DRNS
DRUGS RESEARCH NETWORK SCOTLAND

Evaluation of the Digital Lifelines Scotland Programme

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Report to
Digital Lifelines Scotland

from the
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Authors:
Catriona Matheson, Hadi Daneshvar, Hannah Carver, Graeme Strachan, Jess Greenhalgh and Joe Schofield.

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Author contributions

Catriona Matheson (CM): Conceptualisation, evaluation design, ethics, project management, survey development, data analysis (survey), writing, editing and finalising report;

Hadi Daneshvar (HD): Ethics, survey development, recruitment (survey), data collection (survey/interviews), data analysis (survey/interviews/secondary data), write up (survey/interviews/secondary data), drafting and editing of report;

Hannah Carver (HC): Ethics, project management, liaison with programme team, interview development, recruitment (interviews), data analysis (interviews), write up of findings (interviews), writing, editing and finalising report;

Graeme Strachan (GS): data collection and analysis (interviews and survey), write up, report preparation;

Jess Greenhalgh (JG): programme admin, data collection (interviews), editing of report;

Joe Schofield (JS): data analysis (interviews), write up (interviews).

List of Abbreviations

DDTF	Drug Deaths Taskforce
DHI	Digital Health and Care Scotland
DLS	Digital Lifelines Scotland
DRD	Drug-related deaths
DRNS	Drugs Research Network Scotland
eHealth	Electronic health
mHealth	Mobile health
ODART	Overdose detection and response technologies
SCVO	Scottish Council for Voluntary Organisations
PT	Programme team
SAtSD	Scottish Approach to Service Design
SP	Service providers
SU	Service users
TEC	Technology enabled care
TPOM	Technology, People, Organisations, and Macro-environmental Framework
TPS	Turning Point Scotland

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Executive Summary

Background

Scotland's drug death crisis requires a range of innovative solutions. The COVID-19 pandemic signalled the start of a realisation that digital technologies could reshape services and offer person-centred developments to strengthen support for people at risk of drug-related harm such as overdose. For this to happen, the public and voluntary sector supporting this group needed to be appropriately digitally able and connected. Against this backdrop, the Digital Lifelines Scotland (DLS) programme, run by the Scottish Government's Digital Health and Care Directorate was formed. It was a partnership between the Drug Death Taskforce (DDTF), Digital Health & Care Innovation Centre (DHI), Scottish Council for Voluntary Organisations (SCVO), Turning Point Scotland (TPS), Drug Research Network Scotland (DRNS) and Connecting Scotland. The programme was delivered through targeted funded initiatives referred to as Early Adopters 1 and Early Adopters 2.

Delivery of this programme was through a combination of activities:

- providing devices and connectivity for people with multiple and complex needs and to the staff and volunteers who support them;
- building the digital confidence and skills of people with multiple and complex needs at risk of drug related harm and staff who support them;
- developing new digital services and approaches that will benefit people in their daily lives, recovery and personal development;
- increasing understanding of the digital needs of people at risk of drug related death through data collection and evaluation;
- gathering and exchanging knowledge and experience of the systems, services and solutions that work effectively through a community of learning.

The DRNS, based at the University of Stirling, was tasked with evaluating the programme as well as supporting data collection around users' needs and reviewing the literature and evidence base around the use of digital technology to support people at risk of drug related harm.

Aim and Objectives

The aim of this study was to evaluate the main DLS programme using the Technology, People, Organisation and Macro-environment (TPOM) framework. The specific objectives were to:

1. consider the impact of the availability and use of digital technology on service users;
2. consider the impact of the availability and use of digital technology from the perspective of service providers and stakeholders;
3. identify gaps, barriers and enablers to meaningful adoption and engagement with digital technology in the service environment, organisation and macro-environment;
4. review whether the DLS programme has met its aims.

Methods

A mixed methods approach was applied, guided by the TPOM framework, which involved qualitative data collected via semi-structured interviews and quantitative data collected via a survey and secondary data provided by the programme team. Three groups of participants were included in the data collection:

1. Service users (survey and interviews)
2. Service providers of digital technology innovations (survey and interviews)
3. Programme team and board (interviews)

Results

Survey data were collected from 19 service users and 31 service providers. Interviews were conducted with 21 service users, 14 service providers and 12 wider stakeholders from the programme board and delivery team. Summarised key findings are presented below:

- The programme reached 274 beneficiaries through Early Adopters 1, and 965 through Early Adopters 2, via a range of devices and connectivity.
- The attrition rate through lost/stolen/sold devices was estimated to be around 10%. Even when individuals sold their devices as an emergency response to financial hardship, they would often pawn them and then re-purchase them.
- Smartphones and data connectivity were the most frequently requested technology. The usability of devices was viewed as particularly important.
- Training alongside provision of technology is important.
- Whilst some service users had concerns about their data security, service providers felt this was easily addressed through training and explanation.
- Service users still require training in basic digital literacy such as computer basics and use of the internet.
- Access to the internet enabled service users to access a range of harm reduction and health information and simply to connect with family and friends.
- Simple applications like the calendar function enabled engagement with appointments.
- Basic digital literacy skills were good for service providers.
- Service providers make considerable use of text and WhatsApp messaging to connect to clients.
- Digital technology was viewed as a way of making connections with service providers, friends and family, other health/social care services, improving wellbeing, and to support education.
- Service providers noted challenges around capacity and knowledge regarding data security, as well as issues around the time taken to procure devices.
- Person-centred approaches to digital technology provision were deemed important. Digital champions were viewed as integral to this, providing digital and other supports.
- The community of learning was viewed as an important resource for service providers, enabling effective practice and challenges to be shared.
- The wider context was important, in terms of how the programme was perceived and received.

Conclusion

Digital Lifelines Scotland is a progressive and novel programme that provides social inclusion and a platform for engagement for service users and those at risk of drug related harm. The personal and social benefits of the supply of devices and connectivity were acknowledged, appreciated and valued by participants. This was evidenced by a lower than anticipated rate of devices being lost/stolen/broken/sold. Service providers offered more than digital support, with emotional and personal support available to service users as a result of the connection through digital technology. There are challenges to be addressed such as service users' anxieties around data security. Furthermore, there is a need for a programme of training for service providers and services users to ensure they can fully embrace the opportunities that digital connections can provide.

Organisations and services are at the start of a potential cultural shift towards digital transformation, which could be enabled in a very meaningful way by the DLS programme. Future activity should move from device supply to digital services. Moving forward, the programme should use this

evaluation evidence to direct the narrative and (indirectly) challenge the stigmatising views that may still exist in wider society. Access to digital technology is no longer a luxury but a necessity in the modern health and social care arena.

Recommendations

1. Digital champions should be recruited from services to provide a locus of activity for training and support of staff and service users.

2. The DLS programme could coordinate the further training of specialist digital champions with expertise in developing online resources for services.

3. The emphasis on smartphone use necessitates the awareness of training and applications that can be used with a smartphone i.e., on a small screen.

4. The programme should continue the community of learning approach and extend this to include other services.

5. The community of learning should be used to foster the culture change across organisations that will enable:
   -understanding training needs
   -the importance of sustainability of engagement
   -development of digital solutions
   -promotion of cross-sector working

6. Future programme criteria need tighter inclusion criteria of the services and organisations which are given funds. This should be more specific in including people at risk of drug-related harm.

7. The programme should have more emphasis on harm reduction services whether third sector or statutory. The Scottish Drug Forum network of living experience groups would be an ideal network for inclusion.

8. Digital transformation initiatives need to be planned and launched in order to offer reformed and new services to tackle the challenges in the sector.

9. To address stigma, the DLS programme should be bolder in communication of the benefits of digital inclusion for people who use drugs. This will require some strategic communication support to ensure the messages are strong and based on the evidence presented.

10. The website should be further promoted as a focus for sharing information about the programme including the positive stories as well as areas for further development.

11. The TPOM and TPOM ODART should be used in future evaluations in which there is suitable qualitative analytical expertise.

12. The TPOM and TPOM ODART should be developed into a structured questionnaire tool that is validated for further use. This would provide a tool for non-specialists to apply in the future evaluations.

1. Introduction

1.1 Background

Scotland is experiencing an ongoing public health crisis of drug-related deaths (DRD). At the start of the Digital Lifelines Scotland (DLS) programme in 2021, 1339 DRD were recorded in Scotland, more than double the figure for 2008. Since then, 1330 DRD were recorded in 2021 and, for the first time, there is estimated to be a reduction of DRD in 2022 (Scottish Government, 2022). The Scottish DRD rate is three times that of the UK as a whole and is the highest in Europe (NRS, 2021; 2022).

The Drug Deaths Taskforce (DDTF) was established in 2019 to address the DRD crisis and public health emergency in Scotland. Along with a number of direct actions, the DDTF endorsed the potential for digital technology to play a part in reducing risk and harm for people who use drugs in the longer term (DDTF, 2022). A range of digital technologies for overdose detection and response are being specifically developed or repurposed to support those at risk of overdose. These are referred to as ODART (Overdose Detection and Response Technologies) in a recent review (Oteo et al., 2023) and are being supported nationally through the Scottish Health and Industry Partnership (SHIP) programme.

In parallel to ODART, a range of simpler existing technologies (e.g., the internet, smartphones, social media, web and mobile applications), were being adopted by services to support people at risk of DRD. The COVID-19 pandemic facilitated the adoption of services using technology with many consultations being conducted by telephone and support services and groups moving online. This initiated a cultural shift in which it was acknowledged that people need to have greater access to digital solutions to help keep them safe and enable them to become and remain connected to family, friends, and support services. The pandemic signalled the start of a realisation that digital technologies could reshape services and offer person-centred designs and developments to strengthen support for people at risk of DRD. The public and voluntary sector that provides services for this group needed to be appropriately digitally connected and collaborative, developing joined-up services and exploring innovative solutions together. This was the foundation of the DLS programme.

1.2 The Digital Lifelines Scotland (DLS) programme

The DLS programme, run by the Scottish Government's Digital Health and Care Directorate, was a partnership between the Drug Deaths Taskforce (DDTF) Digital Health and Care Scotland (DHI), Scottish Council for Voluntary Organisations (SCVO), Turning Point Scotland (TPS), Drugs Research Network Scotland (DRNS) and Connecting Scotland (Scottish Government, 2021). Delivery of this programme was through a combination of activities, including:

- providing devices and connectivity for people with multiple and complex needs and staff who support them;
- building the digital confidence and skills of people with multiple and complex needs at risk of drug-related harm and staff who support them;
- developing new digital services and approaches that will benefit people in their daily lives, recovery and personal development;
- increasing understanding of the digital needs of people at risk of DRD through data collection and evaluation;
- gathering and exchanging knowledge and experience of the systems, services and solutions that work effectively.

By March 2023 the programme aimed to have established a range of digital solutions and re-designed services to meet the needs of people with multiple and complex needs who are at increased risk of drug-related harm, specifically that:

- people have greater access to digital solutions, have skill and motivation to use them, and are confident in utilising them, to keep them safe and enable them to become and remain connected to family, friends and relevant services that support them;
- the services that support these citizens have the digital means to develop and strengthen the support they provide, and staff are skilful in using and developing digital solutions to enable those they support;
- the sector is digitally connected and collaborating, developing joined-up services and exploring innovative solutions together.

The DLS programme initiated activities with what was called the early adopters 1. This was a group of organisations which had received DDTF funds for initiatives aimed at reducing the risk of drug-related harm. This was considered to be part of early developmental work that would shape the direction of the programme (alongside other work streams). Following this there was a funding call via SCVO and organisations who received this funding were referred to as early adopters 2. Both early adopters 1 &2 were invited to take part in a community of learning, organised by the DLS delivery team. These were face-to-face meetings at which progress and challenges were shared, and solutions discussed.

The DRNS is an integral part of this programme and was specifically tasked with designing and undertaking the evaluation of the programme, facilitating the active involvement of key partners. The evaluation was undertaken as technologies were adopted through initiatives, by a range of services and stakeholders who received programme funds to provide digital technological support to people at risk of drug-related harm.

1.3 User needs summary

To inform the DLS programme, user needs were assessed by the DRNS evaluation team during 2021. Data were collected information from 79 people who used drugs and were at risk of drug-related harm, and 79 service providers, using surveys and focus groups.

There was synergy between the findings from people who use drugs and those who provide services, and between survey and focus group findings. Notably, the majority of participants who identified as people who used drugs had access to digital devices and the internet, but this was not without challenges and did not necessarily capture an experience of digital inclusion. There were gaps in access to technology and there was a reliance on mobile phones, with less access to desktop, laptop or tablet computers. Whilst survey data indicated many had connectivity at home, focus group data suggested that paying for connectivity was challenging for some. People used technology to connect with friends/family and service providers, but the highest reported use was to access information on health and social problems, followed by information on drug use. There was a clear need expressed for support to access and use digital technology. The benefits of connection with service providers and peer support were strongly expressed as a means to reduce risk of harm. Participants had creative ideas to address identified needs and expressed a strong motivation to be involved in developing solutions and in leading these initiatives.

1.4 International evidence on the use of digital technologies

A review of the international literature was undertaken by the evaluation team to identify what technologies have been used or have the potential to be adopted by people who use drugs, their reported benefits, views on the potential use of technologies, and evidence of effectiveness. The review scoped and combined two broad concepts: 1) digital technologies and 2) people who use drugs. The review identified 68 papers, a third of which were literature reviews. Most of the studies (74%) were conducted in the United States, and the remaining conducted in the UK, Canada, Ireland, India, Greece, and France.

Notably three-quarters of the papers (n=51) were published after 2019 indicating that the COVID-19 pandemic had a significant impact on research and innovation in this field, reflecting a shift around the world from traditional models of service provision to services through digital means. Many study authors observed how these technologies could change the way in which existing services were provided or had led to the offering of new digital services. When we compared the studies published before and during the pandemic, we observed the accelerated implementation and use of digital technologies as a result of services having to move online or use digital technology. However, overall, the number of studies published specifically on digital inclusion or the needs of people who use drugs was limited.

The largest category of empirical studies (n=24 papers) was on the topic of telehealth. These papers evaluated and researched the effectiveness of the telephone and video interventions and explored how service provision was changing from physical and in-person to remote digital services. Different topics were examined such as the treatment of patients through the use of phone or video call, digital recovery services, digital therapeutic services, digital support services and online training. Other studies compared the telehealth service versus physical services.

Another strong theme (n=16 papers) was mHealth (mobile health) which refers to the use of smartphones, applications, and the internet for service provision. These papers discussed the uses of mHealth, its effectiveness, or the evaluation of applications developed in this field. Aspects evaluated were the use of mobile applications for treatment, behavioural treatments, recovery, and the social aspect of using applications. A number of studies explored different functionalities of developed applications. Other papers evaluated smartphone applications. Some studies investigated mobile phone and internet use by different groups of people who use drugs. Prescription monitoring services were also covered.

A number of papers (n=15) focussed on what was referred to as eHealth (electronic health) services which covered a broader area of digital technology. These studies focused on treatments, behaviours, and recovery services. Various aspects of digital technology such as software for assessing risk, assessing the use of technology, and the use of technology by people who use drugs, were topics discussed by these studies. Four papers presented recently published studies on sensors and wearable devices which has also been the subject of a focussed recent review (Oteo et al., 2023).
The descriptions of the individual studies noted above are presented in a separate report (Daneshvar et al., 2022). Of importance, the robust search of the international literature did not reveal any other existing programme like the DLS programme, with the explicit aim of addressing digital exclusion in people with multiple and complex needs who are at risk of drug-related harm.

1.5 Aim and objectives

This work programme aimed to evaluate the main DLS programme using the Technology, People, Organisation and Macro-environment (TPOM) evaluation framework (Cresswell et al., 2020).
Specific objectives of the evaluation were to:

1. consider the impact of the availability and use of digital technology on service users;
2. consider the impact of the availability and use of digital technology from the perspective of service providers and stakeholders;
3. identify gaps, barriers and enablers to meaningful adoption and engagement with digital technology in the service environment, organisation and macro-environment;
4. review whether the DLS programme has met its aims.

2. Methods

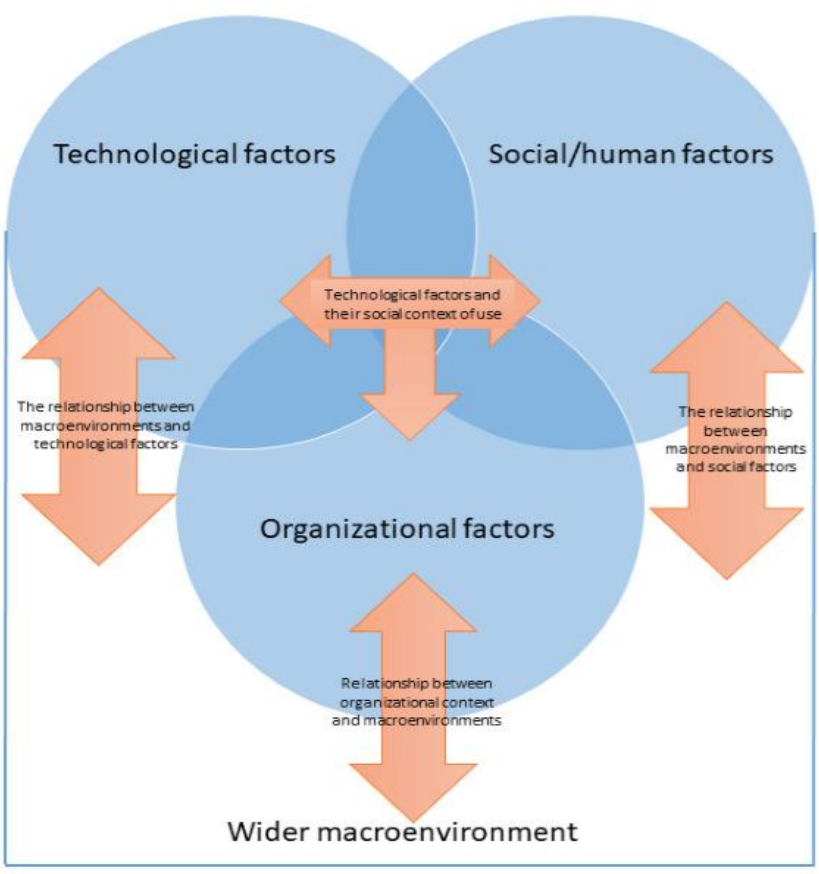
2.1 Study design

A mixed methods approach was applied, which involved semi-structured interviews to collect qualitative data, alongside survey and secondary programme data. The evaluation was guided by the TPOM framework, described below.

2.2 Evaluation framework

An evaluation framework called Technology, People, Organisations, and Macro-environmental (TPOM) was considered the most appropriate for the study because it accounts for the implementation landscape, where a range of technological, people (social/human), organisational, and wider macro-environmental factors play an important role (Cresswell et al., 2020). It is particularly relevant for studying technology in health and social care settings which are complex in nature and require appropriate socio-technical theories to capture the defined dimensions. Applying the framework ensured the four evaluation dimensions of TPOM factors were covered in data collection and analysis. The dimensions of the TPOM that interview data fitted into are presented below:

Figure 1. Diagram of the TPOM evaluation framework



The TPOM also works in a complementary way with the Scottish Approach to Service Design (SAtSD), which guides the DLS programme. There are three aspects which need careful consideration in design of services with the SAtSD: practices, process, and conditions (Scottish Government, 2019). All of these fall within the four evaluation dimensions of TPOM. Furthermore, the formative approach provided by the TPOM supports the discovery, definition, development, and delivery stages highlighted in the SAtSD

as it continually evaluates the various stages and outcomes and provides input for development and delivery of next stages.

2.3 Ethical approvals

Ethical approval was obtained from the University of Stirling General University Ethical Approval Panel (GUEP; 7799), the Ethics Subgroup of the Research Co-ordinating Council of The Salvation Army, TPS, and Shine Mentoring.

2.4 Participants

Three groups were included in data collection:

1. Service users (survey and interviews)
2. Service providers of digital technology innovations (survey and interviews)
3. Programme team and board (interviews)

Inclusion criteria for each participant group were:

Service users: Currently using illicit drugs (or used in the last 12 months) who have wider health and social challenges and are receiving/have received a digital technology-based innovation funded by the DLS programme or had been offered an innovation but refused (interviews only).

Service providers: Managers, frontline staff, and volunteers working in third sector organisations that have received funding under the DLS programme. This includes third sector organisations who provide harm reduction services, counselling, and housing support.

Programme team: Those involved in the programme delivery team and the programme board of the DLS programme. This included Technology Enabled Care (TEC), TPS, SVCO, DRNS, DHI, Scottish Government and the DDTF.

Exclusion criteria were people aged under 18 years; unable to provide informed consent; unable to speak/understand English; unable to take part due to severe mental health, behavioural problems or under the influence of substances; not currently living in Scotland; not involved in DLS.

Table 1 below displays the participation of target groups across the TPOM domains and data collection methods.

Table 1. Participation across target groups

Participants	Main TPOM Domains	Method	Number of Participants
Service users	Technological Social/human factors	Survey	19
		Interviews	21
Service providers	Technological, Social/human and Organisational factors	Survey	31
		Interviews	14
Programme team and board	Organisational and wider macro-environment	Interviews	12

2.5 Online surveys

2.5.1 Survey tools

The survey tools used at baseline as part of the user needs study were used to allow for comparison of findings (although not applied to the same individuals). In addition, a new section was added on digital literacy, amended from an NHS digital literacy tool (Allbutt et al., 2018). Survey questions differed for

the two groups, but generally covered current use of technology, type of technology used and training and support needs around use.

2.5.2 Survey data collection

An online survey was created (JISC online platform). The survey for both service users and service providers was distributed online by HD via an e-mail link sent to all organisations which had received DLS programme funds under early adopters 1&2. In addition, a printed copy of the QR code was taken to community of learning meetings so that it could be scanned, enabling participants to open the online survey there and then, or take it with them for later completion. The online survey was offered as an alternative to those who might want to participate but were not able to take part in an interview, but participants could complete both if they wished. The survey for service providers was available from 1st August 2022 to 31st January 2023 and from 1st August 2022 to 13th February 2023 for service users. Reminders were sent by the research team (HD) to the service providers as well as reminders at face-to-face community of learning meetings and via the programme team (HD, GS, HC). Consent to participate was requested before the start of the survey using a tick box which then enabled progress to the survey questions. Participants were provided with details of sources of information and support at the end of the survey. Participants were asked not to disclose personal information with which they could be identified. Copies of the surveys can be found in Appendices 1 and 2.

2.5.3 Survey analysis

Survey results were downloaded from the online survey platform and used to generate tables. Basic descriptive statistics were used to describe findings. Free text responses were coded using simple thematic analysis of in Word (Coding Framework in Appendix 3)

2.6 Qualitative interviews

2.6.1 Topic guides

Topic guides were developed by the research team, covering the domains of the TPOM, and informed by the broader DLS delivery work and the user needs study. The topic guide for service users focussed more on the technology and social/human (people) domains by exploring how technology was used, impact on service use and relationships with service providers. Topic guides for the service providers covered the infrastructure of digital services, type of technology available and training and support needs for staff and clients and impact of relationships with service users. The topics covered in the programme team interviews focussed on the impact of the programme and gaps, barriers and enablers at organisational and macro-environmental level. Topic guides are included in Appendices 4, 5 and 6.

2.6.2 Interview data collection

All organisations who received funding from the DLS programme were invited to participate by email (HC) and to support recruitment of other staff/volunteers and of service users. Details of the interviews and participant information sheets were distributed by email and interviews were arranged either by phone, online or in-person. Service user participants were recruited via service providers; staff participants were recruited via service managers; and programme team participants via email. Written or verbal consent was sought from all interviews prior to each the interview. Interviews were conducted by GS, HD and JG. Service user participants were offered a £10 shopping voucher as an honorarium. Interviews with programme team members and service providers were all conducted using MS Teams, lasting an average of 35 minutes (range 14-58 minutes) with programme team participants and 42 minutes (range 30-66 minutes) with service providers. Interviews with service users were typically shorter in duration and lasted an average of 17 minutes (range 6-30 minutes). All interviews were audio-recorded with permission. Researchers (GS, HD, JG) made reflective notes after each interview to cover contextual information of relevance including how they felt the interview had gone. All participants were provided with debrief sheets at the end of the interviews. The research team also attempted to interview participants who had been offered digital innovations via the DLS programme but declined, but no individuals could be identified by service providers.

2.6.3 Data analysis

All interviews were transcribed in full by an external transcriber who was subject to confidentiality agreements with the University of Stirling, and any identifiable information removed by GS. Transcripts were uploaded to NVivo (version 12). Deductive thematic analysis was undertaken using the domains and sub-domains of the TPOM, with inductive coding allowing for additional themes to be identified and described. Three datasets (service users, service providers and programme team) were created and coded separately. An initial coding framework was developed by GS and HC after coding 2-3 transcripts from service users and service provider interviews and used to code the remainder. GS, HD and JS coded the remainder of the transcripts, with HC checking for clarity/coherence. Data were then combined under the TPOM domains for interpretation and description of findings by HC, GS, HD and JS. In the subsequent findings section of the report quotes are used to illustrate particular points or themes and cover the range of views and experience evident in the data. Quotes are pseudonymised and attributed to each participant group using initials and participant number: PT= Programme Team, SP= Service Provider, SU= Service Users. Care has been taken to ensure identifiable names, places or people are not included.

2.7 Secondary data

2.7.1 Sources of data

The DLS programme team collated data from each participating organisation on the level of participation in the programme, in particular, the number and type of technologies provided, and to whom. This information was shared with the research team to provide contextual information on the reach and coverage of the programme. Data used was based on data available at 1st March 2023.

2.7.2 Secondary data analysis

Descriptive analyses have been undertaken to describe the reach of a range of digital technologies across organisations funded by the programme.

3. Secondary data: Distribution of devices

3.1 Summary of device distribution

Early Adopters 1 provided 184 devices (145 phones, 26 tablets and 13 laptops) and 211 people received connectivity. At the time of reporting this was from five of eight organisation that had received funding (Early Adopters 1 Impact Report, 2022). The breakdown per organisation was not available.

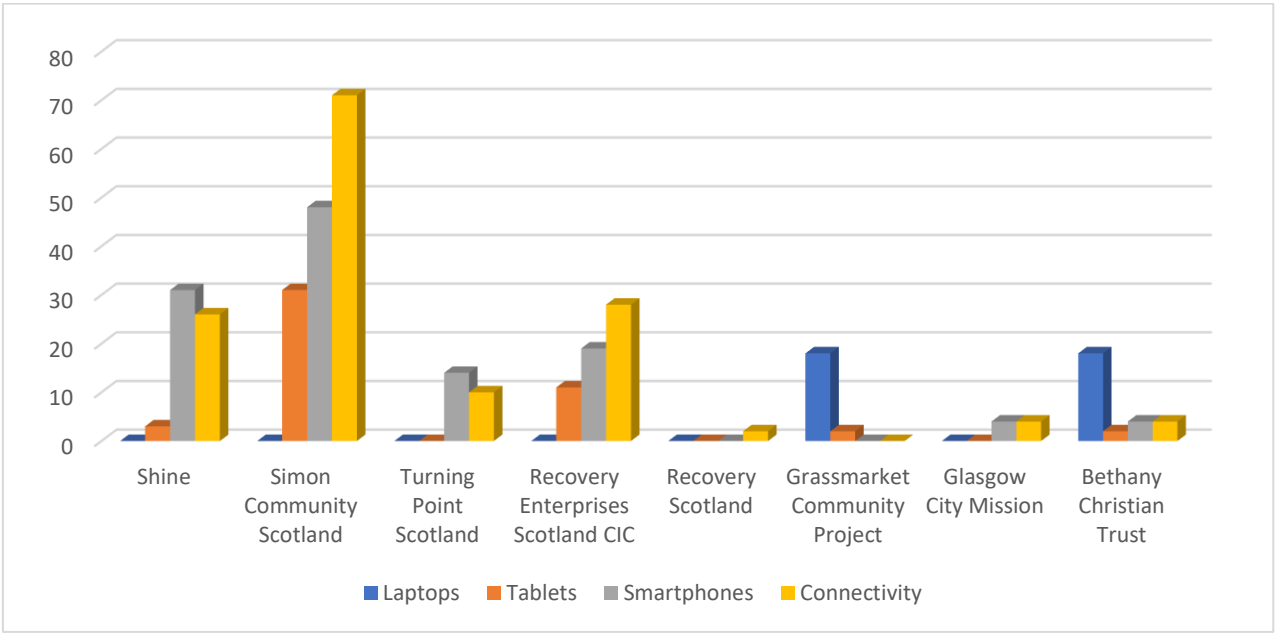
Across the eight organisations who received funds under the Early Adopters 2 programme smartphones and data packages were the most frequently requested technologies. More data was available on these organisations and Table 2 below details the devices received by each organisation.

Table 2. Device distribution by each organisation

Organisation	Laptops	Tablets	Smartphones	Connectivity
Shine	0	3	31	26
Simon Community Scotland	0	31	48	71
Turning Point Scotland	0	0	14	10
Recovery Enterprises Scotland	0	11	19	28
Recovery Scotland	0	0	0	2
Grassmarket Community Project	18	2	0	0
Glasgow City Mission	0	0	4	4
Bethany Christian Trust	18	2	4	4
Total	36	49	120	145

Figure 2 below shows that the different devices that were distributed by organisations which received funding. Simon Community Scotland distributed the highest number of smartphones, with 48 devices, followed by Shine with 31 smartphones. The Grassmarket Community Project and Bethany Christian Trust both received the highest number of laptops, with 18 devices each. Through the programme, 965 people in three categories (people experiencing homelessness, people transitioning from prison and people being discharged from hospital) directly and indirectly, were beneficiaries of devices.

Figure 2. Device distribution for each organisation in Early Adopters 2



4. Survey findings

4.1 Service users

4.1.1 Description of participants

Over the six-month data collection period (August 2022-February 2023), 19 service users (SU) completed the online survey. This included 13 men, four women and two people who did not specify their gender. Nearly half of the participants were aged 40-49 years (42.1%, n=8) and the remaining were 50-59 years old (36.8%, n=7). More than half of the participants resided in a city (68.4%, n=13), with 21.1% (n=4) from a large town and 15.8% (n=8) from a small town, giving a range of geographical coverage. Table 3 below provides participant demographic details.

Table 3. Age, gender and location of service user participants (n=19)

Age group	**Number**	**%**
18-29	1	5.3
30-39	1	5.3
40-49	8	42.1
50-59	7	36.8
60-69	2	10.5
70+	0	0
Gender	**Number**	**%**
Male	13	68.4
Female	4	21.1
Non-binary	0	0
Other	2	10.5
Prefer not to say	0	0
Location	**Number**	**%**
City	12	63.2
Large town	4	21.1
Small town	8	15.8
Rural area	0	0

More than half of the participants lived in ‘council, housing association or social housing’. Almost two thirds of participants lived alone 63.2% (n=13), while the remainder lived with a range of others. Details of living arrangements are displayed in Table 4 below.

Table 4. Living arrangements of participants (n=19)

Type of current accommodation	Number	%
I own my home	1	5.3
Private rented	3	15.8
Council / Housing Association / Social Housing	12	63.2
With family/friends	3	15.8
Living situation	**Number**	**%**
Live alone	13	68.4
Live only with partner	3	15.8
Live with wider family members	0	
Live with people not related to	1	5.3
Prefer not to say	2	10.5
Other	0	0

Around three-quarters of participants had school-level education (n=14), a third had a college education, and one participant did not specify their education. The education level attained is displayed in Table 5 below.

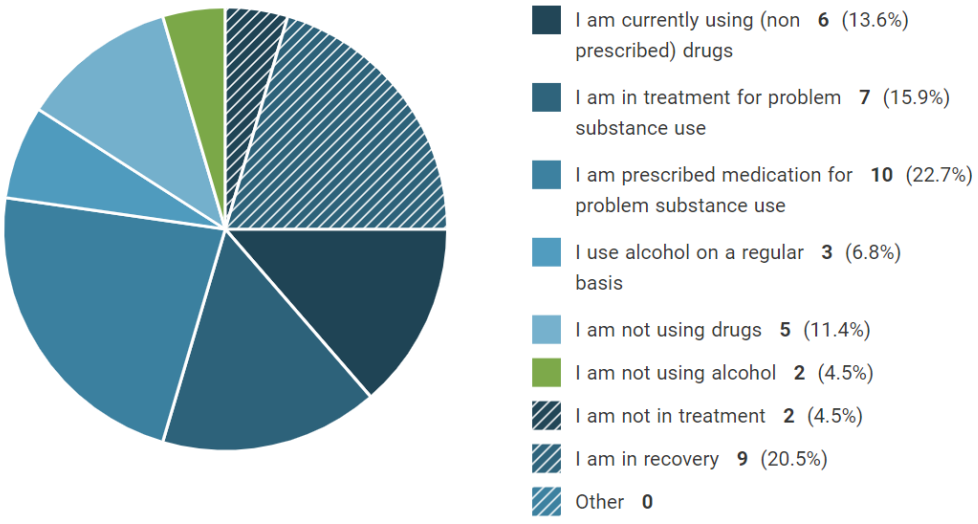
Table 5. Education level (n=18)

School	Number	%
School	14	73.7
College	4	21.1
University	0	0
N/A	1	5.3

4.1.2 Health and substance use status

Almost all participants had long-term physical and/or mental health conditions (94.7%, n=18). Regarding drug and alcohol use, more than half of participants reported taking prescribed medication for problem substance use (52.6%, n=10). Almost half of participants described themselves as in recovery (47.4%, n=9). Over a third were in treatment (36.8%, n=7), with almost the same number using (non-prescribed) drugs (31.6%, n=6). See Figure 3 for more detail on current substance use (note: more than one response was possible).

Figure 3. Current situation regarding drug and alcohol use (n=19)



4.1.3 Access to technology and the internet

More than half of the 19 participants said that they used digital technology for health purposes or social problems (68.4%, n=13). Almost all of the participants owned smartphones (%94.4, n=17), with almost half reporting the device had an internet connection (44.4%, n=8) although it is possible this may not have been also accessible if they did not always have data. A small number of participants had access to desktop computers, tablets, smart watches, or voice assistant technologies. See Table 6 below for full details (note: number of respondents varied for each option).

Table 6. Participants' access to devices and the Internet

Devices	Own		Access to someone else's		Regularly use		Don't have access		Devices connected to the internet	
	N	%	N	%	N	%	N	%	N	%
Smartphone (n=18)	17	94.4	1	5.6	2	11.1	1	5.6	8	44.4
Desktop computer (n=11)	2	18.2	0	0	1	9.1	8	72.7	1	9.1
Laptop computer (n=9)	1	11.1	1	11.1	0	0	7	77.8	2	22.2
Tablet (n=14)	7	50	2	14.3	1	7.1	6	4.29	2	14.3
Smart watch/ wearable (n=11)	2	18.2	0	0	0	0	81.8	9	1	9.1
Voice assistant (e.g. Alexa / Google home / Siri) (n=10)	2	20	10	100	0	0	7	70	1	10

The majority of participants had constant/daily connection to the internet on their mobile phones, (84.2%, n=16). More than half of participants had constant home internet connection (57.2%, n=8). Very few participants used Wi-Fi internet connection in cafés, libraries, buses, or trains, or at a service provider to connect to the internet. See Table *7* below for more details.

Table 7. Access to the internet

Devices	Every day		A few times a week		A few times a month		Less often		Never	
	N	%	N	%	N	%	N	%	N	%
On my mobile phone (n=19)	16	84.2	3	15.8	0	0	0	0	0	0
Home connection (n=14)	8	57.1	1	7.1	0	0	0	0	5	35.7
Work or college connection (n=13)	0	0	3	23.1	0	0	1	7.7	9	69.2
Public Wi-Fi (n=14)	3	21.4	4	28.6	2	14.3	3	21.4	2	14.3
Cafe Wi-Fi (n=12)	1	8.3	0	0	4	33.3	2	16.7	5	41.7
Library Wi-Fi (n=12)	1	8.3	0	0	3	25	2	16.7	6	50
Bus or train Wi-Fi (n=14)	1	7.1	5	35.7	2	14.3	1	7.1	5	35.7
Service provider's computer / Wi-Fi (n=15)	2	13.3	5	33.3	3	20	1	6.7	4	26.7

4.1.4 Purpose of use of digital technology

Data on how participants reported using digital technology are described below. This included connections to family and friends and service providers, as well as to seek information and support relating to health and social problems and drug use.

4.1.4.1 Connections to friends and family

Most of the digital technologies used by participants to connect to their family and friends were text messages and social media. Video calls were also used by almost half of the participants on an everyday basis (43.8%, n=7). See Table 8 below.

Table 8. Use of digital technologies to connect with family or friends

Method	Every day		A few times a week		A few times a month		Less often		Never	
	N	%	N	%	N	%	N	%	N	%
Video call (n=18)	4	22.2	7	38.9	1	5.6	1	5.6	5	27.8
Text message (n=17)	12	70.6	5	29.4	0	0	0	0	0	0
Social networking (n=16)	7	43.8	6	37.5	0	0	0	0	3	18.8
Email (n=17)	2	11.8	9	52.9	3	17.6	3	17.6	0	0

4.1.4.2 Use of devices provided specifically by DLS programme

Almost all of the participants have received devices but one participant did not mention receiving a device. All used smartphones for calls and almost two thirds of them used this for connecting to the Internet. See Table *9*.

Table 9. Purpose of devices received from the DLS programme

	Call		Internet		Text messages	
	N	%	N	%	N	%
Smartphone (n=15)	15	100	11	73.3	10	66.7
Tablet (n=6)	4	66.7	4	66.7	4	66.7
Internet connection (n=5)	4	80	3	60	4	80

4.1.4.3 Connections to service providers

All of the participants who responded to the question (n=15) used text messages (e.g., SMS or WhatsApp services) to connect with service providers to receive support. Email (78.6%, n=11) and social media (71.4%, n=14) were highly used, followed by online chat functions, (60%, n=9), while video calls were the least used service (42.9%, n=6). See Table 10 below for details on the types of technology used for particular ways of connecting with services.

Table 10. Use of technology to keep in touch with service providers for support

	Smartphone		Desktop computer		Laptop		Tablet		None of these	
	N	%	N	%	N	%	N	%	N	%
Video call (e.g., Zoom, Skype, FaceTime) (n=14)	6	42.9	0	0	0	0	2	14.3	7	50
Text message (e.g., SMS, WhatsApp) (n=15)	15	100	0	0	0	0	0	0	0	0
Social networking (e.g., Instagram, Facebook, Twitter) (n=14)	10	71.4	0	0	0	0	2	14	4	28.6
Online chat functions (support organisations, recovery forums) (n=15)	9	60	0	0	0	0	4	26.7	4	26.7
Email (n=14)	11	78.6	0	0	0	0	3	21.4	2	14.3

Note: more than one response was possible

4.1.4.4 Use for health or social problems

Over two-thirds of participants used digital technologies to access information and support relating to health or social problems (68.4%, n=13). Internet searches were used regularly or on a daily basis by one third of participants (35.3%, n=6). Furthermore, four participants who did not use digital

technology for this purpose mentioned they prefer face-to-face communication and one of them did not trust technology in the open question. See Table 11 below for more detail.

Table 11. Use of technology to get help with health/social problem

	Every day		A few times a week		A few times a month		Less often		Never	
	N	%	N	%	N	%	N	%	N	%
Search on the internet (n=17)	6	35.3	4	23.5	1	5.9	2	11.8	4	23.5
Ask friends to search on the internet (n=17)	5	29.4	4	23.5	4	23.5	2	11.8	2	11.8
Check service provider website (n=15)	1	6.7	4	26.7	3	20	4	26.7	3	20
Check NHS website (n=13)	0	0	3	23.1	1	7.7	5	38.5	4	30.8
Check social media (Facebook groups – n=12)	3	25	2	16	0	0	3	25	4	33.3
Check Forums (n=14)	1	7.1	0	0	4	28.6	4	28.6	5	35.7
Ask voice assistant (Alexa, Google Home, Siri) (n=12)	3	25	0	0	0	0	3	25	6	50
Contact healthcare provider (e.g. GP, Addiction service) (n=15)	4	26.7	1	6.7	4	26.7	3	20	3	20

4.1.4.5 Information related to drug use

Many participants (63.2%, n=12) used digital technology when they needed information about seeking help for problems related to drug use. When asked about frequency of use of technologies for this purpose, nearly half selected that a few times a month they ask their friend or family member to search on the internet for information. See Table 12 below.

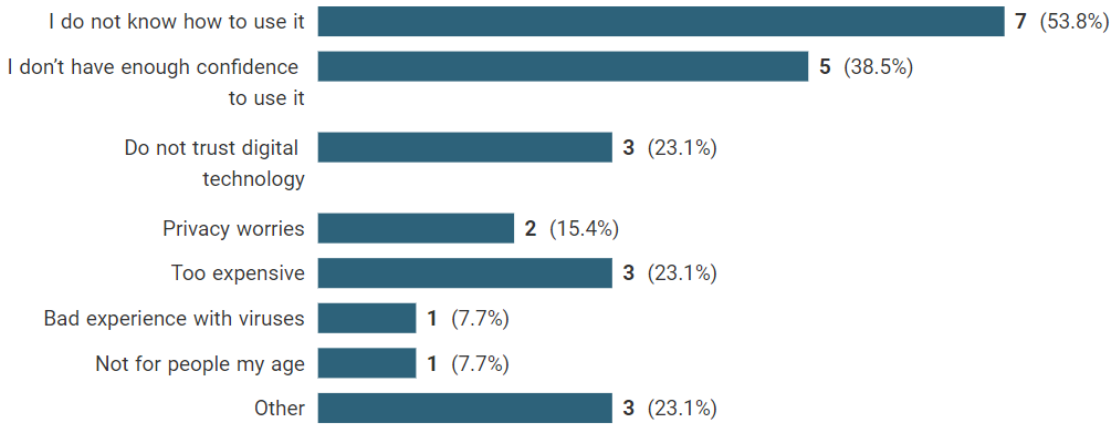
Table 12. Use of technology to seek help with drug problems

	Every day		A few times a week		A few times a month		Less often		Never	
	N	%	N	%	N	%	N	%	N	%
Search on the internet (n=15)	4	26.7	3	20	3	20	2	13.3	3	20
Ask my friend / family member to search on the internet (n=13)	2	15.4	0	0	6	46.2	1	7.7	4	30.8
Check service provider's website (n=12)	2	16.7	0	0	3	25	2	16.7	5	41.7
Check NHS website (n=11)	2	18.2	0	0	2	18.2	4	36.4	3	27.3
Check social media (n=12)	3	25	0	0	2	16.7	3	25	4	33.3
Online forums / chat (n=12)	3	25	0	0	1	8.3	3	25	5	41.7
Ask voice assistant (n=12)	2	16.7	1	8.3	1	8.3	2	16.7	6	50
Phone call (n=13)	7	53.8	1	7.7	2	15.4	2	15.4	1	7.7

4.1.5 Challenges using digital technology

Of the 13 participants who mentioned having difficulty using digital technology, the main challenges were a lack of knowledge (53.8%, n=7) and not having the confidence to use it (38.5%, n=5). Three people did not have trust in the technology (23.1%). See below for more detail on challenges.

Figure 4. Challenges in using devices or digital technology



4.1.6 Requirement/suggestions for support with using digital technology

The majority of participants (84.2%, n=16) agreed that they would benefit from some type of support in the use of devices and digital technologies. Of these, nine believed that having their own device and easy to use instructions could be beneficial alongside having support in the use of devices. Figure 5 below shows participants' suggestions for support requirements.

Figure 5. Participants' suggestions of what might be helpful in terms of support to use devices or digital technology

4.1.7 Digital technology training required

Participants were asked about their level of proficiency in using various digital devices and their perceived training and skills needs. 'Using the internet' was noted by over half of participants as the most important (52.9%, n=9) as was 'computing basics' (50%, n=9). See Table 13 for more detail (note: not all questions were completed by every participant).

Table 13. Digital technology training required by service users

	Most Important		Quite Important		Not Important		Not Applicable		I can do this already	
	N	%	N	%	N	%	N	%		
Getting started with computers (logging onto computer, keyboard, and mouse skills) (N=18)	8	44.4	2	11.1	1	5.6	4	22.2	3	16.7
Computing basics (word processing, emails, setup Wi-Fi) (N=18)	9	50	4	22.2	1	5.6	3	16.7	1	5.6
Using the internet (searching etc.) (N=17)	9	52.9	6	35.3	0	0	1	5.9	1	5.9
Using online communication tools (e.g., social networking, online communities, online chat) (N=17)	7	41.2	5	29.4	3	17.6	1	5.9	1	5.9
Using technology to support services to access and use your health and social care resources (N=17)	5	29.4	6	35.3	3	17.6	3	17.6	0	0
Using the internet safely and securely (N=17)	5	29.4	7	41.2	2	11.8	2	11.8	1	5.9
Understanding issues of confidentiality and data protection (N=17)	5	29.4	8	47.1	1	5.9	2	11.8		
Accessing online learning opportunities (N=17)	5	29.4	6	35.3	3	17.6	2	11.8	1	5.9

4.1.8 Comparison with baseline survey of service users

Data from the survey undertaken at baseline can be found as Appendix 7. A comparison of the baseline demographics of this survey indicates the sample of participants had a slightly different profile from those who participated in the survey at baseline. There was a higher proportion living in a city (63.2% compared to 16.7% at baseline) and more living in council or social housing (63% compared to 50% at baseline). There were differences in participants' reported health status, with 94.7% reporting long term physical and/or mental health conditions compared to 66.7% at baseline. Altogether, this indicates that current participants were a group with more complex needs compared to the baseline survey sample.

Regarding use of technology, more participants had access to the internet on their mobile phone (84% compared to 44.4% at baseline) and more had access to the internet via a home connection (57% compared to 33.3% at than at baseline). There was a difference in how technology was used between baseline survey participants and current participants. The use of technology for video call and text messages had increased from 0% to 22% and 33.3% to 70%, respectively. All participants used their smartphones to connect to their service providers, compared to 72% of baseline participants. Fewer participants used technology to access information about seeking help for drug use (63.2% compared to 82.4% at baseline). This may reflect that the follow up sample were all receiving some form of support through the programme. Challenges noted by participants at baseline focused around access to devices or the internet. However, current participants noted gaps in their knowledge and skills in using technology.

4.2 Service providers

4.2.1 Description of participants

The survey received responses from 31 people who provide services to people who use drugs in Scotland. Respondents included nine men and 20 women. Most participants were in the 30-39 and 40-49-year age range (32.3%, n=10 for both). See Table *14* for more details.

Table 14. Age group and gender of service provider participants (n=31)

Age group	Number	%
18-29	3	9.7
30-39	10	32.3
40-49	10	32.3
50-59	5	16.1
60-69	3	9.7
70+	0	0
Gender	**Number**	**%**
Male	9	29
Female	20	64.5
Non-binary	0	0
Other	0	0
Prefer not to say	2	6.5

Nearly half of participants (41.9%, n=13) performed a managerial role in their organisation and the other participants had a wide range of roles including outreach worker, recovery worker or harm reduction worker. Almost all participants worked for a third sector organisation (93.5%, n=29), and one person worked for a third sector or charity organisation. See Table *15* below for details regarding organisation type, services provided and participants' roles and geographical scope.

Table 15. Organisation type and type of service – service providers and participant's role (n=31)

Organisation service type	Number	%
Third sector / charity/ voluntary	30	96.8
Local authority	0	0
Other	1	3.2
Organisation geographical scope	**Number**	**%**
Local (town/city/local authority level)	23	74
Regional (health board level)	2	6.5
National	6	19.4
Type of services	**Number**	**%**
Harm reduction	0	0
Recovery support and/or treatment	3	9.7
Homelessness support	6	19.4
A combination of supports	21	67.7
Other	1	3.2
Participant's role	**Number**	**%**
Manager	13	41.9
Outreach worker	5	16.1
Recovery worker or harm reduction worker	4	12.9
Support worker	2	6.5
Other	7	22.6
Organisation geographical scope	**Number**	**%**
Local (town/city/local authority level)	23	74
Regional (health board level)	2	6.5
National	6	19.4

4.2.2 Access to the digital technology

All participants had access to an internet connection and email at their place of work, and, in most cases, their work provided technology for learning at work. See Table 16 below.

Table 16. Access to digital technology for work (n=31)

Purpose use of device	Yes		No		Not applicable	
	N	%	N	%	N	%
Internet connectivity	31	100	0	0	0	0
Work email	31	100	0	0	0	0
Access to online employee management systems	80.6	25	6	19.4	0	0
Access to technology for learning at work	93.5	29	1	3.2	1	3.2

4.2.2.1 Digital literacy of service providers

One of the aspects we asked service provider participants about was digital literacy. The results suggest that participants have a high level of digital literacy and are comfortable using digital tools in their work. All participants used digital technology within their organisation. There was a high level of use of digital tools such as computers, laptops, and software such as Excel, Word, and PowerPoint to perform their job roles. Additionally, all participants agreed that they can easily find online learning resources to help them in their work. However, there were some neutral responses and a few disagreements regarding the use of social media for work and downloading documents from organisations' intranet. All participants agreed on the importance of understanding internet safety and security, and online confidentiality and data protection principles. See Table *17* below for more detail.

Table 17. Digital literacy as reported by service providers (n=31)

Use of Technology	Agree		Neutral		Disagree		Not Applicable	
	N	%	N	%	N	%	N	%
Use technology within the workplace	31	100	0	0	0	0	0	0
Log into computer or laptop at work	30	96.8	1	3.2	0	0	0	0
Send and receive work emails	31	100	0	0	0	0	0	0
Use software to help me in my role – Excel, Word, PowerPoint etc.	29	93.5	2	6.5				
Share documents online with colleagues e.g., sending documents as attachments	31	100	0	0	0	0	0	0
Download and save documents from the internet	31	100	0	0	0	0	0	0
Download and save documents from the intranet	27	87	1	3.2			3	9.7
Find the information I need on the internet at work	31	100	0	0	0	0	0	0
Complete my mandatory training online	29	93.3					2	6.5
Use social media for work	26	83.9	1	3.2	2	6.5	2	6.5
Find relevant information using the internet to help with work	31	100	0	0	0	0	0	0
Find relevant information using the internet to help with work	31	100	0	0	0	0	0	0
Understand internet safety and security	31	100	0	0	0	0	0	0
Understand the principles of online confidentiality and data protection	31	100	0	0	0	0	0	0
Participate in video conferences	29	93.5	1	3.2	1	3.2	0	0
Participate in webinars	31	100	0	0	0	0	0	0
Easily find online learning resources to help me in my role	31	100	0	0	0	0	0	0
Other	1	20						

4.2.2.2 Access to digital technology at home

All participants reported having internet access at home. In terms of devices, the majority (96.8%, n=30) reported having a laptop, while a smaller proportion (64%, n=64) had a tablet or iPad. Over half (55.6%) reported not having a desktop computer at home, while all participants reported having a mobile phone with internet access (smartphone). No participants reported having a mobile phone without internet access. Table *18* below provides more details of participants' personal access to digital technology.

Table 18. Access to digital technology at home

Devices	Yes		N	
	N	%	N	%
Desktop computer (n=27)	12	44.4	15	55.6
Laptop (n=31)	30	96.8	1	3.2
Mobile phone with internet access (smartphone) (n=31)	31	100	0	0
Mobile phone with no internet access (n=19)	0	0	31	100
Tablet or iPad (n=25)	16	64	9	36
Internet (n=29)	29	100	0	0

4.2.3 Service providers' training requirements

Based on participant responses, fewer than 20% (n=6) needed training regarding computing basics or getting started on a desktop computer and 80% (n=?) had good levels of confidence in these areas. Forty one percent (n=13) of participants said they needed training in creating and publishing online content. The most important training area for the respondents was 'using technology to support service users/clients/patients to access and use health and social care resources' (32.3%, n=32). See Table *19* below for more detail on participants' views on training required.

Table 19. Digital technology training required by service providers

Digital technology training	Most important		Quite important		Not important		Not applicable		I can do this already	
	N	%	N	%	N	%	N	%	N	%
Getting started with computers (logging onto computer, keyboard, and mouse skills) (n=30)	6	20	0	0	0	0	0	0	24	80
Computing basics (word processing, emails, spreadsheets) (n=30)	6	20	0	0	0	0	0	0	24	80
Using the internet (searching etc.) (n=29)	5	17	1	3.4	0	0	0	0	23	79.3
Using online collaboration tools (e.g., social networking, online communities, online chat) (n=30)	5	16.7	1	3.3	1	3.3	0	0	23	76.7
Using technology to support service users to access and use health and social care resources (n=31)	10	32.3	3	9.7	0	0	1	3.2	17	54.8
Creating and publishing online content (e.g., blogs, podcasts) (n=31)	3	9.7	13	41.0	1	3.2	6	19.4	8	25.8
Participating in video-conferences and webinars (n=30)	3	10	6	20	1	3.3	0	0	20	66.7
Using the internet safely and securely (n=30)	5	16.7	2	6.7	0	0	0	0	23	76.7
Understanding issues of confidentiality and data protection (n=30)	5	16.7	2	6.7	0	0	0	0	23	76.7
Accessing online learning opportunities (n=31)	7	22.6	2	6.5	0	0	0	0	22	71

4.2.4 Service users' situations

Service providers were asked about their perception of access to technology for their service users. The majority of participants believed that only a very small minority of their service users had access to a personal computer or laptop. See Table *20* below for further details.

Table 20. Estimates of service users' access to technologies (n=30, 1 missing)

Devices	All of them		More than half		Approx. half		Less than half		A very small minority		I don't know	
	N	%	N	%	N	%	N	%	N	%	N	%
Smartphone	3	10	7	23.3	5	16.7	9	30	4	13.3	2	6.7
Laptop	1	3.3	1	3.3	0	0	0	0	23	76.7	5	16.7
Personal computer	1	3.3	0	0	0	0	0	0	23	76.7	6	20
Tablet	0	0	0	0	2	6.7	3	10	19	63.3	6	20

4.2.5 Current services provided using digital technology

The majority of participants (86.7%, n=26) said their organisation provided services to people who use drugs via digital technology. Of those providing digital technology, a phone call or text message check-in were used by 92.3% (n=24). One-to-one online support meetings were used by 46% (n=12). See Table 21 for details.

Table 21. Type of digital technologies used to provide services to service users (n=26, 5 missing)

Type of service provided	Number	%
One-to-one online support meeting	12	46
Therapeutic group-work	5	19.2
Access to video call/consultation for specific issue	4	15.4
Online booking for a service	5	19.2
Phone call/text check-in	24	92.3
Online access to personal data record/history	3	11.5
Other	0	0

Participants were asked about the ways in which digital technology is used to provide information to clients. Text messaging was well-used and somewhat used by 37.9% (n=29) of organisations. See Table 22 for details.

Table 22. Ways in which organisations provide information to clients via digital technology

	Well used		Somewhat used		Rarely used		Never used	
	N	%	N	%	N	%	N	%
Website (n=30)	8	26.7	4	13.3	12	40	6	20
Text messaging (n=29)	11	37.9	11	37.9	5	17.2	2	6.9
Mobile app (n=29)	5	17.2	4	13.8	7	24.1	13	44.8
Social media activity (n=29)	6	20	12	40	8	26.7	4	13.3

4.2.6 Perceived barriers to using digital technology for service users

All participants noted the perceived challenge for their service users in terms of not using digital technology as they could not afford to buy a digital device (n=30). Almost all participants said service users could not afford to buy data packages (96.7%, n=29). Other challenges noted were that service users lost their devices, or had them stolen, and they could not replace, or they do 'not have support or training to use devices' (73.3%, n=22). More than a third of participants agreed with the statement: 'lack of trust in digital technology' (36.7%, n=11)). See Table *23* below for more information.

Table 23. Perceived barriers of service users using digital technology (n=30, 1 missing)

Option	Number	%
Cannot afford to buy a device	30	100
Cannot afford data packages	29	96.7
Has lost their device or had it stolen and cannot replace it	22	73.3
Lack of trust in digital technology	11	36.7
Has no need for the technology	3	10
Does not have support or training to use devices	22	73.3

4.2.7 Views on reducing risk of drug related harm

Participants were asked '*what would make the most difference to reduce the risk of harm to people who use drugs?*'. Almost all participants (96.7%, n=29) agreed with the need for ease of access to information on drug use and harm reduction and information on different types of treatment (93.3%, n=28). See Table 24 below for more details.

Table 24. Views on the approaches to reducing harm among clients (n=30, 1 missing)

Option	Number	%
Easy access to information on drug use and harm reduction	29	96.7
Easy access to information on different types of treatment	28	93.3
Easy access to information on services available locally	26	86.7
Connection to support workers including peer support	24	80
Connection to social support network e.g., family	24	80
Use of monitors to detect overdose	18	60
Information on other health conditions	18	60
Other	2	6.7

4.2.8 Comparison to baseline survey of service providers

Service providers had a similar service/organisation profile to those at baseline with the exception of those noting they provided harm reduction service: none of the participants noted this in the type of service compared to 14% at baseline. Regarding the type of service provided to service users, there was a reduction in the use of digital technology to provide one-to one online support (46% compared to 62.5% at baseline), a reduction in therapeutic work (19.2% compared to 57.5% at baseline) and a reduction in access to video consultation for specific issues (15.4% compared to 50% at baseline). There was, however, an increase in the use of text messaging, with 92.3% noting this compared to 82.5% at baseline. Perceived barriers to the use of digital technology by clients was similar to baseline, with the majority noting that being unable to afford to buy a device as a key challenge (100% compared to 90.7% at baseline). However, there was an increase in the view that the lack of access to support or training was a barrier (73.3% compared to 65.1% at baseline).

4.2.9 Service providers' additional comments

At the end of the survey service users were asked to add any final comments, remarks, opinions and ideas via an open text box, which were then analysed (see 2.5.3). Participants offered mostly encouraging views but were also mindful of potential challenges. Six themes were identified: 1) recognising service user potential; 2) digital communication and connection; 3) harm reduction benefits from digital technology; 4) challenges for service user engagement; 5) digital technology can help access family and services for vulnerable service users; and 6) providing support and improving life skills.

4.2.9.1 Recognising service user potential

Service providers were positive about the potential not only from the use of digital technology but from those service users that were interacting with services. Acknowledging that it is a new and challenging process for many did not detract from the enthusiasm to assist and mentor those who wished to be involved:

> *Sometimes it's a case of just getting them used to using technology again after a period of time. When I have 1-2-1's with them most are just needing someone to sit with them to build their confidence back up again. Some will need more 1-2-1's but I can offer this.*

4.2.9.2 Digital communication and connection

The focus of service providers when working with service users was to ensure quick and easy access to vital and basic services. Illustrated here as "quick wins", it means that service users have access to day-to-day services which most people take for granted, such as email and social media:

> *The digital support and learning framework are categorised by the key "quick wins" that people can easily achieve using their device: e.g., communication-setting up am email, text messaging, setting up social media, video calling-focusing on connection and communicating with loved ones and services.*

4.2.9.3 Harm reduction benefits from digital technology

Multiple harm reduction tools were mentioned, which are available to service providers. Digital technology has enabled service providers to provide non-judgmental, lifesaving, critical frontline care and options for people who use drugs:

> *Able to provide information on local drug alerts and inform people about any warnings about what is in their substance.*

> *Able to signpost to needle and syringe programmes and other harm reduction interventions they can access locally.*

> *Able to inform people of their right through the MAT [medication assisted treatment] standards and ensuring they are having their rights activated, ensuring they are a part of any communication about their care.*

> *Able to inform people about treatment options and signpost them to services.*

4.9.2.4 Challenges for service user engagement

Service user challenges included an expectation to comply with what was perceived to be rigid social expectations and a barrier to engagement. Initial periods of learning and tentative commitment to build confidence assisted service users. However, it appears realistic to recognise that for various individual reasons, digital technology will simply not be suitable for everyone:

> *For most service users they need to know how to use and feel comfortable using digital technology. This involved a period of learning and digital confidence building. Some service users find this too complicated and challenging to consider. Even those who do feel comfortable and confident may have times when they find it too challenging and stressful. The thought of potentially being expected to use and therefore always having to be able to afford digital connectivity can be too challenging for some and could be a block to engaging with services.*

4.9.2.5 Digital can help access family and services for vulnerable service users

In contrast to the potential challenges above, service users have access to digital means of connection through individual device needs to suit differing lifestyles, which helps provide access to family and services on an instant basis. These services include health which has multiple benefits within vulnerable communities who previously found access difficult:

> *The individuals who have received mobile phones, tablets and access to the internet, have benefited hugely from receiving these. It allows them to communicate with family and friends.*
>
> *Make health care appointments.*

4.9.2.6 Providing support and improving life skills

Service providers noted that service users were able to structure their lives in a way that was previously more challenging for them, as digital technology was perceived as enabling people to feel empowered to focus on taking control of their lives through new skills and being in contact with services and appointments that improve their lives:

> *People would like support with using their devices to use them to their full capacity. A lot of people never used their calendars while scheduling appointments or even alarms to add structure to their day. Most of the people supported really enjoyed the focus being on improving their skills and how digital could make life easier rather than the focus being on recovery.*

5. Interview findings

5.1 Summary of participation

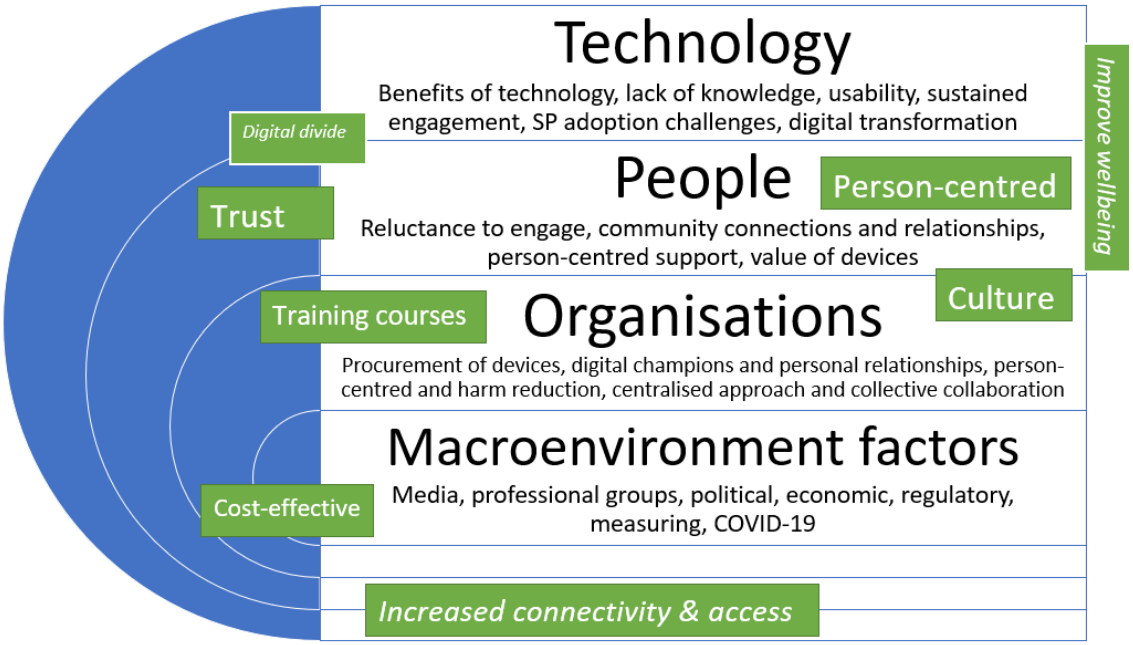
A total of 47 interviews were conducted with individuals from three groups across 14 organisations across Scotland: 12 with programme team members, 14 with service providers and 21 with service users. Participants worked in a range of roles, had a variety of experiences with drug use and were of a mix of genders and ages. Table 25 below provides details of the number of participants and their organisations.

Table 25. Participation numbers and organisations

Programme Team	Total	Service Provider	Total	Service User	Total
Scottish Government	4	Simon Community	5	Simon Community	9
Turning Point Scotland	2	Grassmarket Community Project	2	Recovery Scotland	8
Scottish Council for Voluntary Organisations	2	Bethany Christian Services	2	Grassmarket Community Project	3
National Health Service	2	Glasgow City Mission	1	Glasgow City Mission	1
Digital Health and Care Innovation	1	Recovery Scotland	1		
Third Sector Lab	1	Shine Mentoring	1		
		Recovery Enterprises	1		
		The Salvation Army	1		
	12		14		21

The interview findings are presented as four main themes, relating to the TPOM domains of technology, people, organisations and macro-environment. Sub-themes are listed and are explored in the following sections.

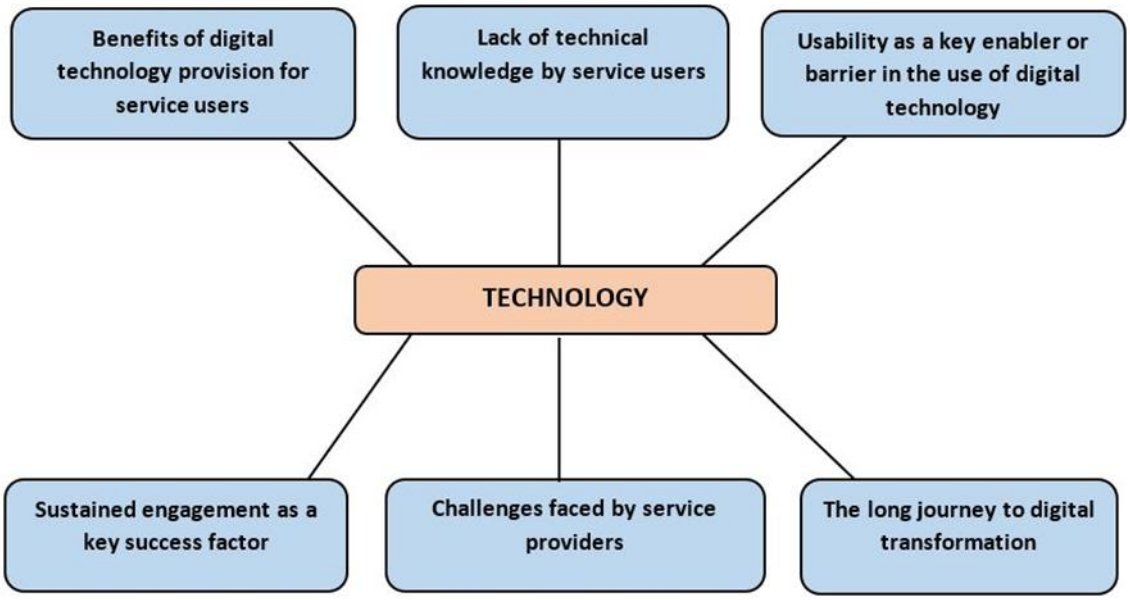
Figure 6. TPOM with additional themes diagram



5.2 Technology

Six sub-themes are covered under the technology factors domain as presented in Figure 7 below.

Figure 7. Sub-themes of the technology factors domain



5.2.1 Benefits of digital technology provision for service users

Participants across all groups described various uses and benefits of different types of technologies provided by the programme. The technologies provided included different types of devices such as smartphones, tablets, and laptops, and internet connectivity tools, with service users generally preferring smart phones:

> In terms of the device, it's usually either a smartphone or a tablet. We have given out some Chromebooks … But I know the majority is mobile phones, probably about 60% and then 40% tablets. (SP12)

We identified three types of main use categories and perceived benefits for digital devices: 1) increased connectivity; 2) increased access to services; and 3) improved wellbeing.

5.2.1.1 Increased connectivity

The first category of benefits of digital devices as identified by participants was making connections with others in order to receive some type of support. This support could range from overcoming loneliness to creating friendships and a sense of community building:

> *Before I got the iPad… I wasn't really connecting with people, if you know what I mean?… But it opened up a lot of doors for me, aye… It did. It made me feel more connected with people… I think more and more people are getting there. […] But I think, I know people in the community are getting connected.* (SU1)

This benefit was discussed most frequently by both service user and service provider participants. For instance, many participants provided examples of connectivity to family and friends:

> *I stay on my own just now, my oldest son he's in the Army, he's 27 so I can Zoom him. My grandson, I can Zoom him… I can Zoom my other son, he's in prison. He's*

done it all the time. He's 25. He's just started 12 years, but in prison, they've got these in the visit room. They started giving virtual visits during Covid, so we got a visit with him with Zoom. (SU21)

We are asking people what they want, and mostly people want access to community. They want to be able to get on to social networks. They want to be able to interact with friends and family digitally, because their friends and family might have left [Location], or they might have moved here from somewhere else, and they don't have that community. (SP5)

Increased connectivity was also mentioned to be of high importance for those who had recently completed recovery programmes or those who were released from prison:

The first kind of most important thing that they use it for is that initial contact, and that's then how we work with them and do the project really. So, I think without a phone, and without that kind of line of contact, it's pretty difficult. You know, I've had a few women that have come out and not had contact numbers. And quite a lot of the time it means, you know, disengagement and you find them further along down the line but it's really important initially. (SP14)

Several participants noted that if it was not for the provision of technology, many would lose any benefit obtained from having the connections:

See, until I get a new smartphone, I am not getting any contact wi' ma house, my Mum hasnae been. She had my phone number, so she can see me. (SU13)

5.2.1.2 Increased access to services

Another benefit of digital devices was improved access to services. This was perceived as a benefit to both service users and service providers.

I do suspect as well that, again, if we're giving people decent enough phones, they're going to need to use them for other aspects of their life anyway and they'll actually get quite used to them, you know. So, whether it's speaking to your daughter, or speaking to your dealer, the phone's quite important to you. But if at the same time, we can utilise that to be able to access those services when they're ready and able to do so, then that for me is a win, win scenario. (PT6)

An increase in access to services was likely due to several factors. Firstly, people who were originally excluded due to lack of access to technology had an increased chance of being engaged as technology was provided to them:

We can cover things that are happening here. So, that access to those devices was quite helpful for engaging with people who normally wouldn't get a chance to engage. (SP4)

Secondly, as technology provision increased, new online services were also provided, which resulted in an increase in support available to individuals, and therefore better engagement with support workers:

Eighty five percent of people in the project said that they engaged more with their support worker since having digital [devices]. And the reason for that is that the person is available to be contacted at any time and if they are in a moment of need, you know, we're available to them and they're available to us so it's just that easy way of staying in contact. And that's massive because not only is it like obviously

> *that extra connection between the service and the person, it also means that when there is a moment of need, we're able to help.* (SP12)

Another reason that access to services was increased was that new offerings such as events could be more easily identified by service users:

> *On Facebook and that, it keeps me connected digitally and also, I know where I can go and meet people, like events are advertised and what not.* (SP1)

5.2.1.3 Improved wellbeing

Digital technologies are seen to have significant potential in improving the wellbeing of the community. While the original intention of the provision of technology was the prevention of overdose deaths, one additional potential that was observed was improving people's lifestyles, which could result in reduced drug use:

> *I also think, to state the obvious, it shouldn't just look at preventing drug death. It should look at supporting people's wellbeing and ways into the community from drug use.* (SP5)

For instance, when individuals were given access to technology some tried to use them to make a positive change in life, such as using the technology to learn new skills in order to find employment:

> *I think it's just opening doors for people. The people that I've come into contact with, for example, one guy, he came along and he's really trying to get his life on track. He's come along to the computer group on a Tuesday and he's just really wanting to change, really wanting to do something. He's in a bit of better place, he's more stable. He came along and he's wanting to look for jobs so that's his benefit.* (SP9)

The wellbeing of individuals was also perceived as improving, by enhancing their confidence through the use of technology. This in turn could lead to other benefits such as connecting to a support network that was unavailable before the use of technology:

> *So, everyone's really receptive of why we're needing skills with computers, tablets, mobiles. And it's just building their confidence as well. And it gives them that option to have that support network that they wouldn't really have before as well.* (SP2)

Another benefit identified in terms of wellbeing was that access to technology, and the provision of online services, led to shorter waiting times for services and hence anxiety levels may be reduced:

> *So, when you compare that to only having a two-hour session, you're spending 15, 20 minutes booting [up the equipment]. I think having good equipment and having an IT suite that actually works as it should enable people to come in and quickly do the things they want to do. That has made a massive difference. Because, anecdotally, prior to that, we had equipment that people would wait ages for things to happen, which would create a stressful environment, which would add stress on to individuals that don't need stress adding on.* (SP2)

Overall, participants reported positive attitudes in relation to how they benefited from technology provision.

5.2.2 Lack of technical knowledge of service users

While many benefits were envisaged and realised by our study participants, the lack of technical knowledge among service users was the most evident challenge highlighted. This could lead to low engagement or short intervals of engagement with technology:

> *There are people that engage for a little while. There are people that come and say they don't know how to work this. They can barely get online. They don't even have an email address. They want to know how to log in to Zoom, all those kinds of stuff.* (SP4)

There was also a lack of knowledge in terms of the potential uses of technology. Without such knowledge, service users were often not inclined to search for information and support themselves:

> *You know, saying you can access all these different health and wellbeing resources, or there are different resources here on using safely, all that kind of thing. How much is that actually being used? Are people really sitting down and going, "oh, I think I'll just look it up now, how to use safely"? Or "how to manage my mental health"? I have my doubts as to how much it's been used for that.* (SP1)

There are also other service users who are more confident but have limited technology skills. They reported being more engaged in trying to find ways to gain the technical knowledge needed:

> *I'm confident to use [digital technology] but there's certain parts like sending emails I'm not good at, I can receive emails but not send them.* (SU21)

To overcome the lack of knowledge, some service providers offered different types of training. They ranged from setting up accounts and email addresses to using social media.

> *It's giving them the chance to setup things like email accounts, social media accounts as well, so they can keep in touch with friends and family and stuff like that. So, it is having a massive effect.* (SP2)

Training could boost the confidence of service users which could further improve their engagement with technology:

> *It's just that initial fear that, "oh, I can't do this." But then when you show them, it's like, "if you press that, that and that your whole world lights up." And just by doing that you see the reaction on their faces. Like, "oh, this isn't quite as hard as I expected it to be".* (SP2)

Some service users suggested further training programmes on the potential services available to be used through digital technologies, such as job searches:

> *[They should] advertise free courses to show people how to use digital devices. Like the Jobcentre, you can go in and use their computers and all that now, right? But see this scheme, where I got the tablet and stuff...* (SU15)

Technology provision without appropriate training could lead to lack of engagement, or even individuals selling their devices:

> *But the other thing with that is that we've found that if you just give people a smartphone and they don't know how to use it and there's no support and there's no connectivity, of course, they're going to sell it. It's useless, it's a lump of metal in*

> *their pocket and they can get £100 for it. If you teach somebody the value of digital, and people start to realise that what digital is bringing to their lives in terms of the social connection, the benefits, the finances, the health, all of it, that is worth so much more to them than the second-hand resale price of what they would get going to a Cash Converters and getting £40 for a second-hand phone.* (SP12)

Overall lack of technical knowledge led to limited use. Hence, training is seen as a key enabler of technology use.

5.2.3 Usability as a key enabler or barrier of digital technology

Although benefits associated with technology provision were realised, the usability of the devices, digital technologies and applications raised concerns. There were different preferences and feelings expressed towards different devices offered by the programme. Some devices were perceived to be easier to use than others:

> *If somebody offered me a tablet, I'd definitely take it, because it would help me with my college work. And it would be easier, probably, to use a tablet than the Chromebook.* (SU21)

There were different factors affecting the usability of devices such as age, level of education, and pre-existing conditions. For instance, one participant explained how his dyslexia made it more challenging to work with laptops than tablets:

> *I guess tablets are just the same as the phones. I mean it's still kind of like touchscreen. But again, with my dyslexia I'd have to get someone to set it up because my son-in-law had to set this up 'cos I've not got a clue how to set phones up. But I would prefer the tablets to like the laptops as well, do you know what I mean? Because I find they are a lot easier for me to like use because there's no buttons. And I get confused on what buttons I am pressing.* (SU14)

Another point that was highlighted was how 'digitally savvy' an individual was. Smartphones and tablets were identified as more learnable and usable to those who were less savvy, as opposed to laptops and Chromebooks:

> *So, we did a trial last year where we did basically the same programme but with 100 people. That told us that the two most popular devices for the type of people we're supporting would be a smartphone or a tablet. Very few people would need or have use for a Chromebook really, or a laptop. The people we're supporting tend to be at the start of their digital journey.* (SP10)

Apart from devices, the operating system used on the devices seemed to have an impact on the usability of technology:

> *I tried to [offer] a bit of mix of phones and tablets, because the operating software on the tablet, which tends to be an iPad, is quite user-friendly.* (SP4)

Moreover, the need to use passwords and other security features were seen to negatively impact the usability of the technologies provided:

> *Sometimes logging into things can be a bit hard when you forget your passcode and that.* (SU18)

In summary, usability can act as a make-or-break factor in the use of technology.

5.2.4 Sustained engagement as a key success factor

We identified that one of the important and challenging issues in technology provision and adoption programmes is the sustainability of engagement after initial technology provision by the programme:

> *And so, we're now looking at, well, actually what's the next iteration of Connecting Scotland? And if we were to do something similar, hand out kit connectivity, what else do we need to put in place around it? Now, unfortunately we don't have the funding that we did because it was Covid funding, and lots of it has dried up. But actually, we've still got all that research and evidence to say, well, there's other things you need to do around it to help support, and it's more than just that kind of kit connectivity and then skills and support. There's that- that support word goes a lot further than I think we envisaged previously.* (PT11)

This means avoiding the disconnection of service users from the digital community, and to keep them connected for the long term. If people disengage there was perceived to be a high risk of returning to drug use:

> *It's difficult because everyone is different, but what we're really conscious of is not allowing people after the 12 months to fall off a cliff and come back round and start from square one again, because that would just be a year wasted in a way.* (SP10)

This sustained engagement can lead to increased inclusion in the community and reduced DRD. Technology was seen as part of a larger puzzle to keep people included in society:

> *I think the more options that we give people the better. I think, you know, we say this all the time, but digital isn't the way to solve drug deaths, but it's one small part of the picture, do you know what I mean? Like the more that we can connect people, the better.* (SP7)

Sustainability of engagement however requires understanding the need for cultural change. One participant gave an example of how improved understanding of technology use can help sustainability:

> *It's that ability to think critically and that ability to really reflect that we need to be giving people or helping people to understand. Now, not everybody will feel comfortable with it, so it's finding ways into it because if you can do that, actually their ability to then use digital tools becomes much greater because they're much more consciously aware of what they're doing. And ultimately, then, what you would do is you would have an impact on culture and society.* (PT11)

To summarise, we identified that programmes need to consider sustainability of engagement as a key factor to achieve long-term benefits.

5.2.5 Service providers' adoption challenges

In the challenges identified above, there was a focus on service users as beneficiaries of technology provision. There is also a range of challenges related to the organisational adoption of technologies by service providers which requires careful consideration. As digital innovation is occurring fast, it is the adoption into practice that is perceived as a considerable challenge:

> *So, you bring out the technology, you develop apps or digital services that can do things. And the industry's absolutely fantastic, they can develop anything. The challenge is actually to integrate it into our service delivery models and that means working with people, changing their roles, and the way they go about doing what*

they do, and that is very, you know, again, the human being factor is the bit that always is the most challenging but also the most rewarding. (PT6)

One reason for these adoption issues is that service providers are already under pressure, lacking time and resources to spend on planning for the effective adoption of technologies:

Another of the challenges is just how much work there is going on in the field of drug death prevention at the moment and lots of frontline organisations feel completely overwhelmed… we're a small fish in part of the whole of that pool. So, actually, organisations have had the absolute best of intentions, but they've been pulled off from focusing on the digital inclusion element from other aspects. (PT6)

This further leads to a lack of provision of digital services. While digital devices are made available to the service users, services for those at risk of drug-related harm are not effectively offered online:

I mean probably the best example is like we're giving people devices, but very few of these organisations have what you would really call a true digital service… generally the public want access to an addiction service or a homelessness service and can go on and find it and I can self-refer. I can speak to someone right now when I'm in that service, I know what you're doing with my data I know where I'm at in the pathway. (PT1)

Furthermore, there was a lack of knowledge about data security issues involved in the use of technologies, for instance, the use of Google Services in their organisations that could endanger service user data security, or the absence of governance under GDPR.

Overall, in order to enhance use of technology by service users, new technology also needs to be adapted by service providers.

5.2.6 A long journey to the digital transformation of the sector

Digital transformation is described as a change process in organisations or societies driven by the use of digital technologies (Vial, 2019). Participants noted that many organisations used some digital technology for provision of activities and support to service users, rather than for transforming their services. There is a difference between the adoption of digital technologies and digital transformation:

I think because the Digital Lifelines work, you know, it's about basic digital skills. It's not necessarily about, you know, a big digital transformation or developing digital services. A lot of it is quite simple on the surface. (PT1)

Digital transformation requires re-thinking and re-designing of processes, not adding a digital layer to an existing cumbersome processes (Matt et al., 2015) and as the example below indicates, this change of processes was not evident in many settings:

Last time I needed to make a phone call to the doctor to try and get an appointment for my daughter, I made 135, I think, repeat phone calls… which is bonkers. And actually, what happened in that process was the receptionist took my details and said doctor will phone you back. Doctor then phoned me back within a couple of hours… But actually, what we've done there is instead of really thinking about a smart digital approach, is we've actually layered up two telephone calls and a face-to-face and increased costs rather than decreased costs… So, let's think about that in a different way. Quite a lot of adults are now used to doing some form of digital or telehealth care. (PT11)

Some participants were aware of the need for transformative changes to service provision, while others were mainly concerned about improving the day-to-day activities using digital technologies:

> *You'd go into the travel agents, and you'd sit down, and you'd look through the brochures, and you'd come up with a way in which you could… this is the holiday that I really fancy and then you'd sit down with somebody. Actually, doing all of that online has changed it dramatically and you need to feel confident about doing that. And the supports and the people that you could have talked to aren't always there when you need them to be there. So, that's a complete transformation of how the travel industry has shifted its way of working. So, if we're trying to do a transformation of how our health and care system works then we're going to go through similar changes when we're introducing digital into that. So, it's not just a matter of me and you talking over a video instead of sitting down and, you know, having a coffee in a café, and blethering about it. This is a really simple digital interaction because we're doing what we always do, we're just using a different channel to do it. When you're actually looking at digital services, they can completely change the way that you access something and how you actually use it, and we've not even scratched the surface of that within Digital Lifelines at this stage.* (PT6)

Hence, digital transformation needs new value creation, creating new digital services that did not exist in existing models of health and care. Such services have started to increase more recently as digital technologies are made available to those, for instance, in rural areas:

> *Those areas like, for example, the people in recovery, the people in the [Location] that I was talking to you about. We weren't able to help them in a digital way whereas we can now because we've got the offer of the devices and people can take them away and we can help them in that way. So, that's a massive difference.* (SP9)

As participants highlighted, digital transformation does not have to be about radical changes. Instead, even a focus on a particular niche as part of that bigger picture of transformation can improve the lives of people:

> *So, as somebody's kind of working through that element of it are there particular parts of that, that by using digital services it makes it better and it makes it easier? Do, you know, whether it's chat rooms or do, you know, what kinds of things it is that might actually help people at those particular little glitches, those problem areas, that they experience as they go along? So, that's the bit I'm kind of interested in and where I think we can make a contribution.* (PT6)

Digital transformation may not necessarily be achieved easily. Apart from having a clear understanding and strategic planning for transformation, other aspects of society and organisations also need to go through change. For instance, digital transformation requires particular skills: employees either need to be trained, or new employees need to be hired:

> *I think part of it is that a lot of frontline staff don't even have the digital skills to pass on to the people they're working with…. I think a lot of charities don't really have a grasp of the digital skill set of their staff. If you are a big social care charity with 2000 staff, we really need to get to grips with your status of digital skills and competence and where it's lacking. How would you support them and how do you train them?* (PT1)

Digital transformation also requires cultural and structural changes in organisations:

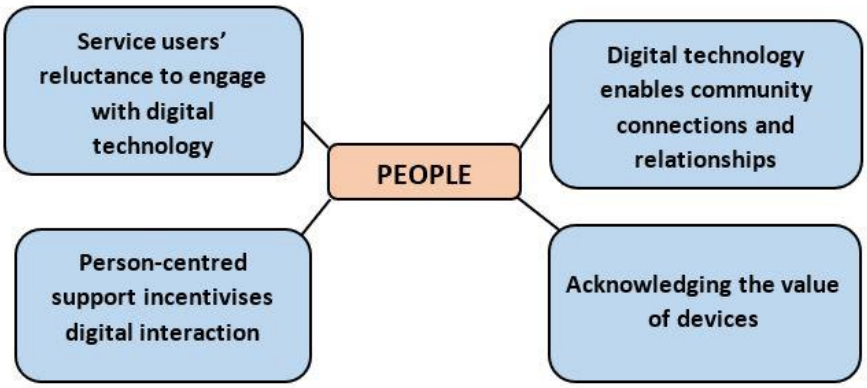
> *I think there are those cultural issues and change management within services, and again, ensuring that the staff that are supporting people feel confident and equipped to use digital.* (PT10)

In summary, digital transformation can have significant impact on the service provision. It can either improve existing services or leads to offering new services.

5.3 People

Four sub-themes are covered in the people factors domain as presented in Figure 8 below.

Figure 8. Sub-themes of people factors



5.3.1 Service users' reluctance to engage with digital technology

Multiple participants referred to a reluctance to engage with the digital world, citing a range of issues. Some service users made references to the reluctance of those stigmatised through unregulated drug use and/or homelessness to engage with digital technology and the perceived inability to escape from it. Two specific concerns were identified: 1) data privacy and 2) lack of confidence in using digital services.

5.3.1.1 Data privacy

Participants reflected that people who use drugs who are regularly let down by society are often mistrusting of services and of providing personal or location data:

> *You wouldnae have all this crap, you know what I mean? But I think it was better before when you just get on a bus and go somewhere. But now you need, now you've got this element, that they can find you, and you cannae get away from them.* (SU7)

The same participant commented on concerns around how their data may be used against them in the future:

> *I don't see the point to it. All you're going to do is access people's personal information and just use it against them.* (SU7)

One participant was particularly concerned about what is going on behind the scenes and being checked up on, noting that women may feel apprehensive about providing any location or privacy information:

> *I was thinking myself, well, can you see where I am all the time? Or stuff like that. That and all just ways you can, I don't know, I don't really know if there is anything gaun on behind the scenes about data or whatever… There has been women that have said that "oh, is that just to check up on us?" So, a lot of women start thinking, "Well, why are we getting these phones?" "Is that to keep tabs on us?".* (SU9)

This is suggestive of being overwhelmed and suspicious of the motivations behind digital devices. There was a feeling of constant supervision and inability to escape.

5.3.1.2 Lack of confidence in using digital devices

An unfamiliarity with digital devices also appeared to result in a reluctance to engage. It was noted that this may be due to feelings of anxiety, shame, or inadequacy. Moreover, there was a feeling that fear of the unknown may initiate anxiety but with some encouragement and support, could be addressed:

> *People are kind of anxious at first with using a computer, but once someone has shown them what to do, they'd probably grasp the chance to get that in.* (SU2)

> *Well certainly we know not everybody wants to access the digital world and now I don't know if that's the fact that they want to be off the grid and they don't, they understand digital and don't enjoy it and choose not to. Or it may be that there's a fear of the unknown and just say they don't want to because they don't know how to work or maybe don't understand the benefits it can bring as well.* (SU12)

Confidence in using digital technology can be low for a number of reasons, for example, due to unfamiliarity with digital devices, fear of the unknown or wishing to be off the grid; they are apprehensive when interacting with digital technology and the benefits it provides. However, informing people of the positives and addressing these myths may have better outcomes.

Overall, there was a common feeling of anxiousness and mistrust in digital services that is compounded by a lack of confidence possibly due to a fear of the unknown.

5.3.2 Digital technology enables community connections and relationships

Enjoying community classes, newfound friendships, renewed personal confidence, self-esteem and connections with family, friends and emotional reconciliation with broader society were benefits discussed by participants. Two prominent factors were noted: 1) digital technology as a connection to community and 2) digital connection to higher education.

5.3.2.1 Digital technology as a connection to community

Participants talked about digital technology as being a way of creating connections, which would increase social cohesion, confidence, relationships and community connections. Digital technology can enable marginalised individuals to make new connections and build relationships within their communities:

> *The day I kind of walked in the door at the community, I never really knew anybody. [Now] I know tens, do you know what I mean? Aye, that is like you mentioned, the Zoom meetings and that, I get to know people that way and then when you meet them in person, you have kind of broken down a barrier.* (SU1)

Service user participants also described the provision of digital devices as enabling a sense of community, self-esteem, and solidarity with service providers who they respect and trust:

> *In here the staff are nae daft. Everybody gets treated with the same respect, right? But they're not going to put you forward for a phone or a tablet if they think the first*

> *thing, you're going to do is walk down the road and put it in a pawn [shop]. That's how I got given a phone and I got my tablet, and I still to this day, I've had them for months now, and I've never even thought about putting them in the pawn [shop].* (SU15)

In contrast to the pejorative media portrayal of service users reported in the 'macro-environmental' section (4.5.1), several participants reflected on the benefit of providing digital devices as a way of showing people that they are cared for and providing the chance to build new relationships:

> *I think it definitely improves relationships as well, because you are empowering someone to use a device independently, to do whatever they want with it. I think quite often people are really shocked when we tell them we're going to give them a phone. Some people get really emotional. That's quite difficult, because you do take it for granted, and you think, you know that everybody deserves that.* (SP7)

5.3.2.2 Digital connection to further education

In addition to connecting to communities, participants talked about the benefits of digital technology as a means to further life expansion and contribution within society, with some of the participants referring to positive new experiences with education. These experiences have been possible through building relationships and allowing their confidence to grow:

> *I'm just thinking of one lady who, over the summer, signed up to do a college course. We were able to give her a laptop. If you had said to her two years ago that she'd be doing a college course, she'd be like, "What? I've got nothing in my life. I've lost my kids. I've got nowhere to live. Don't even know if I'll be here next week". And then, just to see the progress she's made over the last couple of years, her enthusiasm and excitement for life now, and wanting to do education.* (SP1)

Another participant found the benefits of working on a computer helped them with other education work they had been learning at college:

> *I've been learning on an actual computer rather than a thingummy, you know what I mean, like folder and all that and saving all my stuff in it. I've been learning how to do that at college.* (SU7)

Digital technology may empower those who are marginalised by society to gain connections and build confidence and skills. Building relationships with staff and connections with service providers that harvest positive future prospects are all benefits of this digital access. Such relationships and connections have enabled some service users to pursue further learning and higher education.

Overall, these relationships and connections have enabled relationships between service providers and users to rebuild self-esteem in service users through access to digital solutions. Such connections have also enabled further education.

5.3.3 Person-centred support incentivises digital interactions

Person-centred care puts individuals at the centre of support and ensures care is personalised to their needs (NHS Education for Scotland, 2021). Participants discussed the individual nature of the support provided and how they felt it incentivised their engagement. The two prominent factors noted were: 1) providing individual support and 2) individual support incentivises engagement.

5.3.3.1 Providing individual support

The person-centred individual support with digital technology from trusted service providers was described by participants as important in facilitating engagement with services and building confidence and skills in using technology:

> *And even members that used to come in, who weren't 100% sure about turning their computer on, over time, because we don't put additional pressure on them and they learn at their own pace, that takes that burden away from them, it's not like, "Oh, right, I need to do this today". It's, "Take as long as you need, and we will support you through that journey".* (SP2)

> *Because the person then starts to see that you are genuinely interested in supporting them and helping them, as opposed to just saying, "Here's a device and goodbye, good luck." Do you know? [laughs] That wouldn't work. It wouldn't work.* (SP4)

Moreover, these participants suggested this support further incentivises those in vulnerable communities by improving self-esteem, self-belief, and a confidence that they are being seen for their potential to succeed.

5.3.3.2 Individual support incentivises engagement

Participants also mentioned that person-centred care can incentivise interactions with service users, highlighting the support of the staff and their relationships with service users which provided the greatest assistance. There was a view that if there is benefit in it for them, then the support is welcome. Some were described as being motivated to engage by the opportunity to have more support:

> *Yes, the staff in the hub, if you need any help with anything, you come in. Maybe one specific member won't know but there's always going to be somebody that will be able to help you, be it with your emails, be it with downloading something, be it with just using and setting it up. I've seen the staff helping each other in here with things.* (SU15)

Overall, participants reported that person-centred support was a crucial factor that incentivised participation in engaging with services and using digital technology. Not only was it beneficial in assisting their learning and individual progress, but it also motivated them to return and engage with the programme and service providers.

5.3.4 Acknowledging the value of devices

The various financial, social, and personal factors surrounding the value of digital devices was a talking point for service providers due to potential negative outcomes related to high value items. Two key factors discussed were: 1) missing devices and 2) transferring value.

5.3.4.1 Missing devices

While there was negative media coverage of the programme at the beginning, with concerns that service users would immediately sell their devices (see section 4.5.1), service providers noted that, in reality, such experiences were rare and service users tended to retain their devices:

> *I can honestly say we've so far delivered about 340 of our 500, we're pretty much over 60% there now. That's only running at about ten percent [which have been lost/sold/broken/stolen]. So, I think we always knew that there was going to be some of that, but I was pleasantly surprised that it's only ten percent.* (SP10)

> *Well, we always build in a ten percent kind of replacement cost so that if people lose phones or they get stolen or they broken… I've left my phone on a bus before. It does*

> *happen, the negative stereotypes is that, oh that people will just sell them. You know, they'll just sell them and take the money. It's just not the reality of what we've found like we're on less than eight percent of people have come back broken, or it's been lost right and that can happen to anybody.* (SP12)

The above quotes highlight that while there were initial concerns regarding devices being lost, stolen, broken, or sold, this has only occurred for around 8-10% of devices. There was also a countering to the negative stereotypes of service users as being people who would regularly lose or sell their phones, whereas SP12 notes "that can happen to anybody".

5.3.4.2 Transferring value

Here we see the realisation that the high value item has more personal worth to the service user than financial value and that even when faced with extreme financial decisions, the value of that device has shifted from monetary to personal:

> *A lot of the people are seeing the real value and what they've got. So, for instance, we had a story about a girl who basically, she needed some money at this particular time. So, she pawned her device, but she knew how valuable it was to her that when she got that money back, she went back and bought the device again and some people have been doing that on like a rolling thing just to support themselves, but they recognise the value of what they've got but they go back, and they get it.* (SP13)

This participant highlights that at the beginning of the COVID-19 pandemic service users would not value the phones as much due to the basic nature of the devices and a lack of tangible personal and social worth:

> *We gave out burner phones at the beginning of the pandemic and people did get rid of them because they're like, whatever. It's only a tenner, I'll take a fiver and I'll buy a packet of cigarettes or whatever. But they're not adding value to people's lives, and they can be replaced like that [clicks fingers], like a smart phone limited connectivity and someone is showing you how to work it, that's a real-life changing thing for a lot of people.* (SP12)

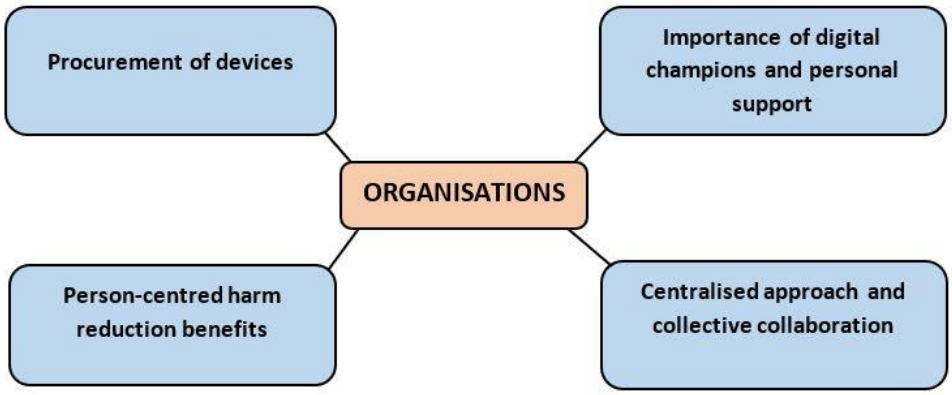
Participants observed that when service users were facing financial challenges and in need of money, they were pawning their devices and buying them back, rather than selling them. The provision of better, more expensive technology was viewed as more valuable to service users than cheaper mobile phones. Service users were perceived as being less likely to sell these better-quality devices and would be more likely to remain with service users due to its more substantial personal worth. The value of having the device long-term is acknowledged more than a short-term limited value fix, for example in getting cash.

Overall, the likelihood of devices being lost/stolen/sold/broken was considered to be lower than initially anticipated, contradicting negative stereotypes reported at the beginning of the programme. The support and inclusion provided by the devices may well be a factor in retention. However, these are also high value life companion devices which are being acknowledged as more beneficial long-term than a short-term solution.

5.4 Organisations

Four sub-themes are covered under organisational factors as presented in Figure 9 below:

Figure 9. Sub-themes of organisational factors



5.4.1 Procurement of devices

Making the best use of funding and navigating anxiety over future resources were considerable challenges for many service provider participants. This was exacerbated by a lack of procurement support and routine time constraints related to working on projects. Participants described the need to ensure the programme was value for money. The two prominent aspects within this subtheme were: 1) value for money and 2) lack of procurement guidance.

5.4.1.1 Value for money

Within DLS, service providers were able to search for the best independent deals on the market, so a great deal of time and energy was spent searching for value and attempting to purchase devices. Service providers also wanted to ensure they were purchasing devices at a cost that would enable many service users to benefit from them:

> *But what I want to make sure is I've got a pot of money and I want to be demonstrating that financial stewardship. To ensure that I'm getting the best price and it's got the most amount of flexibility for the people that we support, because actually if they're boxed into dealing with things like a set length of contracts and things like that, it's quite difficult.* (SP6)

> *I think it's difficult to get something really, really good with obviously the cost price that we're limited to, just due to our funding. We want to get as much as possible and get as many people connected as possible.* (SP7)

5.4.1.2 Lack of procurement guidance

However, a lack of a cohesive and coordinated central support for procurement of devices was described as a challenge for service providers, due to the amount of time required to access devices. The lack of support was described by services providers as time consuming and limiting their ability to get the desired value for money:

> *But I remember talking to [a member of the programme management team] and at that point s/he was talking about the procurement stuff, and s/he was saying that s/he was giving me examples of places for purportedly tablets and phones that was*

going to be your kind of thing, right? Also, the mobile routers and all that. That never came to fruition. (SP11)

We went out to buy devices and I just thought that would be really straightforward, to phone up a provider and say this is what we've got. We want a phone, a Smartphone, we want that for 12 months and pay for it all over the phone and that would be it job done, but that didn't happen. So, it became something that could have been really straightforward, became quite drawn out, long, laborious to the point that we had to buy individual devices, and get digital providers to actually get the connectivity and buy it on an individual basis as a top up. (SP6)

There appeared to be a disconnection between programme management and service providers over procurement issues and adequate support was not forthcoming. The perceived lack of support resulted in a time-consuming process for service providers, who had to source the devices themselves, something they initially thought would be straightforward.

5.4.2 Importance of digital champions and personal relationships

Service providers promoted digital champions because of their existing digital expertise or because they had specifically been trained to become one. They are sometimes support workers who already have relationships with service users, or they can be other members of staff who have trained to be digital champions. Their expertise and value were highlighted by many participants; however, relationships were more than just digital champions and frequently substantial and caring in nature. Two key areas discussed were: 1) digital champions and 2) digital and personal support.

5.4.2.1 Digital champions

Providing a helping hand and support with understanding the digital landscape, digital champions are those who can pass on their knowledge of digital technology or make learning how to use digital technology that little bit less daunting:

So, some people have absolutely minimal experience of using anything digital and others, in one sense we would call them a digital champion, because they are there helping other people. So, they've got a lot of expertise themselves but maybe are not able to get online at home, or they don't have their own device. So, they are coming in and using what we have on offer in the drop-in. You see, there's a whole range. (SP1)

And some learning opportunities with a person that's familiar with them, which ordinarily would be their support worker that's currently got a relationship with them, who we then take and train as digital champions, giving them a few extra skills to support them in the work that they're going to do on our behalf. (SP10)

Having the digital champions available was a regular talking point as it provided immediate points of contact for service users. People would use digital lifelines devices or services offered and could benefit from the availability of digital champions for assistance. The expertise of digital champions and the relationships they have with service users who have very minimal experience of using digital devices were viewed as crucial to helping individuals develop confidence and skills.

4.4.2.2 Digital and personal support

Services are much more than just digital champion focused. The trust that is frequently found in provider-user relationships through digital champions helps enhance a broader welcoming, community atmosphere:

> *But, through our digital champions we find that they're the best people to deliver that support because there's a pre-existing relationship there. Frontline workers are often best because the people we support… trust them.* (SP12)

> *[Service] definitely needs to be here. It is the heart of the community, like as in the homeless community. And it's, it's so unusual, pure joy, because it's like… when you're lost, and you can just chat to somebody. You've always got someone to bond wi in here.* (SU7)

Digital solutions and digital communities in third sector services appear to be perceived as providing a place of safety for people. The communities provide a mixture of trusting and helpful services from providers and camaraderie and support from peers. The above quotes highlight these supportive relationships that are formed or cultivated through access to digital services.

Overall, digital champions were described as having important roles in services, to provide support to service users, providing support both in terms of digital technology and in the trusted community environment.

5.4.3 Person-centred, harm reduction benefits

Harm reduction was a prominent theme, discussed by the majority of participants. Harm reduction and digital inclusion are acknowledged complimentary solutions to problem substance use and reducing DRD (Matheson et al., 2022). They can be tailored to each and every individual for person-centred care and, as discussed, can help provide access to a plethora of multiple other avenues for help. The two factors most prominent in this sub-theme were: 1) harm reduction and access to digital services, and 2) acknowledging digital technology as a vehicle to access broader services.

5.4.3.1 Harm reduction and access to digital services

Harm reduction is providing access to digital services to service users in various third sector environments, health situations and challenging life circumstances:

> *That was when I've been going to the women's harm reduction course. But I'm going to the [service provider] course as well. So, that's going to be good as well because they said they're aunt ae do like things that's reflecting different people's outlook and stuff that's happening an' that. And that, I've only started the [service provider], but that will be good because I've got my data, and I know I can like connect with them as well*. (SU9)

> *Then over the last couple of years we've been looking at how digital could support people that use drugs to access information, advice and support that makes sense to them through a harm reduction model and that's what kind of brought us into this work I guess with Digital Lifelines.* (SP3)

The DLS programme was felt to be ideal as it also embraced a harm reduction model linked to digital solutions. As noted above, digital technology was viewed not as the solution but as a vehicle by which many could travel or use to find solutions and positive outcomes in difficult situations. It is not the end destination but the means by which to find the solution.

5.4.3.2 Acknowledging digital technology as a vehicle to access broader services

Digital technology was described by some participants as a conduit through which people pass to use or reach another more positive place. It was not the silver bullet, but provided a mediating space in which people could build relationships, communicate, and find common ground to look for or receive information on the best ways forward at any given time:

> *I think it has improved relationships, but I think that it's an additional layer to that kind of relational practice. I think that needs to be like, fundamental to everything, doesn't it? Because it provides like an additional way of connecting with that person, communicating. It provides different options around access and information. It provides different options around that accessing different support and signposting people into the system and all that kind of stuff like.* (SP3)

> *I guess just I think what this project has allowed us to do is to really look at how digital can be the vehicle to address other needs that people we support might have. And I think it's allowed us to be really creative and flexible in the support we provide, and I think that's important, so just really grateful that we've been able to get the opportunity to continue this and obviously have the support from Digital Lifelines.* (SP7)

As highlighted above, the flexibility of digital technology can be many different things to many different people. It allows people both privacy and a way to connect depending on their needs and providing support for future changes. Digital technology was also viewed as providing a creative and flexible manner of providing support.

Overall, harm reduction and digital solutions enjoy a relatively harmonious and complimentary relationship which is further enhanced by the multi-layered life transitioning possibilities related to the digital lifelines programme.

5.4.4 Centralised approach and collective collaboration

In addition to streamlined collective connections and relationships and to tackle the time-consuming procurement issues, there was broad positivity over implementing a centralised database of partners and collaboration service providers. The two factors highlighted were: 1) collaboration with partners, and 2) community of learning.

5.4.4.1 Collaboration with partners

For the service providers involved in DLS, the prospect of future networks and collaborations to ensure better services touched on everything from a directory of services to more regular opportunities to learn from each other. There was a tangible sense of collectivism within the discussions on collaboration:

> *I'm excited about the early adopters, but I'm really kind of looking forward to what that would look like and what that's going to shape up to be next year, when we kind of launch a product. I think whatever that looks like, and we don't know a lot about what that looks like at the moment, the most important thing for me would be collaboration. Not just with people in our own cities, but with people across the whole scheme to make sure that we are all learning from one another.* (SP10)

> *I think if there was some sort of forum or some sort of place where anybody who is a participant of the sort of scheme can communicate with one another. You know whether they are working in partnership or not, we are all trying to reach the same goal.* (SP13)

There was palpable enthusiasm going forward, in terms of service providers learning from each other and a sense of collective collaboration to improve the landscape and assistance available to service users. A central database of services or directory would assist with this process and allow much easier communication between service providers and partners.

5.4.4.2 Community of learning

The regular monthly community of learning meetings were very well received and provided an opportunity for many participants to share ideas and encourage collective solidarity:

> *We've just been so impressed by the amount of resource that's been given to it – the community of learning opportunities that we have every six weeks or so. That's been really good to get together with other providers and just find out what they're doing, and share learning, and to hear what's working, what's not working. That's just been really refreshing as well, because you hardly ever get out of the office and hear what everyone else is doing. So, that's been excellent and the team around it have just been really good.* (SP1)

> *When we meet once a month it's brilliant just to knock around ideas and things and the [meeting] lead is really good, and I know that they're so approachable that if there's anything I know that they're there to contact. So yes, I would say they do an amazing job, and you can tell that they really care as well, which is good. I know that it is a difficult subject, isn't it? And everybody's coming from a different place as well.* (SP9)

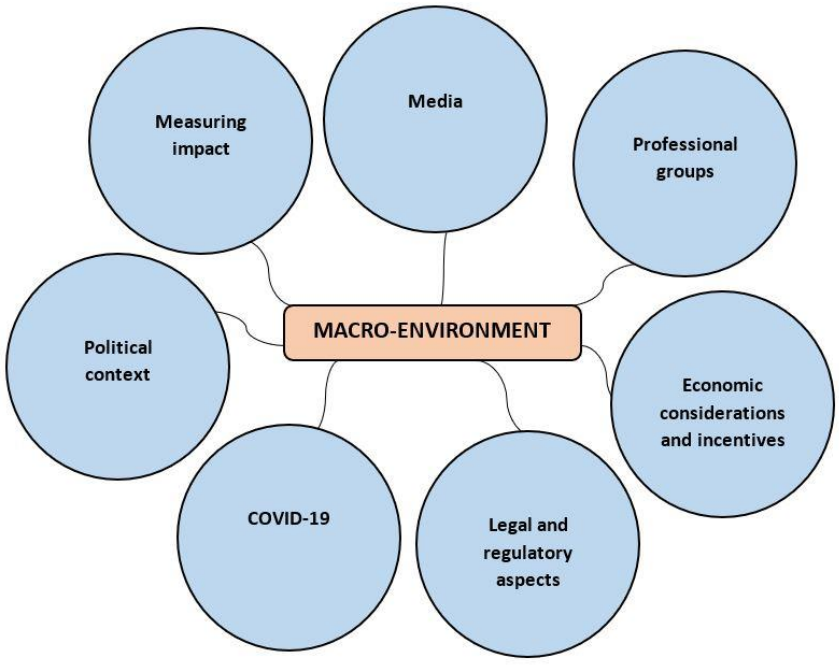
The opportunity to learn from each other and discuss what is being successful on the ground and what is not as beneficial was deemed important for service provider participants. This positivity towards the community of learning meetings was enhanced due to the approachability and commitment of the staff, making these meetings a success.

Overall, there was an anticipation that future projects would learn from these formative community of learning experiences.

5.5 Macro-environment

Eight sub-themes were covered as presented in 10 below.

Figure 10. Sub-themes of micro-environment



5.5.1 Media

Several programme team members noted the adverse coverage in some newspapers' responses to Scottish Government communications promoting the DLS programme. This coverage, which included prominent front-page stories, used highly stigmatising language about people who use drugs.

Adverse reporting from some sections of the press was anticipated by project partners, based on prior experience of the editorial positioning of some newspapers. This was offset by a belief that the public would reach their own conclusions about the programme:

> *So, I think that it was not something that this programme wasn't prepared for because there was always the feeling in the background that there might be a bit of negative associated with this unfortunately. So, it depends on what people think of the press, and what they read in the press. People form their own views around it. But I think it was picked up in maybe a couple of papers and then it's yesterday's news, isn't it, after that… I'd like to think in a way that the public are more [tolerant] and aware.* (PT12)

Another programme team member echoed the belief that such adverse coverage was to be expected from a certain section of the media, and noted that this was a time-limited response to initial promotion of the project:

> *One or two not very helpful articles, I think, in certain newspapers around giving devices to people who promptly go and sell them to support their drug use, or some of that. That was only one part of the media really, just one particular faction, I would say, that would be taking a more challenging approach to it. And there hasn't been, in recent months, much in the way of media interest, I would say, or media questions around this. So, we obviously prepare briefings and respond to questions that come in.* (PT10)

Some members of the programme team looked forward to being able to deliver more balanced and evidence-based information when reporting programme outcomes. One described this as follows:

> *That may be a good thing, you know, that want to get the programme working and implemented rather than potentially some unhelpful commentary that isn't really based on evidence but more on people's beliefs.* (PT10)

Another further discussed this in more detail, noting that the programme team made a strategic decision to defer major public announcements about the programme until activity and outcome data were available:

> *We tried to kind of keep our head below the parapet until we knew what we had to say and we were very aware of criticism there had been in the media before about, and really kind of quite disgusting language used, about people that use drugs and you know, why would you give, using their words, "junkies" these devices and all this stuff, and we wanted to be in a position to say, this works and this helps people… But we took the decision not to go and try and push our programme out into the kind of public arena, and in the background, we've been trying to gather the evidence that we know is out there and we know anecdotally that this works, but we need the strength in actual data to report.* (PT3)

5.5.2 Professional groups

A civil servant noted that, whilst project oversight and accountability were led by the programme team, other project partners provided additional skills and capacity:

> *We have a very small team nationally supporting the programme and there's a lot to do, and I guess it's that challenge of how we focus what capacity we have with what we need to deliver on. So, I guess from the role I play with responsibility for the programme, that's obviously an ongoing issue I need to consider around the capacity of the national team to do, and also to ensure that we're commissioning out what's relevant to other organisations to deliver and keeping some oversight and co-ordination around that.* (PT10)

Another programme team member echoed this view, and highlighted the importance of third sector service providers as "real delivery agents" working in partnership with Scottish Government and service users:

> *My take would be that the real, the distinctive nature of this is that it's not driven from within government fully. It's got a link to real people, real delivery agents and also to government because there's a degree of accountability required… I think the involvement of third sector is probably the thing which has been most important in this, I think.* (PT5)

5.5.3 Political context

One participant highlighted the connections between DLS and several, wider policy concerns of social inclusion, giving people more choice and access to resources to support their self-management, and preventative care:

> *The benefit, I guess, is to improve access and ideally outcomes for people in being able to connect in with services and support… I think it should bring in more choice to people about when and how they want to access services. So, rather than being told, well, this is where you have to be at a particular time, you've more choice. I think it also should empower people more in terms of self-management and early intervention. So, rather than wait for somebody to tell you what's wrong, you're able to get data and information in real time that's giving you some information around choices or decisions as you can make, and I suppose bring things into more real time, that you're not waiting.* (PT10)

Another noted the differing priorities across Government departments, suggesting a possible tension between the arenas of quantitative public finance management and more qualitative health and wellbeing aspirations:

> *I think policymakers think that somebody being digitally connected is a silver bullet because there are cost savings. I think there are different layers of policymakers and making, so, I think there's a financial benefit. I think, also, that there will be policymakers who understand and hope for the health benefits and for the health and wellbeing and that we will be able to save lives.* (PT8)

A civil servant indicated that the Scottish Government's aims for the programme were not prescriptive, but designed to support cross-sectoral developments and innovation:

> *So, in Drugs Policy [Scottish Government] we set out a national mission on drugs. But we didn't write down these are the principles of the mission; this is what you must do. The mission was just a bunch of funding that helps. £250 million that buys you some relationships. But at the core of that people had to come and chat about what they could do to be part of it and so that actually sparked a lot of really important informal networks and informal discussions.* (PT5)

Another programme team member explained how their organisation, which supported a portfolio of several digital inclusion projects, had adapted senior management meetings to provide policymakers with a more holistic understanding of the role these projects play in Scotland:

> *We have also recently changed the format of our portfolio board meetings, which we have people from across different government areas that sit on as portfolio members, and we now are starting each portfolio board meeting with one of our early adopter organisations coming in to speak to them and talking about what their project's delivering on the ground and the impact it's having on people. So, I think in that respect they are really starting to sit up and take notice of the benefits of the work that we are doing, and we aren't just an add on service. It isn't just about giving people mobile phones and devices, it's an awful lot more than that.* (PT3)

5.5.4 Economic considerations and incentives

Interviewees identified several economic aspects of the project. One programme team member acknowledged a tension between potentially negative perceptions of this use of public funds against the potential to realise savings in the longer term:

> *I think that's one of the things that the sector just struggles with in general is that notion of giving a smartphone free to someone who's an addict or someone who's homeless for all of the general population is quite a jarring concept, but actually, you know the tiny costs along, well, a phone can save colossal amounts on delivering services, and it's no brainer.* (PT1)

Another referred to evidence that digital interventions provide good value for money, especially in the context of increasing pressures on health and care services:

> *In bold terms, though, what digital [technology] can provide is savings, and that's one of the main reasons for it as a drive because there are statistics out there that are face-to-face, or a telephone call will cost pounds to deliver. A digital interaction costs pennies to deliver, and therefore, if you've got an increasing population… you can't just keep exponentially growing your public service by people to meet your people. You have to do it in a different way or else your bill for it is going to be enormous.* (PT11)

One service provider with lived experience suggested the programme should recognise the risk that some devices may be sold or stolen from participants:

> *Then some folk, obviously because of the kind of lifestyle they live, which I understand, because I lived it myself, you have devices in Cash Converters before you know it, or somebody else has got it, it's been stolen, or what have you. That's what happens sometimes.* (SP4)

Another service provider reflected on this risk, especially in the context of the ongoing cost of living crisis, and suggested ways that services could appropriately support clients in crisis to mitigate against this happening:

> *Then a sort of £80 resale probably isn't really worth it, whereas a £200 resell is worth it. You know if you've got nothing to eat and you've got no electricity - and I think there's a real challenge that we face probably within Digital Lifelines and the broader digital connection work around the cost of living crisis… I had that a couple of weeks ago with a woman who came into our access hub on the Thursday and she wasn't getting paid until the Tuesday and she didn't want to sell her device, but the reality was she had absolutely no money. She had no money. No food. So, we were able to get her like an*

emergency food package to keep her going over the weekend and I said this at the last Digital Lifelines meetings, like we almost need like a personal budget to go alongside the devices. So that if people are at absolute crisis point that organisations have a little bit of like wiggle room where they can do say, let's buy you a weeks' worth of shopping or let's make, you know, in order to keep hold of your device. (SP3)

5.5.5 Legal and regulatory aspects

Just one Programme Team member discussed these aspects, from their perspective at the organisation who engaged with the translation of digital tools from the North American to the Scottish context. Although describing this as a somewhat bureaucratic task, this participant highlighted the importance of ensuring appropriate data governance to avoid risk of harm to programme partners, providers, and beneficiaries:

So, doing the kind of contract work with the [North American app provider], making sure that colleagues understand all of the legislation that goes round about utilising these digital tools, how to get it onto an app store. You know, what the data processing agreements, you know, all the really boring paperwork stuff that needs to be put in place to protect both organisations and the individual, so that's kind of been our bit of it. (PT6)

5.5.6 Measuring impact

Programme team members and service providers discussed impacts from several perspectives, contrasting short and longer-term impacts, and objective versus more subjective aspects. One noted that participation in the project had enabled staff to intervene in several potentially fatal overdoses:

We have intervened in six scenarios where there was a kind of near-death experience and we've managed to turn that around. That, for me, would be a great story to tell but whether we're going to be able to tell it or not, I don't know, we're obviously still recruiting. (PT6)

The same participant discussed "softer", but still "life changing", impacts that included service users being able to connect with services and other supports at key points in their recovery/rehousing journey:

So, you know, we've got a number of impacts that we've already, some of them are very kind of softer impacts though, you know, the stuff that's coming out of the digital inclusion piece that (SP) have been leading on? You know, it's even just things like, you know, speaking to my housing officer. You know, connecting into services that were very difficult for you to connect into before. Or settle in quicker when you're discharged from prison and maybe not linking up with your previous networks. You know, so some of those kind of softer life changing stories, I think are equally valuable from a policy perspective as the ones that say actually, we have, you know, I'm thinking of the Brave app one again. (PT6)

Several participants noted that impacts include both objective measures, such as reducing the number of DRD among participants, and less tangible aspects such as participants feeling more socially connected and hopeful. Both were noted as being important and worthy of acknowledgement and exploration. A service provider discussed this as follows:

I also think, to state the obvious, it shouldn't just look at preventing drug death. It should look at supporting people's wellbeing and ways into the community from drug use. Nobody's suggesting it, but it shouldn't be "this is the solution". I think they can play a role. I think it is innovative, but I think organisations like ours and those of others

that are involved, it's about providing places for people to be and to be able to engage with things out with their drug use. That's a key part of it. (SP5)

This view was echoed by a programme team member working in a health role in Scottish Government who noted the need to acknowledge and measure softer impacts from the project:

You can't look at the world that way because there isn't a metric, there isn't a reliable metric for happiness. The communities being built and your whole life's been changed. So those questions are always these ones that challenges people's thinking because if you're just looking at it through pounds, shillings, and pence per person, this is all about what change you're making in people's lives. (PT5)

One programme team member noted the importance of, and challenges in measuring, the softer impacts. They also reflected that this project was relatively novel, and that measures of success should be considered emergent:

I think it's okay that as well like a lot of people who get devices will not be someone that may have overdosed, but the device may be the thing that has stopped them taking that longer term pathway… We just need to kind of cut into like why are we doing this? Who's it for? What are the projected long-term benefits? And equally I think being really bold about the fact that some of this stuff is a total unknown. So, it's like you can't just give devices to like, you know, 25 people who are supported by the (SP) and saying that is going to cut drug deaths by ten percent. There might be a point where we have some evidence base that really succinctly shows that, but it's very, very difficult. What I think you can do is talk about people feeling more connected to their friends and family and more connected to the people who are going to support them quickly, because they've got a device. (PT1)

5.5.7 COVID-19

Another macro-environmental factor that one programme team member raised was the role that the COVID-19 pandemic had in expanding and normalising the use of digital technologies in service delivery:

Yes, I think because of Covid, things pushed through a lot quicker than they maybe have before because it was needs must, and you couldn't see your GP. So, things like digital conferencing for appointments, and stuff like that, really ramped up throughout that as well. I think people through Covid have had to become acquainted with technology in a lot of ways… So, it's how do we keep plodding ahead where appropriate and utilising the momentum. (PT12)

6. Discussion

6.1 Summary of key findings

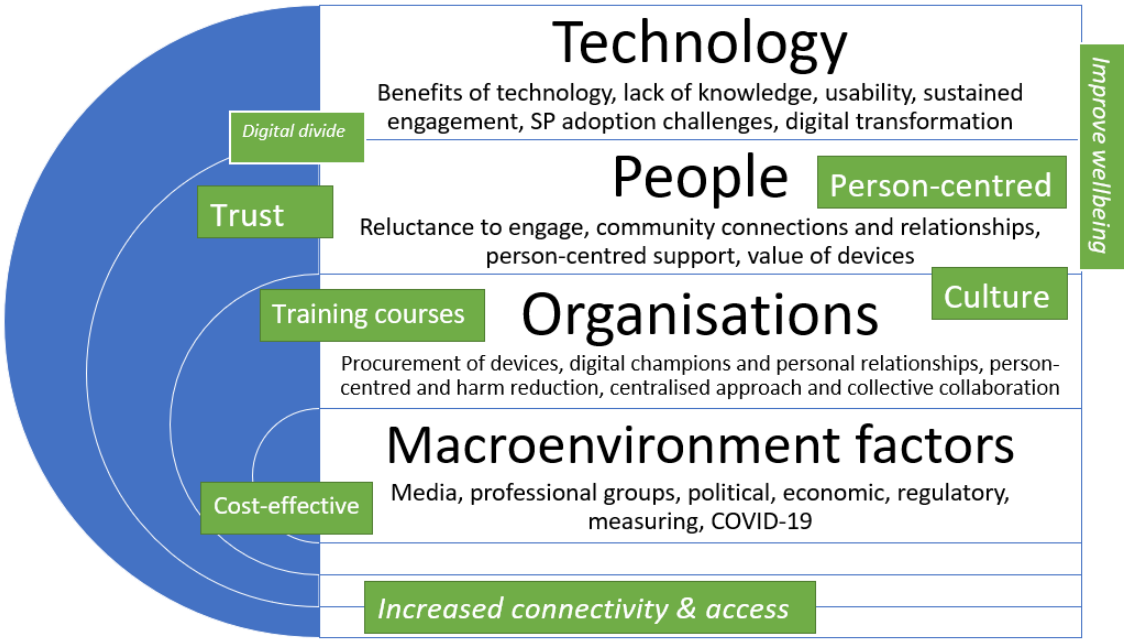
- The programme reached 274 beneficiaries through Early Adopters 1, and 965 through Early Adopters 2, via a range of devices and connectivity.
- The attrition rate through lost/stolen/sold devices was estimated to be around 10%. Even when individuals sold their devices, they would often pawn them and then re-purchase them.
- Smartphones and data connectivity were the most frequently requested technology. The usability of devices was viewed as particularly important.
- Whilst some service users had concerns about their data security, service providers felt this was easily addressed through training and explanation.
- Service users still require training in basic digital literacy such as computer basics and use of the internet.
- Access to the internet enabled service users to access a range of harm reduction and health information and simply to connect with family and friends.
- Simple applications like the calendar function enabled engagement with appointments.
- Basic digital literacy skills were good for service providers.
- Service providers make considerable use of text and WhatsApp messaging to connect to clients.
- Training alongside provision of technology is important.
- Digital technology was viewed as a way of making connections with service providers, friends and family, other health/social care services, improving wellbeing, and to support education.
- Service providers noted challenges around capacity and knowledge regarding data security, as well as issues around the time taken to procure devices.
- Person-centred approaches to digital technology provision were deemed important. Digital champions were viewed as integral to this, providing digital and other supports.
- The community of learning was viewed as an important resource for service providers, enabling effective practice and challenges to be shared.
- The wider environmental context was important, in terms of how the programme was perceived and received.

6.2 Methodological considerations

6.2.1 The TPOM as a model for evaluation

The TPOM (Cresswell et al, 2020) proved to be a very useful tool for the evaluation. It provided a guiding framework that ensured key areas were explored and the sampling framework covered the key groups of participants. It is a broad tool which was designed for more general technology in healthcare rather than this specific target area and group of people. Figure 11 shows the TPOM with the additional themes used in this analysis.

Figure 11. TPOM with additional themes diagram



Going forward we recommend that additional themes used here are incorporated when used in this sector. However, given the need for ongoing evaluation, and for this area of evaluation to evolve as digital technologies are embedded into practice, there is a need for a shorter, more focussed evaluation tool. A recent analysis of the TPOM for ODART recommended other similar variations of the framework for this population (Dumbrell et al., 2023). The TPOM as modelled above with our additional themes, and TPOM ODART (Dumbrell et al, 2023) require specialised qualitative analytical skills and are not suitable for those without appropriate training in qualitative methodology. These frameworks could be developed into a questionnaire tool from the evidence gathered in this evaluation and the research conducted by Dumbrell et al. (2023). This would give services adopting technologies a tool for internal evaluation as well as this being part of an evaluation package for the DLS programme going forward.

6.2.2 Sampling, participation and scope of the evaluation

This evaluation used a range of qualitative and quantitative methods to seek the views and experiences across service users, service providers and wider programme team. The survey and interview data should be considered as complementary rather than one being more explanatory of the other. Ideally, we would have surveyed the same people that were included in the baseline survey of users' needs. However, given the transient nature of service users and staff in these services, and the time between baseline and evaluation, this was not considered feasible from the outset. We are able to broadly compare the survey findings at baseline with those in the current evaluation as an indication of the change in use of technology by service users and providers. However, numbers are small so we cannot consider this to be representative of the whole group who received or provided technology as part of the programme.

We had considerable challenges in getting service providers to engage with the evaluation process, despite it being made clear that participation was an expectation of the funders. This reflects that third sector service providers are under considerable challenges to deliver their services, so taking time to participate in an interview or complete a survey was not a priority for them. Although we had a target of 20 interviews with service providers, we were only able to interview 14. This was despite considerable time and effort put into trying to engage with potential participants. However, although we did not recruit the target number, those that did participate came from a range of different services with eight different organisations represented. We used participation in the survey as a way to offer a

less time-consuming mode of participation and survey participants did provide further rich data through some detailed responses to open questions.

Participation by service users was good with 21 participants. Unfortunately, we had hoped to include some people who had not wanted to take up the offer of digital technology but, again despite considerable effort, we were unable to do so. In seeking participation from service users, it became apparent that there were many service users who were not eligible for the research because they were not currently using drugs or done so in the last 12 months. This situation arose because some of the services funded by the programme were not targeted at this specific high-risk group but at broader areas of addressing loneliness and isolation in areas of multiple disadvantages. There needs to be some tightening of the inclusion of organisations and their target groups if the programme is to meets its aims going forward.

6.3 The impact of digital technology on service users

This addresses objective one of the evaluation. The personal and social benefits of the devices were acknowledged and appreciated by many individuals. This is evidenced by the low attrition rate discussed by two separate service providers and the real-time observation that long-term goal orientated thinking is being observed in service users. This longer-term goal orientated thinking additionally encourages an important relationship between harm reduction ideology and digital devices. Service users' access to devices and services related to harm reduction cultivates a feeling of inclusion and interaction within a harm reduction environment. Access to instant advice on injecting equipment provision, places of safety, urgent healthcare, and MAT standards were described by participants as examples. The ability to organise their time with appointments using the calendar in their smartphone was another simple tool which could encourage engagement with appointments.

Digital inclusion through devices and connectivity promoted relationships, community, and connections, with some service users utilising these newfound opportunities to take them into more learning and further education opportunities. Person-centred support was viewed as crucial for interaction and incentivisation with digital devices. Bespoke tailored plans were naturally agreed. The novelty of the programme enabled this more flexible approach because there was no protocol to follow on what device, how it should be used or any limitations around that.

6.4 The impact of availability of digital technology for services and other stakeholders

This addresses objective two of the evaluation. Contrary to the potential assumption that digital technology is distant and less interactive than face-to-face interactions, there was a person-centred nature to digital inclusion via technology evident which was welcomed by service providers. There was a synergistic relationship between harm reduction and digital inclusion interventions as both offer bespoke personal avenues for positive individual outcomes. Digital inclusion in the form of access to devices and the opportunities these devices opened (with appropriate training and support) provided an opportunity for recipients to overcome difficulties and travel through these difficulties, with support, to find the deeper solutions to much bigger problems. Access to educational opportunities was an example of this, which can assist in transforming service users' lives with the help of service providers.

The opportunity throughout this programme for service providers to meet, socialise and share experiences during the monthly community of learning meetings was broadly acknowledged as a positive experience. Discussing individual experiences and comparing how providers approach project challenges was welcomed. This was further enhanced and elaborated on going forward as collective communication and provider collaboration was suggested as pivotal to ensure further improvement and development at service and programme level.

6.5 Gaps, barriers and enablers to meaningful adoption of digital technology

6.5.1 Technological

This evaluation found that provision of digital technologies offers many benefits to service users and providers. The technologies examined in this study ranged from smartphones, tablets, and laptops to internet connectivity tools. We identified three main categories of use and perceived benefits for these devices: *increased connectivity, increased access to services,* and *improved wellbeing*. Increased connectivity was described as the most frequent benefit by both service users and service providers. In particular, as previous studies such as McClure et al. (2013) and Ozga et al. (2021) found, there are still many concerns about the *digital divide* for marginalised populations. This evaluation showed that provision of such devices and tools allowed service users to connect with others, overcome loneliness, create friendships, and build a sense of community thus reducing the digital divide. Participants provided examples of connectivity to family and friends, as well as the importance of connectivity for those who had recently completed recovery programmes or those recently released from prison.

Increased access to services was another benefit of digital devices. This confirms recent studies which also point to drug treatment services becoming more available through use of mobile devices (Ozga et al., 2021). It was perceived as a benefit to both service users and service providers, as people who were originally excluded due to lack of access to technology had an increased chance of being engaged. New online services were provided in some services, resulting in an increase in support available to individuals and better engagement with support workers. In addition, new offerings such as events could be more easily identified by service users.

Improved wellbeing was the third main benefit that our study identified in provision of digital technology for service users. A novel finding was that digital technologies were seen to have significant potential in improving the wellbeing of the community. The provision of technology had the potential to prevent DRD, but it was also seen as a way to improve mental health and emotional wellbeing. Participants noted that access to digital technology provided a way to reduce stress, anxiety, and depression, as well as improve self-esteem and confidence.

The evaluation identified some challenges faced due to the limited technology literacy among service users. Technology literacy is a key requirement for health awareness and access to services (Pillai et al., 2018). Participants highlighted that some service users had limited technical knowledge, leading to low engagement, periods of stress and short intervals of engagement with technology. There was also a lack of knowledge in terms of the potential uses of technology, and without such knowledge, service users were often not inclined to search for information and support themselves. Some service providers offered training ranging from setting up accounts and email addresses to using social media to overcome the lack of knowledge. Training boosted the confidence of service users, which further improved their engagement with technology. Lack of technical knowledge could lead to limited use, and hence training was seen as a key enabler of technology use.

Technology usability has been the focus of many studies related to use of digital technology in health and care (Holden et al., 2020, de Joode et al., 2010). As in those studies, this evaluation found that the usability of devices, digital technologies and their applications also raised concerns for people. There were different preferences and feelings expressed towards different devices offered by the programme. Some devices were perceived to be easier to use than others. Smartphones and tablets were considered more learnable and usable to those who were less digitally savvy, as opposed to laptops and Chromebooks. In addition to devices, the usability of digital technologies e.g., applications were important and should be considered if DLS starts to support the development and implementation of digital products.

6.5.2 People factors

Trust in technology and how data were used was a barrier to engagement for service users. Service users and especially those using drugs regularly being apprehensive around digital technology is understandable considering their vulnerable situation and mistrust of services such as police or authoritarian agencies (Falzon et al., 2022). Consideration should be made for those in precarious circumstances who have good reason to not wish to share data or become digitally noticed. This is exacerbated by a lack of confidence in using the technology due to its unknown elements and users' marginalised status, but this may be overcome with support, encouragement and training. Service providers did not feel this was insurmountable and investing some time with mistrusting or sceptical individuals was considered worth the effort.

Digital services were an enabler to promote relationships, community, and connections, with some service users utilising these newfound opportunities to take them into more learning and further education opportunities. Person-centred support was viewed as crucial for facilitating interactions and incentivising digital devices, with distinct and bespoke tailored plans being agreed between service providers and service users rather than broad spectrum expectations.

Digital champions were an enabler that crossed the people and technology themes of the TPOM framework. Digital champions are integral to assist in building confidence, self-esteem and motivation one-to-one with those who are apprehensive, inexperienced or lack understanding of the digital world (Allman, 2022). In this evaluation digital champions were discussed by service providers as being crucial to its success due to the approachable and supporting role they provide.

6.5.3 The service and organisation environment

A barrier for service providers was the sometime problematic processes required in procuring devices. Improved communication to streamline procurement would be welcomed. A gap to be addressed moving forward is the current emphasis in services for digital technology to be used for connection through text messaging. Connection is important but text and WhatsApp messaging is, by its nature, limited. A shift towards online support, consultation and services would help the programme move forward.

Training courses in services were a clear enabler and there is a need for more training to move people from basic digital literacy to embracing the potential of online access. The women's harm reduction course available from one service had embraced digital solutions and harm reduction for some time. This was an example of training that could be provided through other organisations or shared across organisation working together to promote the right form of training to individuals. Although not suggested by participants, there could be capacity to develop a group of digital training champions who specialist in developing online training resources for their clients. A coordinated approach through DLS could prevent duplication of effort across the sector.

The ability to transform service users' lives with the help of service providers was being realised by some. This cultural shift should be facilitated going forward. The community of learning was an enabler that could provide the environment to support culture change across organisations.

6.5.4 The macro-environment

There was strong evidence that the concerns in the media about people selling devices have not been realised. Service providers estimated approximately 8-10% of devices were sold and, in some cases, these were only temporarily sold to address a short-term cash flow problem and were later re-purchased. This tells us that digital connections were valued by service users. Individuals' accounts through robust research, provides personal stories of the value of digital connection. The combination of personal stories and data provides a strong tool to counter the stigma expressed by the press and other commentators in the media. The DLS programme has a moral obligation to use this evidence to change the narrative and be bold in countering previous stigmatising views. A campaign to promote

digital inclusion, hosted on the DLS website, and promoted more broadly through partner organisations as well as being promoted to the media could be a powerful way to address stigma. The website has had 2283 visits since January 2022 (communication, programme team) which is not particularly high. For comparison, the DRNS website received 5400 since February 2022. A coordinated website-based campaign would drive awareness and increase website usage, thus further promoting the programme.

The potential for more cost-effective services was noted. Digital services can save time and engage more people. This has implications for wider healthcare that should be explored through future cost effectiveness studies.

The novelty of the DLS programme is clear given the lack of evidence from our literature review, of such programmes elsewhere. This is an opportunity for Scotland to demonstrate it is leading the way internationally in a truly progressive, planned and executed programme of digital inclusion. Scotland's reputation as the DRD capital of Europe has brought shame to our Government, and our country and, undeservingly, to our services. This programme demonstrates novelty, impact and leadership which must be communicated effectively and proudly.

6.6 Has DLS met its aims?

Objective four of the evaluation was to consider whether the DSL programme aims were met. These are considered in turn.

Aim 1: people have greater access to digital solutions, have skill and motivation to use them, and are confident in utilising them, to keep them safe and enable them to become and remain connected to family, friends and relevant services that support them.

This aim has not yet been fully met. Access has improved as the programme has over 1000 beneficiaries, but the number of actual devices to the Early Adopters 2 programme is still quite low (36 laptops, 49 tablets, 120 smartphones and 145 connectivity packages at the point of reporting). This could be because the programme was slow in getting beyond the discovery phase of the SAtSD to enable a larger scale funding programme to be promoted. Whilst there is strong evidence from interview data of the benefits for those who have been recipients of technology, there is clearly still a need to further develop training to improve basic digital literacy and confidence in using technology as well as understanding issues around data security. There is also scope for future development to meet this aim more fully going forward, which taps into the developing network of groups of people with living experience of drug use. The Scottish Drugs Forum is supporting nine such groups across Scotland. This network would be an obvious group for inclusion in the benefits of the DLS programme going forward.

Aim 2: the services that support these citizens have the digital means to develop and strengthen the support they provide, and staff are skilful in using and developing digital solutions to enable those they support.

This aim has been largely met in that staff had a good level of basic digital literacy to support service users. Staff could also see the benefit of person-centred support with digital technology, but also through using digital technology for other purposes, such as connection to families or access to education, for their service users. Digital champions had a strong role to play and there should be investment in more digital champions and more specialised digital champions, including specialists in setting up online services or online information resources. There is considerable scope to further develop skills in service providers to develop digital solutions. Moving forward the DLS programme should focus attention on enabling staff, potentially through developing the digital champion role, to further meet this aim.

Aim 3: the sector is digitally connected and collaborating, developing joined-up services and exploring innovative solutions together.

The programme has started to support joined up working. The potential to use the programme for joining up individual third sector organisations, as well as connecting third sector and statutory services is considerable, particularly in areas where data sharing arrangements have been addressed. The use of the community of learning and the support for digital champions is key to meeting this aim going forward. The programme needs to ensure harm reduction services, whether third sector or statutory, are central to activities.

6.7 Towards digital transformation

Digital transformation is not just about adopting digital technologies but also about re-designing and re-thinking the existing processes to offer new and improved services (Vial, 2019). Participants noted that many organisations were using some digital technology for providing activities and support to service users, but that was not transforming their services. The evaluation highlights the need for new value creation and the creation of new digital services. For instance, digital technologies can be used to re-design processes to streamline the existing ones or allow organisations to offer new services that are not offered if digital technologies were unavailable, such as remote consultations. Furthermore, this evaluation confirmed that in drug harm reduction services, the digital transformation process requires particular skills, cultural and structural changes in organisations (Matt et al., 2015), and the transformation of the society as a whole (Braa et al., 2023) Digital transformation is difficult to achieve, but it can have a significant impact on services and service user engagement.

6.8 Conclusion

Digital Lifelines Scotland is a progressive and novel programme that provides social inclusion and a platform for engagement for service users and those at risk of drug related harm. The personal and social benefits of the supply of devices and connectivity were acknowledged, appreciated and valued by participants. This was evidenced by lower than anticipated rate of devices being lost/stolen/broken/sold. Service providers offered more than digital support, with emotional and personal support available to service users as a result of the connection through digital technology. There are challenges to be addressed such as service users' anxieties around data security. Furthermore, there is a need for a programme of training for service providers and services users to ensure they can fully embrace the opportunities that digital connections can provide.

Organisations and services are at the start of a potential cultural shift towards digital transformation, which could be enabled in a very meaningful way by the DLS programme. Future activity should move from device supply to digital services. Moving forward, the programme should use this evaluation evidence to direct the narrative and (indirectly) challenge the stigmatising views that may still exist in wider society. Access to digital technology is no longer a luxury but a necessity in the modern health and social care arena.

7 Recommendations

1. Digital champions should be recruited from services to provide a locus of activity for training and support of staff and service users.

2. The DLS programme could coordinate the further training of specialist digital champions with expertise in developing online resources for services.

3. The emphasis on smartphone use necessitates the awareness of training and applications that can be used with a smartphone i.e., on a small screen.

4. The programme should continue the community of learning approach and extend this to include other services.

5. The community of learning should be used to foster the culture change across organisations that will enable:
   -understanding training needs
   -the importance of sustainability of engagement
   -development of digital solutions
   -promotion of cross-sector working.

6. Future programme criteria need tighter inclusion criteria of the services and organisations which are given funds. This should be more specific in including people at risk of drug-related harm.

7. The programme should have more emphasis on harm reduction services whether third sector or statutory. The SDF network of living experience groups would be an ideal network for inclusion.

8. Digital transformation initiatives need to be planned and launched in order to offer reformed and new services to tackle the challenges in the sector.

9. To address stigma, the DLS programme should be bolder in communication of the benefits of digital inclusion for people who use drugs. This will require some strategic communication support to ensure the messages are strong and based on the evidence presented.

10. The website should be further promoted as a focus for sharing information about the programme including the positive stories as well are areas for further development.

11. The TPOM and TPOM ODART should be used in future evaluations in which there is suitable qualitative analytical expertise.

12. The TPOM and TPOM ODART should be developed into a structured questionnaire tool that is validated for further use. This would provide a tool for non-specialists to apply in the future evaluations.

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Appendices

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Appendix 1: Survey – service users
(note: this was formatted for online platform)

Digital Lifelines Scotland Evaluation Survey for people who use drugs

PIS information.

1. You are eligible to take part in the study if you:
    - Are aged 18 years and over,
    - Currently use or used street drugs in the past 12 months
    - Currently living in Scotland.
    - Received a digital technology-based innovation funded by the Digital Lifelines Scotland programme.

    Does this describe you?
    ☐ *Yes/no (go to the end of the survey)*

Consent box that ticks that they meet eligibility criteria.

2. Do you consent to the above statements?
    ☐ *Yes/no (go to the end of the survey)*

Online survey questions for people who use drugs/have used drugs in the past 12 months
<<Personal Information>>

3. Where do you currently live? (Please tick one)
    ☐ *City*
    ☐ *Large town*
    ☐ *Small town*
    ☐ *Rural area*

4. What type of housing or accommodation do you live in? (Please tick one)
    ☐ *I own my home*
    ☐ *Private rented*
    ☐ *Council accommodation*
    ☐ *Homeless hostel*
    ☐ *With family/friends*
    ☐ *Currently rough sleeping*
    ☐ *Other (specify)*

5. Do you have any long-term physical or mental health conditions?
    ☐ *Yes* ☐ *No*
        ☐ *If yes, do you use digital technology to access information or services regarding your condition(s)? (This could include website/online chat/online constancy/ online prescription etc)*

        ☐ *If you don't currently, would you like to use digital technology to get help and support with your condition(s)?*

<<Digital literacy>>

6. Do you own/have access to / use any of the following devices?
   (Please tick the boxes that apply).

	I own	I have access to	I regularly use	I don't have access	This device can connect to the Internet
Smartphone	☐	☐	☐	☐	☐
Desktop computer (PC)	☐	☐	☐	☐	☐
Laptop computer	☐	☐	☐	☐	☐
Tablet, iPad	☐	☐	☐	☐	☐
Smartwatch	☐	☐	☐	☐	☐
Voice assistance (e.g. Alexa/Google Home, Siri)	☐	☐	☐	☐	☐

☐ *Other* (Please explain – Free text)

7. Please tell us about your skills in using digital technology. Tick one box to show how much you agree with the following statements

I am confident that I can	**Agree**	**Neutral**	**Disagree**	**Not Applicable**
Log into PC or laptop	☐	☐	☐	☐
Send and receive emails	☐	☐	☐	☐
Share documents online with others e.g. sending documents as attachments	☐	☐	☐	☐
Download and save documents from the Intranet	☐	☐	☐	☐
Use social media	☐	☐	☐	☐
Use online banking, pay bills	☐	☐	☐	☐
Find relevant information using the Internet	☐	☐	☐	☐
Understand internet safety and security	☐	☐	☐	☐
Understand the principles of online confidentiality and data protection	☐	☐	☐	☐
Participate in video calls	☐	☐	☐	☐
Easily find online learning resources to help me in my treatment	☐	☐	☐	☐
Other	☐	☐	☐	☐

(If selected other, please specify)

8. Which of the following ways do you connect to the Internet? (Please tick all that apply).

	How often do you connect to the Internet this way?				
	Every day	A few times a week	A few times a month	Less often	Never
On my mobile phone	☐	☐	☐	☐	☐
Home connection	☐	☐	☐	☐	☐

Work or college connection	☐	☐	☐	☐	☐
Public Wi-Fi internet	☐	☐	☐	☐	☐
Cafe Wi-Fi	☐	☐	☐	☐	☐
Library Wi-Fi	☐	☐	☐	☐	☐
Bus or train Wi-Fi	☐	☐	☐	☐	☐
Service provider computers/Wi-Fi	☐	☐	☐	☐	☐

Other (please specify)

9. Which of the following do you use to connect to your family or friends? (Please tick all that apply)

	How often do you connect to friends / family this way?				
	Every day	A few times a week	A few times a month	Less often	Never
Video call (Zoom, Skype, Facetime, WhatsApp, MS Teams…)	☐	☐	☐	☐	☐
Text (SMS, WhatsApp)	☐	☐	☐	☐	☐
Social networking (Instagram, Facebook, Twitter, TikTok etc)	☐	☐	☐	☐	☐
Email	☐	☐	☐	☐	☐

Other (please specify)

<<Current Situation>>

10. Which kind of digital devices have you received from the Digital Lifelines Scotland programme?

	How have you used it so far?			
	Call	Internet	Text messaging	other
Smartphone	☐	☐	☐	☐
Tablet	☐	☐	☐	☐
Internet connection	☐	☐	☐	☐
other	☐	☐	☐	☐

11. Which of the following do you use to keep in touch with your service providers for support? (Please tick all that apply)

	Which devices do you use to do this?				
	Smartphone	Desktop computer	Laptop	Tablet	None of these
Video call (e.g. Zoom, Skype, Facetime, MS Teams, Google Meets etc)	☐	☐	☐	☐	☐
Text message (SMS, WhatsApp)	☐	☐	☐	☐	☐

Social networking (Instagram, Facebook, Twitter, TikTok etc)	☐	☐	☐	☐	☐
Online chat functions (Support organisations, Recovery Forums)	☐	☐	☐	☐	☐
Email	☐	☐	☐	☐	☐

Other (please specify)

<<Digital Technology and Services>>

12. Do you use devices or digital technology to find out how to get help with health or social problems?

☐ *If yes, what technology do you use? And how often?*

	How often do you do this?				
	Every day	A few times a week	A few times a month	Less often	Never
Search on the Internet	☐	☐	☐	☐	☐
Ask friends/family/support workers to search on the Internet	☐	☐	☐	☐	☐
Check the service provider's website	☐	☐	☐	☐	☐
Check NHS website	☐	☐	☐	☐	☐
Check social media (Facebook groups)	☐	☐	☐	☐	☐
Forums	☐	☐	☐	☐	☐
Ask voice assessment (Alexa, Google Home, Siri)	☐	☐	☐	☐	☐
Contacting health care providers e.g. GP, Addiction service	☐	☐	☐	☐	☐

☐ *If not, why do you not use digital technology?*

☐ *Please explain (Free text)*

13. When you need information about seeking help for problems related to drug use, do you use a device/digital technology? ☐ Yes ☐ No

☐ *If yes, what technology do you use? How often?*

	How often do you do this?				
	Every day	A few times a week	A few times a month	Less often	Never
Search on the Internet	☐	☐	☐	☐	☐
Ask friends/family/support workers to search on the Internet	☐	☐	☐	☐	☐

Check the service provider's website	☐	☐	☐	☐	☐
Check NHS website	☐	☐	☐	☐	☐
Check social media (Facebook groups)	☐	☐	☐	☐	☐
Forums	☐	☐	☐	☐	☐
Ask voice assessment (Alexa, Google Home, Siri)	☐	☐	☐	☐	☐
Contacting health care providers e.g. GP, Addiction service	☐	☐	☐	☐	☐

☐ *If not, why do you not use digital technology?*

- *Please explain (Free text)*

14. Do you experience any difficulties in using devices or digital technology? ☐ *Yes* ☐ *No*

☐ *If yes, please tell us about these difficulties.*

☐ *I do not know how to use it*
☐ *I don't have enough confidence to use it*
☐ *Do not trust digital technology*
☐ *Privacy worries*
☐ *Too expensive*
☐ *Bad experience with viruses*
☐ *Not for people my age*
☐ *Other (please specify)*

15. Do you think having support to help you use devices and digital technologies would be helpful? E.g., training, skills development, confidence building, support? ☐ *Yes* ☐ *No*

☐ *If yes, what might be helpful (tick all that apply and please add further ideas of your own)?*

☐ *Having my own device*
☐ *Easy to use instructions*
☐ *Better access to the Internet*
☐ *More support*
☐ *Other (please specify)*

☐ *If you don't need any support to help you use digital technology, please tell us why.*

16. Please tell us what digital technology training you would welcome

	Most Important	Quite Important	Not Important	Not Applicable I can do this already.
Getting started with computers (Logging onto computer, keyboard and mouse skills)	☐	☐	☐	☐
Computing basics (word processing, emails, setup Wi-Fi)	☐	☐	☐	☐
Using the internet (searching, etc.)	☐	☐	☐	☐

Using online communication tools (e.g. social networking, online communities, online chat)	☐	☐	☐	☐
Using technology to support services to access and use your health and social care resources	☐	☐	☐	☐
Using the Internet safely and securely	☐	☐	☐	☐
Understanding issues of confidentiality and data protection	☐	☐	☐	☐
Accessing online learning opportunities	☐	☐	☐	☐
Other	☐	☐	☐	☐

Other (please specify)

About you

17. How old are you? (Please tick one)
    - ☐ *18-29*
    - ☐ *30-39*
    - ☐ *40-49*
    - ☐ *50-59*
    - ☐ *60-69*
    - ☐ *70+*

18. Which of the following best describes how you think about your gender identity? (Please tick one)
    - ☐ *Male*
    - ☐ *Female*
    - ☐ *Non-binary*
    - ☐ *Other*
    - ☐ *Prefer not to say*

19. What is the highest level of education you have completed? (Please tick multy)
    - ☐ *School*
    - ☐ *College*
    - ☐ *University*
    - ☐ *Other*

20. Which of these responses best describes your living situation? (Please tick one)
    - ☐ *I live alone*
    - ☐ *I live only with my partner*
    - ☐ *I live with wider family members (e.g., sister, parent)*
    - ☐ *I live with people I am not related to (e.g., friends, hostel accommodation)*
    - ☐ *Prefer not to say*
    - ☐ *Other (please specify)*

21. What is your current situation regarding drug and alcohol use? (Please tick all that apply)
    - ☐ *I am currently using (non-prescribed) drugs*
    - ☐ *I am in treatment for problem substance use*
    - ☐ *I am prescribed medication for problem substance use*
    - ☐ *I use alcohol on a regular basis*
    - ☐ *I am not using drugs*
    - ☐ *I am not using alcohol*
    - ☐ *I am not in treatment*
    - ☐ *I am in recovery*

□ *Other*

If selected other, please specify:

Thank you for participating in this research project.

Appendix 2: Survey – service providers

(note: this was formatted for an online platform)

Digital Lifelines Scotland Evaluation Survey For Service providers

Personal Information sheet.

1. You are eligible to take part in the study if you are a professional involved in non-NHS service to people who use drugs or their family in Scotland and received a digital technology-based innovation funded by the Digital Lifelines Scotland programme and you do not work for an NHS organisation. Does this describe you?
    - *Yes/no (go to end of survey)*

Consent form

2. Do you consent to the above statements?
    - *Yes/no (go to end of survey)*

Online Survey (Service Providers)

<< Organisation >>

3. What type of organisation do you work in?
    - ☐ *Voluntary*
    - ☐ *Third Sector/Charity*
    - ☐ *Local Authority*
    - ☐ *other (please specify)*

4. What is the geographical scope of your service?
    - ☐ *Local (town/city/Local Authority level)*
    - ☐ *Regional (Health Board level),*
    - ☐ *National*
    - ☐ *Other (please specify)*

5. What is the main focus of your service for people who use drugs with complex needs?
    - ☐ *Harm reduction,*
    - ☐ *recovery support, treatment,*
    - ☐ *homelessness support,*
    - ☐ *a combination of supports,*
    - ☐ *other (please specify)*

    Free text option to provide more information if needed

6. Please describe your current role in your organisation. How does it relate to people who use drugs with complex needs?
    - ☐ *Manager*
    - ☐ *Outreach worker*
    - ☐ *Recovery/harm reduction worker*
    - ☐ *Administrator*
    - ☐ *Supporter*
    - ☐ *Other(please specify)*

<< Digital Literacy >>

7. Do you have access to digital technology to allow you to undertake the following tasks?

	Yes	No	Not Applicable
A work email address so you can send and receive work communications	o	o	o
Access to online employee management systems (for example systems to record annual leave, absence, payroll etc.)	o	o	o
Internet connectivity	o	o	o
Access to technology for learning at work (e.g. online learning modules, tutorials, webcasts, videos) etc	o	o	o
Other			

□ *Other (please specify)*

8. Please tell us about your skills in using digital technology. Tick one box to show how much you agree with the following statements

I am confident that I can ...	**Agree**	**Neutral**	**Disagree**	**Not Applicable**
Use technology within the workplace	o	o	o	o
Log into PC or laptop at work	o	o	o	o
Send and receive work emails	o	o	o	o
Use software to help me in my role – Excel, Word, PowerPoint etc.	o	o	o	o
Share documents online with colleagues e.g. sending documents as attachments	o	o	o	o
Download and save documents from the Internet	o	o	o	o
Download and save documents from the intranet	o	o	o	o
Find the information I need on the Internet at work	o	o	o	o
Complete my mandatory training online	o	o	o	o
Use social media for work	o	o	o	o
Find relevant information using the internet to help with work	o	o	o	o
Understand internet safety and security	o	o	o	o
Understand the principles of online confidentiality and data protection	o	o	o	o
Participate in video conferences	o	o	o	o
Participate in webinars	o	o	o	o
Easily find online learning resources to help me in my role	o	o	o	o
Other				

□ *Other (please specify)*

9. Do you use the following at home?

	Yes	No

PC	o	o
Laptop	o	o
Mobile phone with internet access (smartphone)	o	o
Mobile phone with no internet access	o	o
Tablet or iPad	o	o
Internet	o	o

10. Please tell us what training you would welcome in relation to digital technology

	Most Important	Quite Important	Not Important	Not Applicable I can do this already.
Getting started with computers (Logging onto computer, keyboard and mouse skills)	o	o	o	o
Computing basics (word processing, emails, spreadsheets)	o	o	o	o
Using the Internet (searching etc.)	o	o	o	o
Using online collaboration tools (e.g. social networking, online communities, online chat)	o	o	o	o
Using technology to support service users/clients/patients to access and use health and social care resources	o	o	o	o
Creating and publishing online content (e.g. blogs, podcasts)	o	o	o	o
Participating in videoconferences and webinars	o	o	o	o
Using the internet safely and securely	o	o	o	o
Understanding issues of confidentiality and data protection	o	o	o	o
Accessing online learning opportunities	o	o	o	o
Other	o	o	o	o

□ *Other (please specify)*

<<Clients>>

11. Please estimate what proportion of your clients who use drugs have access to internet-connected technology?

	All of them	More than half	Approximately half	Less than half	A very small minority	I don't know
Smartphone	o	o	o	o	o	o
Laptop	o	o	o	o	o	o
Personal computer (PC)	o	o	o	o	o	o
Tablet	o	o	o	o	o	o
Other	o	o	o	o	o	o

Free text option if required.

12. In your opinion, what are the barriers for those who do not have a device or do not use digital technology? Please tick all that apply.

□ *Cannot afford to buy a device*

- ☐ *cannot afford data packages*
- ☐ *has lost their device or had it stolen and not replaced it*
- ☐ *lack of trust in digital technology*
- ☐ *has no need for the technology*
- ☐ *does not have support or training to use devices*
- ☐ *other (Please specify)*

We would welcome if you can expand on your answer here. Free text option to provide more details.

13. Does your organisation provide *information* to people who use drugs via digital technology (e.g. website, text messaging, app, other)? If so, please note how this information is provided and with what level of engagement?

	Well used	Somewhat used	Rarely used	Never used
Website	□	□	□	□
Text messaging	□	□	□	□
Mobile app	□	□	□	□
Social media activity	□	□	□	□
Other	□	□	□	□

   - If uptake is poor or could be better, please provide your view as to why that might be and ways to address this.
     - Free text box

14. Does your organisation provide *services* to people who use drugs via digital technology (e.g. online meetings with clients, phone call/text check-ins with clients, other)?
   - *If yes, please tick all that apply*
     - ☐ *One to one online support meeting,*
     - ☐ *Therapeutic groupwork,*
     - ☐ *Access to video call/consultation for specific issue,*
     - ☐ *Online booking for a service,*
     - ☐ *Phone call/text check in,*
     - ☐ *Online access to personal data record/history,*
     - ☐ *Other (please specify)*
   - *If no, do you know why? Please tick all that apply.*
     - ☐ *Lack of technology,*
     - ☐ *Lack of training in using technology,*
     - ☐ *Lack of data access,*
     - ☐ *Unfamiliarity with technology,*
     - ☐ *other (please specify) Please elaborate in the box below.*

15. Do you use digital technology to share information regarding support for clients with other organisations?
   - Yes. Please provide information on what this support looks like and what other organisations are provided with information

- No. Please use the text box to let us know why not (data protection, privacy concerns, lack of time, have not thought about it…)

16. Do other organisations share information on their clients and services with you? Yes/No
    *If yes, what kind of information? (*Free text box)

    - *If not, what barriers are there? (*Free text box)

17. Would you welcome more training on using digital technologies in your work with people who use drugs with complex needs?
    Yes/ No
    Free text box for more information

    If yes, what training would help you in using digital technology to provide support to clients? *(please specify)*

18. What training is needed to enable your clients to use digital technology/devices/software?

19. From your experience what support settings would benefit most from deploying digital technology?
    - ☐ *Homeless hostel/supported accommodation*
    - ☐ *Prison/police custody*
    - ☐ *Client's home*
    - ☐ *Remote/ rural locations*
    - ☐ *NHS Service*
    - ☐ *Local Authority services*
    - ☐ *Voluntary sector services*
    - ☐ *Other*

20. In your opinion, what would make the most difference to the lives of people who use drugs in relation to access to/use of digital technologies to reduce harms in their lives. (Please tick all that apply)
    - ☐ *Easy access to information on drug use and harm reduction*
    - ☐ *Easy access to information on different types of treatment*
    - ☐ *Easy access to information on services available locally*
    - ☐ *Connection to support workers including peer support*
    - ☐ *Connection to social support network e.g. Family*

- ☐ *Use of monitors to detect overdose*
- ☐ *Information on other health conditions*
- ☐ *Other (text box)*

21. Thinking about the examples you gave above in the survey so far, what are the *benefits/challenge* to your **organisation** from the delivery of ***information*** to clients via digital technologies/devices?

22. Thinking about the examples you gave in the survey so far, what are the *benefits/challenges* to your **organisation** from the delivery of ***services*** to clients via digital technologies/devices?

23. Thinking about the examples you gave above, what are the *benefits*/*challenges* to your **clients** from the delivery of ***information*** via digital technologies?

24. Thinking about the examples you gave above, what are the *benefits*/*challenges* to your **clients** from the delivery of ***services*** via digital technologies?

25. Is there anything else relevant that you would like to add that you have not been asked about above?

<<Personal Information>>

26. How long have you worked in your present job?
    - Under 1 year
    - 1 – 3 years
    - 4 – 5 years
    - 6 – 10 years
    - 11 – 20 years
    - 21 – 30 years
    - More than 30 years

27. How old are you?
    - *18-29,*
    - *30-39,*
    - *40-49,*
    - *50-59,*
    - *60-69,*
    - *70+*

28. Which of the following best describes how you think of your gender identity?

- *Male*
- *Female*
- *Non-binary*
- *Other*
- *Prefer not to say.*

Thank you for participating in this research project.
If you would like to stay in touch with the project or have any queries about the work please contact us by email at admin@drns.ac.uk or visit Drugs Research Network Scotland (DRNS) website.

Appendix 3: Service provider survey free text comments – coded thematic matrix

Thematic groups

Service Providers

1. Providing support and improving life skills
2. Relationships, communication and connection
3. Harm reduction benefits from digital

Service users

1. Barriers to service user engagement
2. Digital can better access to family and services for vulnerable users.
3. Recognising service user potential

Others

1. Balancing budgeting costs
2. Providing support and improving digital skills
3. Various other codes

Smart Phone	**Budget**	**Stigma**	**Marginalisation**	**Anonymity**	**Internet access**	**Women**	**Digital inclusion**	**Price**	**Cost**
Support	**Poverty**	**Heat or eat**	**Loneliness**	**Distrust services**	**Face to Face better**	**Connectivity**	**Digital skills**	**Homeless**	**Learning support**
Awareness	**Relationships**	**Social media**	**Lack of engagement**	**Device option?**	**Better IT support**	**Service user disinterest**	**Housing**	**Risk management**	**health**
Social work support	**Welfare rights**	**Email**	**Signposting**	**Collaboration**	**Outreach**	**Person centred**	**Information sharing**	**Connection**	**Barriers**
Training	**Information**	**Framework**	**Complex needs**	**Apps**	**DWP**	**Mental Health**	**Literacy support**	**Diverse needs**	**Engaging issues**
Offer basic digital support	**Some too unstable**	**Build confidence**	**Education**	**Family and friends**	**Pre-liberation digital access**	**Entertainment access**	**Wellbeing**	**Community**	**Basic needs**
Value	**Respect**	**Digital independence**	**Unstable internet connection**	**Challenges**	**Manage GP apps**	**Confidence**	**Accurate**	**Honesty**	**Trust**
Resources	**Dedicated staff required**	**Group work**	**Share info quickly**	**Communication**	**Some have no interest**	**Self-esteem**	**Lived experience**	**Harm reduction**	**Needle and syringe programmes**
Drug alerts	**Substance warnings**	**MAT Standards**	**Use appropriate language**	**Online saves time**	**Digital help on prison release**	**Loss/breakages/sell**	**Better relationship F2F**	**Reach people with digital**	**Some not on social media**
Lack of knowledge	**Hybrid sessions**	**Temp accommodation WIFI issues**	**Offer data options**	**Disconnection upstream downstream**	**What is recovery?**	**Tailor device needs**	**Safety online**	**Privacy concerns**	**DWP Problems**

Empowerment	**Acknowledged as equals**	**Lack of knowledge**	**Wifi**	**Flexibility**	**Saves on travel**	**Instant access**	**Alienated by tech**	**Stress**	**Pressure**
Easy to fob off with digital	**Convenience**	**Device judgment calls**	**Barriers**	**Central database for Info**	**Engage with those without access**	**Improving skills**	**Emergency and temporary accommodation**	**Expectations discourage engagement**	

Appendix 4: Interview topic guide – service users

1. Do you receive any digital services/devices from any service providers?
    a. If yes,
        i. What services/devices do you receive and how do you feel about it in terms of: how easy it is to use or learn to use as well as security and confidentiality of data, confidentiality, etc.
        ii. When did you start receiving the services and did they change over time?
2. What benefits have you experienced from using digital technology so far?
3. Thinking about the devices mentioned above, what do you typically use these for e.g. communication, information access etc?
4. What worked well for you in terms of devices and/or digital services? What worked less well? Why?
5. Please tell us how you feel your digital skills/ confidence? Do you think these could be improved? How?
6. Have you been involved in getting digital services started or used more? At what stages and in what ways?
7. Do you think the changes to digital technology have changed the relationships between you and the service providers?
8. Is there anything else you'd like to add?

Appendix 5: Interview topic guide – service providers

1. Can you please tell me about how you deliver digital services/devices to any service users through the Digital Lifeline fund? What services/devices do you offer and how do you feel about it in terms of: usability, learnability, security, accessibility, confidentiality, etc.
2. When did you start offering the services and did they change over time?
3. What are the different uses of digital technologies you are offering– e.g. communication, information access, etc.
4. What types of benefits have you identified from the use of digital technology so far? What about challenges?
5. Were there any unintended consequences in the use of digital services/provision of devices, either positive or negative?
6. What worked well in terms of digital technology? What worked less well? Why?
7. Please tell us how you feel about your digital skills and/or confidence? Do you think they could be improved? How?
8. Have you been involved in the implementation, adoption, and optimisation of digital services? At what stages and in what ways?
9. Has the digital initiative changed relationships between you and the service users?
10. In terms of the implementation of digital services:
    a. Are management structures adequate to support services offered?
    b. Is the training provided adequate, realistic and effective?
    c. Are resources provides (prompts: including technology, supporting change) adequate?
11. With regards to the Digital Lifelines Scotland programme, is there anything you would have wanted to be done differently? E.g. addition of new services etc.
12. Is there anything else you'd like to add?

Appendix 6: Interview topic guide – programme team

1. From your point of view can you explain the different parts of the programme? What are the benefits and challenges?
2. In terms of programme delivery, what do you think worked well? What worked less well?
3. Were there any unintended consequences in the use of digital services, either positive or negative?
4. In terms of implementation of digital services:
    a. Are management structures adequate to support services offered?
    b. Is the training provided adequate, realistic, and effective?
    c. Are the resources provided (including technology, change management and maintenance) adequate?
5. How is the Digital Lifelines programme viewed by the media and by the public? How does the organisation view/manage media relations?
6. What benefits do policymakers expect from digital technology?
7. With regards to DLS programme, is there anything you would have wanted to be done differently?
8. Is there anything else you'd like to add?

Appendix 7: Baseline survey results (users' needs)

1 Views and experiences of people who use drugs

1.1 Participation

Over the five-month data collection period (July-November 2021), 18 PWUD completed online and paper-based surveys. This included 12 men, five women and one person who did not specify their gender. A third of participants were 40-49 years (33.3%, n=6) and the remaining were 18–29 years old (22.2%, n=4). Less than half of the participants were from small towns (44.4%, n=8), with 22.2% (n=4) from a 'large town' and 16.7% n=3) from 'rural' areas, giving a range of geographical coverage. Geographical spread is displayed in Table 1.

Table 1. Current location of participants (n=18)

Living situation	Number	%
City	3	16.7
Large town	4	22.2
Small town	8	44.4
Rural area	3	16.7

Half of the participants lived in 'council, housing association or social housing'. Under half of the participants lived alone 38.9% (n=7), while the remainder lived with a range of others. Three participants did not disclose their living situation. Details of living arrangements are displayed in Table 2.

Table 2. Living arrangements of participants

Type of current accommodation (n=18)	Number	%
I own my home	1	5.6
Private rented	2	11.1
Council / Housing Association / Social Housing	9	50
Homeless hostel	1	5.6
With family/friends	1	5.6
Currently rough sleeping	0	0
Other	4	22.2
Living situation (n=15)	**Number**	**%**
Live alone	7	46.7
Live only with partner	2	13.3
Live with wider family members	2	13.3
Live with people not related to	2	13.3
Prefer not to say	0	0
Other	2	13.3

Half of participants had a school education (n=9), a third had a college education, and one participant had a university education. The education level attained is displayed in Table 3.

Table 3. Education level (n=18)

School	Number	%
School	9	50
College	6	33.3

University	1	5.6
N/A	2	11.1

1.2 Health and drug use status

Two thirds of participants had long-term physical and/or mental health conditions (66.7%, n=12). Almost half of participants reported currently using non-prescribed drugs (44.4%, n=8). Prescribed medication for problem substance use was also taken by almost half of participants (44.4%, n=8). Just over a quarter were in treatment, with the same number in recovery (27.8%, n=5). Additionally, one quarter also revealed that they consumed alcohol on a regular basis (22.2%, n=4). Table 4 details reported current drug and alcohol use of participants.

Table 4. Current situation regarding drug and alcohol use (n=18)

Option	Number	%
Currently using (non-prescribed) drugs	8	44.4
In treatment for problem substance use	5	27.8
Prescribed medication for problem substance use	8	44.4
Using alcohol on a regular basis	4	22.2
Not using drugs	1	5.6
Not using alcohol	0	0
Not in treatment	2	11.1
In recovery	5	27.8
Other	3	16.7

1.3 Access to technology and the internet

Almost all participants reported having a device that was used for phone calls (94.4%, n=17). Two thirds of the 12 participants who responded to this question said that they used digital technology for health purposes or for accessing different services (66.7%, n=8). The majority of participants who responded owned smartphones, amongst which the majority of them had internet connection (64.7%, n=11/17). A small number of participants had access to desktop computers, tablets, smart watches, or voice assistant technologies. Details are shown in Table 5 (number of respondents varied for each option).

Table 5. Participants' access to devices and internet

Devices	Own		Access to someone else's		Regularly use		Don't have access		Devices connected to the internet	
	No.	%	No.	%	No.	%	No.	%	No.	%
Smartphone (n=18)	15	83.3	4	22.2	6	33.3	1	5.6	11	64.7
Desktop computer (n=12)	1	8.3	3	25	1	8.3	7	58.3	3	60
Laptop computer (n=14)	5	35.7	3	21.4	4	28.6	5	35.7	5	55.6
Tablet (n=12)	2	16.7	1	8.3	2	16.7	8	66.7	2	50
Smart watch/ wearable (n=11)	1	9.1	0	0	0	0	10	90.9	0	0
Voice assistant (e.g. Alexa / Google home / Siri) (n=12)	4	33.3	1	8.3	1	8.3	7	58.3	2	40

The majority of participants had constant/daily connection to the internet on their mobile phones, (88.8%, n=16). Two thirds of participants had regular/daily/constant home internet connection. Very few participants used Wi-Fi internet connection in cafés, libraries, buses, or trains to connect to the internet. The detail of internet connection is shown in Table 6.

Table 6. Access to the internet

Devices	Always		Daily		Regularly		Rarely		Never	
	No.	%	No.	%	No.	%	No.	%	No.	%
On my mobile phone (n=18)	8	44.4	8	44.4	0	0	1	5.6	1	5.6
Home connection (n=16)	5	33.3	3	20	2	11.1	2	11.1	4	22.2
Work or college connection (n=13)	0	0	0	0	2	11.1	2	15.4	9	50
Public Wi-Fi (n=15)	3	20	0	0	2	11.1	5	27.7	5	27.7
Cafe Wi-Fi (n=13)	0	0	0	0	1	5.6	5	27.7	7	53.8
Library Wi-Fi (n=14)	1	5.6	0	0	1	5.6	2	11.1	10	55.5
Bus or train Wi-Fi (n=15)	1	5.6	0	0	2	11.1	4	22.2	8	44.4
Service provider's computer / Wi-Fi (n=13)	2	11.1	3	16.7	0	0	2	11.1	6	27.7

1.4 Purpose of use of digital technology

Data on the purpose of digital connections i.e. connection to friends and family, service providers, health and social problems and information on drugs is presented below.

1.4.1 Connection to friends and family

Most of the digital technologies used by participants to connect to their family and friends were text messages and social media. Video calls were also used by almost half of the participants on a regular basis (46.7%, n=7). Table 7 illustrates participants' use of digital technologies to connect to their family or friends.

Table 7. Use of digital technologies to connect with family or friends

Method	Always		Daily		Regularly		Rarely		Never	
	No.	%	No.	%	No.	%	No.	%	No.	%
Video call (n=15)	0	0	3	20	4	22.2	3	20	5	27.8
Text message (n=18)	6	33.3	5	27.8	4	22.2	2	11.1	1	5.6
Social networking (n=18)	5	27.8	5	27.8	5	27.8	2	11.1	1	5.6
Email (n=15)	1	5.6	1	6.7	2	11.1	8	44.4	3	20

1.4.2 Connection to service providers

More than half of participants used their smartphones to connect with service providers to receive support services. Text messages were highly used (72.2%, n=13), followed by social networking, (44.4%, n=8), while online chat functions were the least used service (27.7%, n=5). Table 8 shows the detail of the technology used by PWUD to contact their service providers to receive support.

Table 8. Use of technology to keep in touch with service providers for support

	Smartphone		Desktop computer		Laptop		Tablet		None of these	
	No	%	No	%	No	%	No	%	No	%
Video call (e.g. Zoom, Skype, FaceTime) (n=17)	9	52.9	0	0	4	23.5	0	0	4	23.5
Text message (e.g. SMS, WhatsApp) (n=18)	13	72.2	0	0	2	11.1	1	5.6	2	11.1
Social networking (e.g. Instagram, Facebook, Twitter) (n=16)	8	50	1	6.3	2	12.5	1	6.3	4	25
Online chat functions (Support organisations, Recovery Forums) (n=10)	5	50	1	10	1	10	0	0	3	30
Email (n=18)	10	55.6	1	5.6	3	16.7	1	5.6	3	16.7

Note: answers are not mutually exclusive

1.4.3 Health purpose and social problem

Over three quarters of participants used digital technologies to find out how to get help with health or social problems (83.3%, n=15). Internet searches were used regularly or on a daily basis by the majority of participants (61%, n=11). Additionally, many participants regularly contacted their healthcare providers (61%, n=11) using digital technologies. The detail of getting help with health/social problems is provided in Table 9.

Table 9. Use of technology to get help with health/social problem

	Always		Daily		Regularly		Rarely		Never	
	No	%	No	%	No	%	No	%	No	%
Search on the internet (n=16)	3	18.8	3	18.8	4	25	4	25	2	12.5
Ask friends to search on the internet (n=13)	1	7.7	0	0	3	23.1	5	38.5	4	30.8
Check service provider website (n=11)	1	9.1	0	0	1	9.1	6	54.5	3	27.3
Check NHS website (n=15)	4	26.7	0	0	3	20	7	46.7	1	6.7
Ask voice assistant (Alexa, Google Home, Siri) (n=12)	0	0	0	0	3	25	1	8.3	8	66.7
Contact healthcare provider (e.g. GP, Addiction service) (n=15)	1	6.7	0	0	10	66.7	4	26.7	0	0

1.4.4 Information related to drug use

Many participants (82.4%, n=14) used digital technology when they needed information about seeking help for problems related to drug use. When asked about frequency of use of technologies to seek help with drug problems from those who responded, half of them selected that they regularly searched on the internet to find solutions. Results are displayed in Table 10.

Table 10. Use of technology to seek help with drug problems

	Always		Daily		Regularly		Rarely		Never	
	No	%	No	%	No	%	No	%	No	%
Search on the internet (n=9)	1	7.1	0	0	7	50	4	28.6	2	14.3
Ask my friend / family member to search on the internet (n=12)	0	0	0	0	4	36.4	3	27.3	4	36.4
Check service provider's website (n=13)	1	7.7	1	7.7	3	23.1	4	30.8	4	30.8
Check NHS website (n=13)	0	0	0	0	5	38.5	5	38.5	3	23.1
Check social media (n=13)	1	7.7	1	7.7	3	23.1	4	30.8	4	30.8
Online forums / chat (n=11)	1	7.7	0	0	2	18.2	3	27.3	5	45.5
Ask voice assistant (n=11)	0	0	0	0	1	10	0	0	9	90
Phone call (n=15)	3	20	0	0	7	46.7	4	26.7	1	6.7

1.5 Challenges in use

The challenge that prevented participants using technology was not having any devices (n=3). One participant mentioned that they had internet connection problems, and two people stated that they had difficulty using devices or technology. One person had problems with reading and writing and did not know how to perform online searches. Another participant stated that they had difficulty understanding digital systems.

1.6 Requirement/suggestions for support with using digital technology

Almost half of participants (47.1%, n=8) agreed that they would benefit from some type of support in the use of devices and digital technologies. Of these, six believed that having their own device could be beneficial alongside having support in the use of devices. For more details, see figure 1.

Figure 5. Participants' suggestions of what might be helpful in terms of support to use devices or digital technology

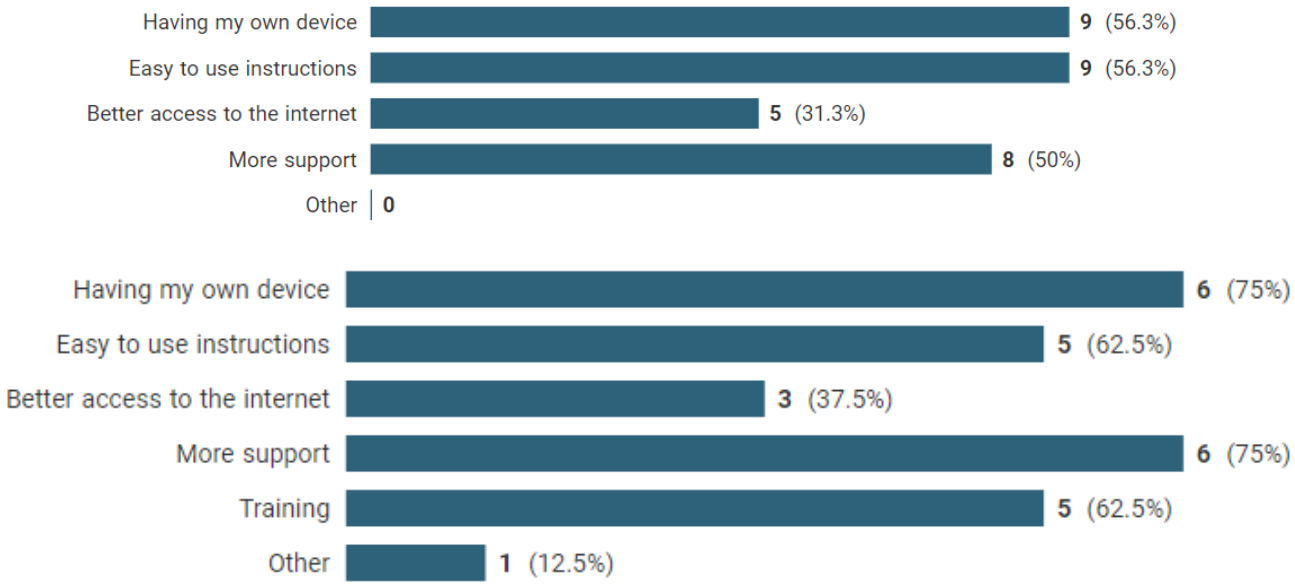

Figure 1. Participants' suggestions of what might be helpful in terms of support to use devices or digital technology (n=8)

2 Views and experiences of service providers

2.1 Participation

The online survey received responses from 43 people who provide services to PWUD in Scotland. Respondents included 13 men and 28 women A third (34.9%, n=15) were in the 50-90 year age range. Age and gender information is displayed in Table 11.

Table 11. Age group and gender of service provider participants (n=43)

Age group	**Number**	**%**
18-29	6	14
30-39	9	20.9
40-49	11	25.6
50-59	15	34.9
60-69	2	4.7
70+	0	0
Gender	**Number**	**%**
Males	13	30.2
Female	28	65.1
Non-binary	1	2.3
Other	0	0
Prefer not to say	1	2.3

2.2 Organisation type and function

The participants performed a wide spectrum of roles such as managerial, caring, social work, specialists, or service managers from different organisations across Scotland which provided services to PWUD. Almost all participants worked for a voluntary, third sector or charitable organisation (95.4%, n=41), and one person worked for a local authority. Around half of the participants (46.5%, n=20) worked for organisations that gave a combination of support to PWUD. See Table 12.

Table 12. Organisation type and type of service – service providers (n=43)

Organisation service type	**Number**	%
Voluntary / Third Sector / Charity	41	95.3
Local Authority	1	2.3
Other	1	2.3
Type of services	**Number**	**%**
Harm Reduction	6	14
Recovery support	7	16.3
Treatment	0	0
Homelessness support	6	14
A combination of supports	20	46.5
Other	4	9.3

Two thirds of participants worked for local organisations. The geographical scope of the organisations is shown in Table 13.

Table 13. Organisation geographical scope (n=43)

Organisation geographical scope	**Number**	**%**
Local (town/city/Local Authority level)	32	74.4
Regional (Health Board level)	5	11.6
National	5	11.6
Other	1	2.3

Participants had access to different devices. More than three-quarters of organisations provided smartphones or laptops for their employees who worked in this field. Some participants noted that the purpose of 'direct support' that they provided included helping clients to do online activities such as online application forms, virtual meetings or video calls, or communication with users in different ways. Many participants mentioned that since the start of the pandemic, they moved to online services to provide digital services to PWUD. The details of devices that are used for work and their purposes are shown in Table 14.

Table 14. Types and purpose of devices used by participants for work

Devices	Personally owned		Owned by organisation	
	Number	%	Number	%
Smartphone (n=40)	13	32.5	33	82.5
Desktop computer (n=16)	1	6.3	15	93.8
Laptop (n=29)	9	21.4	33	78.6
Tablet (n =14)	3	21.4	11	78.6

Purpose use of device	Number	%
Direct support work with clients	31	72.1
Email	42	97.7
Access to websites	42	97.7
Office applications (Word, Excel, etc.)	41	95.3
Applications within my organisation	27	62.8
Other	7	16.3

Most (86%, n=37) participants said their organisation shared their clients' details with other organisations. While they noted that their organisation shared a wide range of information with different partner organisations, they highlighted that the nature of sharing depended on contract and data sharing agreements. Different types of information were mentioned by participants, with most citing client referral information as the main information exchanged between different partners. Other information exchanged included updates on progress, client reviews, and support plans.

2.3 Clients' situations

A third (32.6%, n=14) of participants estimated that more than half of their clients (PWUD) had access to an internet connection through their smartphones. Around half of participants believed that only a very small minority of their clients had access to the internet through their laptops, personal computers, or tablets. The details of estimates are displayed in Table 15.

Table 15. Estimates of clients' access to internet-connected technologies (n=43)

Devices	All of them		More than half		Approx. half		Less than half		A very small minority		I don't know	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Smart phone	3	7	14	32.6	8	18.6	10	23.3	4	9.3	4	9.3
Laptop	0	0	1	2.3	3	7	10	23.3	20	46.5	8	18.6
Personal computer	0	0	0	0	1	2.3	6	13.9	20	46.5	13	30.2
Tablet	0	0	0	0	2	4.6	8	18.6	20	46.5	10	23.3

2.4 Current services provided to PWUD using digital technology

The majority of participants (93%, n=40) said their organisation provided services to PWUD via digital technology. A number of participants emphasised that their organisation had started providing their service via digital technology after the COVID-19 pandemic began. Of those providing digital technology, a phone call or text message check-in were used by the majority (82.5%, n=33). One-to-one online support meetings were used by 62.5% (n=25), and more than half of the participant group provided therapeutic group-work services to their clients through digital technology (57.5%, n=23). Half of the participant group (50%, n=20) highlighted that they provided video call/consultation for specific issues. The detail of type of services provided is shown in Table 16.

Table 16. Type of digital technologies used to provide services for PWUD (n=40, 3 missing)

Type of service provide to PWUD	Number	%
One-to-one online support meeting	25	62.5
Therapeutic group-work	23	57.5
Access to video call/consultation for specific issue	20	50.0
Online booking for a service	9	22.5
Phone call/text check-in	33	82.5
Online access to personal data record/history	3	7.5
Other	7	17.5

More than half of participants believed their organisation provided information to their clients via digital technology. Text messaging was well-used by 67.5% (n=27) of organisations, and social media was somewhat used by 47.5% (n=18) of organisations. The details of uses of digital technology for providing information to PWUD is presented in Table 17. Different applications such as WhatsApp and Facebook were mentioned by participants as a communication tool with clients. Some participants mentioned that their organisations provided website chat/online chat, with one commenting that it was rarely used by their clients.

Table 17. Ways in which organisations provide information to PWUD via digital technology

	Well used		Somewhat used		Rarely used		Never used	
	No	%	No	%	No	%	No	%
Website (n=39)	14	35.9	13	33.3	7	17.9	5	12.8
Text messaging (n=40)	27	67.5	6	15	4	10	3	7.5
Mobile app (n=29)	10	34.5	6	20.7	6	20.7	7	24.1
Social media (n=38)	14	36.8	18	47.4	2	5.3	4	10.5
Other (n=10)	7	70	1	10	1	10	1	10

2.5 Challenges

In terms of challenges that were highlighted, almost all participants noted that PWUD may not use digital technology as they could not afford to buy a digital device (90.7%, n=39). More than three-quarters of participants said PWUD could not afford to buy data packages (86%, n=37). Other challenges noted were that PWUD lost their devices, or had them stolen, and they could not replace them (79.1%, n=34). Less than a quarter of participants agreed with the statement: 'lack of trust in digital technology' (23.3%, n=10) or not understanding the need for digital technology (20.9%, n=9). Table 18 shows detail of the barriers of PWUD in using digital technology as perceived by staff participants.

Table 18. Perceived barriers of PWUD to using digital technology (n=43)

Option	Number	%
Cannot afford to buy a device	39	90.7
Cannot afford data packages	37	86
Has lost their device or had it stolen and cannot replace it	34	79.1
Lack of trust in digital technology	10	23.3
Has no need for the technology	9	20.9
Does not have support or training to use devices	28	65.1
Other	5	11.6

In the open format question, one participant mentioned that moving from place to place and not having stability was a challenge for their clients. Another challenge expressed was keeping long-term connections with PWUD:

> *We do have a cohort of people who tend to have a different mobile number every few weeks. People can live without a phone but not without substances. This can prove challenging when looking to maintain phone contact with that person. Stopping the revolving changing phone number would good. For example, community care grant takes 6-8 weeks to be assessed, by the time the person has been granted the items, their number has changed, and services cannot then get in contact with that individual.*

2.6 The impact of pandemic on growth of digital services

Participants were invited to share experience of the impact of the pandemic in an open format question. In general, participants were very positive about the potential of digital technology in the COVID-19 pandemic situation. One participant shared their experience about web chat functions:

> *We also have a webchat facility and have found that we have had people accessing the service by using webchat as their first point of contact. In this day and age, if people are looking for information on anything, the internet can be their main port of call.*

Another participant highlighted the importance of online information and services during the pandemic:

> *We have been very successful through our digital team I am delivering online information and services. In our service we were forced to deliver online groups suddenly in response to COVID-19 and they worked very well.*

Some organisations did not use digital technology prior to COVID-19. As a result of the pandemic, they were forced to go through a transformation which involved use of digital technologies:

> *My service's main use of digital technology was throughout the COVID-19 pandemic. In the initial lockdown we were not permitted to carry out visits with the people we support, and all contact was over the phone. This has carried on in part and my service makes use of wellbeing calls and over the phone appointments on a more regular basis.*

2.7 Requirements to reduce digital exclusion

Digitalisation needs new structure and infrastructures in order to enable provision of digital services to PWUD to avoid particular individuals or groups from being excluded. Participants could respond in an open format question and key themes are presented below.

3.2.7.1 Training requirements

Most participants recommended training for both service users and providers. Currently, organisations provide different levels of training and support for their volunteers such as how to install or work with particular apps. Training was seen as a way to encourage volunteers on the uptake of using devices, where they might not otherwise have been utilised:

> *Additional training is always beneficial however the service I specifically manage, are up to date and experienced in using technology and able to support our service users to use technology also.*

We regularly set up apps on people's phones/ tablets for them to enable them to access groups. We also work in partnership with the College who provide IT classes for services users and volunteers. We also have internal IT/ Google training at the organisation.

It would encourage volunteers on the uptake of using devices, allowing training, where it might not otherwise have been utilised.

Participants also expressed, in open format questions, that training (including daily digital technology use such as Wi-Fi setup, accessing online resources, making video calls) would be beneficial for service users given that technology is constantly changing. One recommended engaging with the client group and providing direct training to PWUD.

Basic skills on setting up wi-fi in the home would be ideal as we can help with this but can be tricky due to the demand of the service and service user needs.

Training to staff in service provider organisations was also mentioned as helpful in improving service provision through use of newly developed technologies and incorporating them into their daily work practices:

Staff require support to make the best use of newly available technologies and incorporate this into their daily work. I have first-hand experience of seeing the barriers and fear that some have in making this leap to the extent that I personally have provided and offered 1:1 coaching.

A number of service providers were not familiar with digital technology, and this had created a number of difficulties, particularly during COVID-19 restrictions where they relied more heavily on digital means of communication:

Although I am confident in the use of digital technology there are a number of my colleagues who are not and this has created a lot of difficulties particularly during covid restrictions where we relied more heavily on digital means of communication with ourselves and clients.

One important challenge highlighted in terms of provision of training was that some organisations did not have sufficient resources for training:

We don't have the resources to offer this support and try to encourage everyone to have face to face counselling.

2.7.2 Views on reducing risk of harm

Table 19 shows the answers to the question '*what would make the most difference to reduce the risk of harm to people who use drugs?*'. Almost all participants (92.9%, n=39) agreed with the need for ease of access to information on services available locally and connection to support workers, including peer supporters that could help to reduce the risk of harm.

Table 19. Participant views on the approaches to reducing harm among PWUD (n=42, 1 missing)

Option	Number	%
Easy access to information on services available locally	39	92.9
Connection to support workers including peer support	39	92.9
Connection to social support network e.g. family	37	88.1
Easy access to information on safer drug use and harm reduction	36	85.7
Easy access to information on different types of treatment	36	85.7
Use of monitors to detect overdose	28	66.7
Information on other health conditions	25	59.5
Remote access to clinical care	25	59.5
Remote access to non-clinical case work	23	54.8
Other	2	4.8