# Assessing the need for, and views on, drug checking services in Edinburgh

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# List of acronyms

| | |
|---|---|
| ADP | Alcohol and Drug Partnership |
| BBV | Blood-borne virus |
| CPN | Community psychiatric nurse |
| DCS | Drug checking services |
| HIV | Human immunodeficiency virus |
| IEP | Injecting equipment provision |
| LGBTQi+ | Lesbian, gay, bisexual, transgender, queer, intersex and other self-identifications |
| MAT | Medication assisted treatment |
| NEON | Needle exchange outreach network |
| NESI | Needle exchange surveillance initiative |
| NHS | National Health Service |
| OST | Opioid substitution therapy |
| R&D | Research and Development |
| ROAM | IEP outreach services to LGBTQi+ individuals |
| SDCF | Supervised drug consumption facilities |
| STI | Sexually transmitted infection |
| WEDINOS | Welsh Emerging Drugs and Identification of Novel Substances |

# Assessing the need for, and views on, drug checking services in Edinburgh

## Executive summary

### Introduction

The unregulated and complex nature of the illicit drug market poses risk of harm, including fatal and non-fatal overdose, to people who use drugs. In Scotland, use and availability of non-prescribed 'novel' benzodiazepines (often termed 'street' benzos) has significantly contributed to high levels of drug-related deaths. Street benzos, often used in conjunction with alcohol, opioids, and other substances, are often designed to mimic traditionally prescribed benzodiazepines but can vary significantly in potency and composition. Additionally, there has been an increase in detection of highly potent synthetic opioids, 'nitazenes', in the Scottish market, raising further concern about the risks posed by the variable, unregulated drug market. Given such challenges, there has been increased policy support and interest in developing harm reduction interventions to address such issues.

One such intervention, currently being planned in Aberdeen, Dundee, and Glasgow, is drug checking services (DCS). DCS enable people to submit a small amount of a substance for testing and subsequently provide information about the tested substance as part of a broader harm reduction consultation. The number of DCS has grown globally in recent years, including in the UK. The Loop have provided festival-based drug checking since 2016 and are in the process of setting up a fixed-site service; and the Welsh Emerging Drugs and Identification of Novel Substances (WEDINOS) provide a postal-based service. DCS can provide individuals with accurate information about the composition of drugs and enable the adoption of harm reduction behaviours and safer drug use practices. Additionally, there is evidence that DCS can increase systemic capacity for drug market monitoring and inform subsequent public health communication and strategies. Internationally DCS vary widely in relation to: how and where they operate; the time taken to provide results; the target population they attract; the detail and comprehensiveness of results provided; and the extent of funding and government support they receive. Such differences are outlined further in the main body of the study.

Previous research has been conducted on the feasibility, acceptability, and barriers and facilitators to implementation of DCS in Aberdeen, Dundee, and Glasgow, highlighting a range of important considerations. The current study, commissioned by Edinburgh ADP, aims to assess the need for, and views on the potential of, DCS in Edinburgh, as part of a wider study on safer drug consumption facilities (SDCF). Eleven participants were interviewed comprising of eight professionals working in relevant roles, and three people with experience of drug use. We have also included data from the SDCF study in which 18 participants with experience of drug use/family members were asked their views about drug checking as part of their interview about SDCF. This executive summary and the report discussion pulls together the overall messages from these two studies.

### Key findings

Findings relate to three primary themes: the perceived need and demand for DCS in Edinburgh; service delivery considerations; and the planning and implementation process.

Perceived need and demand for drug checking services

Participants in both studies (DCS and SDCF) expressed general support for the implementation of DCS, viewing it as an important harm reduction intervention in light of current levels of drug-related harms and death. DCS were seen as having a number of potential harm reduction impacts, including:

- providing opportunity for the adoption of safer drug use practices through increasing the availability of information about drug contents
- increasing uptake of other harm reduction interventions through building trust and engagement
- providing staff with opportunity to have detailed and specific harm reduction conversations with service users
- increasing systemic capacity for drug market monitoring, and
- the potential to change drug markets

Despite discussion of the potential benefits of implementation, some participants expressed reservations in relation to the strength of evidence for DCS and described challenges in achieving the above impacts. For example, it was noted that more marginalised individuals, with a range of intersecting vulnerabilities, may face limitations in their capacity to consistently adopt safer drug use practices in light of the information provided by DCS.

Participants generally felt that many people who use drugs may want to access a DCS as a means of reducing risk and taking care of their health. All three participants with experience of drug use noted that they would use a DCS, contingent on it being accessible and delivered in a suitable manner, as did those interviewed for the SDCF study. Participants noted that a wide and heterogenous group of individuals may access DCS, across a continuum from 'recreational' use to those using more dependently. Given the diversity of potential service users, it was highlighted that services models may need to operate differently to be suitable for different groups. Such considerations were reflected in discussion around who DCS should primarily be targeted at. Some felt that DCS should be broadly inclusive and acceptable to wide groups of individuals. However, others noted that, given current rates of drug-related deaths and a constrained fiscal environment, there may be a need to focus on engaging those at highest risk.

Whilst it is not possible to estimate levels of demand from a small sample of largely professional participants, other evidence triangulates need and demand for DCS in a Scottish context, including the data from participants interviewed for the SDCF study. For example, use of WEDINOS in Scotland has increased significantly in recent years, with approximately half of all submitted substances expected to be benzodiazepines. Similar trends have been observed for substances submitted to WEDINOS from Edinburgh in recent years. Additionally, provisional data from the Needle Exchange Surveillance Initiative (NESI) in Glasgow has highlighted high willingness to use a DCS amongst respondents. A related study of DCS in Aberdeen, Dundee, and Glasgow has also reported a strong perceived need for, and willingness to engage with, DCS amongst people who use drugs and affected family members.

Service delivery considerations

Several different service locations were discussed as potentially suitable for DCS delivery, with a varied benefits and challenges associated with each. For those at highest risk of experiencing drug-related harm, recovery hubs, homelessness services and SDCF (if implemented) were thought to be most suitable for the integration of DCS. Recovery hubs (multi-agency drop-ins across the city providing drug and alcohol treatment and support services) were often noted as the most intuitive and straightforward setting for DCS delivery, given high levels of existing footfall amongst those at higher risk, the range of harm reduction and treatment options offered on site, and the presence of highly skilled and specialist staff. However, given the potential stigma associated with such services, and their perceived association with the drug treatment landscape, there were doubts whether such settings

would be attractive to people who do not view their drug use as problematic. Crew, an existing third sector harm reduction service, was described as an appropriate and inclusive location for wider groups of individuals due to its relaxed and informal environment, and perception of being less associated/integrated with the drug treatment landscape.

DCS in both a pharmacy and a mobile van setting drew mixed responses with varied views on: whether they would afford discretion and confidentiality; whether they were logistically feasible; and which groups/individuals would be most likely to access DCS in such settings. The varied perceptions of these two potential service delivery settings suggests a need for further research and exploration. However, it should be noted that a Home Office licence would not currently be granted for DCS in a mobile van. In addition to the specific challenges and advantages associated with each model, a number of cross-cutting considerations were discussed relating to the need to: ensure that staff had adequate capacity to deliver drug checking; ensure that potential service users felt confident about the confidentiality and discretion afforded by the service; and to consider space and layout of settings for DCS delivery.

Findings highlight a general perception that any one model would be limited in its capacity to be appropriate and accessible for all who may wish to use a DCS. As discussed, people who may wish to use DCS are likely to vary widely in experiences, preferences, and needs, and may differ in terms of preferred settings and model of delivery. Further, participants noted that Edinburgh has a number of dispersed locations of high drug-related harms, further adding to the challenge for one site to be accessible to all. Participants interviewed as part of the SDCF study also noted the importance of the DCS being flexible, accessible, and user-friendly, and located in a place that would ensure that those who needed the service most would be able to access it. Participants suggested some alternative, lower cost means of expanding access to DCS, including implementing multiple sites for substance collection, where substances can be transported to a central site for testing within a longer timeframe, and postal provision.

In addition to discussion about specific locations for DCS delivery, participants noted a range of more general considerations around service delivery. A central issue was result turnaround time (i.e., length of time required for a service user to receive their results). It was noted across both studies (DCS and SDCF) that many individuals, particularly those using dependently and who are experiencing withdrawal, may require quick results (between 30 minutes and 2 hours), and that longer waiting times (1-7 days) may present a barrier to engagement. However, findings highlight that not all individuals would require quick results. For example, all three participants with experience of drug use in the DCS study described being willing to wait up to a week for results, although those interviewed as part of the SDCF study reported being less willing to do so. It should be noted that there may be a trade-off between speed of testing and comprehensiveness of results. For example, quicker testing (conducted on site at a DCS) may not be able to consistently provide information on substance strength and may, in some cases, be unable to detect or identify novel or emerging substances. Conversely, where substances are transported to a lab for more detailed and comprehensive testing this may entail a longer timeframe for results.

Related to the trade-off between speed of testing and comprehensiveness of results, participants noted that information about substance strength would be valuable for informing dosage and the adoption of risk reduction strategies – a finding in line with the existing evidence base. However, all still described being willing to use a DCS which provided only information about the contents a substance with no information on substance strength. Clearly explaining the limitations of testing prior to engagement was described as essential to managing expectations and ensuring the continued engagement of service users. Given the small sample of participants with experience of drug use included in the current study, further consultation is required to gauge optimal service design in light of the described trade-offs (i.e., speed of testing vs comprehensiveness of results).

A range of further issues relating to service design were discussed including the need for: non-judgemental staff with relevant expertise, including peers; DCS to be linked with other harm reduction services; as small an amount of a substance as possible to be used in the testing process; consideration of extended opening hours beyond Monday-Friday 9am-5pm; and further exploration the suitability of a range of methods for communicating results including in-person, over the phone, by text, and online. Participants highlighted the need for ongoing consultation with varied groups of people who use drugs to ensure that service design and delivery is appropriate and inclusive.

Planning and implementation process

Owing to the complexity entailed in DCS implementation, participants described the need for multi-party dialogue across a wide range of stakeholders. Central parties were described as: third sector and NHS services and staff; people who use drugs; existing DCS; local and national public health staff; local and national police; local and national government; Alcohol and Drug Partnerships (ADPs); the Home Office; staff and services in the wider drug landscape; and local communities and the wider public. It is important to note that the DCS planning process in Aberdeen, Dundee, and Glasgow has highlighted the benefit of involving a range of stakeholders in design and implementation. For example, relating to the complex considerations around the testing and analysis process, Scotland is developing expertise and infrastructure around DCS testing. Additionally, Police Scotland have been involved in dialogue from an early stage. Such infrastructure, progress, and knowledge could be drawn on for implementation in Edinburgh. Participants in the current study described the importance of bringing together a range of expertise, assigning roles and responsibilities, and ensuring shared understanding from an early stage of the implementation process.

# Recommendations

The City of Edinburgh Council and the Alcohol and Drug Partnership should take steps to introduce drug checking services (DCS) in the city. Several models and locations of DCS have the potential to reduce drug related harms in Edinburgh, and approaches serving a range of potential users should be explored.

- For those at highest risk of drug-related deaths and harms, DCS within recovery hubs, homelessness services, community pharmacy, and safer drug consumption facilities (SDCF) would have the greatest acceptability and impact. For this group, local and quick access to results (ideally with additional lab testing to follow up and provide surveillance) are key considerations

- For wider groups of people who use drugs, sites such as Crew may be more appropriate as they opportunities for a low threshold, drop-in service which may be broadly acceptable and accessible for individuals with a range of experiences and preferences. Postal services or multiple drop off locations may supplement this provision. For this group, there may be a lower premium on immediacy of response

To this end, we recommend the following next steps.

## Consultation

- Carry out consultations with potential providers to explore feasibility in specific locations

- Liaise with those leading development of drug checking within Aberdeen, Dundee and Glasgow, and the national implementation group led by Scottish Government, to apply both practice and policy learning

- Consult further with a range of people who use drugs in the city to explore needs and preferences

- Urgently discuss the feasibility of Edinburgh also using the national lab-based testing services that are currently being developed as part of the national implementation work

## Service development

- Explore the creation of multiple drug checking services in locations across the city, or the establishment of a distributed model where a primary site collects samples from other locations for testing

- Explore options for the creation of city-wide postal provision

- Consider the balance between speed of testing results and comprehensiveness of the analyses in developing service design

- Develop service designs that include:
    - flexibility, ease of access and user-friendly, non-judgmental approaches, including peer support
    - access to other harm reduction interventions
    - operating procedures that ensure safety of staff and people using the service
    - clear plans for design coproduction, including people with lived and living experience

## Legal considerations

- Ensure planning takes account of Home Office licensing requirements, and other national plans for confirmatory testing

## Finance and costs

- Initiation of discussions with local and national government decision makers to ascertain the potential financial envelope for service provision

- Liaison with potential providers to explore costs and feasibility of standalone and integrated provision

## Communication

- Develop a communication plan to provide stakeholders and the public with information about drug checking services, and the place of potential services in the wider treatment, recovery, and harm reduction landscape in Edinburgh

# Background

Drug checking services (DCS) operate in many countries globally, as a harm reduction intervention to reduce the harms associated with drug use. In DCS people submit a small sample of their drugs for testing and are subsequently provided with detailed information about what is in the sample, alongside harm reduction information and advice (1,2). Drug checking can operate in different settings, usually either event-based (at festivals or in nightlife settings) or community-based settings (in permanent settings) (1,3–6). There has been increasing interest in community-based DCS as a way of reducing harm to those most vulnerable to drug-related deaths (5,7–10). For example, in North America many DCS operate within supervised drug consumption facilities (SDCF) (11–15). In this report, DCS refers to those delivered in community-based settings. More detail about the evidence base for DCS can be found on the Scottish drug checking project website (16).

Community-based DCS can be delivered within fixed-site settings, with some also having mobile vans, and via distributed models. Within fixed-site settings, people would visit a service to hand in their sample for testing. Sometimes testing occurs on site (point-of-care testing) and can combine basic techniques, such as reagent tests and fentanyl and benzodiazepine testing strips, with more extensive testing, depending on the size of the service and the equipment and staffing available (for example if services are staffed by technicians qualified to use and interpret the technology). Mobile vans provide DCS in various locations across a city, with drug checking equipment and harm reduction staff on board. People may drop off their sample and get the results later or wait in the van for their results. There are examples of drug checking vans in Montreal, Canada; Chicago, United States; and Lisbon, Portugal.

When services are limited in the testing they can provide, samples are sent to a lab for extensive testing, using dedicated facilities. Point-of-care testing can provide information in a short period of time (i.e., within a few hours), but details may be limited: staff may be able to provide people with information about whether or not the sample contains a particular substance or not, but not the existence of other substances/adulterants and their composition. Lab-based testing will provide a more detailed analysis of the substance, including the amount of each compound, but testing takes much longer (i.e., days or even weeks) (17). For example, Toronto's DCS do not provide on-site testing, but instead transports collected substances to a lab with results available within 1-2 working days (18). The service received 10,051 samples for testing between October 2019-July 2023, of which 45% were expected to be fentanyl(s) by those submitting the substances for testing (19).

DCS can also be provided via distributed models, where a central site with the necessary technicians and equipment supports dispersed sites, for example those in more rural locations. One such model exists in Vancouver Island, British Columbia, Canada, with the central site located in central Victoria and five distributed sites across the island (20). Within the distributed sites, staff are trained to conduct the testing of the substances, and the results are then interpreted by technicians in the central site, with all sites connected electronically. The central site can also run more technical testing on samples at a later date than when they are received, either via mail or collected by central site staff. This model therefore enables point-of-care testing to be carried out in multiple locations without the cost of having technicians in these sites thus allowing people to receive their results in a short period of time (20).

Postal DCS also exist, both in the UK (21) and globally (22). Individuals can anonymously post their sample and receive results remotely (for example via the organisation's website), usually without any harm reduction advice. Test results are generally provided within a week (22). The Welsh Emerging Drugs and Identification of Novel Substance (WEDINOS) service started in 2009 and provides postal testing across the UK. People post a small amount of a substance to WEDINOS and the results are posted on the website, with details on: location (first part of postcode), intended purchase, sample

colour/form, any self-reported effects, and the major and minor components identified during testing (21).

### Current drug checking in the UK

Event-based drug checking has existed in the UK for several years, with The Loop introducing drug checking at festivals in 2016 (23). No community-based DCS currently exist in the UK. The Loop are in the process of setting up a service in Bristol, funded by the city council (24), and there have been pilots of community-based DCS in Bristol, Durham, and Weston-Super-Mare (25,26). No services currently exist in Scotland, although they are being planned in Glasgow, Aberdeen, and Dundee (27). Recent research in these Scottish cities explored the opportunities and challenges of setting up DCS, focusing on different service models and implementation considerations from the perspective of professionals, people who use/used drugs, and family members of people who use/used drugs (16). Participants across all cities were supportive of DCS and reported a preference for such services within third sector and pharmacy settings, as well as the potential for alternative options such as drop-boxes, DCS within SDCF, and via outreach (28,29). Participants also noted the importance of a range of different service models, as one site may not reach all of those wishing to have their drugs tested (28). Important considerations from participants included: key service design features; involving relevant stakeholders in dialogue; building DCS into public health communication networks; the complexity of communicating drug checking results; and developing communication strategies to build support for DCS (30). Participants also noted the potential impact of DCS on: individual service users; harm reduction services and staff; drug market monitoring structures and networks; and wider groups of people who use and sell drugs via shaping their interactions with the drug market (29).

There is a clear need, and support for, DCS in Scotland. Substances submitted to WEDINOS from Scotland increased tenfold between 2014-2022, with 1,512 substances submitted over this period (1,049 of these were submitted between January 2020 and October 2022). Use of WEDINOS in Edinburgh has followed a similar trend, with 213 substances submitted between January 2020-October 2022 (31). Importantly, 44% of the substances submitted from Edinburgh during this period were expected to be benzodiazepines prior to testing, evidencing demand for DCS extending beyond so-called ‘recreational’ use. Further, provisional data from the Needle Exchange Survey Initiative (NESI) amongst Glasgow respondents shows that 71% reported being willing to use a DCS if established (32). Whilst reported willingness to use an intervention is not always predictive of actual uptake, such data suggests a level of perceived need and demand for DCS in Scotland, extending into populations at higher risk of experiencing drug-related harm.

The aim of this study was to build on the research conducted elsewhere in Scotland to understand the need for, and views on, the establishment of DCS in Edinburgh, as part of a wider study on SDCF commissioned by Edinburgh Alcohol and Drug Partnership (ADP).

## Methods

This study used similar methods to the research conducted in Aberdeen, Dundee, and Glasgow during 2021-2023 (28,29,33). Ethical approval was granted by the University of Stirling (NICR, paper 0562; March 2021) as part of this related study, and NHS Lothian R&D approval was granted for interviews with NHS staff. Professional participants for the research were identified by the Edinburgh ADP commissioning manager who contacted relevant individuals by email with information about the study. Participants then contacted the researcher to arrange an interview. Participants with experience of drug use were identified through relevant third sector organisations and provided with information about the study. Interested individuals were then either asked to contact the researcher or agreed to their details being shared with the researcher who then initiated contact. During the study, attempts

were made to recruit family members of people with recent or current experience of drug use. No family member participants were identified for the study however, despite ongoing attempts.

Interviews were conducted over the phone, lasted an average of 55 minutes (range: 24-86 minutes), and were transcribed by a professional transcriber. Participants with experience of drug use were provided with a £20 shopping voucher as a 'thank you' for their time. All participants provided written or verbal consent prior to conducting interviews. Participants also provided basic demographic information prior to interview, such as age, gender, ethnicity, occupational role (for professional participants), types of drug/s used, and engagement with drug services (for participants with experience of drug use). Prior to (or during) interview, participants were provided with three hypothetical example models of DCS operation (see Table 1) and were asked to discuss their perceptions of the advantages and challenges associated with each. This was undertaken to encourage in-depth discussion and consideration of different potential service models and their specific effectiveness or limitations in the context of the city of Edinburgh. The models were adapted/shortened versions of those used in the related three city study (28). In terms of data analysis, thematic coding was undertaken in NVivo12 (QSR International Pty Ltd., 2020) to develop relevant themes and sub-themes, drawing on the coding framework developed for the related study.

Table 1. Hypothetical service delivery models

| **Hypothetical examples of DCS models** |
|---|
| **Model one:** DCS in a fixed-site third sector setting, with a mobile van service travelling to different locations through the city.<br>**Model two:** DCS in an NHS alcohol and drug treatment service.<br>**Model three:** DCS provided in a community pharmacy setting. |

## Findings

These findings are based on interviews with 11 Edinburgh-based participants drawn from two groups: professional staff (n=8), and people who use drugs (n=3). Professional participants were drawn from third sector services, NHS services, and Edinburgh ADP. Professional participants worked across varied roles in the drugs field, including: service managers; strategic decision-makers; public health consultants; people with prescribing roles; and policy leads. Of the three participants with experience of drug use, two described their drug use as recreational/occasional, using drugs such as MDMA, cocaine, amphetamine, and cannabis. Neither described having been in contact with drug treatment services in relation to their drug use. One participant described using crack cocaine and heroin frequently and having multiple previous experiences of drug treatment, including rehab. Two participants described their gender identity as female and one as non-binary, with an age range of 25-54. Details of participant demographics are presented in Table 2.

Table 2. Participant demographics

| **Group** | **Total number** | **Gender** | **Ethnicity** |
|---|---|---|---|
| Professional stakeholders<br><br>*NHS*<br><br>*Third sector*<br><br>*Alcohol and Drug Partnership (ADP)* | n=8<br><br>n=3<br><br>n=4<br><br>n=1 | Female n=4<br>Male n=4 | White Scottish/British n=8 |
| Participants with experience of drug use | n=3 | Female n=2<br>Non-binary n=1 | White Scottish/British n=3 |

| | | | |
|---|---|---|---|
| **Total** | n=11 | Female n=6<br>Male n=4<br>Non-binary=1 | White Scottish/British n=11 |

It should be noted that some topics discussed by participants are not included in the report due to space constraints. For example, detailed discussion of the potential harm reduction impacts of DCS was omitted from the findings due to the need to focus primarily on key areas of service design and delivery to inform implementation. For this reason, some topics are only presented in table-form, outlining high level considerations. Further detail can be provided if/where needed.

During interviews participants highlighted that certain aspects of the provided examples models (see Table 1 above) were not applicable to Edinburgh. Namely, participants felt that the distinctions between third sector and NHS services in Edinburgh was not as clear as the provided models suggested (and as they were in the related research, see Carver et al. 2023 (28)). This largely related to the 'recovery hubs' located throughout the city which were described as 'mixed' models of provision involving third sector and NHS staff working in partnership. Therefore, participant discussions of the 'recovery hub' model is presented in place of example model 2 (NHS setting). Participants also highlighted a number of additional locations which they believed might be suitable sites for DCS integration which are presented below.

The findings are presented in three main sections, as detailed in Table 3.

Table 3. Sections and sub-sections of the findings

| |
|---|
| **Perceived need and demand for drug checking services** |
| **Service delivery considerations** |
| **Model of service delivery (location)**<br>*Fixed-site third sector setting*<br>*Mobile van*<br>*Recovery hubs*<br>*Pharmacy setting*<br>*Homelessness services*<br>*Supervised drug consumption facilities (SDCF)*<br><br>**Accessibility considerations**<br><br>**Further service design considerations**<br>*Staffing: skills, knowledge, and values*<br>*Links and integration with wider supports and services*<br>*Result turnaround time*<br>*Mode of communicating result*<br>*Important information from the analysis process*<br>*Opening hours*<br>*Amount of a substance required for testing*<br>*Consulting people who use drugs* |
| **Planning and implementation process** |
| *Target demographic*<br>*Resourcing*<br>*Bringing together key stakeholders*<br>*Community and public consultations*<br>*Legal challenges* |

## Perceived need and demand for drug checking services

Participants were generally supportive of DCS implementation in Edinburgh, with several seeing it as an important harm reduction intervention in the context of an increasingly variable unregulated drug

market. Drug checking was perceived to have the potential to reduce the risk faced by those who use drugs through the provision of accurate, reliable information:

> *Obviously, there's a lot of things that are miss-sold and it would be good for people to be more informed as to what they're taking. And obviously to potentially prevent deaths and harms from the miss-selling of drugs or just from… the adulteration of drugs that, yes, people could avoid.* (Participant with experience of drug use 3)

Participants stated that greater access to information about the contents of drugs could lead to altered patterns of drug use and the adoption of harm reduction practices such as: using less of a substance; not using a drug in light of an unexpected result; and reducing poly-drug use. Although participants noted that DCS may lead to the adoption of safer drug use practices for some individuals, it was also felt that there may be limitations to this. For example, for more marginalised individuals facing complex vulnerabilities around issues such as housing, mental health, and poverty, it was noted that may be limits on their capacity to consistently adopt harm reduction practices and, subsequently, to reduce their risk of experiencing harms.

In addition to informing drug consumption practices, participants highlighted that DCS may facilitate uptake of other harm reduction and drug treatment interventions offered on site. The provision of a non-conditional harm reduction service (DCS) was viewed as potentially helping to build trust and engagement amongst people who use drugs, thus fostering engagement in wider interventions:

> *What a drug checking service allows us is an ability to build that relationship as well, you know? And for somebody to kind of touch base with a service that actually meets their needs.* (Professional participant 3)

Relatedly, a number of participants expressed the view that DCS would provide enhanced opportunities for staff to have detailed, in-depth harm reduction conversations about issues such as drug dosage and poly-drug use. Participants described the current situation as one of working with very limited information around drug contents and having to rely on generic harm reduction information. Conversely, drug checking was seen as enabling more detailed and valuable interaction between service users and staff.

Some participants noted that DCS may also increase systemic capacity for monitoring drug market trends, with the potential for this information to be shared with people who use drugs and frontline services through a number of channels. The most commonly discussed channel of communication was through services and staff, either verbally and/or through distributing leaflets and resources to service users:

> *We could say 'there's other stuff that's come up, or a client has tested a substance in the locality, and this is what it was, please be aware'.* (Professional participant 1)

While most participants saw enhanced capacity for drug market monitoring, and the resultant public health communication, as an important benefit of drug checking, some questioned whether implementation could be justified on such grounds alone, highlighting potential limitations relating to the harm reduction impact of DCS in this regard. For example, one participant questioned whether being able to track drug market trends would have significant practicable implications for service commissioning, design and delivery, or the practices of frontline staff:

> *Absolute continuous scrutiny of exactly what is in the drug supply just doesn't give you any new levers to use to change things that much.* (Professional participant 6).

In contrast, several participants noted that the drug market monitoring function of DCS may be imperative if synthetic opioids were to be become common on the Scottish drug market (which recent increased detection of nitazene opioids suggests may be the case). In such an event, DCS would enable swift detection of emerging substances, and inform practice and policy responses in a timely manner:

> *The fact is that when you look at other countries like the US and the problems they've got with fentanyl… if that was something that was to happen here, I think the safest way for us would be a drug checking service. If that was the case, you'd could at least warn patients 'listen we're finding that a lot of heroin batches are adulterated, so basically... it's not the same drugs that you've been taking for years and years'. We'd be able to kind of almost pre-empt it and respond there, and then as opposed to responding after the fact and it becoming a bit of an avalanche of clinical issues.* (Professional participant 7)

While it is not possible to accurately estimate demand for DCS in Edinburgh from a small number of (largely) professional participants, it was generally believed that many people who use drugs would likely want to access DCS as a means of taking care of their health and reducing risk:

> *Broadly speaking people want to take care of their heath and want to look after themselves.* (Professional participant 3)

All three of the participants with experience of drug use noted that they would access a DCS if it were available, provided it was delivered in a suitable location and accessible manner, and they were not at risk of negative police interactions.

Participants described the need for drug checking to be accessible to those at highest risk of experiencing drug-related harms, including those using opioids, non-prescribed benzodiazepines, and injecting cocaine/smoking crack cocaine. Some noted that those who used novel benzodiazepines may access the service more frequently than those using opioids or crack/powder cocaine, although there is significant overlap between these groups. Participants who held this view cited a number of potential reasons. Firstly, opioids and cocaine were described as more expensive and bought in smaller quantities than benzodiazepines, creating a barrier to engagement as people would have to lose a portion of their drugs due to the testing process. Secondly, some participants noted that those using novel benzodiazepines may be more concerned about drug contents, due to the high variability in content and strength of these substances.

Another group which participants described as potentially using DCS was those using drugs such as MDMA, amphetamine, ketamine, and powder cocaine (i.e., drugs considered 'recreational'). However, beyond this dichotomy between 'dependent'/higher risk drug use and 'recreational' use, some participants described a broad spectrum of potential service users with varied drug use, experiences, and reasons for accessing DCS. It was noted that some individuals may not identify themselves as being 'dependent' but may be experiencing health or social issues in relation to drug use. For example, many individuals across Scotland use powder cocaine (and may wish to use a DCS) but would not typically be associated with those at highest risk of experiencing drug-related harm. It was also noted that, although younger people using drugs were often labelled 'recreational' in their use, there was a growing population of young people using benzodiazepines in Scotland who largely remain hidden to services and interventions:

> *Young people are using benzos and have been for quite a few years now and some of them are using them in a really dangerous way… developing dependence and tolerance very quickly.* (Professional participant 5)

Participants also described a number of specific sub-populations who may wish to use DCS requiring

consideration of particular service designs and suitability for such groups. For example, it was noted that people using drugs for chem-sex may wish to access DCS and were not typically seen by drugs services.

Participant discussion highlighted the diversity of experiences, needs, and profiles of individuals who may wish to use DCS which raises questions about the suitability of one model for a range of groups. As noted by one participant, services aimed at different individual demographics "*have to be quite different* [in terms of service design] *to reflect that"* (Participant with experience of drug use 3). Participants often described the need to balance these competing demands, and to consider the extent to which the service focused only on those at highest risk of harm, as opposed to a wider population:

> *It's a question around how much the drug checking should focus on trying to avoid those very high harms, in term of deaths or non-fatal overdose, versus being a more general service which could potentially help, you know, avoid lower-level harms.* (Professional participant 8)

A number of participants stated that, given the high rate of drug-related deaths and limited resources, there may be a need for primary focus to be on engaging those at highest risk:

> *Where it's viable is in populations who are most vulnerable and most at risk of a drug-related death, or other extreme harms, that's much more strategically important and interesting to me. If it's middle-class kids in festivals who are going to be okay anyway, I suppose I'm broadly in favour of it being done but it wouldn't sit with our budget.* (Professional participant 6)

In summary, the above discussion highlights a general perceived need for DCS in Edinburgh, particularly given the variable unregulated drug market placing individuals at risk of experiencing drug-related harm. Further, there may be demand for DCS across a heterogenous group of people who use drugs on a continuum from more marginalised individuals at higher risk of harm to those using recreational drugs. However, and as will be outlined further below, the level of engagement amongst different groups of people will likely vary by the model of service delivery chosen.

## Service delivery considerations

This section outlines participants' perceptions relating to key areas of service design and delivery, including: where DCS should be located; how they should operate; the level of integration with other harm reduction and treatment services; and what information DCS should provide about substances and within what timeframe.

### Models of service delivery (location)

'Models of service delivery' relates to the locations which participants thought would be suitable for delivering DCS. A number of services and sites were described as potentially suitable points for DCS delivery, with participants discussing various perceived advantages and challenges associated with each. These settings were fixed-site third sector, mobile van, recovery hubs, pharmacies, homelessness services, and SDCFs.

*Fixed-site third sector service*

Participants noted that third sector services in Edinburgh vary substantially in relation to the demographics of individuals with whom they engage and their level of integration into the drug treatment landscape. Third sector services were seen as separate from the statutory drug treatment landscape in Edinburgh and as very different to the more clinical recovery hubs (which are integrated into the treatment landscape):

> [The recovery hubs] *are very much a clinical setting where you go to get a service. Again, there are pot plants and they're therapeutic and they're lovely people… But it doesn't have that same kind of unofficial appeal to it.* (Professional participant 6)

Third sector services, which are less aligned with the treatment landscape, were viewed as less stigmatising than the more clinical services, as more informal, and lower threshold (easier to access). One participant noted that "*certainly my bias is for more third sector spaces*", discussing a preference for the informal and relaxed feeling of services less aligned to drug treatment (Participant with lived experience 2).

Several participants described Crew, a third sector harm reduction service, as a potential location for a DCS, noting that the service is trusted by existing service users, and provides a relaxed, informal environment. One of the key perceived advantages of Crew was that individuals could be accessing the service for a number of reasons unrelated to drug treatment/harm reduction (such as for the purposes of volunteering or accessing general information), lessening the stigma of accessing the site and protecting confidentiality. Two participants with experience of drug use noted that Crew had a friendly and relaxed 'drop- in' atmosphere:

> *They tend to have quite colourful, nice windows, so people coming past will just go, 'oh, what's this?', and drop in and then they'll ask, 'what's this about?'.* (Participant with experience of drug use 2)

It was noted that Crew provide a number of resources and supports including information and signposting to other services. Crew primarily engages with younger people who may represent a substantially different demographic than those at higher risk of experiencing drug-related harm. However, some participants did note that Crew offers a counselling service which engages with some individuals with longer histories of drug use. The counselling service was also seen as a benefit in relation to DCS integration, as those who were attending to test drugs could easily be referred to this service for additional support if required. Despite this, participants generally stated that Crew may not be a particularly suitable location for those at higher risk of experiencing drug-related harms who would be more likely to be engaging with the recovery hubs. Others described a need to consider how offering DCS in Crew may change the dynamic of the service. If the service was successful in engaging those at higher risk, it was felt that this may affect atmosphere and dynamic for the existing service users (predominantly younger individuals):

> *If you mostly work with 16-24 years olds, and then you open up a different part of your service and you get people of all ages, it's just going to create a different kind of vibe.* (Professional participant 3)

Participants noted that Crew's central location and proximity to public transport links was a benefit in relation to accessibility. However, professional participants working with those using drugs dependently who lived further from the city centre were sceptical of whether such individuals would travel to Crew to access drug checking:

> *For the demographic that I work with… opiate users, diazepam users, it would need to be in their community, I think. To try and get one of my service users to go from Craigmillar to Leith, which is a fairly short distance, it can be a challenge. So, to get them into town where Crew is, it just wouldn't happen*. (Professional participant 2)

*Mobile van*

Participants had mixed views on the suitability of a mobile drug checking van. Some described a mobile option as flexible and potentially able to engage those who may not want to access a fixed-site setting. Two participants noted that this flexibility could be valuable in the context of Edinburgh, where there were several "*concentrated hotspots for drug deaths and drug use"* (Professional participant 8). Discussing the specific 'hotspots' in Edinburgh, one participant described several locations a mobile DCS could travel to, centring around the four quadrants and city centre location where the recovery Hubs operate:

> *You'd need it essentially where the hubs are in Edinburgh... you've got one in Leith, at Leith Links... you've got one in Craigroyston next to the Muirhouse shops... and you've got one in Wester Hailes... I think, that's maybe why* [a van] *might be quite useful because you could basically be situated in each area, like a day a week for example. And the last hub is at Spittal Street just off Lothian Road... I guess you'd have an option to have that van situated in each area for at least a period each week.* (Professional participant 7)

Three participants noted that there was already a mobile harm reduction infrastructure in Edinburgh which could be drawn on to provide drug checking:

> *We have got the NEON* [needle exchange outreach network] *team who until recently had the van going round Edinburgh with injecting equipment, and we still have the ROAM team* [providing an IEP outreach services to LGBTQi+ individuals] *who go out to vulnerable communities delivering HIV [human immunodeficiency virus] and STI* [sexually transmitted infection] *screening, you know, and working with people about very delicate sensitive things in, you know, people who are in quite difficult places as well, people who are doing sex work. So, we do have experience within the city that we could really draw on.* (Professional participant 5)

Participants described several challenges to delivering a mobile DCS. Whilst a DCS van was seen by some as a means of discretely engaging those who may not want to access fixed-site service, others held contrasting opinions. Some felt that a DCS van may not be discrete, and that members of the community may be aware of what was being offered (thus creating a barrier to engagement for some). It was felt that a mobile van, owing to its visibility in communities, may also raise objections from local residents:

> *The idea of coming out of the van, a whole queue of people lining up with their substances to get tested, isn't very anonymous. And it's likely to have such a reaction from the public that it wouldn't be workable.* (Professional participant 1)

Some noted that a mobile van could face challenges in relation to security as people may target it under the impression that there were large amounts of drugs on board when, in reality, the van would only store tiny amounts of a substance which would likely then be destroyed in the testing process. Others highlighted that a mobile van may not be a particularly cost-effective option. For example (in contrast to a mobile van), it was noted that a fixed-site DCS may represent a better use of resources given that staff would be able to perform multiple interventions. Relatedly, one participant discussed a range of challenges relating to depreciation, risk assessment, and obtaining insurance:

> *I know Scottish Government are very, very wary of having a van and I understand why. You know immediately, because of the job I do, my head goes to the risk assessment, the depreciation, the insurance.* (Professional participant 5)

Two participants discussed potential challenges relating to policing of a DCS van. Whilst DCS integrated into existing fixed-site services were thought to reduce policing issues (an individual could be accessing any number of services on site), it was noted that a van may increase the potential for individuals to be targeted by police: *"I think the van would be followed by the police"* (Participant with experience of drug use 1).

*Recovery hubs*

A number of participants described the recovery hubs as intuitive and feasible locations for delivering a DCS, particularly for engaging those at higher risk of experiencing drug-related harm. It was noted that the hubs were already attended by significant numbers of people who use drugs, particularly those using opioids, benzodiazepines, and cocaine (typically crack cocaine or injecting powder cocaine). Additionally, the hubs offer a wide range of harm reduction and treatment interventions including injecting equipment provision (IEP), take-home naloxone, blood-borne virus (BBV) testing, and medication assisted treatment (MAT) prescribing. This existing provision was seen as presenting opportunities to link people accessing drug checking into wider supports and services. Due to the presence of skilled practitioners and experience of offering a range of interventions, many participants expressed a view that recovery hubs would be the most straightforward sites to integrate DCS.

Despite the discussed advantages, participants also outlined a range of challenges in relation to DCS being offered in recovery hubs. While such sites were primarily seen as accessible for existing service users, many participants expressed doubt about their suitability for wider groups of people who use drugs, particularly those who were not engaged in treatment or support in relation to their drug use. For example, some described being sceptical of whether younger individuals and those using recreationally would be comfortable accessing a treatment service:

> *Those younger end people… there are very good reasons to not expect them to go through the same front door as somebody who's nearly 50 and who's been using heroin for years.* (Professional participant 5)

Echoing this, one participant described their experience of accessing a recovery hub and experiencing physical and verbal altercations, which they noted may be off-putting for some people:

> *Sometimes I'm going in and there's people, you know, having a physical altercation, or a very intense verbal altercation, with staff, just because of the nature of it, dealing with OST* [opioid substitution therapy] *and things like that.* (Participant with experience of drug use 3)

It was highlighted that some individuals may have mistrust of such settings due to negative previous experiences with statutory health and treatment services: "*we know that a lot of people really struggle with clinical settings"* (Professional participant 3). Similarly, some noted that such settings may be too formal and therefore off-putting for a significant proportion of people who use drugs:

> *My impression is that a small but significant fraction of people would be put off by having to go into an NHS kind of thing.* (Participant with experience of drug use 2)

Additionally, participants noted that some existing service users may have concerns about the confidentiality of DCS in recovery hubs, particularly if they were also being prescribed MAT onsite. It was highlighted that the staff delivering DCS should be separate from those involved in prescribing in order to facilitate a sense of confidentiality and separation between the two interventions. Participants also discussed issues around the level of demand already placed on existing recovery hub staff, creating challenges for DCS delivery:

> *The workload is extremely high… until these hubs are set up with more prescribers, and vacancies filled, it would be quite tough to ask them to take on even more work.* (Professional participant 7)

*Pharmacy setting*

Participants had mixed views of DCS in a pharmacy setting. One of the key perceived advantages was that significant numbers of people who use opioids (among other drugs) frequent community pharmacies to access IEP and MAT. Some participants noted that the frequency of engagement (often daily) by some individuals may help with relationship and trust building with pharmacy staff, and thus facilitate engagement in DCS. It was also noted, however, that pharmacies varied widely in relation to their practice and attitudes towards people who use drugs. Some described examples of stigmatising practice, while others described examples of psychologically informed and caring practice:

> *Service users still report being very stigmatised in pharmacies when they go to collect prescriptions… a lot of our service users really hate going to the pharmacy.* (Professional participant 2)

> *My local pharmacy is very considerate towards people who are getting methadone. They treat them with real respect, but that's not necessarily the case in other pharmacies.* (Professional participant 5)

Owing to such inconsistencies in practice, participants tended to view the suitability of pharmacy settings as contingent on the ethos of staff, as well as a range of issues relating to the layout of the pharmacy space. Relating to layout, it was noted that not all pharmacies would have the space or capacity to deliver a DCS. One participant with experience of drug use described the importance of pharmacy lay-out for protecting confidentiality. They described two different pharmacies in the city with one offering a discrete service and the other requiring people accessing IEP to use a separate door. They noted concern that having to access a separate door may lead to police interaction and surveillance:

> *If you go into Boots, you can be kind of discrete out the back of the shop behind a wooden board. But if you're going like up Nicholson Street, for instance, in Edinburgh, a needle exchange, you're going to a side door of the chemist, and it's specifically for that, so I think, again, that could be a watched place by the authorities.* (Participant with experience of drug use 1)

Participants discussed a range of issues relating to the capacity of pharmacy sites. Some noted that specialised drug services may be better placed to offer DCS given they are specifically focused on drug-related interventions and practice. By contrast, pharmacies offer a range of interventions, with only a small proportion of these relating to harm reduction. Relatedly, others noted that pharmacies were often already stretched and under-resourced, raising questions around capacity to deliver DCS.

There were mixed views about who might be most likely to engage with pharmacy-based DCS. While a potential advantage of the setting was that MAT and IEP were already being offered (potentially facilitating engagement amongst those at higher risk), there were some concerns regarding whether a DCS in a pharmacy setting would be trusted amongst this group. For example, it was noted that those accessing MAT from a pharmacy may have concerns about confidentiality, and the effect of accessing drug checking on their treatment. Some participants saw a pharmacy model as most suitable for people who use recreational drugs, as opposed to those experiencing dependence. However, two participants, both of whom described their drug use as occasional, expressed concerns about accessing a pharmacy setting related to anxieties around either being recognised by someone they knew, or being judged by other pharmacy customers:

> *So, the pharmacies, they're never totally quiet, and I'm not saying that a third sector venue would also be totally quiet, but sort of the people who are also in the drug testing service* [in a third sector setting] *are probably not going to judge you too harshly for being there… whereas in a pharmacy, you know that's quite general… People who are going into the pharmacy for general things… it may seem to the person who's getting their drugs tested that they're being judged*. (Participant with experience of drug use 2)

> *I've bumped into people I know in the pharmacy queue like around me. So, like you do have that. You can ask to be spoken to in private, but some pharmacies don't have like that wee little room to do that.* (People with experience of drug use 3)

Whilst both participants described private consultation rooms as going some way to protect confidentiality, they also outlined significant reservations about the discretion and confidentiality afforded by a pharmacy setting.

*Homelessness services*

Some highlighted that homelessness hubs (such as Access Point, The Salvation Army, or Simon Community's Holyrood hub), may be suitable for engaging those experiencing homelessness who use drugs. It was noted that these services already offer harm reduction interventions due to the disproportionately high rates of drug-related harms amongst those experiencing homelessness:

> *So, I think that in either of the homeless services hubs, obviously Simon Community have a Holyrood Hub and Salvation Army have Niddry Street. So, I think both of those services see a lot of people and already do quite a lot of harm reduction work in that space. The Holyrood hub has BBV nurses come down there and they've got staff trained on dried blood spot testing*. (Professional participant 3)

It was also noted that staff in such spaces may be able to build trust and rapport with individuals, facilitating engagement in drug checking. One participant with experience of drug use described such settings as a potentially ideal and trusted location, as they offer a range of other services and therefore are less easily targeted by police.

Despite the potential benefits of such a model, participants described some challenges. It was highlighted that services catering to those experiencing homelessness may not be particularly accessible to other people who use drugs. Additionally, one participant noted that, similar to other models discussed, staff were under significant workload pressures, creating challenges for the integration of drug checking as a new and novel service.

*Supervised drug consumption facilities (SDCF)*

Several participants stated that, were SDCF to be implemented in Edinburgh, this would be the ideal location for DCS provision. The key advantages of such an approach related to the likely high levels of engagement in such a service amongst marginalised individuals, and the provision of multiple harm reduction and treatment interventions available on site:

> *That would be the best. You put all the expertise in one place, you'd have everybody coming in for a particular reason. They're probably going to hang about longer anyway, which simplifies the process of getting the drug checking done. You're going to co-locate the other things behind it, like treatment access and the other services that you want to offer.* (Professional participant 6)

Despite such perceived advantages, one participant with experience of drug use noted that they would not use a SDCF if it were set up. They felt that there would be a high level of mistrust around such services, with concerns around police surveillance:

> *I just don't think it would get off the ground like. I think the authorities would be on it.* (Participant with experience of drug use 1)

It should be noted that, despite the barriers to engagement described by this participant, SDCF internationally typically have high levels of engagement amongst people who use drugs, particularly more marginalised groups (see SDCF report for more detail).

Overall, participants discussed both advantages and disadvantages of the different potential models of DCS delivery in Edinburgh. A table with details of the advantages and disadvantages of each potential setting can be found in Appendix 1.

## Accessibility considerations

Aside from discussion around the suitability of specific potential locations for DCS delivery, participants also discussed geographical considerations and most specifically the accessibility of DCS for people who use drugs. It was highlighted that a DCS, whichever model of delivery was chosen, should be proximal to where people commonly buy, sell, and use drugs. If a DCS was aiming to engage those at higher risk of experiencing drug-related harm, many participants noted that a DCS should be integrated into a service offering IEP. However, participants described challenges in relation to one site being accessible for all who may wish to use it. Firstly, it was noted that one site may not be suitable for different groups (for example those using recreational drugs or who have never been in contact with drug services, and those at higher risk and are linked into existing services). Secondly, it was highlighted that Edinburgh has several geographically distributed locations with high levels of drug-related harms which made it challenging for one site to be accessible to those living farther afield. For example, one participant noted that an individual living in Leith may be unlikely to access a service in the city centre, owing to the time and money required to do so:

> *Will a service user who lives in the depths of Leith go up into town just to get a drug tested?* (Professional participant 2)

Some participants noted that, as the recovery hubs were geographically dispersed and provided good coverage throughout Edinburgh, it might make sense to have drug checking provision across multiple hubs. It was noted, however, that the equipment and staffing costs associated with multiple DCS may not be economically feasible. Considering such resource constraints, one participant suggested that a 'hub and spoke' model may be a cost-effective means of expanding the reach of drug checking (i.e., a distributed model). In these cases, rather than providing testing on site (as is often the case in fixed-site DCS), substances could be transported to a central site for further testing (which could either be the main DCS service in Edinburgh or a national lab-based facility). This was seen as reducing the cost of equipment and staffing required to operate multiple drug checking sites. Another participant noted that having a postal element of provision could help expand access to drug checking. However, they highlighted that people may have concerns about whether a substance was going to reach its intended destination, or whether it would be intercepted: *"I like the freepost idea, but I can also see people being concerned about whether stuff is going to get through the post"* (Participant with experience of drug use 2).

## Further service design considerations

This section relates to further service design considerations including: the skills and knowledge required by DCS staff; the level of linkage and integration a DCS should have with additional services;

issues relating to the testing process; opening hours; and the need for further consultation with people who use drugs prior to implementation. The findings are presented in Table 4.

Table 4. Key points relating to service design

| **Staff skills, knowledge, and values** |
|---|
| • Participants felt that staff should be known and trusted by service users (attached to a known harm reduction service), and skilled in building trust and rapport.<br>• Staff should have knowledge and expertise in a range of issues relating to safer drug use, drug contents, and drug markets, be skilled in harm reduction communication, able to clearly explain results, and have the knowledge and capacity to link individuals with wider treatment and support.<br>• Staff should be able to support individuals with holistic needs such as health, housing, finance.<br>• Most participants felt that third sector harm reduction staff would be most suitable although one participant discussed the potential involvement of medical professionals.<br>• Involvement of those with lived/living experience was seen as important. |
| **Links/integration with wider supports and services** |
| • Participants noted that DCS should be co-located with harm reduction interventions such as IEP, naloxone, and other resources.<br>• Links to wider treatment such as MAT, drug counselling, CPNs, rehab described as important.<br>• Support around wider health, financial and wellbeing needs seen as important to support individuals to navigate services, signposting etc. |
| **Result turnaround time** |
| • Some individuals may require quick results (less than an hour), while others may not require as rapid results such as those buying in bulk or using occasionally/in a planned manner.<br>• Important to clearly communicate the expected waiting time which may fluctuate depending on demand. Speed of results will depend on the methods and equipment being used (for example, whether testing is offered on site or substances are sent to a lab).<br>• Being able to provide quicker testing may trade-off against more detailed and comprehensive results.<br>• All participants with experience of drug use described being willing to wait up to a week for results, but this may not be the case for other people who use drugs in Edinburgh. |
| **Mode of communicating results** |
| • A range of methods for communicating results may be appropriate, including in-person, over the phone, by text, or online.<br>• Given that people will have different preferences, it may be important to provide options.<br>• For some individuals, online delivery (coupled with remote methods of substance submission e.g., postal provision or 'drop-boxes') may help to protect anonymity and facilitate engagement.<br>• Different methods have trade-offs. Remote methods allow flexibility, do not require individuals to wait on site, and may protect anonymity. However, they provide less opportunity for detailed harm reduction consultation. |
| **Important information from the testing process** |
| • Information on substance content and strength deemed important.<br>• Information on substance strength enables more informed decision making around dosage which is particularly important where a substance may be potent and pose risk.<br>• It may be challenging to consistently provide information on the strength of a substance given limitations of on-site equipment. It may be possible, however, to provide approximate information about strength and discuss issues such as dosage more generally.<br>• It was believed that individuals would still use a DCS if it were not able to provide information on substance strength. All participants with experience of drug use noted that they would still use the service if it did not provide this information.<br>• The testing process may have further limitations such as not being able to provide comprehensive or reliable information for all substances (there may be times where results are inconclusive).<br>• In cases where results are inconclusive, this should be clearly communicated to those accessing the service. Additionally, there may be potential for such substances to be sent to a lab-based service for more detailed analysis. |
| **Opening hours** |
| • Services should consider extended opening hours (beyond 9am-5pm, Monday-Friday). |

| Amount of a substance required for testing |
|---|
| • DCS should test as small an amount of a substance as possible.<br>• Having to hand over some of a substance for testing (and not receiving this substance back) may present a barrier to engagement, particularly for those with limited disposable income using more expensive drugs. |
| **Consulting people who use drugs** |
| • Important to consult a broad range of people who use drugs about appropriate service design and delivery.<br>• Consultations should include the views of: women; LGBTQi+ individuals; those from ethnic minority backgrounds; and those with a wide range of drug use types and experiences.<br>• Drawing on existing services and community groups can help ensure effective and appropriate consultation.<br>• Meaningful consultation should pay individuals for their time, provide opportunities for individuals to have key workers or other supportive individuals present, and provide examples of potential models of service delivery for discussion.<br>• Participants noted that people who use drugs should be involved in all stages of planning and delivery and offered opportunities for involvement in operating the service.<br>• Some noted that, although consultation with a wide range of individuals was preferable, initial consultation may need to focus on engaging those at highest risk of experiencing drug-related harm, if this is the target group for DCS in Edinburgh. |

Table 5 presents the aspects of drug checking which participants highlighted as 'core' and 'adaptable'. 'Core' elements relate to those which participants highlighted as essential for DCS delivery in Edinburgh, whilst 'adaptable' elements are those which were described as being able to be tailored according to local need and the preferences of people who use drugs.

Table 5. Perceived core and adaptable elements of service design for Edinburgh

| Core elements of service design |
|---|
| • DCS integrated into a trusted space with pre-existing footfall. For mobile models, DCS should be associated with an existing, trusted service<br>• Harm reduction ethos<br>• Confidentiality and discretion<br>• Small amount of a substance as possible required for testing<br>• Operating with a Home Office licence<br>• Service user protection from stop and search and arrest when leaving or entering service. |
| **Adaptable elements of service delivery** |
| • Location (various potential models with different advantages and challenges)<br>• Waiting time for results<br>• Scale of service (number of points where DCS is available throughout a city)<br>• Staffing (third sector, NHS, numbers of staff)<br>• Some participants discussed that DCS should be integrated into existing harm reduction services and be able to provide service users with wider harm reduction support as well as more holistic support with housing, health etc. However, the extent of this integration may vary by chosen service model<br>• Equipment used and detail/comprehensiveness of results<br>• Potential for lab-based testing offered to individuals within a longer time frame. |

## Planning and implementation process

This section presents participant discussion of key planning and implementation considerations for DCS in Edinburgh including: key stakeholders who should be involved in dialogue and delivery; resource and funding considerations; determining the target demographic for the intervention; the need for public and community consultation; and key legal challenges relating to protection of DCS staff and service users. The findings are presented in two tables: Table 6 presents the key stakeholders which participants felt were central to planning and delivery (with several stakeholders having more

than one role), and Table 7 presents an overview of the key areas to be considered during the implementation process.

Table 6. Key stakeholders and their role in planning and delivery, as discussed by participants

| Key stakeholders | Role and input |
|---|---|
| Third sector and NHS services and staff | Service design, delivery, planning and expertise |
| People who use drugs | Consultation, planning and delivery (staffing) |
| Other existing DCS (in other cities/countries) | Expertise and consultation |
| Public health (PHS and NHS Lothian) | Planning, expertise, drug trend monitoring |
| Police Scotland and local police division | Policing strategy |
| Scottish Government | Governance and potential funding |
| ADP | Governance, planning, and potential funding |
| Local government | Strategic support, potential funding |
| UK Government/Home Office | Political dialogue and strategic stakeholder, licensing process |
| Wider services and staff | Building trust and awareness |
| Local community and wider public | Dialogue and consultation |

Table 7. High-level summary of key considerations and areas relating to planning and implementation

| Planning and implementation area | Key considerations |
|---|---|
| Target demographic | There is a need to consider who DCS in Edinburgh will be primarily aimed at and which settings/models of delivery are most suitable for this purpose. |
| Resourcing | There is a need for mapping of key potential costs and consideration of how to reduce costs by drawing on available resources. While drawing on existing resources (such as existing services and staff) was seen as a means of reducing cost, this needs to be balanced with maintaining the quality of existing interventions being offered. Participants also described the need to consider the 'opportunity costs' in relation to DCS (for example, use of funds which could be used for other interventions). It was highlighted that aiming the intervention at those at highest risk of experiencing drug-related harm may reduce such concerns as it could have most potential to reduce drug harms. There is also a need for rigorous evaluation of DCS, if implemented. Additionally, there was some uncertainty about the harm reduction impacts DCS may have when compared to interventions with a more established evidence base. |
| Bringing together key stakeholders | Participants noted that it is important to ensure that all key local and national parties are involved in dialogue around planning and delivery. |
| Community and public consultation | There is a need for consideration of the community dynamics around the chosen DCS implementation site/s, with a potential need for community consultation. However, some participants were sceptical of the need for extensive consultation as they felt DCS integrated in an existing drug service would have limited impact on public amenity. Wider communication strategy for the general public was also deemed as important. |
| Legal challenges | Participants noted that dialogue is required with local and national police. Delivery will, ultimately, be determined by Home Office licensing requirements, including the need for staff to receive assurances about the legality of drug checking (and to address any potential moral/ethical concerns). |

# Drug checking data from the safer drug consumption facility study

## Methods

Full methods for the SDCF study are provided in a technical Appendix in the associated report. Ethical approval was granted by University of Stirling (NICR, paper 14024; July 2023); NHS Lothian did not require R&D approval for interviews with NHS staff. Participants with experience of drug use and affected family members were identified via relevant third sector organisations and provided with information about the study, and then interviews were arranged with the researcher.

Interviews were conducted either in person in specialised homelessness services or a women's residential service in Edinburgh, or by phone. During the interviews, participants were asked questions regarding DCS in terms of: general perceptions, value, and likelihood of use; preferred location; potential barriers to using the service; staffing preferences; operational considerations; waiting times; and the amount of substance required for testing. These questions were asked of all affected family members and the majority (14 out of 20) of participants with experience of drug use. Participants were provided with a £20 voucher or bank transfer as a 'thank you' for their time. All participants provided written or verbal consent prior to conducting interviews. Interviews were transcribed in full. Thematic coding was undertaken to develop relevant themes and sub-themes relevant to the aim of assessing feasibility and acceptability of a DCS in Edinburgh.

## Findings

The findings below are based on interviews with 18 Edinburgh-based participants drawn from two groups: people who use drugs (n=14) and affected family members (n=4). Of the participants with experience of drug use, 15 were men and one was a woman: three of the affected family members were women and one was a man. The findings are presented in three main sections, as detailed in Table 8.

Table 8. Sections and sub-sections of the findings

| |
|---|
| **Support for, willingness to use, and preferences for a drug checking service (DCS)** |
| **Perceived need for a DCS** |
| **Perceived benefits of a DCS** |
| **Preferred design features of a DCS** |
| **Preferred location of a DCS** |
| **Accessibility related considerations** |
| *General acceptability of the service*<br>*Practical concerns regarding time for receiving results*<br>*Staffing preferences* |
| **Barriers and operational challenges** |
| **Potential unintended consequences** |

### Support for, willingness to use, and preferences for a drug checking service

Participants expressed a variety of views ranging from enthusiastic support to cautious scepticism. Importantly, the utility of DCS was often viewed in the context of harm reduction and improved safety for clients:

> *That's an amazing, amazing, amazing thing. Amazing thing and I'd use it myself.* (Participant with experience of drug use 19)

> *I'm 100% for that.* (Affected family member participant 4)

The support for DCS was largely framed around the benefits of harm reduction, the importance of knowing what substances are being consumed, and the potential for saving lives. However, two

participants expressed concern that the availability of such services might inadvertently send a message that drug use is acceptable:

> *You're giving people… you're saying it's all right. If you said to people in any way, shape or form that drugs are all right to use and then they're going to take… it's going to worsen the problem.* (Participant with experience of drug use 16)

Despite these views being a clear minority (2/14 interviewees), it is important to highlight that attitudes within the target group of people who use drugs towards drug checking may vary depending on a range of factors including lack of knowledge regarding components of DCS. For example, in the comment above the interviewee expects that those using DCS would be told that drugs are safe to use but DCS do not do this.

## Perceived need for a drug checking service

The perceived need for a DCS was strongly articulated by participants. Concerns ranged from the purity and mislabelling of substances, to a broader public health imperative due to the high rates of drug-related deaths. Participants highlighted the crucial need for a reliable system for checking the quality and safety of substances:

> *They're selling you something that if you put up your nose, it's getting you messed up, but it's not cocaine.* (Participant with experience of drug use 8)

> *Scotland's got the biggest drug population in Britain, and we've not got a drug testing station.* (Affected family member participant 4)

The participants underscored the urgency of establishing a DCS, not just as a measure of personal safety but also as a public health imperative. The lack of such a facility, particularly in Scotland with its high population of people who use drugs, was viewed as a significant gap in the city's harm reduction services.

## Perceived benefits of a drug checking service

The perceived benefits of drug checking were a recurring theme throughout the interviews. Participants highlighted the potential for such services to provide valuable insights into the substances being consumed, thereby fostering safer use, and potentially influencing future consumption choices. The benefits were viewed not just at an individual level but also as a means of enhancing community safety and preventing tragedies:

> *It would give people a real fuckin' insight into what they're buying.* (Participant with experience of drug use 7)

> *A lot of people would probably be like 'whoa, I'm not going to go near them again' when they find out what's in them.* (Participant with experience of drug use 15)

> *It might be keeping a whole community safe.* (Affected family member participant 2)

Overall, participants saw drug checking as a tool for harm reduction, capable of providing critical information that could alter drug-taking behaviours, prevent adverse effects, and save lives. The service was also considered as a potential catalyst for broader systemic changes in drug policy and community safety.

## Preferred design features of a drug checking service

The design features of a potential DCS were a topic of considerable interest among participants. The discussion spanned various facets, including the service's operational hours, physical setup, and the integration of technology for communication. For example, participants noted the importance of technological options for communication, including alerts. Additionally, the role of peer support and the importance of an informal atmosphere were also highlighted:

> *That aspect of peer support, that bringing together of people for a coffee, maybe tea, maybe a café type of thing as well.* (Affected family member participant 3)

The participants emphasised that a well-designed DCS would need to be flexible, accessible, and user-friendly. Features like operational hours and mobile alerts were viewed as pragmatic necessities, while a welcoming environment and options for peer support were seen as essential for encouraging utilisation and potentially enhancing the service's harm-reduction mission.

## Preferred location of a drug checking service

The geographical placement of a DCS emerged as a crucial consideration among participants. Preferred locations range from existing service locations, central urban areas, to local community venues such as churches. The rationale behind these preferences was often tied to the notion of maximising utility and ensuring that the service would be easily accessible to those who need it most:

> *It would be local. I think at the harm reduction places. So Streetwork, Spittal Street, even local churches to get the most usage, to get the most people to be safe.* (Participant with experience of drug use 17)

> *So, like the first one would be in a situation where so many communities can access the building to see the success of it. If it is a success, then we can move a building to somewhere else.* (Participant with experience of drug use 18)

> *Maybe a place where a lot of drug users go to get their prescriptions.* (Participant with experience of drug use 19)

The choice of location for a DCS was considered a critical factor for its success. Whether centrally located or situated in areas already frequented by potential clients, the common thread was the need for accessibility.

## Acceptability related considerations

This section focuses on three crucial aspects that shape the acceptability and feasibility of a DCS: the general acceptability of the service; practical concerns regarding time for receiving results; and staffing preferences.

### *General acceptability of the service*

Participants expressed a range of views and concerns regarding ease of use, timeliness, and the types of expertise required to make DCS effective and trustworthy. The data suggest that, while the concept of a DCS is generally well-received, there are specific concerns and suggestions to consider. These range from how to make the service more accessible and acceptable to various populations such as middle-class people who are not engaged in any treatment or harm reduction service, to considerations for safety and confidentiality. The overarching sentiment was that DCS could be universally acceptable if these issues were addressed.

*Practical concerns regarding time for receiving results*
The time required to receive drug checking results was a significant concern among participants. The data highlights a tension between the urgency some individuals feel, particularly if experiencing withdrawal symptoms, and the time it takes to conduct thorough drug testing.

> *You see, if you were rattling, if you were withdrawing, you're not waiting, you're not waiting two minutes, never mind 40 minutes to an hour.* (Participant with experience of drug use 7)

> *That's fine, but nobody is going to sit around for that, nobody.* (Participant with experience of drug use 9)

> *Not long. I think it would need to be a kind of direct thing.* (Affected family member participant 4)

The data suggests that, while there is general support for drug testing, the wait time for results could pose a practical barrier. This might be particularly off-putting for those who are in a state of withdrawal. The challenge therefore lies in balancing the need for quick results with the time required for accurate and thorough testing (this issue is also covered at other points in this report as result turnaround time).

*Staffing preferences*
Responses on the topic of who should staff a DCS indicated a preference for a partnership balancing experiential and professional expertise. There was a strong consensus that the service should include individuals who have personal experience with substance use, as well as those with medical training. The staffing preferences for a DCS varied but leaned heavily towards including those with lived experience of substance use. This diverse staffing model, they suggest, would bring both credibility and empathy to the service, thereby making it more effective and relatable to those who would use it.

> *Like, ex-users and stuff. Ex-users and people that basically care.* (Participant with experience of drug use 8)

> *I definitely think ex-addicts have got to be involved, because I don't care what other people say, you cannot just read it and… you've got to live it, and you've got to understand and have empathy.* (Participant with experience of drug use 9)

> *Volunteers… because they're passionate. Because they actually give a shit about people not dying and people being safe.* (Participant with experience of drug use 17)

> *Trained medical staff, psychiatrists, psychologists.* (Affected family member participant 4)

In terms of acceptability of DCS, the findings from the SDCF interviews suggest that while there was broad support for the concept of a DCS, there would be challenges that would need to be addressed including result turnaround time and the staffing of the service. The interview data also indicates concerns about the types of populations that might find the service more or less acceptable, emphasising the need for an inclusive approach that caters to as wide a range of user needs.

## Barriers and operational challenges to a drug checking service

While participants generally expressed a positive outlook on the concept of a DCS in Edinburgh, there were also significant concerns about the potential barriers and operational challenges that could hinder its effectiveness or accessibility. These concerns ranged from societal stigmas to legal issues involving police engagement and criminalisation.

*There'll be the naysayers, and there'll be the people who'll no doubt not want it.* (Affected family member participant 3)

*A lot of folk on the streets and users and that, maybe mistrust authorities like the police in an official sense.* (Participant with experience of drug use 13)

*The criminalisation aspect of it of course is going to be there.* (Affected family member participant 2)

Addressing these barriers was viewed as requiring a multifaceted approach that takes into consideration both the social and legal complexities surrounding DCS.

### Potential unintended consequences

Finally, this theme raises the complex expectations and concerns participants had about the unintended consequences of a DCS. Both positive and negative impacts are considered in their reflections.

*I think it's going to make trouble, because if I score a bit of kit* [heroin] *and then I go and they test it, and it's not that, I'm going back to tell them, that's not the right percent.* (Participant with experience of drug use 9)

*It could make [the drug market] collapse in a way.* (Participant with experience of drug use 15)

*You're only giving people excuses to carry drugs about with them.* (Participant with experience of drug use 16)

*Something needs to change and if it means that these drugs are getting legalised for the sake of getting monitored, that's definitely the way to go.* (Affected family member participant 4)

These comments indicate participant views that implementation of a DCS may raise potential unintended consequences, both positive and negative, from disrupting the drug market to potentially enabling drug use, and perhaps even paving the way for more regulated and safer drug use.

## Discussion

This discussion utilises the main DCS study findings which explored the views of 11 participants (professionals and people with experience of drug use) combined with interview data from the 'sister' SDCF study where another 14 people with experience of drug use and four affected family members were also asked specific questions about the feasibility and acceptability of DCS in Edinburgh. Overall, participants described a need for, and support of, DCS in Edinburgh. It was noted that DCS may have a number of benefits including: increased information about substance contents potentially leading to adoption of safer drug use practices amongst people who use drugs; potential for increased engagement with wider harm reduction interventions; increased systemic capacity for drug market monitoring; and potential changes to drug markets. Participants often noted that individuals with a wide range of drug use histories and experiences may wish to access the intervention. This means that there should be consideration of the suitability of particular service designs for engaging different groups of people who use drugs. The three participants with experience of drug use noted that they would use DCS in Edinburgh, contingent on various service design considerations. Participants with

experience of drug use in the SDCF study also explained they would use such a service, noting the importance of DCS to people who use drugs, as well as the potential for public health and wider drug policy. This echoes research conducted with participants in Aberdeen, Dundee and Glasgow, where participants with experience of drug use and affected family members described a strong perceived need and demand for DCS (29).

Participants noted that locations for DCS integration may vary in their suitability for different groups of people who use drugs. For those considered to be at higher risk of experiencing drug-related harm, recovery hubs, homelessness services, or a SDCF (if implemented in Edinburgh) were thought to be the most suitable sites. This was due to the perceived advantages regarding current/potential engagement with people who use drugs, preferred staffing, and service location. Challenges were also noted, particularly the view that that recovery hubs, homelessness services, and SDCF were not typically seen as accessible to wider groups of people who use drugs, many of whom are not in contact with drugs services. The potential stigma of accessing these sites, and the perception that they would not provide a relaxed and informal atmosphere for many, were described as key barriers to engagement. Participants generally perceived informal settings that were less aligned with formal drug treatment as more suitable for a wider spectrum of individuals. Crew was noted as a potentially suitable location for such purposes, given its relaxed, drop-in atmosphere. Additionally, it was felt that the stigma associated with accessing Crew may be lower, as individuals could be accessing the service for a number of reasons besides drug checking/drug-related interventions. Participants in the SDCF study also noted the importance of the DCS being flexible, accessible, and user-friendly, and located in a place that would ensure those who need the service most would be able to access it.

There were mixed perceptions of the suitability of both a mobile drug checking van and a pharmacy based DCS. Both settings produced varied responses in relation to the discretion and confidentiality they would provide, which groups they would be most suitable for engaging, and their general feasibility. It should also be highlighted that a mobile van may not be a feasible model of delivery due to current legal and licensing considerations. Although some participants noted that a mobile model could target various 'drug hotspots' within the city, it is unlikely that a Home Office licence would be granted for a DCS van. The mixed perceptions of both models (pharmacy and mobile) suggest the need for further consultation with people who use drugs about their suitability. However, generally, other options (such as Crew, recovery hubs, homelessness services, or SDCF) were seen as more feasible locations for delivery.

While participants discussed the advantages of several DCS models, they also noted challenges relating to the accessibility of such services. In particular, they highlighted that one site may not meet the needs of everyone who uses drugs in Edinburgh, something that was also highlighted in the study untaken on the other three cities (28). Participants noted that people would be unlikely to travel to the city centre to access DCS, meaning that the recovery hub locations across the city may be more suitable. Overall, distributed models of DCS may be feasible where substances could be submitted and then transported to a lab-based service for analysis, rather than having multiple DCS across the city. Postal provision may also be a feasible option. Some participants noted that this may be particularly suitable for those who wish to remain anonymous and not want to enter a fixed-site service. However, this may be seen as duplicating existing provision such as WEDINOS to which people in Scotland can already submit substances (although WEDINOS may have waits of up to 3-4 weeks).

Participants in both the DCS and SDCF studies discussed a range of further service delivery considerations. Consistent with the literature, the importance of DCS delivery in a low-threshold, accessible, and non-judgemental space was highlighted, alongside wider support provision (25,28,34,35). Due to potential concerns among prospective service users about negative consequences of accessing DCS, participants stressed the importance of providing a discrete and confidential service. It was noted that service users would need to trust that their information would

not be shared, for example between the DCS and drugs services, and this would be a central factor in determining uptake of the intervention.

A number of issues relating to the testing/analysis process were discussed. Participants stated that a DCS should only require the smallest amount of a substance possible for the analysis process, reflecting the wider literature (9,22,29). In relation to the time taken to provide results, participants in both studies often stressed the importance of being able to conduct rapid testing, particularly for those who may face challenges around withdrawal and a range of other competing demands on their time (income generation, sourcing drugs, finding accommodation). This is consistent with some existing research on DCS (9). It should be noted, however, that all three participants with experience of drug use stated that they would be willing to wait longer periods of time for result (up to a week), although those in the SDCF study were unsure if individuals would wait for their results. While some evidence on DCS suggests the importance of quick on-site testing, particularly for individuals at higher risk, there are examples of services with longer waiting times and high levels of engagement (18). Given the limited number of participants with experience of drug use in the current study, there is a need for further consultation on this issue.

Participants often noted that service users would likely want information on substance strength (quantitative information) in addition to information on substance contents (qualitative information). Being able to provide this information may increase the harm reduction utility of DCS, enabling individuals to dose more accurately (36). Despite the potential importance of information on substance strength, all participants with experience of drug use noted that they would still access a DCS if it were only able to provide qualitative information. Participants noted that, while highly specific information on strength may not be available in all cases, it may be possible to provide approximations/estimations of strength which may still be valuable for informing dosage. The importance of clearly explaining the potential limitations of testing to service users was highlighted, in line with existing literature (37).

Some participants noted that service users could be offered the opportunity for more detailed results through lab-based testing, particularly where results provided on-site were limited or inconclusive. However, this may entail logistical, funding, and resource challenges, and depends on the capacity of a lab-based service to analyse significant numbers of substances. More generally, whilst it may not be feasible to provide lab-based results to individual service users, building a lab-based component into DCS provision has a number of advantages. Transporting a selection of substances to a lab for further analysis enables evaluation of the effectiveness of equipment used on site, by comparing on-site and lab-based results. It should be noted that this approach is being planned by Aberdeen, Dundee, and Glasgow, where a central lab-based service will provide national 'confirmatory' (highly accurate) analysis on a proportion (yet to be determined) of substances from each city.

While considerations around equipment and methods utilised for DCS analysis are highly complex, it should be noted that Scotland has a developing infrastructure and expertise around equipment which can be drawn on. For example, the Leverhulme Research Centre for Forensic Science (University of Dundee) are currently validating equipment for use in DCS, focusing on detecting and identifying novel benzodiazepine compounds. Local and national drug checking expertise can thus be drawn on for implementation in Edinburgh.

Participants discussed a range of potential means of communicating results to service users including in person, over the phone, via text, or online. Participants in the SDCF study noted the importance of technological options for communication, including alerts. Each mode of communication may entail a trade-off between flexibility, convenience, and anonymity on the one hand, and the capacity to provide in-depth harm reduction consultation on the other. There has been limited research on the

trade-offs involved with various communication methods, or on service user preferences in this regard. However, existing DCS offer examples of different models for communication of results (38).

Participants noted that DCS staff should be knowledgeable about a range of issues relating to drug use including dosage, poly-drug use, and risks and effects of drugs. It was noted that staff in the existing services in Edinburgh tended to have many of the requisite skills and knowledge. Although not discussed by participants, an important consideration for DCS delivery is the level of expertise required to operate equipment and interpret subsequent results. This will depend on the equipment being used and substances being tested, and the level of detail the service aims to provide (2,39). There is some evidence that those with expertise in chemistry/drug checking may be best placed to interpret drug checking analysis results with sufficient accuracy (2). However, this may entail an unfeasible cost, and services often rely on existing staff members to carry out testing (11). Drawing on existing DCS to provide training can ensure staff are sufficiently equipped to carry out the analysis process.

The importance of staff with lived/living experience (often known as peers) was underscored in participant accounts in both the DCS and SDCF studies. There is evidence that, for DCS and harm reduction interventions more generally, the involvement of peer staff may facilitate engagement and create a sense of safety and trust (35,40–42). Involvement of those with living experience (i.e., still using drugs) was described as important by one participant for building relationships between the service and people who use drugs. Whilst involvement of those with living experience may entail practical challenges, there are successful examples of such practice internationally (43).

Police activity in the vicinity of a DCS was described as an important implementation consideration in both studies. Whilst DCS would be required to operate with a Home Office licence in Scotland, offering legal protection for the service and staff, such licences offer limited protection to individuals when entering, leaving, or travelling to a DCS (i.e., whilst in the vicinity of the service)(33). It was noted that concerns over potential interactions with the police when accessing the service may act as a barrier to engagement for some. As noted by several participants, integration of DCS into existing harm reduction services is valuable in this regard as an individual could be accessing a number of interventions other than drug checking (reducing grounds for stop and search). Significant groundwork has been undertaken in relation to the policing of DCS in Scotland as part of the national project run by the University of Stirling, and Police Scotland colleagues sit on the Scottish drug checking implementation group that currently meets monthly to discuss progress and national considerations. Meetings have also been held with colleagues from Crown Office and Procurator Fiscal Service (COPFS) over the past three years with regards to drug checking in Scotland.

Participants described the importance of bringing together a range of parties in the planning and implementation phase. This was seen as a means of pooling varied expertise and perspectives, highlighting, and working through challenging issues, and clarifying respective roles and responsibilities. Previous research on DCS implementation and planning in Scotland has highlighted the benefit of multi-agency collaboration given how complex DCS are to implement with intersecting legal, logistical, scientific, and resource issues to be considered.

Participants noted the importance of considering potential community perceptions during the implementation process. While there has been limited research on community perceptions regarding DCS, research on SDCF has highlighted the importance of community consultation and engagement in managing any community tensions (44,45). However, participants had mixed views on the extent to which extensive community consultation would be required for DCS implementation, with some stating that adding drug checking provision into an existing harm reduction service may make little difference to issues of public amenity or concern.

A crucial point of discussion was the highlighted need for further consultation with people who use drugs on issues around service design and delivery. Participants felt that consultation should aim to engage diverse groups of people who use drugs, drawing on trusted community spaces and services to facilitate such engagement. Given the limited number of participants with experience of drug use in the current research, it is important to build consultation into early stages of planning and implementation to ensure that services are designed in an appropriate manner. The current research may provide a template for doing so, by highlighting important aspects of service design for further exploration.

### Limitations

It is important to note the study limitations. We were only able to speak with three people with experience of drug use, two of whom reported using what would be considered to be recreational drugs. Substantial effort was made to recruit participants with experience of drug use including circulating the study information around multiple third sector services and staff and sharing the information on social media through a local service. A number of arranged interviews with people with experience of drug use did not go-ahead due to lack of response to contact attempts from the researcher. For this reason, the views of some of the key potential beneficiaries (such as older people, men, and those using opioids) are not represented in the main drug checking study, and their views may differ somewhat from those involved in the study. As we have noted above, consultation with a wide range of people who use drugs across Edinburgh will be an essential part of any next stages of planning and implementation. We were also unable to speak to any affected family members, despite considerable efforts to include them. A number of organisations across Edinburgh who work with affected family members were contacted and they provided information about the study to their members. However, no participants were identified, with affected family members declining as a result of not being 'in the right space' to contribute.

Because of the challenges encountered above in recruiting lived experience and affected family member interviewees, we have included data from a wider range of people with experience of drug use and affected family members through the SDCF study. We developed a set of specific questions on DCS and embedded them in the SDCF interview schedule. While these interviews were not as detailed as those provided in the main DCS study, importantly, the findings do generally echo those presented in the main study. In addition, previous research has shown that family members of those who use drugs may have interest in accessing DCS (46), and previous research in Scotland has highlighted a perceived need for DCS amongst family member participants (16). Future research on DCS, in Edinburgh and more widely, would benefit from the inclusion of this stakeholder group.

## Recommendations

The City of Edinburgh Council and the Alcohol and Drug Partnership should take steps to introduce drug checking services (DCS) in the city. Several models and locations of DCS have the potential to reduce drug related harms in Edinburgh, and approaches serving a range of potential users should be explored.

- For those at highest risk of drug-related deaths and harms, DCS within recovery hubs, homelessness services, community pharmacy, and safer drug consumption facilities (SDCF) would have the greatest acceptability and impact. For this group, local and quick access to results (ideally with additional lab testing to follow up and provide surveillance) are key considerations

- For wider groups of people who use drugs, sites such as Crew may be more appropriate as they opportunities for a low threshold, drop-in service which may be broadly acceptable and accessible for individuals with a range of experiences and preferences. Postal services or multiple drop off locations may supplement this provision. For this group, there may be a lower premium on immediacy of response

To this end, we recommend the following next steps.

### Consultation

- Carry out consultations with potential providers to explore feasibility in specific locations
- Liaise with those leading development of drug checking within Aberdeen, Dundee and Glasgow, and the national implementation group led by Scottish Government, to apply both practice and policy learning
- Consult further with a range of people who use drugs in the city to explore needs and preferences
- Urgently discuss the feasibility of Edinburgh also using the national lab-based testing services that are currently being developed as part of the national implementation work

### Service development

- Explore the creation of multiple drug checking services in locations across the city, or the establishment of a distributed model where a primary site collects samples from other locations for testing
- Explore options for the creation of city-wide postal provision
- Consider the balance between speed of testing results and comprehensiveness of the analyses in developing service design
- Develop service designs that include:
    - flexibility, ease of access and user-friendly, non-judgmental approaches, including peer support
    - access to other harm reduction interventions
    - operating procedures that ensure safety of staff and people using the service
    - clear plans for design coproduction, including people with lived and living experience

### Legal considerations

- Ensure planning takes account of Home Office licensing requirements, and other national plans for confirmatory testing

### Finance and costs

- Initiation of discussions with local and national government decision makers to ascertain the potential financial envelope for service provision

- Liaison with potential providers to explore costs and feasibility of standalone and integrated provision

### Communication

- Develop a communication plan to provide stakeholders and the public with information about drug checking services, and the place of potential services in the wider treatment, recovery, and harm reduction landscape in Edinburgh.

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# Appendix 1. Perceived advantages and disadvantages of each service model

| Potential models of DCS delivery in Edinburgh |
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| **Fixed-site third sector service (for example Crew)**<br>*Advantages*:<br>• Participants can attend for a number of reasons, and Crew is less associated with drug treatment than other services (such as the recovery hubs), potentially lessening perceived stigma and creating a discrete service.<br>• Relaxed and friendly 'drop-in' atmosphere.<br>• Potentially accessible and appropriate for individuals with diverse experiences.<br>• Offers additional interventions, resources, and signposting (including an on-site counselling service).<br>• Centrally located and near transport links.<br><br>*Challenges:*<br>• May not be suitable for engaging those at highest risk (who may already be accessing the recovery hubs). May not be accessible for those located outside of the city centre, particularly more marginalised individuals.<br>• DCS delivery may change the dynamic for existing service users (primarily young people) if the intervention engages wider groups. |
| **Mobile van**<br>*Advantages:*<br>• Some viewed a mobile model as flexible and accessible to a variety of individuals (although not all agreed with this perspective).<br>• Could be suitable for those who do not want to engage with a fixed-site DCS.<br>• Potentially responsive to various drug use and harm hotspots.<br>• Existing mobile harm reduction infrastructure and expertise in Edinburgh.<br><br>*Challenges:*<br>• Potentially not discrete and could create community resistance.<br>• Potentially vulnerable to law-enforcement interruption.<br>• Depreciation of the van.<br>• Seen as less-cost effective than a fixed-site service.<br>• Challenges securing adequate insurance.<br>• Legal and security challenges. |
| **Recovery hubs**<br>*Advantages:*<br>• Optimally located across the city.<br>• Existing staff expertise and delivers multiple interventions.<br>• Potentially suitable for engaging those at highest-risk of drug-related harm.<br><br>*Challenges:*<br>• Potentially not suited to engaging wider groups of people who use drugs.<br>• Potential concerns about accessing DCS amongst those on MAT.<br>• High level of demand already placed on staff. |
| **Pharmacy setting**<br>*Advantages:*<br>• Individuals attend community pharmacies frequently to access IEP and MAT.<br>• Some pharmacies operate in a psychologically informed manner and may be suitable.<br>• May be suitable for wide range of individuals (although conflicting views on this, suggesting a need for further consultation).<br><br>*Challenges:*<br>• People who use drugs have experienced stigmatising practice in some pharmacies. |

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| • Concerns over privacy and discretion afforded.<br>• Pharmacies may have limited space and capacity.<br>• Pharmacies often stretched and under-resourced. |
| **Homelessness services**<br>*Advantages:*<br>• Potentially suitable for engaging individuals at high risk of experiencing drug-related harm.<br>• Harm reduction interventions already offered.<br>• Potentially discrete (individuals could be attending for a number of reasons).<br><br>*Challenges:*<br>• Less suitable for engaging wider groups. |
| **Supervised drug consumption facilities**<br>*Advantages:*<br>• Suitable for engaging those at high risk of experiencing drug-related harm.<br>• Likely to be co-located with multiple interventions.<br><br>*Challenges:*<br>• Less suitable for engaging wider groups.<br>• Not yet implemented in Scotland (although legal statement now in place by Lord Advocate for Glasgow). |