. An evaluation of the Sydney SIF found that between May 2001 and April 2010, the facility was used by 12,050 individuals, with over 600,000 injections taking place on site[78].

Locations and operating procedures vary by country and by city, depending on consumption patterns and local drug markets. For instance, sites in Australia and Canada are solely injection facilities, whereas those in the Netherlands also provide smoking rooms. Most require registration prior to use and prohibit the entry of people less than 18 years of age and pregnant women. One universal requirement is that the drugs consumed are obtained prior to entry, with drug dealing inside the facilities strictly prohibited.

The legality of SIFs has been a matter of debate since their inception in the 1980s. The central issue is whether, by allowing the consumption of illegally obtained drugs on site, they violate international drug control conventions requiring UN member states to limit the use of narcotic drugs to medical and scientific purposes only[79,80]. As a result, several SIFs have been subject to legal challenges and most countries have had to develop specific legislation to allow their operation. For instance, in Denmark, a legal exemption means that individuals over the age of 18 with a chronic drug dependency will not normally be prosecuted for personal drug possession or use, in and around the facility, whilst national prohibitions are maintained elsewhere[81]. However, an Independent Working Group set up by the Joseph Rowntree Foundation concluded that safer injecting facilities can contribute towards the aims of the UN Drug Conventions and that their introduction in the UK therefore would not necessarily require legislative change[82].

UK context

No SIF is currently in operation in the UK.

Although the Home Affairs Select Committee recommended in 2002 that "…an evaluated pilot programme of safe injecting houses for [illicit] heroin users is established without delay and that if, as we expect, this is successful, the programme is extended across the country", this recommendation was rejected by the then-government on the grounds of insufficient evidence of effectiveness from European facilities and the potential for legal challenge[83].

In 2004, the aforementioned Independent Working Group on Drug Consumption Rooms, convened by the Joseph Rowntree Foundation, recommended their introduction as "a rational and overdue extension to the harm reduction policy that has produced substantial individual and public benefits in the UK"[82].

In 2013, a local independent commission on drug-related harms recommended that the feasibility of a SIF be explored in Brighton and Hove, but subsequently concluded that there was insufficient evidence of need and a lack of local accord to deal with the legal aspects[84, 85].

Similarly, a recent Home Office review of international responses to drug use recognised the evidence base for safer injecting sites but did not recommend their implementation in the UK, on the grounds that "the UK does not experience open drug scenes of the kind which prompted the creation of the DCRs we saw in Switzerland and Denmark"[81].

In Scotland, where both health and drugs policy are devolved matters, the National Forum on Drug-Related Deaths – an independent advisory body of professional and lay representatives – has recommended on a number of occasions that harm reduction services be expanded to include safer injecting facilities and heroin-assisted treatmen[t86, 87]. In the Forum's most recent report, published in May 2015, the scoping, establishment and evaluation of pilot services in one or two ADPs with the greatest need was identified as "a national priority"[87].

4.7.2. Evidence summary

Sources of evidence

The main source identified was a systematic review by Potier et al, published in December 2014[88], which synthesised results from 75 studies, predominantly from Canada and Australia. This was supplemented with information from an earlier review by the European Monitoring Centre for Drug and Drug Addiction (EMCDDA), which also included studies published in languages other than English and hence provided greater detail on SIF in mainland Europe[76].

Quality of studies

Though logistical and methodological constraints have precluded randomised controlled trials on the impact of SIFs, both reviews identified a substantial body of observational evidence, of variable design and quality.

The potential for confounding in such studies is significant, given the absence of randomised controlled trials and the multiplicity of factors influencing the epidemiology and harms of injecting drug use (such as changes in supply, other concurrent harm reduction initiatives, and law enforcement activity). Such concerns are a particular issue for ecological studies , such as those investigating changes in drug-related deaths at the community level. Some studies – particularly those from the Vancouver SIF – attempted to control for these factors.

Many studies used self-reported measures vulnerable to social desirability bias; however, where objective measures (such as incidents of drug-related litter) were available, they yielded similar results.

While the majority of SIFs are located in Europe, evaluations from Vancouver or Sydney dominate the published literature. However, the findings of the EMCDDA report – which included articles in languages other than English and was therefore more representative of evaluations of European SIFs – were similar to those of Potier's English language-only review.

Clinical effects

Reaching the target population

The success of SIFs depends to a large extent on their ability to attract and engage with people who inject drugs in their locality, particularly those who are most marginalised and most at risk from drug-related harm.

Analyses of the demographic characteristics, social circumstances, and health status of SIF attendees suggest that they are able to reach those most in need[88, 89]. For instance, among a community cohort in Vancouver, 45% of people with active injecting drug use had ever used the SIF; those who had were more likely to be homeless, use heroin or cocaine on a daily basis, engage in public injecting and have had a recent non-fatal overdose compared to those who did not[90]. Similar findings have been reported from Australian and European facilities[81].

There is some evidence to suggest that SIFs can also attract stably housed clients, who choose to inject in the facility rather than their own homes. For instance, between 60 and 70% of clients attending the Sydney SIF during its first nine years of operation owned or rented their own homes, or lived with parents[91]. In Switzerland and Germany, approximately two-thirds of SIF clients are stably housed. However, this outcome varies greatly according to local context, with SIFs in other cities serving a higher proportion of homeless or unstably housed clients (for instance, 57% in Vancouver and 60% in Barcelona)[76,92].

Overdose and drug-related death

Evaluating the impact of SIFs on rates of overdose and drug-related death is difficult, given the potential for confounding by secular trends in drug supply, composition, and consumption, and by unpredictable events, such as changes in law enforcement strategies. Nonetheless, some tentative conclusions can be drawn.

Estimates of on-site overdose rates vary significantly between SIFs, from 0.5 to 7.0 per 1,000 injecting episodes[89]: such estimates are likely to be influenced by differences in case definitions and local patterns of drug use. While rates of overdose appear to be similar between users and non-users of SIFs, the availability of rapid assistance means that the risk of complications among the former is likely to be significantly reduced. Qualitative research with attendees has further highlighted how SIFs can minimise exposure to the environmental factors that increase the risk of fatal overdose, such as injecting alone or rushing to avoid detection by members of the public or police[93].

Indeed, no deaths from overdose have been recorded in SIFs since their inception, despite millions of injecting episodes[76, 88]. Though no studies reporting mortality per injecting episode in the community could be identified for direct comparison, these findings compare favourably with the high rates of overdose mortality among people who inject drugs (in one meta-analysis, estimated to be 6.2 per 1,000 person-years)[94] and estimated ratios of fatal to non-fatal overdose in the community[95].

There is some evidence from ecological studies to suggest that SIFs can help reduce community rates of overdose morbidity and mortality. For instance, a retrospective population-based evaluation found that, following the establishment of a SIF in Vancouver, fatal overdoses declined by 35% within a 500m radius of the facility, but only 9% in the rest of the city[96]. Similarly, the introduction of a SIF in Sydney was followed by a 68% reduction in overdose-related ambulance call-outs during its opening hours[88].

The EMCDDA therefore concluded that "when coverage and capacity are adequate, DCRs [drug consumption rooms, a synonym for SIF] help to reduce overdose deaths", though noted that the magnitude of that reduction depends on their success in reaching those most at risk and the extent to which overdose mortality is concentrated within the SIFs' target population[89].

Other injecting-related harms

Both reviews found that SIF were associated with significant reductions in risky injecting practices.

For instance, Kerr and colleagues found that frequent use of the Vancouver SIF was associated with a 70% decrease in the likelihood of sharing injecting equipment (adjusted odds ratio 0.3, 95% confidence interval 0.18 to 0.89)[97]. Similar results have been observed among attendees at European SIFs[76]. SIFs have also been associated with improved injection hygiene, including reduced syringe re-use and increased cleaning of injection sites[76].

Though SIFs appear to significantly reduce the sharing of injecting equipment, and as such reduces the behaviours that increase the risk of HIV and hepatitis C transmission, no study has yet documented a direct impact on BBV transmission[88]. This may reflect the difficulties of undertaking a study of sufficient statistical power and of disentangling the effects of SIFs from concurrent harm reduction initiatives, such as injecting equipment provision or opiate substitution treatment. It may also be in part to the facilities' limited coverage of the target population.

With regard to public injecting, cross-sectional community surveys among people who inject drugs in Sydney have suggested modest reductions in the prevalence of injecting in the street (47% in 2000 to 40% in 2002, p=0.06) or in public toilets (39% to 29%, p=0.01) following introduction of a SIF[78]. Another study from Vancouver found that regular SIF users were more than twice as likely to report a reduction in public injecting compared to those who occasionally or rarely used the SIF (adjusted odds ratio 2.79, 95% confidence interval 1.93 to 3.87)[98]. These self-reported findings are substantiated by environmental mapping exercises and population surveys following SIF introduction in various cities, which have documented reductions in drug-related litter and in observed public injecting episodes[76].

Impact on drug use and addictions treatment

Both reviews found SIF attendance to be associated with increased uptake of addictions care. For instance, among a cohort of people who inject drugs recruited from the Vancouver SIF, regular attendance was associated with a 33% greater likelihood of initiating addictions treatment (hazard ratio 1.33, 95% CI 1.04 – 1.72) and a 72% greater likelihood of entering a detoxification programme (hazard ratio 1.72, 95% CI 1.25 – 2.38)[99, 100]. Similar results have been demonstrated in Sydney's SIF, which brokered 3,871 accepted referrals to drug treatment services during its first 9 years of operation, from a total of 12,050 clients registered[91]. While these findings might be subject to selection bias – if SIF attendance reflects a degree of motivation or stability that also increases the likelihood of engaging with addiction services – the profile of SIF attendees described earlier mitigates against this. Furthermore, a community-recruited sample in Vancouver showed no change in rates of opiate substitution therapy or of relapse into injecting following the opening of a SIF[101].

Concerns that SIFs may promote initiation into injecting drug use – or hinder cessation – do not appear to have been realised, with evaluations from several cities finding no change in the local prevalence of injecting drug use following their introduction[89, 101, 102].

This indicates that SIFs are unlikely to encourage individuals to initiate or recommence illicit drug use and may in fact play a role in facilitating access to addictions treatment and recovery. Their impact on the overall prevalence of injecting drug use appears to be minimal.

Social effects

Drug-related nuisance

Canadian, Australian, and European primary literature points to significant reductions in the prevalence of public injecting and drug-related litter following the opening of local SIFs[88].

As described above, a number of studies among SIF users have documented significant self-reported changes in injecting behaviour, including reductions in public injecting and discarding of injecting equipment.

These self-reported benefits have been substantiated by local population surveys and by direct observation. For instance, an environmental survey conducted in Vancouver found that the opening of a SIF was associated with significant reductions in the number of people injecting in public places (daily mean of observed episodes, 4.3 v 2.4; p=0.022), discarded syringes (daily mean of items, 11.5 v 5.3, p=0.010) and other injecting-related litter (daily mean of items, 601.7 v 305.3, p=0.014), independent of law enforcement activity and weather conditions[103]. In Sydney, local residents and business operators noted a significant reduction in public injecting and dropped syringes after the opening of a SIF, though not in the frequency of being offered drugs for purchase[104].

However, the causal relationship between SIFs and changes in public injecting and drug-related nuisance can be difficult to establish, due to potential confounding influences on injecting practices[76]. Their impact in this respect is also likely to depend on reach and accessibility among the target population.

Impact on crime and anti-social behaviour

Several studies have attempted to address concerns that SIFs may encourage acquisitive and drug-related crime in their vicinity.

Following the introduction of SIFs in Vancouver and Sydney, local evaluations lasting up to ten years observed no change in police-recorded incidents of acquisitive crime, violence, or drug trafficking in the area around the facilities[88]. Comparable findings were also reported in European studies from Switzerland and the Netherlands[76].

Both reviews therefore concluded that SIFs do not appear to lead to increased levels of crime and anti-social behaviour in their vicinity. However, their success in this respect appears to

be contingent on good working relationships with local law enforcement agencies and their integration into a wider harm reduction strategy.

In most countries where SIFs operate, local accords have been reached, through which police agree not to target clients in the vicinity of the facility or monitor its entrance or exit[105], but still maintain close ties with the facility and offer assistance if circumstances require[103]. For instance, in Vancouver, police now refer individuals found injecting in public to the SIF instead of pursuing punitive action[106], whilst in Copenhagen two police officers act as dedicated liaisons to the facility and sit on its board[81].

Public perceptions

A number of surveys in Sydney, Germany, and Switzerland have suggested that, though SIFs are often met with mixed public opinion prior to introduction, the attitudes of local residents and businesses has tended to become more positive over time.

For instance, in Sydney, the proportion of local residents and businesses agreeing with the establishment of a SIF increased from 68% and 58% respectively in 2000 (before opening) to 78% and 63% respectively in 2002 (after opening)[107]. The proportions of residents and businesses believing that SIFs encouraged illicit drug use and attracted drug users to the area also declined after the centre's establishment.

Opinions of the Vancouver SIF appear to be more mixed. An evaluation of the first year of operation found only 46% of local business people in favour, with the remainder undecided (20%) or opposed (34%): businesses closer to the SIF tended to be more supportive[92].

Public opinion towards SIFs in many countries therefore varies, though greater exposure to such facilities appears to be associated with more favourable views.

Cost-effectiveness

Several economic evaluations of existing SIFs were identified; three from Vancouver and one from Sydney[108-111]. In the absence of direct evidence of effectiveness in reducing HIV infections or overdose deaths, all attempted to estimate the societal cost savings of predicted reductions in these outcomes using mathematical modelling techniques. They concluded that SIFs resulted in substantial potential savings, although estimates varied greatly between countries. For instance, among those studies considering both HIV infections and overdose mortality, savings estimates varied from AU$658,000 (~£323,000) per year[111] to CA$6,000,000 (~£3,000,000)[108], with the latter study suggesting that the Vancouver SIF achieved a benefit to cost ratio of 5:1. However, the reduction in HIV transmission risk attributed to SIF attendance used in some Canadian studies has been criticised as an unfounded over-estimate[112]. No studies attempted to quantify the costs of social impacts such as drug-related crime or public amenity, though these are likely to be substantial.

More generally, these and other economic models of the benefits of SIF are sensitive to a number of assumptions about service utilisation rates, injection frequency, and the background incidence of HIV among people who inject drugs; all of which are likely to vary greatly between potential SIF settings. To our knowledge, no study has yet considered the potential economic implications of a SIF in the UK.

4.7.3. Stakeholder views

People with a history of injecting drug use

Among people currently involved in public injecting, all were in favour of introducing a safer injecting facility in Glasgow city centre. All of those asked agreed that they would use such a service and that it would reduce the likelihood of injecting in public.

A variety of reasons were given for supporting such an intervention. In particular, several mentioned the benefits to the wider community, such as reduced visibility of public injecting and reduced drug-related litter. Other benefits mentioned include: reduced sharing of injecting equipment and transmission of BBV, access to assistance in the event of an overdose, advice on safer injecting technique and links to other health and social services. Several participants alluded to the potential for such facilities to act as a gateway to reducing use and entering recovery.

Improving access to, and integration between, existing services was also seen as a key benefit of such a site. Particular mention was made of the opportunity to access housing services, social work, welfare advice, primary care, and drugs counsellors.

> ***"It's a safe environment you're in. You're not in your close, you're not in a back alley where if anything happens there's nobody there."***
>
> *Interviewee (currently injecting drugs)*

> ***"Needles end up getting discarded on the street, citric packets which I'm sick of seeing, needles lying in the street, packets lying in the street…If they provide safe injectment places [sic]. Know what I mean. None of that is going to be about."***
>
> *Interviewee (currently injecting drugs)*

> ***"My mental health would be a wee bit more, less worried and just be more like peace of mind really."***
>
> *Interviewee (currently injecting drugs)*

However, several were concerned that police might target such a facility and highlighted that trust would be a key determinant of its popularity among users.

The city centre was generally agreed to be the best location, though some participants suggested that several sites across the city might be required. Distance to travel - from drug markets or begging pitches - was identified as a key determinant of use. Views on opening hours varied, though most felt that it would need to be open beyond 'office hours'. Though twenty-four hour access was seen as ideal, this was acknowledged to be unrealistic.

Stakeholders in recovery were also generally in favour of a safer injecting site, though felt it would be most beneficial in combination with heroin-assisted treatment. Such a facility was seen as a step change towards a more effective approach to harm reduction:

> ***"You can put as many posters up as you like, saying that there is an increase in HIV in places. You need to think about it differently. That's where I think safe injecting routes and injecting heroin…you take away the chaos. Then you have a chance to work on the attitude."***
>
> *Focus group participant (in recovery from drug use)*

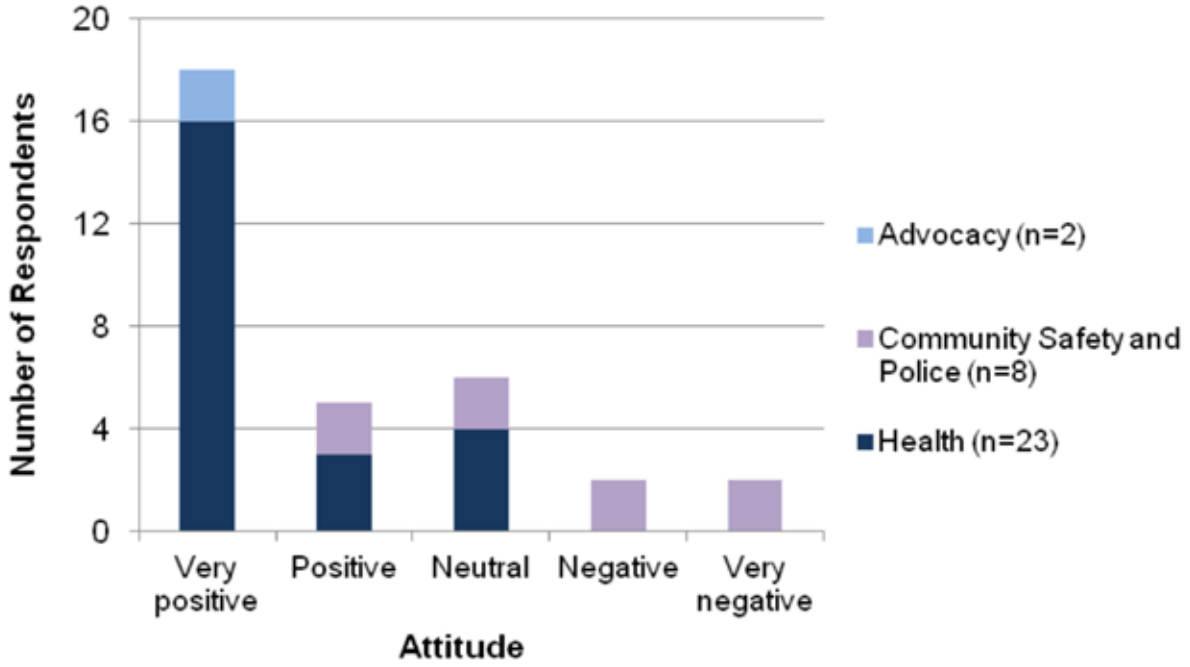
Those in recovery also mentioned concerns about police activity in the vicinity of such a facility, and the risk that such a facility would be under-used as a result. Distance to travel was again described as a key determinant of uptake, given that public injecting was predominantly driven by immediacy and convenience.

Others described a tension between the benefits of integration with other health and social services and the potential repercussions for users in terms of child protection and access to substitute prescribing. One participant stressed the importance of any such facility being focused on users' needs rather than those of services or professionals.

Staff of relevant health and community services

Among service providers, a potential safer injecting facility in Glasgow was generally positively received (**Figure 12**). Health professionals particularly welcomed the idea, with 19 of 23 (82.6%) feeling "positive" or "very positive" towards the idea. Similarly, both of the advocacy organisations representing drug users and their families described "very positive" attitudes. However, the views of staff from Community Safety Glasgow and Police Scotland were more mixed.

Figure 12. What is your attitude towards the potential introduction of Safer Injecting Facilities in Glasgow city centre?



Most respondents believed it would reduce the likelihood of people injecting in public, though some acknowledged that its success would depend on the choice of location and on the level of trust by clients.

Respondents described a range of potential health benefits for clients, particularly reduced sharing of injecting equipment and blood-borne virus transmission, reduced rates of overdose and drug-related death, and reduced risk of other injecting-related complications such as skin and soft tissue infections.

Many highlighted that the opportunities a SIF would provide for health promotion advice, health care, and entry to addictions treatment, including recovery planning. In particular, a number identified the potential to reach particularly high-risk individuals who are not currently engaging with existing treatment options and to build trust in healthcare services.

The potential positive impact on the wider community was also highlighted, predominantly through reduced drug-related litter and improved public amenity. Some respondents also believed it would be cost-saving through reduced pressure on NHS and social work services.

Several stakeholders mentioned the evidence from SIFs in other countries, and described their local implementation as overdue.

"These could significantly impact on the current, and probability of future, blood borne virus outbreaks in Glasgow. Glasgow has a particular problem with drug use and needs specialist services to tackle it. Glasgow could be seen as leading the way and the pioneer for these facilities in the UK in the future."

Addictions physician

"[A SIF would] enable people to enter recovery journey earlier and with less harm beforehand, so reducing complex trauma concerns."

GP, Hunter Street

"From a purely health perspective I think the arguments for this are persuasive."

HIV physician

"It has got to quite a ridiculous stage where members of the public, small businesses and communities are asking "why can't you give these people somewhere safe to go and inject" and the reason we don't is?"

Senior staff, IEP services

However, reservations were expressed by a number of stakeholders. Representatives from Community Safety and Police Scotland were particularly concerned about the legality of such a facility and the potential for a "honey-pot" effect, whereby a SIF could attract drug users to the area, increase local rates of crime and anti-social behaviour, and contribute to a negative image of the city. Concerns were also expressed relating to the wider message it might send to the public about the acceptability of drug use.

In contrast, health professionals tended to identify concerns about adverse public opinion, appropriate use of resources, and opportunity costs, particularly in the current financial climate. Others described the potential for stigmatisation, either of those attending the facility or of those who refused to do so. Several people identified the risk that police enforcement in the vicinity might discourage its use and create a climate of mistrust in services.

"Stigma and backlash from the general public who are located around the venue, but also perhaps increased stigma and low tolerance for injectors who can't/won't use the facility."

HIV professional

"Potential risks would be drug dealing and possible bullying around it"

Outreach worker

"If there are waiting times to access the facility there is no guarantee that the service user will use the facility consistently, i.e. might revert back to public injection and if that happens close to the facility itself, that will be a reputational risk to the facility."

Senior staff, Community Safety Glasgow

Finally, many acknowledged that a SIF would not "solve" the problem of drugs in Glasgow and should be viewed as one component of a holistic response to the health needs of people who inject drugs in public places.

"[It] should not be seen as a panacea but rather part of a package of care to the most vulnerable population."

Advocacy and support organisation leader

4.7.4. Summary

Safer injection facilities are hygienic environments where illicit drugs (purchased off the premises) can be consumed under clinical supervision, in order to provide people who inject drugs with sterile injecting equipment, advice on injecting technique, assistance in the event of an overdose and access to other health and social services. The first such facility was opened in the 1980s, and more than 90 are now in operation worldwide.

Evaluations from a number of countries indicate that SIFs are able to attract those most at risk of injecting-related harm – including people with a similar profile to the Glasgow public injecting population – and support them to engage with health and social services. They can provide timely management of overdoses occurring among attendees and may contribute to reductions in drug-related deaths at a community level. There is strong evidence to support a reduction in risky injection practices – including sharing of equipment and public injecting – among SIF clients, though there is no direct evidence of an influence on BBV transmission. SIF do not appear to undermine existing addiction treatments, and may even act as a successful gateway into treatment and recovery. If located and managed appropriately, they appear to have no impact on drug-related crime or public disorder, and can improve public amenity.

There is some limited evidence from other countries to suggest that SIFs can offer significant potential cost savings: this may well be the case locally, where the target population incur high costs through health care, social services, and criminal justice.

Stakeholder attitudes towards safer injecting facilities were generally positive, with many respondents alluding to the evidence from other countries as well as identifying specific benefits of establishing such a facility in Glasgow. However, attitudes among stakeholders from Community Safety and Police Scotland were less favourable, citing concerns about legality, anti-social behaviour, and public messages about drug use.

It is therefore reasonable to conclude that a SIF is likely to have a positive impact on the most pressing health concerns affecting public injectors in Glasgow, and on the community as a whole. However, the nature of public injecting as a localised phenomenon, specific to a 'micro risk environment'15 means that interventions such as SIFs are likely to be particularly context-sensitive. Implementation in a new setting – such as Glasgow – would therefore require careful evaluation, to ensure that benefits seen elsewhere are reproduced and local risks minimised. The concerns expressed by Community Safety and Police Scotland are also an important consideration, given that the success of safer injecting facilities in other cities has depended to a large extent on collaboration with local law enforcement agencies.

4.8. Potential novel interventions: heroin-assisted treatment

4.8.1. Nature of intervention

Heroin-assisted treatment refers to the prescription of pharmaceutical heroin (also known as diamorphine) by medical professionals for the treatment of opiate-dependent individuals who do not benefit from existing substitution therapies, such as methadone or buprenorphine. It aims to create stability in users' lives, reduce the individual and societal harms associated with illegally-obtained heroin, and facilitate contact with the wider network of health and social services.

In contemporary practice, prescribed heroin is self-administered by patients under supervision in specialist outpatient facilities, in order to provide adequate monitoring and to safeguard against diversion into the illicit market. Heroin is provided up to three times per day, seven days per week, and is supplemented by take-home oral methadone to prevent overnight withdrawal. Such programmes therefore require suitably trained and licensed medical staff and a reliable supply of pharmaceutical-grade heroin.

Most research studies, and all existing treatment programmes, have been limited to people with chronic opiate dependency and at least one unsuccessful previous attempt at maintenance treatment[e].

International comparisons

Heroin-assisted treatment is routinely available as a clinical treatment in Switzerland, Denmark, Germany and the Netherlands. In a smaller number of countries, it is available only to participants of previous or ongoing clinical trials: these include Spain, Canada, and Belgium. In some countries, such as the US, Australia and France, protocols for trials of heroin-assisted treatment have been previously been developed but never realised.

Few data are available on the total number of patients enrolled in heroin-assisted treatment worldwide. The most recent available figure, from 2011, estimates that 2,500 people across Europe were in receipt of supervised injectable heroin[113].

UK context

Whilst heroin is approved as a medicinal product in the UK, its prescription for the purposes of addiction treatment is restricted to licensed specialists, and is not widespread. Heroin-assisted treatment is not included in current NICE guidance on drug misuse, with a review consultation in 2011 concluding that "There is insufficient evidence in this area to be considered for recommendation at this stage".

As described above, the introduction and evaluation of pilot programmes for heroin-assisted treatment in Scotland has been recommended by the National Forum on Drug-Related Deaths, but no such services have yet been established.

4.8.2. Evidence summary

Most studies have investigated the use of injectable heroin, though some have included inhaled treatment[114] or injectable methadone[115]. Since the majority of existing evidence relates to supervised injectable heroin, this will be the focus of this summary.

Sources of evidence

The main source identified was a systematic review of heroin-assisted treatment strategies undertaken by Strang and colleagues on behalf of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA)[113] and a subsequent meta-analysis of clinical outcomes by the same authors[116].

In preparing this summary, we also drew upon a Cochrane review from 2011 which compared heroin maintenance to methadone or other substitution treatments for opioid dependence[117].

[e] A subgroup analysis of the only trial to date that has included patients with no previous maintenance treatment did suggest a potential benefit in this group[152]: however, given the limited evidence base in this area, this approach will not be considered further in this review.

One randomised controlled trial, five qualitative studies, and one economic evaluation published subsequent to the EMCDDA review were also identified for inclusion.

Quality of studies

With regard to study quality, seven randomised controlled trials have been published on this topic, as well as a number of observational studies using both quantitative and qualitative methods.

All trials were open-label, with both participants and investigators aware of treatment allocation. The Cochrane review team found that the allocation process in most studies minimised the risk of selection bias, though several did not describe this aspect in sufficient detail. All used an intention-to-treat approach to analysis, in order to minimise bias due to differential withdrawal between groups and thus provide a more realistic estimate of treatment effectiveness.

Though some early trials in this field were criticised for sub-optimal methadone dosage among control participants, more recent studies which have addressed this concern[115, 118] have yielded similar results.

With 29 study centres in 7 different countries (including the UK) represented, the generalisability of findings to different settings is likely to be high. Consistent with its intended use as a second-line treatment, trials of heroin-assisted treatment have recruited a highly selected group of patients, albeit one likely to overlap substantially with the public injecting population.

Clinical effects

The primary outcomes of most trials in this field have been measures of dependency (such as use of street heroin) or of engagement in care (such as retention in treatment). Few studies have reported health status as a primary outcome, though several have described changes in multi-dimensional indices that incorporate measures of health.

Retention in treatment

Both of the meta-analyses considered in this review found that heroin-assisted treatment significantly improved retention in treatment compared with oral methadone[113, 116].

Though differences in selection criteria meant these two analyses considered an overlapping but not identical set of trials, pooled estimates of effect were similar, with patients assigned to supervised injectable heroin between 37% and 44% more likely to be retained in treatment than controls receiving oral methadone (Strang et al – RR 1.37; 95% CI 1.03 to 1.83%; p=0.03, Ferri et al - RR 1.44, 95% CI 1.19-1.75, p=0.0002).

The only trial published since, by Demaret et al, found no difference in retention in addictions treatment at 12 months follow-up between those randomised to heroin or methadone[114]. In the absence of a more up-to-date meta-analysis, it is unclear what impact this small trial – of 74 participants – would have on the pooled estimates of effect described above.

Use of illicit drugs

Heroin-assisted treatment was consistently associated with a reduction in the use of 'street' or illicit drugs in all trials to date[113]. However, due to differences in the definition and measurement of this outcome, it has not been subject to meta-analysis.

In the only UK trial (and the only one to report an objective measure of illicit heroin use), Strang et al found that 72% of participants receiving heroin treatment tested negative for illicit opiates on at least 50% of occasions during the study period, compared to 27% of those on oral methadone[115]. After adjusting for study site and other potential confounders, they estimated that participants prescribed injectable heroin were 8.2 times more likely to achieve this outcome than those prescribed oral methadone (95% confidence intervals 2.88 – 23.16; p<0.0001), with a number needed to treat of 2.2 (95% CI 1.6 – 3.2).

Physical and mental health

Only one trial to date has considered health as a primary outcome measure. In this German study, 80% of those assigned to heroin treatment achieved at least a 20% improvement on two validated scales for physical and mental health at 12 months follow-up, compared to 74% of those assigned to oral methadone (p=0.0023)[118]. This difference was more pronounced when analyses were limited to those participants who completed the study treatment (87% vs 77%), since a high proportion randomised to methadone either did not initiate treatment or withdrew during the intervention period. These results suggest that while the incremental health benefits of heroin over methadone may be modest, it has the potential to reach a greater number of patients.

Two recent trials, in the UK and Belgium respectively, found no statistically significant difference in self-rated physical or mental health between participants receiving injectable heroin or oral methadone[114, 115]. However, both trials were under-powered with respect to these secondary outcomes and of relatively short duration compared to participants' drug use careers, limiting their ability to demonstrate an impact on health.

Two further trials have evaluated health effects as part of composite outcome scores: both found that physical and mental health was significantly better among patients assigned to heroin treatment compared to oral methadone[119, 120].

Qualitative research into participant experiences of heroin-assisted treatment has pointed to positive impacts on health, particularly through improving psychological wellbeing and providing the motivation and stability required to engage with health concerns[121-124].

Mortality

Both reviews found that while heroin treatment was associated with a lower mortality rate than oral methadone, this difference was not statistically significant. In a meta-analysis of 1,477 patients from four trials, the relative risk of death amongst those treated with supervised injectable heroin compared to oral methadone was 0.65 (95% confidence interval 0.25 - 1.69, p=0.38)[117]. The uncertainty associated with this estimate is likely to reflect the small numbers of deaths among participants and hence the limited power of these trials to detect any impact on mortality.

Adverse clinical effects

In studies to date, the rate of serious adverse events – predominantly non-fatal overdoses requiring naloxone – was generally higher among participants receiving injectable heroin compared to those receiving oral methadone[113, 117]. For instance, in the UK trial by Strang and colleagues involving 127 people, two serious adverse events related to study medication were observed in the heroin group and none in the methadone group[115]. They calculated that such events occurred approximately once in every 6,613 heroin injecting episodes. A subsequent meta-analysis has estimated the risk of serious adverse events related to study medication to be almost five-fold higher among those treated with supervised injectable heroin (RR 4.99, 95% CI 1.66 – 14.99)[116]: however, there exists substantial uncertainty around this estimate given the low absolute rate of complications in both groups.

Long-term follow-up

Most of the trials described above reported results of 6, 9 or 12 month intervention periods, which were followed either by the widespread offer of heroin-assisted treatment for eligible patients or by continued treatment of trial participants on compassionate grounds. In the five studies that have evaluated longer-term outcomes, retention in heroin-assisted treatment has varied between 44% at 2 years in Spain[125], 55% at 2 years in Germany[126], 50% at 2.5 years in Switzerland[127], 56% at 4 years and 40% at 6 years in Switzerland[128]. Of those ceasing treatment, the majority returned to an alternative maintenance treatment, with smaller proportions achieving abstinent recovery[113].

Long-term follow-up of treatment cohorts in Switzerland, Germany, Spain and the Netherlands has indicated sustained improvements compared to baseline in physical and mental health, use

of illicit heroin, and social functioning[118, 125, 126, 126, 127, 129], though studies differed in the measures used to assess these outcomes.

Social effects

Studies from several countries have evaluated the potential wider community impacts of heroin-assisted treatment.

To date, all trials have either found heroin to have a positive or neutral effect on self-reported criminal activity[113]. Studies from the Netherlands and Germany found significantly lower rates of offending among participants treated with heroin than those treated with methadone[130, 131]: in the latter, these self-reported findings were supported by police data from a subset of states participating in the trial. However, trials in Spain, Canada, and the UK found that, while both heroin and methadone treatments were consistently associated with substantial reductions in criminal activity compared to baseline, there was no statistically significant difference between intervention and controls[119, 120, 132]. These disparate findings may reflect differences in the measurement of criminal offences between studies, and the fact that, despite randomisation, involvement in illegal activity at baseline was not equally distributed among the treatment groups.

Three studies – in Germany, Canada and the UK – have used police department data to assess the impact of heroin-assisted treatment trials on the local community. As mentioned above, the German trial found that police activity data corroborated self-reported reductions in criminal activity amongst those prescribed heroin[131]. In Canada and the UK, no discernible changes in crime, public disorder or anti-social behaviour in the local area was observed either following the start of trials (in Vancouver, Montreal and London) or their scale-up (in Vancouver and Montreal)[133, 134].

In the UK, the perceptions of local community members both before and after a heroin-assisted trial were explored through key informant interviews. Though several initially raised concerns about a potential 'honey-pot' effect (i.e., that people who use drugs would be attracted to the area), these did not appear to be realised. By the time of the follow-up interview, most community members reported no significant community impacts, whether positive or negative[133]. In other countries, heroin-assisted treatment enjoys widespread public acceptance and has been less controversial than other harm reduction interventions, such as SIFs[81].

With relation to individual social wellbeing, modest but statistically significant benefits of heroin-assisted treatment for housing, employment satisfaction and social integration were observed in all trials evaluating these outcomes[113].

Cost-effectiveness

A number of analyses of the cost-effectiveness of heroin-assisted treatment– linked to the clinical trials described above – have been reported.

An economic evaluation of the UK RIOTT trial investigated the cost-effectiveness of heroin-assisted treatment compared to methadone maintenance among people with chronic, refractory opiate addiction, over six months of follow-up[135]. While heroin-assisted treatment was more expensive to provide than methadone maintenance (predominantly due to staffing costs), it was associated with lower costs of criminal activity and greater gains in quality-adjusted life years (QALYs; a measure of both length and quality of life). For instance, the total cost – including medication, health service use, and social impacts - of injectable heroin over the six month study period was £13,410, in comparison to £15,805 for methadone. From a societal perspective, heroin-assisted treatment was therefore found to be more cost-effective in this population than oral methadone. However, if a narrower health sector perspective was adopted, discounting the cost savings from changes in criminal activity, oral methadone was favoured.

Other studies – from Germany, the Netherlands and Switzerland – have produced similar results, with heroin-assisted treatment found to be cost-saving overall from a societal perspective as a result of reductions in crime and offending and, to a lesser extent, in the adverse health consequences of drug use[113].

Though these studies have consistently indicated that injectable heroin represents a cost-effective approach to treating this population over the short to medium term, there remains a lack of data on long-term outcomes and hence on the duration of both clinical and economic benefits.

4.8.3. Stakeholder views

People with a history of injecting drug use

Among people currently involved in public injecting, the possibility of heroin-assisted treatment received a mixed reception. The group was less familiar with this intervention compared to, for instance, safer injecting facilities, and less certain of its potential impacts. Nonetheless, all but one stated they would consider it as a treatment option.

Several identified potential benefits of receiving pharmaceutical-quality heroin under clinical supervision and monitoring, with one participant drawing an explicit contrast to the previous outbreak of anthrax caused by contaminated drugs. Others felt it would help reduce their criminal activity and provide a degree of stability, as well as having a wider impact on the illegal drug market in the city. One participant anticipated heroin-assisted treatment being beneficial in making a transition to recovery.

> ***"I wish they would. Because you know something, it takes the smack out the city. It takes the illegal stuff out, and at least you know what you're putting into your body."***
>
> *Interviewee (currently injecting drugs)*

> ***"Because that way I wouldn't be paying and having to go out and rob and all that, and do what I'm doing, begging and all that."***
>
> *Interviewee (currently injecting drugs)*

Only one interviewee expressed reservations, citing concerns that it would perpetuate or exacerbate people's addictions and that it was an inappropriate use of NHS resources.

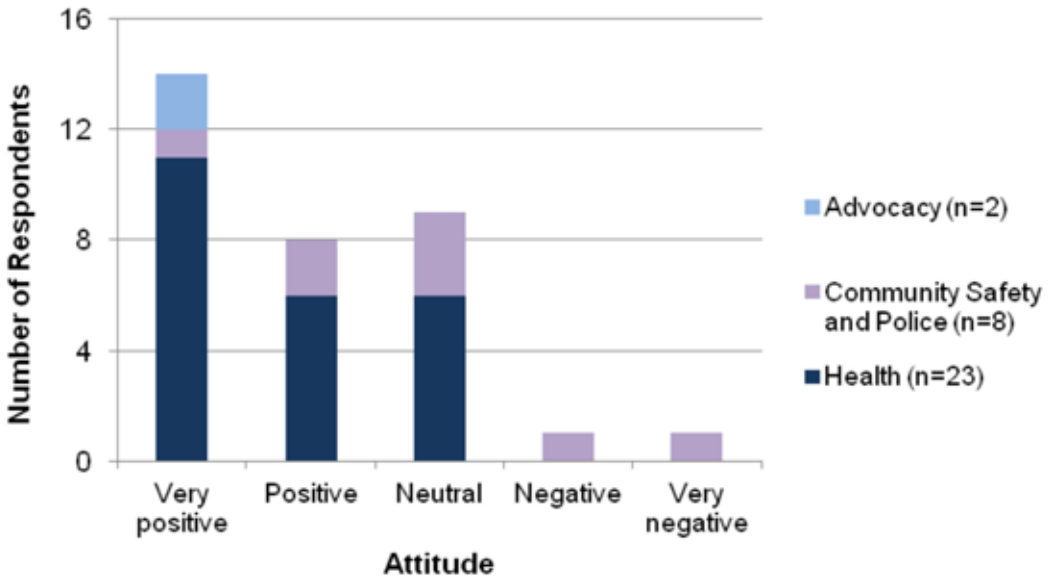
Focus group participants with a past history of drug use were generally positive towards the idea of heroin-assisted treatment, particularly if provided in the context of recovery. Several alluded to potential benefits in terms of stability and social circumstances beyond those provided by existing services, and reduced risk of drug-related death. The only risk identified by this group was again police activity around treatment sites.

Staff from relevant health and community services

The majority of service providers had positive views on the possible introduction of heroin assisted treatment in Glasgow (**Figure 13**). Of the three interventions included in the consultation, it garnered the least negative feedback. However, some stakeholders acknowledged they were less familiar with the concept, and its potential risks and benefits, than the other interventions discussed. As with the feedback on safer injecting facilities, attitudes were more positive among those from healthcare or from advocacy organisations representing drug users and their families, compared to those from Community Safety or Police Scotland.

Several health professionals mentioned the evidence to suggest that heroin-assisted treatment was associated with increased retention, greater social stability, and reduced criminal activity among those not who did not benefit from existing maintenance treatment. Many highlighted the known content and potency of prescribed heroin, and thus the potential to reduce the risk of overdose and of spore-forming bacterial outbreaks such as botulism and anthrax. A number of respondents also identified the potential for heroin-assisted treatment to act as a gateway to recovery and to other health and social services.

Figure 13. What is your attitude towards the potential introduction of Heroin-Assisted Treatment in Glasgow city centre?



Most respondents believed that heroin-assisted treatment had the potential to reduce public injecting, though several highlighted that not all people who inject in public might be eligible and that injecting of stimulants – such as cocaine – would continue. In addition to the impact on acquisitive crime, some anticipated that heroin-assisted treatment might reduce the market for illegal drugs in Glasgow, thus improving public safety and reducing expenditure on law enforcement and criminal justice.

It would allow people to live a more normal lifestyle and reduce criminality and antisocial behaviour. It could also reduce stigma and mean that people are engaging with services more positively. At the moment people have very little choice and it becomes a barrier to treatment when they do not want to go back on methadone and this is the only thing offered.

Outreach worker

"Engagement with those who don't engage or benefit from present ORT provision"

Manager, addictions services

"[Heroin-assisted treatment] would be a very positive addition to the services, the challenge would be to deliver it to sufficient numbers to make a real impact."

Advocacy & support organisation leader

The main reservation expressed by stakeholders was the potential for negative public opinion, particularly in relation to the use of public money. Political will and public understanding of the benefits were seen as crucial to success. Many acknowledged that success would also depend to a great extent on sufficient staff training, monitoring of eligibility criteria, and integration with existing services.

Some respondents were concerned that heroin prescribing could be perceived as condoning injecting drug use or could act as a disincentive to those seeking recovery.

"Public perceptions of the programme may lead to greater stigma and possibly reduced engagement"

Manager, addictions services

"Would this facility be an opportunity to engage clients into recovery process, including harm reduction and abstinence[?]"

Advocacy & support organisation leader

As part of the consultation, Police Scotland expressed their strong opposition to heroin-assisted treatment, but did not cite any specific objections beyond a general statement of their duty to uphold the law as it applies to the misuse of drugs.

4.8.4. Summary

Heroin-assisted treatment describes the prescription of pharmaceutical-grade heroin by medical professionals as a second-line treatment for people with chronic opiate dependency who have not benefited from existing substitution therapies such as methadone. Randomised controlled trials from a number of countries have demonstrated that, for this group, heroin-assisted treatment can have both individual and social benefits in terms of retention in treatment, decreased illicit drug use, reduced criminal activity and incarceration and, potentially, reduced mortality. There is also evidence – including from the UK – that heroin-assisted treatment is cost-effective from a societal perspective.

Although relatively small numbers of people are eligible for heroin-assisted treatment, the health and social harms they experience, the costs they incur, and their lack of benefit from other treatments, provide strong clinical and economic arguments for its provision.

Quantitative and qualitative data outlined above suggest that a significant proportion of those involved in public injecting in Glasgow city centre may be eligible for – and benefit from – this second-line treatment. Glasgow's history of fatal disease outbreaks caused by contaminated heroin[72,73] also points to significant potential local benefits. However, given that this is a high-threshold intervention for carefully selected population, and that cocaine injecting is also prevalent among our target population (Section 4.6), heroin-assisted treatment should be considered one element of a wider suite of interventions required to address public injecting.

Stakeholders generally welcomed the prospect of introducing heroin-assisted treatment in Glasgow, citing the evidence for improved retention in addictions care and greater social stability, as well as potential impacts on the illegal drug market in the city. However, some raised concerns regarding cost and the potential for adverse public opinion. Opinions among staff from Community Safety and Police Scotland tended to be less favourable than among staff from health services or organisations representing drug users and their families.

4.9. Potential novel interventions: extended injecting equipment provision services

4.9.1. Nature of intervention

In this report, we use the term 'extended IEP' to describe interventions aiming to increase access to IEP services, particularly outwith usual operating hours.

International comparisons

IEP vending machines are available in a number of European countries (including Denmark, Norway, France, Switzerland, Italy, the Netherlands, Germany and Austria), as well as Australia and New Zealand[136]. Such machines dispense sterile injecting equipment in return for tokens issued by local IEP outlets or addiction services or, less frequently, for money or used injecting equipment. Many also dispense educational material to promote healthy injecting practices.

Other approaches include extending the opening hours of fixed-site IEP outlets or introducing mobile IEP distribution teams, either on foot or in vehicles.

UK context

No IEP vending machines are currently in operation in the UK. Several cities, including Edinburgh, use mobile IEP vans which visit specific sites according to a pre-defined schedule; in some areas these also provide nurse-led clinics for physical and mental health care. A number of peripatetic street teams similar to the Assertive Outreach service in Glasgow are also in operation. Little information could be identified on the opening hours of IEP outlets elsewhere in the UK.

4.9.2. Evidence summary

Sources of evidence

The main sources of evidence for this review were: a recent systematic review and meta-analysis article on the effectiveness of IEP in relation to HIV prevention[137]; a recent "umbrella review" (i.e. review of reviews) on BBV prevention, which included a section on IEP[138]; and several non-systematic reviews and primary research articles which were specific to extended IEP services or published subsequent to the earlier reviews.

Quality of studies

There is little primary literature available on this topic; that which does exist predominantly uses cross-sectional survey designs or qualitative methods to evaluate use of and attitudes towards extended IEP services. No randomised controlled trials and few longitudinal studies were identified. There was a particular lack of research into health outcomes associated with the provision or use of extended IEP services. This may reflect the methodological challenges of disentangling the effects of these services over and above 'traditional' IEP services, since individuals who use the former are also likely to use the latter. None of the studies that have been carried out on this topic are from the UK; many are from countries where injecting equipment is mostly purchased from pharmacies and the costs borne by users, so the generalisability to UK settings of their findings on access and uptake may be limited.

Clinical effects

Traditional IEP

Previous reviews have concluded that use of traditional IEP services is associated with improved injecting practices and potentially with a reduced risk of HIV transmission[139]. For instance, a recent meta-analysis of 12 studies with 12,000 person-years of follow-up found that exposure to IEP was associated with an estimated 44% reduction in HIV transmission (RR 0.66, 95% CI 0.43 – 1.01)[137]. This effect was more pronounced when the analysis was limited to only high quality studies (0.42, 95% CI 0.22 – 0.81). A recent 'umbrella review' found insufficient evidence to

support the effectiveness of IEP in reducing hepatitis C virus (HCV) transmission, but it is unclear whether this is explained by a genuine lack of effect or a lack of quality studies on the topic[138].

Fewer studies have investigated what level of IEP coverage is required for effective BBV prevention. Optimal coverage in a particular population may depend on background BBV prevalence, sharing behaviours and the composition of injecting networks. Though some authors have found a negative association between HIV incidence and IEP coverage at a national level, the risk of confounding in ecological studies such as these is high, making causality difficult to establish[140].

Other studies comparing one-for-one exchange of injecting equipment versus unlimited provision according to request found that the latter was associated with reduced rates of self-reported syringe re-use, suggesting that ease of access is a key determinant of IEP effectiveness[141].

Similarly, there is some evidence to suggest that proximity is a determinant of IEP uptake[142-144]: in one study from Glasgow in the early 1990s, individuals residing more than 1 mile from an IEP outlet were 30% more likely to have shared injecting equipment in the last six months than those residing within a 1 mile radius[143].

Reaching the target population

Evidence from a number of observational studies suggests that different IEP outlets may attract different populations of people who inject drugs. Compared with users of fixed-site IEP outlets, people accessing vending machines and mobile outreach services tend to be younger and from lower socioeconomic groups, with shorter drug histories and higher frequency of injecting[145]. This subgroup is also less likely to be stably housed, employed, or engaged in addictions treatment. Anonymity appeared to be an important factor among those preferring vending machines, particularly among those new to injecting or resident in small communities. Islam et al, in their systematic review on the topic, concluded that both vending machines and mobile outreach services are effective in improving IEP access among hidden and hard-to-reach groups of people who inject drugs[145].

Out-of-hours availability was also highlighted as a key advantage of IEP vending machines in qualitative evaluations from Australia and France[146-148]. This may be especially relevant to some subpopulations of people who inject drugs, such as homeless people, who may be unable store injecting equipment, or those involved in commercial sex work, who may be more likely to be on the streets at night. However, a more recent study from Paris, of the two most active of the city's network of IEP dispensing machines, has suggested they are rarely used overnight[149].

Injecting practices

To date, the few community-based studies undertaken on the topic have found no difference in self-reported sharing of needles between participants reporting predominant use of vending machines compared to those favouring fixed-site IEP services, though one study from France did find the former were less likely to share paraphernalia. Vending machines in prisons have been shown to positively impact on injecting risk behaviour among inmates, but the generalisability of these findings to non-institutional settings may be limited.

No studies of the impact of extended IEP opening hours on injecting practices could be identified.

BBV transmission

There is little research available on the effect of extended IEP services on BBV transmission. Only one study comparing HIV prevalence among users of IEP vending machines and fixed-site outlets was identified; it found no statistically significant difference but relied on self-reported outcomes and was cross-sectional in nature[148]. No prospective community-based studies have evaluated this outcome.

Social effects

Again, a scarcity of evidence limits any conclusions on the impact of extended IEP services on levels of community drug use: no evaluations using objective prevalence measures could be identified. Though several studies have suggested that users of vending machines are on average younger than users of fixed-site IEP outlets[145], none have directly evaluated whether vending machines are inappropriately used by young non-drug users or whether they play a role in initiating people into injecting drug use.

The impact of vending machines on the number of discarded needles in urban areas has been investigated[136] with local evaluations following the installation of vending machines in several Australian cities finding no significant change in the number of discarded needles. Two surveys of vending machine users – one from Australia, another from Germany – found that the majority reported appropriate disposal of injecting equipment, but are likely to have been influenced by social desirability bias[136].

Cost-effectiveness

Though there is reasonably strong evidence for the cost-effectiveness of IEP services, no economic evaluations of their extension – through vending machines or out-of-hours provision – could be identified.

It has been argued that – given the reduction in staff costs – vending machines are likely to be highly cost-effective in comparison to fixed-site IEP outlets[136]. However, this is a speculative conclusion that does not take into account the possibility that fixed-site IEP outlets may be more effective in providing harm reduction advice and hence result in lower costs from injecting-related harm.

One modelling study by the National Institute for Health and Care Excellence (NICE) has suggested that effective interventions to increase syringe coverage could be cost-effective from a societal perspective if the associated intervention costs are modest: this may well be the case for vending machines, but has not yet been conclusively established[150].

4.9.3. Stakeholder views

People with a history of injecting drug use

Among people currently involved in public injecting, existing access to injecting equipment provision was felt to be good, though travel to the 24-hour facility at West Street was acknowledged to be inconvenient.

Most were positive towards the prospect of improved out-of-hours pharmacy access in the city centre and agreed they would use such a facility. However, some questioned whether it was necessary and whether such a change would jeopardise the continuation of the existing service at West Street.

> ***"I don't know beneficial about it, but, I think it's another option. It's an option. Because a lot of people are like 'I'm not going away into West Street, it's too far', know what I mean."***
>
> *Interviewee (currently injecting drugs)*

> ***"Obviously with West Street as close there's no way there'd be two places that close together running the same type of operation 24/7. The council wouldn't pay for it."***
>
> *Interviewee (currently injecting drugs)*

Attitudes towards vending machines were more ambivalent. Most interviewees agreed they would improve access to injecting equipment, and some identified their anonymity as a particular attraction. However, concerns were raised about inappropriate access by young people, tampering and vandalism, and the potential public impact and personal risk if they became a gathering point for drug users.

"People can get it, if it's a vending machine, at their own leisure. And also some people might be embarrassed going into a chemist. My mum works in a chemist."

Interviewee (currently injecting drugs)

"Vending machines would be a good one, know what I mean. But, I don't know, would people start putting dirty needles in them and all that?"

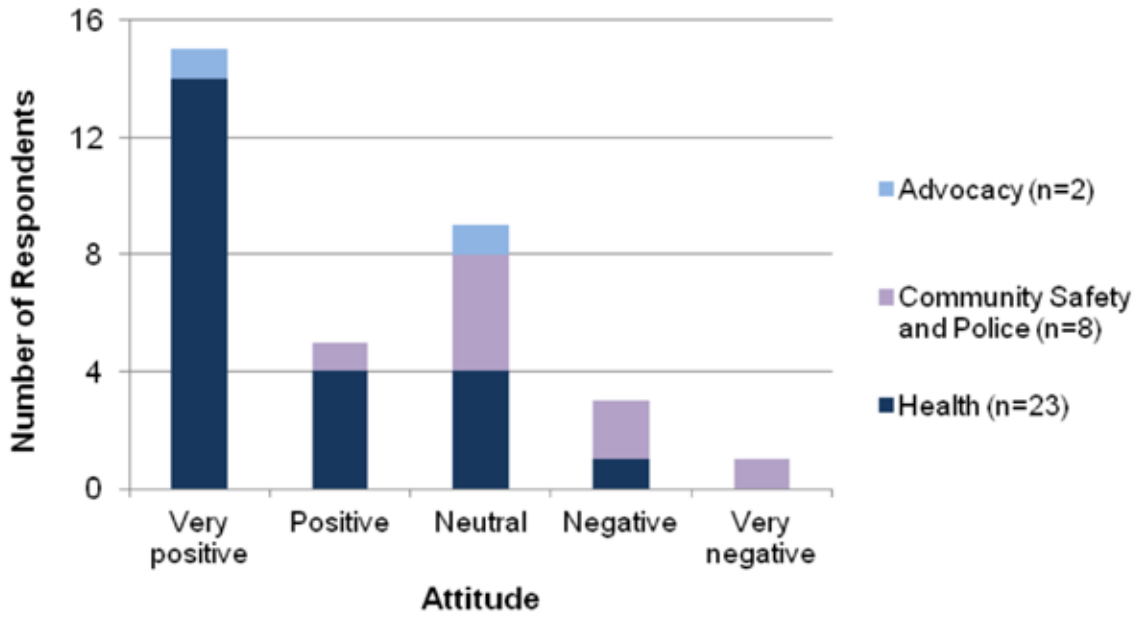
Interviewee (currently injecting drugs)

Participants in recovery highlighted that 24-hour access to IEP would be particularly beneficial for homeless individuals, young people and those that do not engage with existing services. However, they also identified the potential for vending machines to act as a 'honey pot' for both drug dealers and police, and for them to exacerbate stigma. One alternative suggestion was a postal service for injecting equipment provision, based on the success of similar initiatives for condoms, though clearly this would be of limited relevance to insecurely housed or homeless users.

Staff of relevant health and community services

Among service providers, attitudes to extending IEP services in Glasgow were predominantly positive or neutral (**Figure 14**).

Figure 14. What is your attitude towards expanding access to injecting equipment provision services in Glasgow city centre, for example through vending machines or increased out-of-hours provision?



Many stakeholders felt that extending IEP services would reduce the harms of public injecting by addressing perceived gaps in existing provision, particularly during the out of hours period. The potential for reduced equipment re-use and sharing, and the associated impact on blood-borne virus transmission, was the most commonly cited benefit. Others highlighted that the anonymity of vending machines might improve access, especially among the most chaotic and vulnerable users.

"The increase in provision would provide an opportunity for clients to access new injecting equipment at a time and place they require it. This may reduce the opportunistic and situational sharing we see occurring. This in turn may reduce the likelihood of BBV transmission."

Senior staff, IEP services

"There is only one 24hr service in Glasgow which provides a manned needle exchange. If this were more widely available throughout the city there would be provision for chaotic drug users who do not observe 'normal working hours' ."

Nurse, addictions services

However, some respondents acknowledged that existing access to IEP in Glasgow was generally very good, and were therefore unsure whether extending current services would be of benefit. Some raised the issue of disposal, and the potential that extended IEP services could worsen drug-related litter.

A number of specific concerns about vending machine provision were also expressed. Several felt it would reduce opportunities to provide harm reduction advice and interventions. Others – particularly respondents from Community Safety and Police Scotland – were concerned that unmanned machines could become focal points for inappropriate use, vandalism, drug dealing, or violence against users.

Views on the impact of extended IEP services on public injecting were mixed. Several respondents argued that increasing access to IEP without providing safer environments in which to inject was unlikely to be beneficial and even potentially harmful. Others felt that it was unlikely to have any impact on the prevalence of public injecting but might reduce the associated harms.

Community opinions were once again raised as a potential barrier. Staff from community safety were also concerned about the potential for extended IEP services to negatively impact on the city's security, public image, and tourism prospects.

"There could be an increase in injecting related injuries because people are not seeking proper advice and information. When we provide NEX [needle exchange] we are ensuring people are using safely."

Outreach worker

"Depends if it is in isolation or in conjunction with safer injecting sites. Could increase drug litter and increase public injecting if there is more provision but nowhere safe to inject."

HIV professional

"May discourage people from accessing equipment if in an extremely public location"

Senior addictions worker

4.9.4. Summary

Though there is a strong evidence base to support IEP in general, there is scarce primary literature on what we have termed 'extended' services, such as vending machines and out-of-hours access, particularly in settings – like Glasgow – where levels of provision are already relatively high.

Evaluations of initiatives in other countries and qualitative studies with people who inject drugs do suggest a demand for such services, driven by concerns of anonymity and accessibility. They appear to be effective in reaching people with similar characteristics to our target population, with adverse social circumstances and risk factors for injecting-related harm. More generally, there is some limited evidence to suggest that increases in IEP coverage are associated with reductions in injecting-related harm and may be cost-effective if intervention costs are low.

Whilst stakeholders were generally very positive about the prospect of improving access to IEP services in Glasgow city centre, they were concerned about potential safety risks and missed opportunities for harm reduction interventions if this were to be provided through vending machines. Instead, there was widespread support for efforts to increase coverage by improving out-of-hours access to staffed IEP services.

5. Conclusions and recommendations

There are few reliable data on the number of individuals who inject drugs in public places in Glasgow city centre. By applying published figures on the prevalence of public injecting to local data from injecting equipment providers, we estimate that approximately 400 to 500 people may be injecting in public places in the city centre on a regular basis: this is consistent with the number of individuals known to a local Assertive Outreach team set up to serve this population.

Data from existing services suggest that the majority are male, of Scottish or other British origin, and aged between 30 and 50 years. Many have multiple social vulnerabilities, such as homelessness, unemployment, and recent incarceration; a significant proportion continue to inject despite receiving structured addictions treatment.

The characteristics of individuals involved in the HIV outbreak are very similar to those of individuals known to the Assertive Outreach team and city centre IEP outlets, and a substantial proportion of cases report public injecting.

Factors driving public injecting include immediacy and proximity to drug markets, homelessness, and concerns about assistance in the event of an overdose.

Public injecting in Glasgow is concentrated in lanes, closes, car parks, and public toilets of the south-east city centre and adjoining areas of the east end. Several informal drug consumption areas have been found in abandoned buildings and makeshift huts.

This population experiences multiple barriers to improving their health and to accessing existing services, foremost among which are the severity of their addiction and the precariousness of their social circumstances. Many experience a combination of adverse health and social factors that has come to be known as severe and multiple disadvantage: homelessness, offending, chronic poverty, and previous trauma. Such factors are inextricably linked to health, and must be directly addressed if any response to public injecting is to succeed.

Nonetheless, a number of priorities for health service provision can be identified from the quantitative and qualitative data gathered here: the risk of blood-borne viruses, of overdose and drug-related death, and of other injecting-related complications, such as abscesses, wounds, and deep vein thrombosis. The link between public injecting and the recent HIV outbreak is particularly concerning, with 83% of cases interviewed reporting this risk factor.

From this work, two sets of recommendations emerge: firstly, for the development of existing services, and secondly, for the introduction and evaluation of new services.

Recommendations for the development of existing services

1. **Develop a strategy for multi-disciplinary co-ordination between the various agencies involved with this population, in order to address the multiple forms of disadvantage they experience and the wider social determinants of public injecting.**

   Public injecting is inextricably linked to the combination of adverse social circumstances often referred to as 'multiple exclusion' or 'severe and multiple disadvantage'. Several stakeholders therefore identified a need for better integration and communication across relevant sectors, including health, social care, housing, and criminal justice. Whilst any such initiative should be mindful of some service users' concerns about confidentiality and information sharing, a co-ordinated approach is essential to ensuring that services meet the needs of this population. Further work is therefore required locally to develop a multi-disciplinary response to the broader needs of this population, particularly in relation to housing.

2. **Support the development of a peer network for harm reduction aimed at current injecting drug users, analogous to – and linked with – successful local peer-led recovery initiatives.**

   Service users and providers alike spoke of stigma as a powerful barrier to accessing much-needed services among this population. Many people with active or former injecting drug use described a need for more person-centred care, and wanting more input into decisions about their care. We were struck by the strength and value of the existing peer network for people in recovery, and by the opportunities for empowerment, engagement, and harm reduction that a similar network could offer for people who inject drugs.

3. **Review models of delivery for specialist addiction services to ensure they are able to meet the needs of this population, with particular reference to access, engagement, and harm reduction.**

   While national and international comparisons suggest that the quality of specialist addictions provision in Glasgow is relatively good, these aggregate data may not be representative of the experiences of people who inject drugs, a subgroup of service users with particularly complex needs and at high risk of harm. Though it is anticipated that the novel services recommended below will contribute to greater engagement and harm reduction among people who inject drugs in public places, this project has also identified a number of opportunities to improve the ability of existing services to meet their needs. Staff highlighted a need for more flexible and intensive services, greater specialist outreach, and potentially, a dedicated city centre community addiction team. Both staff and service users also suggested there was scope for a greater focus on harm reduction across all tiers of service.

4. **Maximise the capacity of the existing Assertive Outreach service to provide injecting equipment during evenings, and shift existing contracts with city-centre outlets to sites with extended opening hours.**

   Current injecting equipment provision (IEP) in Glasgow city centre is widely acknowledged to be very good. Plans to expand the provision of route transition interventions – such as foil distribution and training – are an important and welcome addition to existing services. However, evidence from our work and that of the HIV Incident Management Team has indicated that there is room for improvement in relation to out-of-hours provision of injecting equipment. Though there is some evidence that vending machines are able to reach the target population, stakeholders generally preferred the option of extending the hours of staffed services, in order to maximise opportunities for harm reduction interventions.

   While a safer injecting facility in the city centre, as recommended below, could in future offer out-of-hours injecting equipment provision, there will inevitably be a significant lead time before it becomes fully operational. The most feasible and acceptable approach in the

interim is therefore to build on existing services to meet out-of-hours demand. The efforts of the HIV Incident Management Team to facilitate evening IEP in the city centre and adjoining areas of the east end are particularly valuable in this regard. Another potential means by which to enhance the capacity of existing IEP services would be to move provision from the Boots Queen Street pharmacy (open until 7pm) to the same company's Central Station outlet (open until midnight).

Recommendations for the introduction and evaluation of new services

Though the above changes to existing services are critical to an effective response to public injecting in Glasgow city centre, the scale and persistence of the problem means they are unlikely on their own to have a significant impact. A multi-faceted public health response is required, integrating evidence from international examples of best practice with considerations of local need. A number of novel interventions, supported by research evidence, local stakeholder feedback, and expert bodies, offer the potential to greatly reduce the health harms experienced by this group.

5. **Introduce and evaluate a pilot safer injecting facility in the city centre, to address the unacceptable burden of health and social harms caused by public injecting.**

   Safer injecting facilities are low-threshold harm reduction services which aim to minimise the risks of public injecting and help engage people with health and social care, including addictions treatment. A substantial body of international research evidence has accumulated over the past three decades to support their effectiveness in reducing the health and social harms associated with injecting drug use, and public injecting in particular. In our consultation, this proposal enjoyed widespread support by stakeholders from the target population, health services, and organisations representing drug users and their families.

   In contrast to other UK cities which have previously considered such a measure, the evidence presented here indicates that the scale of public injecting – and its associated health harms – in Glasgow city centre justifies the introduction of a pilot safer injecting facility. However, any such initiative would require a robust, prospective evaluation – including an economic component – to confirm whether the benefits observed in other cities are transferable to the local context. The facility should be established through co-operation between key local agencies and the wider community, and carefully integrated with existing services. Addressing the concerns expressed in our stakeholder consultation by colleagues from Community Safety and Police Scotland is an important challenge in this respect.

6. **Introduce and evaluate a pilot service for heroin-assisted treatment in Glasgow City ADP, for people who continue to use street heroin despite optimal opioid substitution therapy.**

   Heroin-assisted treatment refers to the prescribing of injectable, pharmaceutical-grade heroin, which is then administered in a specialist outpatient facility under clinical supervision and strict safeguards. There is high-quality evidence to suggest that it can improve individual and social outcomes when provided as a second-line treatment for people with chronic opiate dependency. Local data suggest that a significant proportion of people who inject drugs in public places in Glasgow city centre would be eligible for heroin-assisted treatment, with substantial potential benefits for both them and the wider community. This coincides with the consensus from our stakeholder consultation that the chaos and instability of addiction is a major barrier to better health among this population, and that prescribed injectable heroin would be a welcome addition to existing opioid substitution therapies. There is therefore a strong case for the expansion of the addictions services offered by Glasgow City ADP to include heroin-assisted treatment.

7. **Incorporate questions on public injecting into routine assessments in existing services (such as community addiction teams, via the new national database known as DAISy) and into ad-hoc surveys (such as NESI) in order to enhance our understanding of the prevalence of public injecting and to monitor the impact of new interventions.**

   None of the existing sources of data on drug use and related harms in Scotland currently record place of use: efforts to address the needs of people who inject drugs in public places are therefore hindered by a lack of high-quality, locally relevant data on their number, characteristics and outcomes. Questions on public injecting should be incorporated into routine assessments in community addiction teams and injecting equipment providers, and into ad-hoc surveys, such as NESI. The development of DAISy, a new national database for collecting treatment and outcome information from community addiction teams, offers a particularly valuable opportunity for this information to be collected at a national level. Whilst limitations of the existing data are not a reason for inaction, given the powerful evidence of harm presented here, improving their quality will be essential to monitor the impact of the new interventions proposed.

These recommendations are intended to be complementary, addressing different aspects of public injecting through interventions at different levels of healthcare service provision. For example, whilst the two novel interventions proposed here share a harm reduction approach and a well-established evidence base, their roles differ: a safer injecting facility is a low-threshold, Tier 2 service which focuses on modifying the risk environment in which injecting takes place, whereas heroin-assisted treatment is a higher-threshold, Tier 3 intervention which aims to reduce street drug use and improve social stability.

Whilst none of the recommendations described above are a panacea, together they represent an evidence-based and person-centred approach to engaging users, reducing harm, and improving health. They are also likely to provide significant benefits for the wider community, through reduced costs and improved public safety and amenity.

Previous attempts to address the problem of public injecting in Glasgow have not curtailed the harms experienced by this population: new and innovative approaches are therefore required in order to meet their needs.

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Appendix 1. Literature search strategies.

Search 1: What is the estimated prevalence of public injecting among people who inject drugs in the UK and other high-income countries, and what are the health needs of this group?

Medline

	Search terms	Results
1	exp Substance Abuse, Intravenous/	13319
2	Inject$ drug use$.mp.	8312
3	(inject$ adj2 drug use$).mp.	8396
4	intravenous drug abuse.mp.	980
5	1 or 2 or 3 or 4	17068
6	(public adj2 place$).mp.	1662
7	(public adj2 space$).mp.	462
8	6 or 7	2098
9	5 and 8	39
10	open drug scene.mp.	17
11	(public adj2 inject$).mp.	80
12	9 or 10 or 11	116

Embase

	Search terms	Results
1	exp substance abuse/	44561
2	exp intravenous drug administration/	360553
3	exp intravenous drug abuse/	8868
4	inject$ drug use$.mp.	10569
5	(inject adj2 drug use$).mp.	24
6	1 or 2 or 3 or 4 or 5	419233
7	(public adj2 place$).mp.	2376
8	(public adj2 space$).mp.	658
9	7 or 8	2998
10	6 and 9	59
11	open drug scene.mp.	28
12	(public adj2 inject$).mp.	118
13	10 or 11 or 12	183

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	Search terms	Results
1	exp Intravenous drugs/	127
2	exp Drug abuse/	2437
3	inject$ drug use$.mp.	9
4	drug consumption/	570
5	1 or 2 or 3 or 4	2971
6	(public adj2 Place$).mp. [mp=title, other title, abstract, heading words]	224
7	5 and 6	1
8	open drug scene.mp.	1
9	(public adj2 Inject$).mp. [mp=title, other title, abstract, heading words]	5
10	7 or 8 or 9	6

Combined search results

Total results of searches after de-duplication	182
Prevalence	
Total relevant results from searches	16
Additional relevant papers identified from reference lists	2
Health needs	
Total relevant results from searches	27
Additional relevant papers identified from reference lists	2

Search 2: What are the health impacts, social impacts and cost-effectiveness of safer injecting facilities?

Medline

	Search terms	Results
1	drug consumption room.mp.	13
2	drug consumption facility.mp.	4
3	drug consumption facilities.mp.	4
4	safer injecting facility.mp.	15
5	safer injecting facilities.mp.	9
6	safer injection facility.mp.	12
7	safer injection facilities.mp.	16
8	supervised injection service.mp.	1
9	supervised injection services.mp.	6
10	supervised injecting centre.mp.	17
11	supervised injecting centres.mp.	2
12	supervised injecting service.mp.	0
13	supervised injecting services.mp.	0
14	supervised injection centre.mp.	0
15	supervised injection centres.mp.	0
16	Drug Consumption site.mp.	0
17	drug consumption sites.mp.	0
18	safer injecting site.mp.	0
19	safer injecting sites.mp.	0
20	safer injection site.mp.	0
21	safer injection sites.mp.	1
22	supervised injection site.mp.	8
23	supervised injection sites.mp.	8
24	supervised injecting site.mp.	0
25	supervised injecting sites.mp.	1
26	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25	96

Embase

	Search terms	Results
1	drug consumption room.mp.	21
2	drug consumption facility.mp.	5
3	drug consumption facilities.mp.	6
4	safer injecting facility.mp.	17
5	safer injecting facilities.mp.	11
6	safer injection facility.mp.	15
7	safer injection facilities.mp.	21
8	supervised injection service.mp.	7
9	supervised injection services.mp.	14
10	supervised injecting centre.mp.	25
11	supervised injecting centres.mp.	4
12	supervised injecting service.mp.	0
13	supervised injecting services.mp.	0
14	supervised injection centre.mp.	0
15	supervised injection centres.mp.	1
16	Drug Consumption site.mp.	0
17	drug consumption sites.mp.	0
18	safer injecting site.mp.	0
19	safer injecting sites.mp.	0
20	safer injection site.mp.	2
21	safer injection sites.mp.	2
22	supervised injection site.mp.	14
23	supervised injection sites.mp.	11
24	supervised injecting site.mp.	0
25	supervised injecting sites.mp.	1
26	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25	138

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	Search terms	Results
1	drug consumption room.mp.	1
2	drug consumption facility.mp.	0
3	drug consumption facilities.mp.	0
4	safer injecting facility.mp.	2
5	safer injecting facilities.mp.	0
6	safer injection facility.mp.	2
7	safer injection facilities.mp.	1
8	supervised injection service.mp.	0
9	supervised injection services.mp.	0
10	supervised injecting centre.mp.	1
11	supervised injecting centres.mp.	2
12	supervised injecting service.mp.	0
13	supervised injecting services.mp.	0
14	supervised injection centre.mp.	0
15	supervised injection centres.mp.	0
16	Drug Consumption site.mp.	0
17	drug consumption sites.mp.	0
18	safer injecting site.mp.	0
19	safer injecting sites.mp.	0
20	safer injection site.mp.	0
21	safer injection sites.mp.	0
22	supervised injection site.mp.	0
23	supervised injection sites.mp.	0
24	supervised injecting site.mp.	0
25	supervised injecting sites.mp.	0
26	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25	8

Cinahl

	Search terms	Results
1	"drug consumption room"	9
2	"drug consumption facility"	2
3	"drug consumption facilities"	3
4	"drug consumption site"	0
5	"drug consumption sites"	0
6	"safer injecting facility"	10
7	"safer injecting facilities"	6
8	"safer injection facility"	10
9	"safer injection facilities"	6
10	"safer injecting sites"	0
11	"safer injecting sites"	0
12	"safer injection site"	0
13	"safer injection sites"	2
14	"supervised injection service"	0
15	"supervised injection services"	4
16	"supervised injecting service"	0
17	"supervised injecting services"	0
18	"supervised injection centre"	0
19	"supervised injection centres"	0
20	"supervised injecting centre"	16
21	"supervised injecting centres"	3
22	"supervised injecting site"	0
23	"supervised injecting sites"	0
24	"supervised injection sites"	6
25	"supervised injection site"	2
26	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25	71

All databases combined

	Search terms	Results
1	supervised injection facility.mp. [mp=ti, ab, ot, nm, hw, kf, px, rx, ui, an, tn, dm, mf, dv, kw]	119
2	supervised injection facilities.mp. [mp=ti, ab, ot, nm, hw, kf, px, rx, ui, an, tn, dm, mf, dv, kw]	57
3	supervised injecting facility.mp. [mp=ti, ab, ot, nm, hw, kf, px, rx, ui, an, tn, dm, mf, dv, kw]	42
4	supervised injecting facilities.mp. [mp=ti, ab, ot, nm, hw, kf, px, rx, ui, an, tn, dm, mf, dv, kw]	65
5	1 or 2 or 3 or 4	223
6	remove duplicates from 5	134

Total references retrieved after combination and de-duplication: 262

Search 3: What are the health impacts, social impacts and cost-effectiveness of providing heroin-assisted treatment?

Medline

	Search terms	Results
1	heroin assisted treatment.mp.	67
2	HAT.mp.	5392
3	exp Heroin Dependence/ or exp Heroin/	11832
4	2 and 3	23
5	1 or 4	68
6	prescribed heroin.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]	19
7	Heroin/ad [Administration & Dosage]	1044
8	Prescription Drugs/ad [Administration & Dosage]	452
9	Narcotics/ad [Administration & Dosage]	2528
10	Methadone/ad [Administration & Dosage]	2067
11	7 and 8 and 9 and 10	2
12	5 or 6 or 11	87
13	supervised injectable heroin treatment.mp.	1
14	12 or 13	88

Embase

	Search terms	Results
1	heroin assisted treatment.mp.	106
2	HAT.mp.	8447
3	diamorphine/	20296
4	2 and 3	34
5	1 or 4	109
6	prescribed heroin.mp.	27
7	diamorphine/ad [Drug Administration]	491
8	prescription drug/ad [Drug Administration]	156
9	7 and 8	2
10	supervised injectable heroin treatment.mp.	2
11	5 or 6 or 9 or 10	137

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	Search terms	Results
1	Heroin assisted treatment.mp.	3
2	HAT.mp.	41
3	exp Heroin/	216
4	2 and 3	2
5	1 or 4	3
6	prescribed heroin.mp.	1
7	exp Heroin/	216
8	exp Narcotics/	360
9	exp Methadone/	120
10	7 or 8 or 9	430
11	exp Drug administration/	2189
12	10 and 11	16
13	5 or 6 or 12	20

Cinahl

	Search terms	Results
1	"heroin assisted treatment"	35
2	"HAT"	458
3	(MH "Heroin")	1918
4	2 AND 3	6
5	"prescribed heroin"	8
6	(MH "Heroin/AD")	258
7	(MH "Methadone/AD")	959
8	6 AND 7	25
9	"supervised injectable heroin treatment"	2
10	1 OR 4	35
11	5 OR 8 OR 9 OR 10	66

Total references retrieved after combination and de-duplication: 271

Search 4: What are the health impacts, social impacts and cost-effectiveness of extending access to injecting equipment provision?

Medline

	Search terms	Results
1	Needle-Exchange Programs/mt [Methods]	44
2	Needle-Exchange Programs/sd [Supply & Distribution]	34
3	Needle-Exchange Programs/og [Organization & Administration]	211
4	Syringes/	5371
5	vending machine.mp.	113
6	4 and 5	2
7	dispensing machine.mp.	21
8	4 and 7	1
9	syringe program$.mp.	167
10	exp Substance-Related Disorders/	237097
11	9 and 10	152
12	access to sterile syringes.mp.	66
13	inject$ equipment provision.mp.	5
14	10 and 12	62
15	24 hours.mp.	80208
16	out of hours.mp.	1282
17	extended hours.mp.	93
18	15 or 16 or 17	81513
19	4 and 10 and 18	2
20	1 or 2 or 3 or 6 or 8 or 11 or 13 or 14 or 19	466
21	Access to Sterile Needle$.mp.	12
22	10 and 21	11
23	20 or 22	476

Embase

	Search terms	Results
1	needle exchange program$.mp.	614
2	syringe exchange program$.mp.	439
3	syringe/	11505
4	vending machine.mp.	170
5	3 and 4	5
6	dispensing machine.mp.	42
7	3 and 6	4
8	1 or 2	1018
9	exp substance abuse/	44672
10	8 and 9	212
11	access to sterile syringe$.mp.	81
12	9 and 11	24
13	Inject$ Equipment Provision.mp.	7
14	access to sterile needle$.mp.	14
15	24 hour.mp.	51350
16	out of hours.mp.	2370
17	extended hours.mp.	147
18	15 or 16 or 17	53801
19	3 and 9 and 18	0
20	5 or 7 or 10 or 12 or 13 or 14	250

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	Search terms	Results
1	exp Needle exchange schemes/	45
2	exp Needles for injection/	137
3	exp Syringes/	169
4	2 or 3	277
5	exp Vending machines/	30
6	4 and 5	0
7	dispensing machine.mp.	1
8	4 and 7	0
9	syringe program$.mp.	13
10	access to sterile syringes.mp.	2
11	inject$ equipment provision.mp.	0
12	access to sterile needles.mp.	0
13	1 or 9 or 10*	57
14	exp "Out of hours health services"/	861
15	24 hours.mp.	454
16	extended hours.mp.	37
17	14 or 15 or 16	1332
18	4 and 17	0

*Used as final results

Cinahl

	Search terms	Results
1	(MH "Needle Exchange Programs/AM/EV/MT")	116
2	(MH "Syringes")	1682
3	(MH "Needles")	3218
4	S2 OR S3	4649
5	"vending machine"	70
6	"dispensing machine"	8
7	S5 OR S6	78
8	S4 AND S7	0
9	"syringe program"	29
10	"syringe programs"	51
11	S9 OR S10	74
12	"access to sterile syringes"	21
13	"access to sterile needles"	5
14	"injection equipment provision"	0
15	"24 hours"	10277
16	"out of hours"	657
17	"extended hours"	57
18	15 OR 16 OR 17	10984
19	4 AND 18	14
20	1 OR 11 OR 12 OR 13 OR 19	221

AM = Administration EV = Evaluation MT = Methods

Total references retrieved after combination and de-duplication: 858

Appendix 2. Consultation methods.

A2.1. Interview schedule for people currently involved in injecting drug use

MAIN QUESTIONS	PROMPTS & EXTRA QUESTIONS
INTRODUCTION	
Interviewer introduces themselves and their role. The NHS and Glasgow City Council are currently reviewing the services they provide for people who inject drugs in the city centre so are carrying out interviews to find about people's views and experiences. By taking part in this interview, you will be helping us improve the health services that we provide. In particular, we are interested in issues around where injection takes place and the risks that people experience when injecting in public. The interview will last about an hour, and you will be provided with a voucher as compensation for your time. There are no right or wrong answers: we are interested in your opinions and your experiences. Taking part is voluntary: you can decline to answer any question or to stop the interview at any time without giving a reason. We will be recording the interview so that we can recall your views accurately: this recording will only be heard by public health staff working on the project – **not by any staff from addictions services** - and will be deleted after use. You will not be identified by name in any of the work that comes out of these interviews and none of the information you provide will be shared with anyone involved in your health care or social care. Are you happy to take part?	
BREAKING THE ICE	
Perhaps you could start by telling me a bit about yourself.	How old are you? Where are you from?
What's your current housing situation?	For drug use:
Are you in work right now?	What? How long for?
What benefits do you receive?	How often? How much?
Could you tell me about your drug use?	Where?
INJECTING BEHAVIOUR	
If living outside city centre: • How often do you come into the city centre? • How far is it from where you live?	
On average, how many times per day do you use drugs in the city centre?	
On average, how many people do you prepare and inject with?	
What locations do you use to inject? Why do you use these?	e.g. Car parks? Toilets? Waste ground? Alleyways?
Does preparing and injecting your drugs away from home change the process at all?	e.g. re-use of needles? Hand-washing? Access to water?
NEEDS	
How would you describe your general health?	Over the past year, have you had any of the following? • Overdose • Abscess • Deep vein thrombosis (blood clot) • Ulcer or slow-healing wounds • Diagnosis of blood borne virus e.g. hep C, HIV
How high on your list of priorities is health?	
Do any health issues worry you right now?	
Is there any kind of help you would like to improve your health?	
Are there any barriers that stop you from having better health?	

EXISTING SERVICES

What kinds of help have you received for your drug use? **How did you find it?** **If you could change anything about these services, what would you change?**	e.g. methadone, needle exchange, detox, rehab, counselling • Where and from whom? • When? • For how long? • What were the positive things about these services? • What were the negative things about these services?

If user reports not having used any relevant services;

- Is there any reason that you haven't been involved with any services?

How would you want these services to change to better meet your needs?

OTHER SERVICES

Are there any services that are not currently available in Glasgow but that you would like to see here?

Some other countries provide safe injecting rooms. These are clean and hygienic indoor facilities supervised by a nurse or doctor where people can inject drugs they have bought elsewhere. They aim to reduce the risk of infections and overdoses and to provide a place where people can access other services like advice on housing or benefits.

- What do you think about the idea of introducing a service like this in Glasgow?
- Is it a service you would be interested in using? Why/why not?
- Would an option for something like this, a place where you could inject safely, reduce the chances of you injecting in public?
- What impact do you think this would have on your health?
- [If positive to idea] What would that facility look like in terms of opening hours, location, services offered etc?

Some other countries provide heroin assisted treatment. This is when doctors prescribe injectable heroin to people for whom methadone or suboxone treatment hasn't worked.

- What do you think about the idea of introducing a service like this in Glasgow?
- Is this a treatment you would consider? Why/why not?
- What impact do you think this would have on your health?
- [If positive to the idea] How would it be beneficial to you over other existing treatments?

Another option would be making sure that people could get hold of clean injecting equipment in the city centre in the evenings and overnight, for example via a vending machine or a 24h pharmacy in the city centre.

- Is this something you would like to see in Glasgow? Why/why not?
- Would you use this service?
- What impact do you think this would have on your health?
- [If positive to the idea] How would it be beneficial to you over other needle exchange services?

CONCLUSION

Is there anything else you'd like to tell me?

Thank interviewee for taking part & provide voucher.

A2.2. Focus group topic guide for people in recovery from injecting drug use

MAIN QUESTIONS	PROMPTS
INTRODUCTION	
Hello, our names are [**NAMES**] and we are [**ROLES**]. Thanks for coming along to this focus group today. The aim of today is to explore health issues associated with injecting drugs. In particular, we'll be talking about what people need in terms of health care, the services that exist at present, and potential new services that aren't currently provided. We want to hear your views: there's no right or wrong answer. We want you to be able to say exactly what you think. We would therefore ask you to be respectful to everyone else in the group and what they have to say. I have a list of questions we'll be discussing but free to respond to questions and to others points without being called upon. However, I would ask that only one person speak at a time. There will be a lot to talk about, so at times I may move the discussion along a bit. We'll be writing things up on the flipchart but if you have anything you'd like to contribute but would rather not share with the group, either write it on a post-it or speak to us at the break or the end. We're scheduled to meet until 4pm but will have a comfort break halfway through. Toilets are located…Please help yourself to refreshments as you need them. We are recording this discussion so we don't miss anything you have to say, but you will not be identified in the recording or in any reports we produce later on, so no-one else will know who said what, and the tape will be destroyed later on. If you wish to leave at any point, you can of course do so, without having to give a reason. Does anyone have any questions? Is everyone happy to continue?	
Breaking the ice	
Perhaps we could start by each spending a couple of minutes telling us a little bit about yourself and your history.	How old are you? Where are you from? • When did you start using drugs? • What were your drugs of choice? • Where would you inject – home, friend's houses, outdoors? • What help did you receive?
Needs	
I now want to ask you to think back to when you were using and think about what your health was like, and how it could have been improved. **So, thinking back to when you were using:** • How high on your list of priorities was health? • **What were the main health issues you experienced?** • Can you think of anything that stopped you having better health?	
Break	

A2.2. Focus group topic guide for people in recovery from injecting drug use

Existing services	
Thinking back to when you were using… **What was your experience of addictions services?** What were the positive things about that service? What were the negative things about that service? **If you could change anything about that service, what would you change?**	Ensure specifically discuss: • Substitution therapy (methadone) • IEP • Community addiction team support
If users report not having accessed any relevant services; • Is there any reason that you didn't access those services? • How could those services have better met your needs when you were using?	
Other services	
Are there any services for people who inject drugs that aren't currently available in Glasgow but you would like to see?	Can you describe how that would have helped you stay healthier?
Some other countries provide facilities called 'safer injecting sites' or 'drug consumption rooms'. These are clean and hygienic indoor facilities supervised by a nurse or doctor where people can inject drugs they have bought elsewhere. They aim to reduce the risk of infections and overdoses and to provide a place where people can access other services like advice on housing or benefits. **What are your thoughts on this?**	Would this have been a service you would have accessed when you were using? [If in favour] What should a service like this look like in terms of location, opening hours, facilities etc? Do you think this would reduce the likelihood of people injecting in public? Why/why not? **What do you think might be the benefits or risks of having a service like this in Glasgow?**
Some other countries provide heroin on prescription. This is when doctors prescribe injectable heroin to people for whom methadone or suboxone treatment hasn't worked. **What are your thoughts on this?**	Would this have been a treatment you would have been willing to consider when you were using? **What do you think might be the benefits or risks of having a service like this in Glasgow?**
At present in Glasgow city centre, injecting equipment is available from pharmacies during the day, or the crisis centre overnight and at weekends. It has been suggested that injecting equipment should be made more readily accessible, for example by 24 hour services in the city centre or through the use of vending machines. **What are your thoughts on this?**	Would this have been a service you would have accessed when you were using? **What do you think might be the benefits or risks of having a service like this in Glasgow?** Do you think this would reduce the likelihood of people sharing tools? Why/why not?
Conclusion	
Is there anything else we haven't discussed that anyone would like to mention? Thank you all very much for taking part. It has been very useful to hear your views, and we're very grateful for your time and contribution. If you would like to be kept informed of the results of this project, please write down your contact details on this sheet and we will send you a summary once the project is complete.	

A2.3. Online consultation for staff of relevant health and community services

With regard to the use of your feedback in the final project report, please choose one of following options:

- I am happy for direct quotations attributed to me by name to be used in the final report
- I am happy for direct quotations attributed to my generic job role to be used in the final report
- I do not wish to be directly quoted in the final report but am happy to complete this questionnaire to inform the consultation

Personal Information

1. Name (optional):

The following questions are about your role.

2. Job role:
   - Addictions case worker
   - Addictions nurse
   - Addictions physician
   - Addictions service manager
   - Advocacy or support organisation leader
   - Homeless practice GP
   - Homeless practice nurse
   - Homeless practice manager
   - Infectious disease physician
   - Injecting equipment provision - service manager
   - Injecting equipment provision - pharmacist
   - Outreach worker
   - Recovery group co-ordinator
   - Sexual health advisor
   - Other (please specify)
3. Organisation:
4. Time in Post:
   - Less than 6 months
   - 6 months to 1 year
   - 1 year to 3 years
   - 3 years to 6 years
   - 6 years to 10 years
   - More than 10 years
5. Brief description of the role and associated responsibilities:
6. How often do you work with people who inject drugs?
   - Every day
   - Most days
   - Every few weeks
   - Every few months
   - A few times per year
   - Never

The following questions relate to people who inject drugs in public places in Glasgow city centre.

7. Please list what you think are the three most important health concerns of this group.

8. Please list what you think are the three most important unmet needs of this group in relation to health.

The following questions relate to existing services.

9. How well do you think your service meets the needs of this population at present?
   - Very well
   - Well
   - Satisfactorily
   - Poorly
   - Very poorly

10. What are the positive aspects of the current set-up?
11. What are the negative aspects of the current set-up?

The following questions relate to the introduction of novel services for people who inject drugs in public places in Glasgow city centre.

Safer Injecting Facilities

'Safer injecting facilities' - also known as drug consumption rooms or medically supervised injecting sites – are clinically supervised areas that provide a hygienic environment where dependent individuals can consume drugs, in order to reduce the individual and social harms of public injecting.

More information on safer injecting facilities can be found at:

http://www.emcdda.europa.eu/topics/pods/drug-consumption-rooms

12. What is your attitude towards the potential introduction of Safer Injecting Facilities in Glasgow city centre?
    - Very positive
    - Positive
    - Neutral
    - Negative
    - Very negative
13. In particular, what do you think would be the potential benefits of this intervention?
14. In particular, what do you think would be the potential harms or risks of this intervention?
15. What impact do you think this intervention would have on public injecting in Glasgow?
16. What impact do you think this intervention would have on the wider community in Glasgow?
17. Any other comments on Safer Injecting Facilities?

Heroin-assisted treatment

Heroin-assisted treatment refers to the prescription of injectable medical-grade heroin to people with opiate dependency who have not benefited from other opiate replacement therapies such as methadone or buprenorphine.

More information on heroin-assisted treatment can be found at:

http://www.emcdda.europa.eu/attachements.cfm/att_154996_EN_Heroin%20Insight.pdf

18. What is your attitude towards the potential introduction of Heroin-Assisted Treatment in Glasgow city centre?
    - Very positive
    - Positive
    - Neutral
    - Negative
    - Very negative
19. In particular, what do you think would be the potential benefits of this intervention?
20. In particular, what do you think would be the potential harms or risks of this intervention?
21. What impact do you think this intervention would have on public injecting in Glasgow?
22. What impact do you think this intervention would have on the wider community in Glasgow?
23. Any other comments on Heroin-Assisted Treatment?

Expanding access to injecting equipment provision services

24. What is your attitude towards expanding access to injecting equipment provision services in Glasgow city centre, for example through vending machines or increased out-of-hours provision?
    - Very positive
    - Positive
    - Neutral
    - Negative
    - Very negative
25. In particular, what do you think would be the potential benefits of this intervention?
26. In particular, what do you think would be the potential harms or risks of this intervention?
27. What impact do you think this intervention would have on public injecting in Glasgow?
28. What impact do you think this intervention would have on the wider community in Glasgow?
29. Any other comments on expanding access to injecting equipment provision?

Concluding remarks

Do you have any final comments to make on the issue of public injecting or the needs assessment that have not been covered in previous sections?

Thank you very much for taking part in this consultation.

Further information on the outcome of the needs assessment will be disseminated in due course.

Appendix 3. Epidemiological tables.

Table A1. Demographic and clinical characteristics of people who inject drugs diagnosed with HIV (outbreak strain only) in Glasgow during 2015.

	Mean (range)
Age (years)	37.5 (21 – 52)

	Number	Percentage[1]
Total	43	100.0
Gender		
Male	28	65.1
Female	15	34.9
Completed structured questionnaire	29	67.4
Employment status		
Unemployed	28	96.6
Unknown	1	3.4
Housing status		
Homeless within last year	18	62.1
(of whom rough sleeping)	(18)	
Homeless previously, not within last year	3	10.3
Never homeless	5	17.2
Unknown	3	10.3
Incarceration history		
In prison at time of interview	2	6.9
In prison within last year	11	37.9
In prison previously, not within last year	8	27.6
Never in prison	6	20.7
Unknown	2	6.9
Injecting location		
Frequently inject in public	18	62.1
Occasionally inject in public	6	20.7
Never inject in public	3	10.3
Unknown	2	6.9

1. For gender and questionnaire completion, percentage of total cases. For all other categories, percentage of cases for whom a structured questionnaire completed.

Table A2. Individuals accessing IEP pharmacies in area of interest, January to December 2015.

	Abbey Pharmacy	Boots Queen St	Boots Sauchiehall St	Boots Charing Cross	Glasgow Drug Crisis Centre	Lloyds Abercromby Street	Assertive Outreach Team	Total clients across all 7 outlets*
Total number of clients using this site who reported injecting heroin and/or cocaine	1,523	660	208	102	1,662	858	297	3,320
Of whom 'regular clients' (≥5 transactions at that site)	419	180	36	16	418	242	99	1,025 (30.9%)
Of whom 'high-frequency clients' (≥50 transactions at that site)	33	15	3	0	8	14	7	141 (4.2%)

*Note that the total for all sites combined will be smaller than the sum of each individual site, since individuals may attend more than one IEP outlet. The definition of 'regular' and 'high-frequency' clients in this column refers to transactions at any of the seven outlets of interest.

Table A3. Reported location of residence among IEP clients at Abbey Pharmacy.

	Abbey Pharmacy
Total number of clients using this site in 2015 who reported injecting heroin and/or cocaine	1,523
Number of clients resident outwith city centre (%)	1,230 (80.8)
Of whom 'regular clients' (≥5 transactions at that site)	303 (72.3)
Of whom 'high-frequency clients' (≥50 transactions at that site)	21 (63.6)
Number of clients resident outwith NHSGGC (%)	147 (9.7)
Of whom 'regular clients' (≥5 transactions at that site)	24 (5.7)
Of whom 'high-frequency clients' (≥50 transactions at that site)	1 (3.0)

City centre defined as postcode sectors G1 or G2.

Note that clients of no fixed abode or who are unwilling to disclose their home postcode are registered using the postcode sector of the pharmacy itself; this method may therefore underestimate the proportion of clients resident outwith the city centre.