



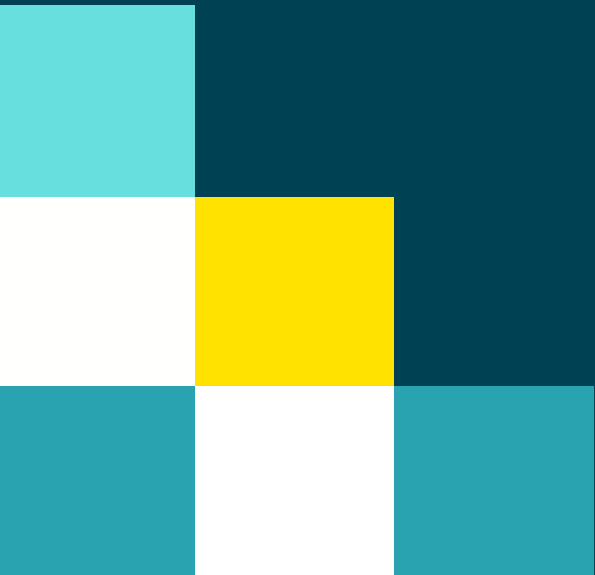
Wales Centre for Public Policy
Canolfan Polisi Cyhoeddus Cymru

Older adults and the pandemic: Tackling loneliness through technology

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November 2022



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Summary

- Loneliness and social isolation have significant impacts on older people's health and wellbeing. This has been a priority issue for the Welsh Government since before the COVID-19 pandemic.
- During the pandemic, social distancing measures increased the risk of loneliness and social isolation and accelerated the use of technology to facilitate social contact and connection.
- This research addresses the question of how new and existing technologies have been used to address loneliness and social isolation among older adults during the pandemic and seeks to identify what can be learned for future efforts to tackle loneliness and social isolation among this group.
- Through a survey and interviews with health and social care professionals, and interviews with older adult service users, we explored enablers and barriers to adoption and use of new and existing technology, and the benefits and challenges of using technology to address loneliness and social isolation among older adults during the pandemic.
- While one-to-one phone calls were a key means of contact between service providers and older adult service users, other digital technologies were provided and used to enable and support social connections.
- A lack of skills, confidence and interest as well as physical resources limited uptake and use of technology among older adults. Heightened concerns about security and scams were another barrier for service users. There were also organisational barriers to the effective use of technology to broker social connections. Organisational readiness is required to support using technology for social connection.
- Where social isolation is amplified by a lack of physical resources and motivation, encouraging the uptake of digital technology to enable social connection is extremely challenging.
- The connections enabled by technology afforded a range of benefits for some service users during COVID-19 but did not replace or reproduce the value of face-to-face contact.
- Services for older people can capitalise on lessons learned by: embedding evaluation; enabling wider digital access through the smartphone as 'entry point' or gateway; managing the threat of scams; including assessment of technological readiness in routine assessments of older adult service users; and prioritising plans to increase the digital capacity of older adults even though – indeed because – the immediate crisis of COVID-19 has receded.

Background

Loneliness and the use of technology to improve health and social care service user outcomes were priorities for the Welsh Government before the onset of the coronavirus (COVID-19) pandemic. In 2018 the Welsh Government committed to transforming health and social care through the use of digital technologies as set out in *A Healthier Wales: our plan for health and social care* (Welsh Government, 2018). In February 2020 the Welsh Government published its *Connected Communities* strategy (Welsh Government, 2020a), supported by a £1.4 million loneliness and social isolation fund to support community-based organisations to deliver, test and scale up innovative approaches to tackling loneliness and social isolation over the next three years. The Welsh Government's action plan 'Age Friendly Wales: a Strategy for an Ageing Society' was published in October 2021 following consultation with stakeholders and the public (Welsh Government, 2021, 2020b).

Loneliness is a subjective feeling experienced when there is a gap between desired and actual social contact (Age UK, 2021). It is a significant risk factor for negative physical and mental health problems (Courtin & Knapp, 2017) being associated with earlier mortality, increased risk of cardiovascular diseases, neurocognitive disorders, and negative mental health outcomes (Davidson & Rossall, 2015). Although loneliness is distinct from social isolation, which refers to a lack in the quantity rather than the quality of social contacts, social isolation does increase the risk of loneliness.

Research on the effects of loneliness has been increasing over the last several decades and loneliness was recognised as a significant public health issue before COVID-19 with the publication of the UK Government Strategy for tackling loneliness (HM Government, 2018) and guidance for local authorities on combating loneliness (Age UK, 2016). A Tackling Loneliness Network was set up as part of developing a connected recovery from COVID-19 (HM Government, 2021). This included a Digital Inclusion Task and Finish group. Recognising that technology can have a positive impact on wellbeing, the group recommended that "funding should be provided to purchase technology for individuals in need" and that free devices should be accompanied by support that takes individual need into account in order that benefits to recipients can be maximised and to enable outputs to be measured".

These and other recommendations were made in the wake of periods of lockdown during COVID-19 which necessitated physical distancing and social isolation, when the impacts of loneliness became a growing concern (World Health Organisation, 2021). However, the exact extent to which there was an increase in severity,

frequency and prevalence of loneliness is not clearly established, not least because of limitations in research samples, designs and data collection methods (Dalhberg, 2021). In the UK, the Office of National Statistics reported increased levels of loneliness for those who had already felt lonely prior to the pandemic (ONS, 2021). A survey conducted by the British Red Cross (2020) reported 41% of UK adults reported feeling lonelier since lockdown and the Local Government Association (2020) reported a heightened risk of loneliness for people living alone, out of work, or digitally excluded. The evidence as to whether older people have been lonelier than other age groups during COVID-19 is mixed (Stuart et al., 2022). ONS (2021) noted heightened loneliness in younger people. In a rare longitudinal study Mayerl (2021) found that greater levels of social restriction in COVID-19 – often associated with older people - predicted greater loneliness, which in turn predicted more symptoms of depression and anxiety 20 months later.

Growing old increases the likelihood of being diagnosed with a chronic health condition (Centre for Ageing Better, 2022) and this, in turn, is associated with greater health risks from COVID-19 (Mueller, 2020). Although being chronologically old cannot be simplistically equated with being vulnerable (Previtali, 2020) the impacts of the pandemic are further amplified by digital exclusion. ONS (2020) reported that of the 3 million people in the UK that have never used the internet, more than 98% were aged over 50. However, the problem is much wider than 'non-use'. Given the increasing necessity for being online, 'narrow' use can also restrict access to a range of experiences around (e.g.) health services and information and shopping and medical appointments increasingly required internet access. Such constraints were amplified during the COVID-19 pandemic when face to face interaction was often limited and particularly so for some older people.

Prior to COVID-19, strategies and initiatives to tackle loneliness tended to focus on increasing the quantity and/or quality of people's in-person social contacts. However, during the pandemic, physical distancing and shielding required to slow the spread of COVID-19 not only increased social isolation and loneliness but also restricted many of the existing approaches to mitigate loneliness that relied on in-person contact. In response, the use of digital technologies to enable non-physical, virtual social 'contact' and support services proliferated.

Prior to the COVID-19 pandemic, given the importance of social connection, discerning the contribution that technology can make to mitigating or preventing loneliness understandably attracted much less research attention than has been the case during or since the pandemic. By way of illustration, a search for relevant

research¹ in key databases yielded 1,510 papers in 2017-2019 compared with 3,479 from 2020-2022. Arguably since COVID-19 there has been a move from considering the extent to which online social connections might cause or exacerbate loneliness (Nowland, Necka and Cacioppo, 2018) to the opposing perspective (Stuart et al, 2022), exploring how digital technology might prevent or mitigate feelings of loneliness.

In an overview of systematic reviews published before the pandemic (Victor et al., 2018), 2 of the 14 systematic reviews identified interventions to reduce loneliness by focusing on technological interventions. There is a mixed picture of their effectiveness. Abdi et al (2017) reviewed studies examining the effectiveness of socially assistive robot interventions in care settings, two of which were randomised control trials, and both showed a decrease in loneliness for the intervention groups. Chen and Schulz (2016) focused on the impact of information communication technology interventions. The results of studies conducted in community settings concluded that the effects of the interventions were inconclusive. On the basis of a systematic review and meta-analysis of 6 eligible trials, Shah et al (2021) concluded that there was no evidence to support the effectiveness of digital technology interventions compared to a/the? control group. A more positive picture was presented by Poscia (2018) who reported that at least one significant finding related to loneliness or social isolation was found in 10 of the 18 studies that were included in their review. Overall though, as neatly summarised by Wilson et al. (2021) evidence about the relationship between social technology use and loneliness is mixed.

Interventions have used existing platforms such as Facebook and WhatsApp and virtual assistant technologies such as Alexa and Google home that enable audio and video calls to be made and messages, photos and videos to be shared (Stuart et al, 2022). Virtual reality, humanoid robots, and digital companion pets have also been used to enhance social enrichment (Waycott, 2022). Closer to home, the Wales Centre for Public Policy (2020) identified a range of interventions using bespoke and off-the-shelf technology that have been used to tackle loneliness, also noting the lack of rigorous evaluation.

In line with this inconclusive picture, based on a scoping review of reviews Fakoya et al (2020) suggest that it is challenging to derive policy recommendations given “the heterogenous nature of the interventions aimed at alleviating loneliness and/or social isolation among the older population, the settings where they are delivered e.g., care

¹ Search conducted in Scopus and Web of Science on 15th August 2022 using search term: Lonel* OR social isolation AND tech* or ICT or Internet OR digital

home or community; the group or one-to-one intervention delivery mode; and the population characteristics.” (p. 10).

One of the key threads that runs through the literature considering the relationship between technology use and loneliness, considers how social internet use relates to in-person contact with others. This question was addressed by Nowland et al (2018) who sought to identify the circumstances under which online activity displaced or stimulated offline activity. The evidence suggests that where online activity aims to displace face to face interaction this results in increased loneliness. Where the goal of social internet use is to stimulate social connections, loneliness is reduced. An important corollary of this is that - for a range of reasons - lonelier people are more likely to prefer online interactions. Other studies consider how contact through a range of social technologies compares with the experience of physical presence. In the context of family relationships, Burholt, et al. (2020) find that none are emotionally equivalent with the ideal of being together in person. Using technology to broker social connection to reduce loneliness is almost invariably reported as being second best to in-person interaction though variability in how satisfactory and genuine the experience that virtual connections deliver is recognised (Liddle, et al 2021). Although face to face connection was preferred, technology can be accepted when it is expected or required (Wilson et al., 2021).

When considering the conditions for technology being effective, The Centre for Ageing Better (2018) makes the case for focusing on enabling people to do what they need and want to do online rather than acquiring basic digital skills and that the mix of skills, motivations and abilities in a heterogenous population requires ‘intensive, person-centred and open-ended support’. The importance of digital technology that dovetails with, and is tailored to the needs, motivations, capabilities and desired outcomes of individuals – which of course are likely to change over time - is considered essential to adoption and continued use of digital technology that can enhance social connection and prevent or mitigate loneliness (Stuart et al., 2022; Wilson-Menzfeld and Brittain, 2022). User centred design methods are key to enabling this (Stuart et al, 2022). However, it is also vital to consider the actions and interactions of those that introduce the technology to older people - friends and family and/or service providers. Their actions will affect how well the technology aligns with the needs and capabilities of the older people that it is supporting (Waycott et al., 2022). Accordingly, this report considers the perspectives of older people and service providers.

This research seeks to explore how, and how far, digital technologies have been used to address loneliness among older adults during the pandemic and to identify what can be learned for future efforts to tackle loneliness among this group.

Research questions

We sought to address four questions in this research:

1. In what ways have new and existing technology been mobilised in Wales to address loneliness and social isolation among older adults during the pandemic?
2. What have been the enablers and barriers to adoption and usage of technology to address loneliness and social isolation among older adults in Wales?
3. What have been the benefits and challenges of using technology for loneliness and social isolation, and for whom and in what circumstances are technology-enabled approaches more or less appropriate?
4. How can services capitalise on the lessons learnt?

Research methods

The research addressed these questions using three methods:

- an online survey of professionals involved in the commissioning and delivery of services to older adults during COVID-19;
- interviews with professionals involved in the commissioning and delivery of services to older adults during COVID-19;
- interviews with older adults.

The research benefited throughout from input from the Wales Centre for Public Policy (WCPP), the steering group (representatives from the Welsh Government), and an experts-by-experience group consisting of older adults who had insights about and/or experiences of loneliness during the COVID-19 pandemic. The steering group met twice to comment on the developing research findings. The experts-by-experience group, convened by the Centre of Innovative Ageing at Swansea University, met online twice and commented in detail on plans for data collection as well as on the developing findings. They also provided comments via email on an early draft of the survey. The input from both groups has been vital in informing the conduct of the research and the resulting implications for service provision.

Timelines

The first UK lockdown in response to COVID-19 in Wales was mandated on 23rd March 2020. This was extended to 1st June 2020 when there was a slight easing of restrictions for those that were shielding. A phased return to schools and to opening

of the hospitality and tourism sector were announced on 29th June and 2nd July respectively. During September 2020 the rules progressively tightened with compulsory mask wearing, limits on the numbers that could meet indoors and hospitality restrictions followed by a second national ‘firebreak’ lockdown between October 23rd and November 9th 2020. The third lockdown for Wales started on 20th December 2020 with ‘stay local’ restrictions being lifted on 25th of March 2021. Alert levels in Wales fluctuated but remained low through until 27th May 2022 when all restrictions in Wales were lifted (Senedd Research, 2022).

Data collection for this research started on 23rd September 2021 and ended on 4th April 2022.

The survey

The survey of health and social care professionals collected demographic information about individuals and their organisations. The first main section of the survey characterised the extent to which technology had been used to communicate *within* respondents’ organisations, before going on to explore the extent and nature of technology use with service users. Subsequent questions aimed to establish the extent to which addressing loneliness and social isolation of service users was an organisational priority, the barriers and enablers to deploying technology during the pandemic and the benefits and challenges of doing so. Finally, we asked about future intentions to use technology to address loneliness and social isolation with older people. The survey included both closed and open-ended questions.

Ethical approval for the survey was obtained from Cardiff University Business School Research Ethics Committee on 14th September 2021. Data collection took place between 23rd September – 7th November 2021.

For more information about who took part and a copy of the survey, see Annexes 1 and 2.

Interviews with service providers

Semi-structured interviews were conducted remotely via phone, Teams or Zoom, with selected survey respondents. Thirty-six survey respondents indicated they would be willing to be contacted to take part in an interview. From this group we prioritised the invitations to participate to maximise diversity in the sample. One of the survey questions asked about the extent to which technology was used to keep in touch with service users during the pandemic – we selected participants across the full range of responses. Taking this into account we then sought to ensure representation from all

regions of Wales and a range of organisational roles while also taking age and gender into account. In total we conducted 19 interviews.

The interview schedule was developed by the University of Bath research team, informed by conversations with colleagues in WCPP, the steering group and the experts-by-experience group. All interviews were fully transcribed, and one was first translated into English as it was conducted in Welsh.

Interviews covered five main areas: the nature of the organisational focus on loneliness and social isolation; the role of technology to address this in the early days of the pandemic; who this worked best for, how and why; positive and negative impacts of technology use to address loneliness and social isolation, and finally future plans for technology use as pandemic restrictions were lifted. Within this structure, interviews also took account of survey responses: e.g., if the survey response mentioned the use of a particular type of technology, in the interview the participant might have been asked more details about this. For more information about who took part in these interviews and a copy of the interview schedule, see Annexes 3 and 4.

Ethical approval for the interviews with service providers was obtained from Cardiff University ethics committee on the 11th of November 2022. The interviews were conducted between 1st December 2021 and 21 January 2022.

Interviews with older adults

Semi-structured interviews were conducted with older adults. Interviewees had a range of experience with engaging with technology – from no experience to being regular users. Recruitment initially entailed asking participants from the service provider interviews if they would be willing to act as gatekeepers and broker relevant introductions. Subsequently, WCPP contacted Age Cymru and other organisational contacts to boost recruitment. Participants were recruited through Delta wellbeing (4), Re-engage (5), self-referral via Centre for Ageing and Dementia Research (2), Age Cymru (2), service provider interviewees (2), Powys Association of Voluntary Organisations (2). Further information concerning the older adults interview participants can be found in Annex 5.

For inclusion in the study there was a lower age limit of 65 years and participants had to be able to give their informed consent. They also had to be living in the community rather than residential care. Gatekeepers were informed that we required a range of people in terms of age and experience with technology. In total we conducted 17 interviews. Six interviews were conducted on Zoom, five on a mobile phone and five

on a landline. To thank interviewees for their time, they were each given a £20 shopping voucher.

The interview schedule was developed by the University of Bath research team, with input from colleagues in WCPP and through correspondence with the experts-by-experience. A copy of the interview schedule can be found in Annex 6. Questions were aligned around five main areas:

- patterns of pre-pandemic activity, contact and use of digital technology
- experiences of loneliness and isolation
- interactions and connections during the pandemic
- patterns of digital technology use for social connection during the pandemic
- inclinations for future use

Ethical approval for the older adult interviews was obtained from Cardiff University on the 13th of December 2021. The interviews were conducted between 2nd February 2022 and 4th April 2022.

Analysis of interviews

All interview recordings were transcribed, anonymised, and translated to English where necessary. The interview transcripts were analysed using the 'codebook' variant of thematic analysis (Braun et al., 2018). Whilst adopting a broadly similar philosophy to reflexive thematic analysis, this takes a structured approach to coding where themes are considered as domain summaries. The analysis took an inductive approach to identifying themes relevant to the research questions. This means that we did not start with preconceived ideas of what the themes would be.

Case studies from service providers

Service providers who took part in interviews were given the opportunity to provide short case studies of the role of their organisation in using technology to prevent or reduce loneliness and social isolation among older adults during the pandemic. We received 12 case studies from five organisations. Some are included in the main report. All of them can be found in Annex 7.

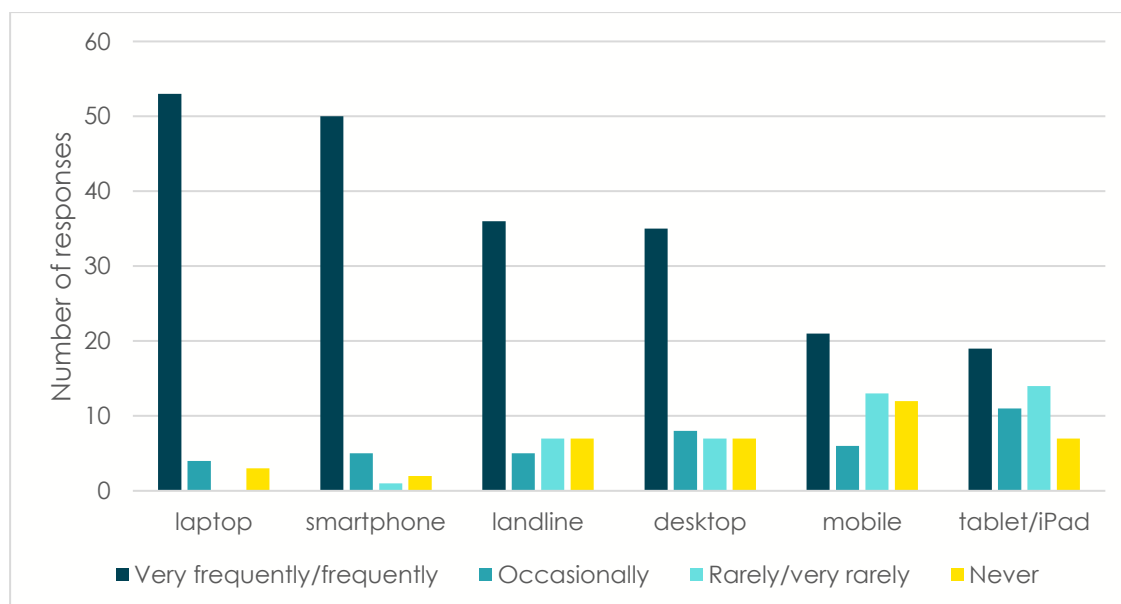
Findings

Setting the scene

Before describing our findings about how technology has been mobilised to address loneliness and isolation among older adults during the COVID-19 pandemic, it is useful to set the scene in two ways: first, by characterising the ways in which technology was used during the pandemic to communicate within organisations and with service users, and second, by outlining the extent to which addressing loneliness and social isolation of service users was an organisational priority. This provides the backdrop against which the research questions can be addressed.

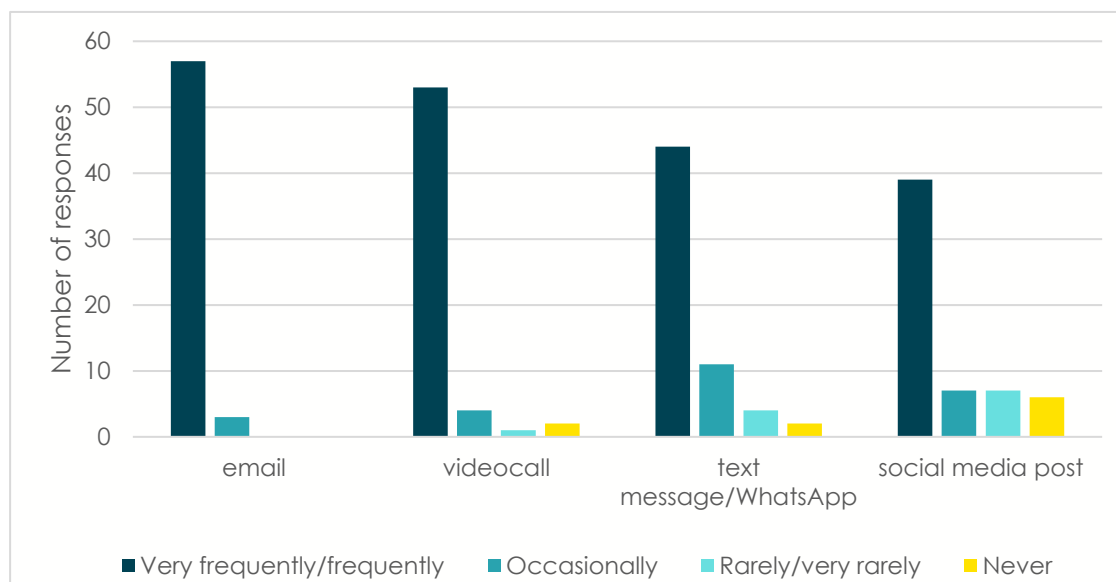
First, as shown in Figure 1, survey respondents reported that the devices being used most frequently within and between organisations during the pandemic were desktop and laptop computers, landline and smartphones, with tablet and (not smart) mobile phones the least used (Q8)². Figure 2 shows that the types of *software* used most frequently within and between organisations were email and videocall.

Figure 1: Frequency of device use to communicate within organisations during COVID-19



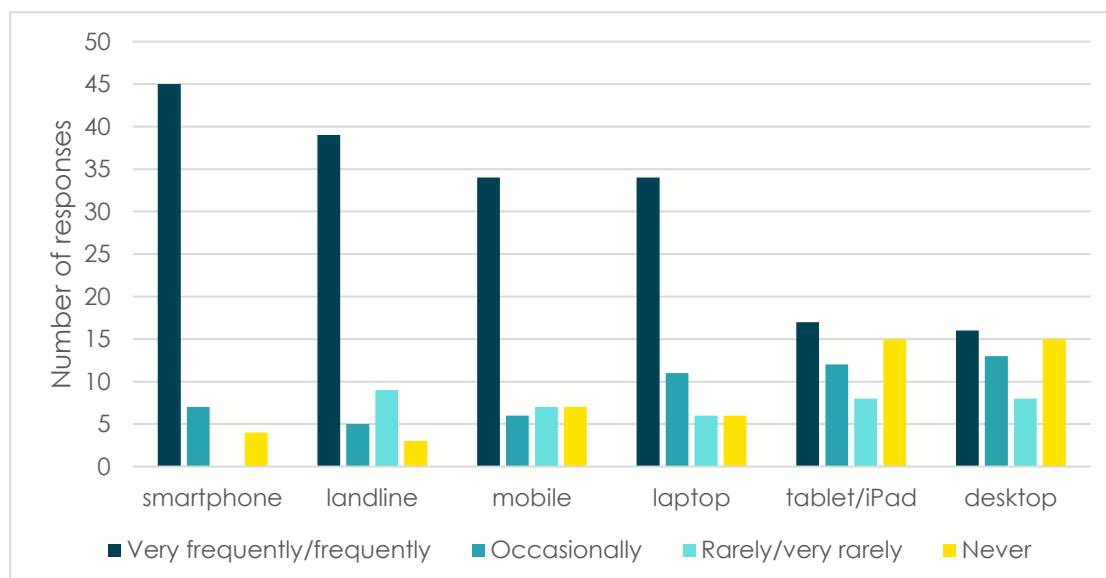
² Median = 5: frequently

Figure 2: Frequency of software use to communicate within organisations during COVID-19



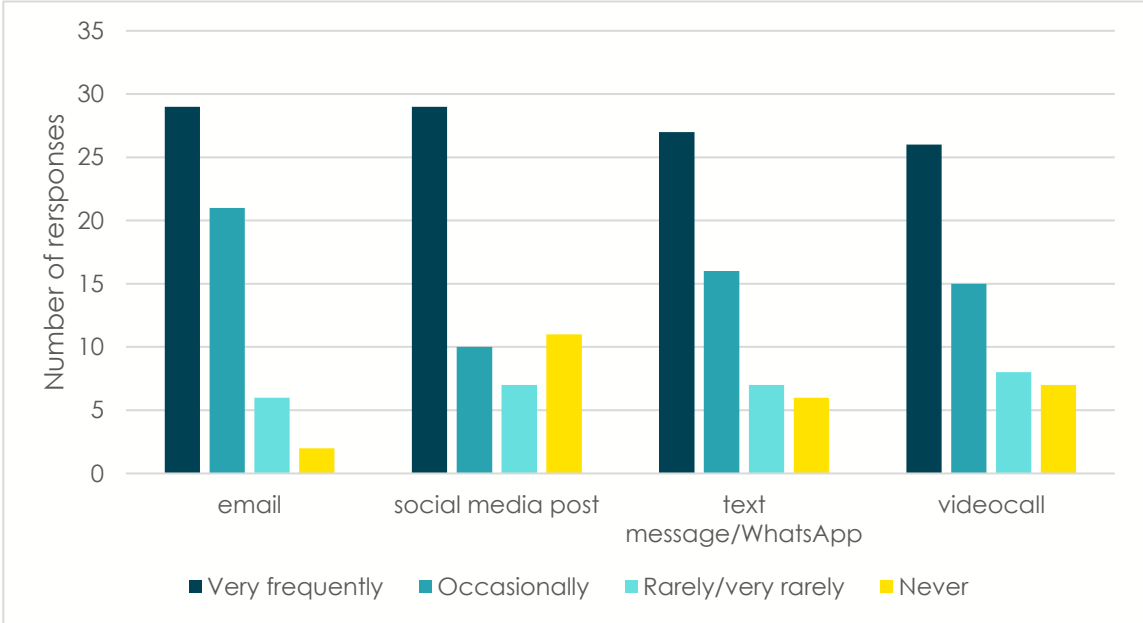
There were different patterns and higher usage of devices and software within and between organisations than between organisations and older adult service users (Q9). As seen in Figure 3, the devices reported as being used most to communicate with service users were smart and landline phones. Desktop computers were reported as least used for this purpose.

Figure 3: Frequency of device use to communicate with service users



As seen above, organisations most frequently communicated with service users by phone: landline, smartphone, and mobile phone. Service providers believed this was in line with how older adult service users most frequently communicated with other people in their social networks (e.g., friends, family, professionals). They believed that service users were most likely to make landline phone calls, followed by smart phone calls, mobile phone calls and text messaging (Q10).

As shown in figure 4, email was the software used most frequently to communicate with service users during the pandemic. Video calls were the least used to communicate with service users, in contrast to how heavily they featured in communication within and between organisations. Figure 4: Frequency of software use to communicate with service users



Although there was clearly a central role for the landline phone, figures 1 to 4 show that all organisations were using digital technology in one form or another to communicate internally and with service users.

The survey also sought to assess more broadly the extent to which addressing loneliness and social isolation was a priority during the COVID-19 pandemic.

Figure 5 indicates that addressing loneliness and social isolation was a clear priority for respondents’ organisations and for their own roles (Q6 & Q7). This is an important context for considering the research questions. As seeking to prevent or reduce loneliness and social isolation was a priority, it is reasonable to assume that during the pandemic, when face-to-face contact was so often constrained or impossible, this

would heighten the motivation to use digital technology to enable older adult service users to connect with others.

Figure 5: Priority of role and organisation to prevent or reduce service user loneliness



The organisational priority of addressing loneliness and social isolation was not necessarily associated with assessment or measurement of levels of loneliness (Q11 & 11.2). Twenty-three (38%) respondents said that this was not done in their organisation. Thirty-eight (62%) said they did assess levels of loneliness (Q11).

“[We assess levels of loneliness] via our CONNECT service provision. Our assessment algorithm highlights if a client "scores" high in specific priority areas so that we can co-produce a wellbeing plan to support them to make changes. Social Isolation and Loneliness are just two of these. Our staff will then signpost or support/coach clients to work on these areas in order to make changes that the client wants to make or improve these areas in some way. Clients also measure distance travelled from being supported by the service across 6 domains by scoring themselves at the start of the service and then at review points throughout. This also feeds into the wellbeing plan in order to support the client's personal outcomes”. (Service provider – survey response)

Methods for doing so ranged from gathering qualitative feedback through e.g., What Matters³ conversations (n=13), to conducting surveys (n=11), and using other formal tools (n=11).

Mobilising technology to address loneliness and social isolation among older adults during the pandemic

Almost all survey respondents (n = 57, 93%) said that their organisations had sought to prevent or reduce older service users' experiences of loneliness and social isolation during the pandemic by encouraging or enabling them to link with people outside their organisation, for example with support groups, friends, family, or other service users (Q14). When providing more information about how this was done, 31 (54%) mentioned the provision of technology or technology support. This contrasts with practice prior to the pandemic when almost half (n=27, 46%) of the organisations surveyed said they were not using technology for the purposes of reducing or preventing loneliness of their older adult service users.

In terms of equipment provision during the pandemic, this included tablets and laptops. New devices provided to older adults across Wales included iPads and other tablets, Komp, WiFi devices, Echo and Alexa and other smart home devices. A variety of software platforms were being used: Zoom, Teams, WhatsApp, Facebook, Skype, and FaceTime to keep in touch with family and friends.

“We have a really proactive Assistive Technology department who use a number of mechanisms to work with older people to reduce isolation and loneliness - Alexa, Armed, Membobell, Brain in Hand and Google hubs. Staff also use iPads/smart phone training to support older people to engage with family and friends. establishment of closed WhatsApp group for people with learning disabilities within our supported living.”
(Service provider – survey response)

Support and training in digital skills was provided in a number of ways. Digital skills training was often described in terms of teaching service users how to use a device that they had been given. It included training and support for engaging in video calls or chat groups. Support was often delivered one-to-one, but was also mentioned in the context of facilitating group activities being delivered online: for example, exercise

³ <https://socialcare.wales/service-improvement/what-matters-conversations-and-assessment>

groups, coffee mornings, cooking groups, art groups. Uptake of digital training was generally poor and service providers recognised that training needed to be improved.

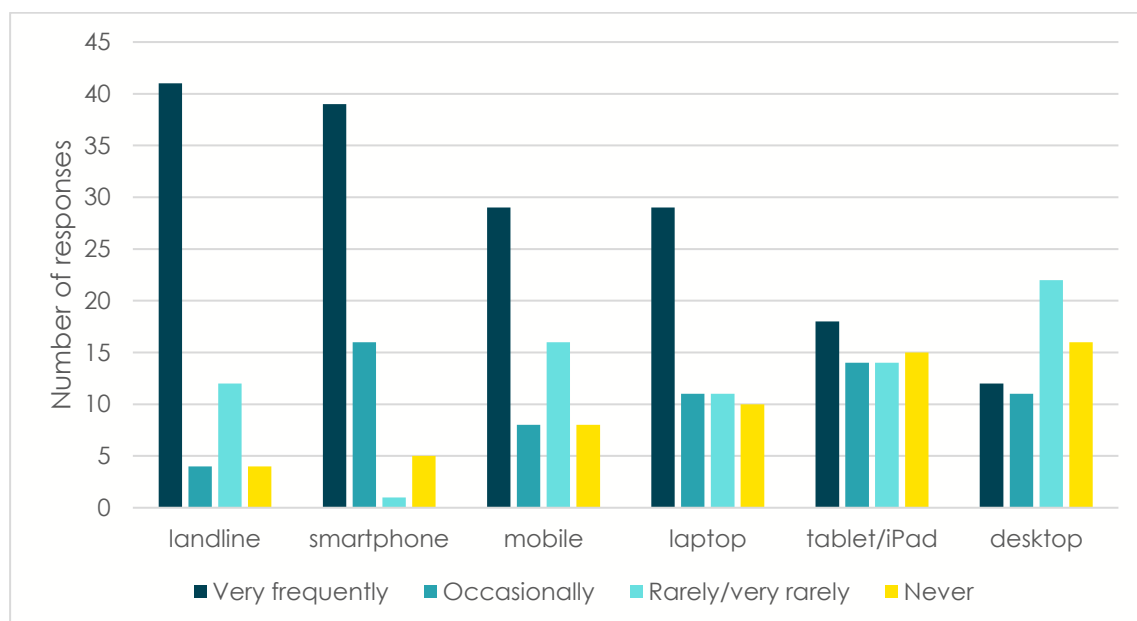
“Most have enjoyed using it and have added smart light and plug to the Alexa and found that just talking to her made a difference.

Positive feedback received from service user and family members, reduced loneliness and anxiety, and enabled independence where Alexa was linked up to lights etc.” (Service provider – survey response)

Figures 6 and 7 provide an overview from the survey of the *types* of technology, device or software that have been used by organisations to communicate with older adult service users in order to prevent or reduce experiences of loneliness and social isolation.

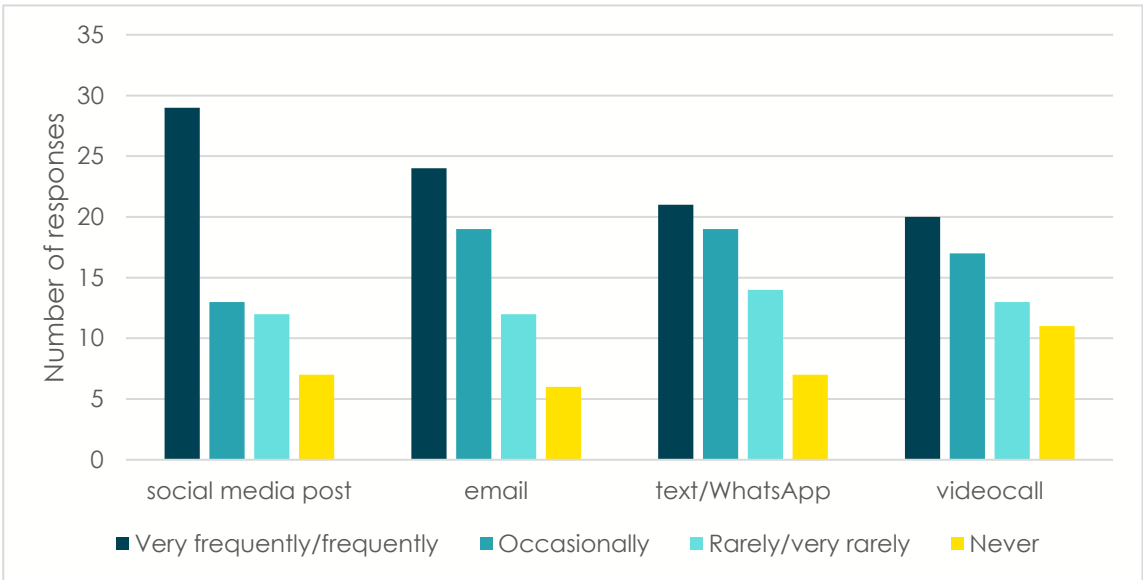
Figure 6 below clearly indicates the centrality of the phone – smart phone, landline and mobile – again suggesting that one-to-one conversations were seen as the key organisational resource in preventing or reducing loneliness. Interviews with service providers confirmed that whether calls were made from landlines, or used the digital capabilities of mobile or smart phones, phone calls were the primary source of contact/communication between service providers and older adult service users, being used for ‘befriending calls’ and wellbeing checks during lockdown. Of course, service providers would not necessarily be aware of the type of phone that older adult service users were making or receiving calls from.

Figure 6: Organisations’ use of devices to communicate with service users to prevent or reduce experiences of loneliness



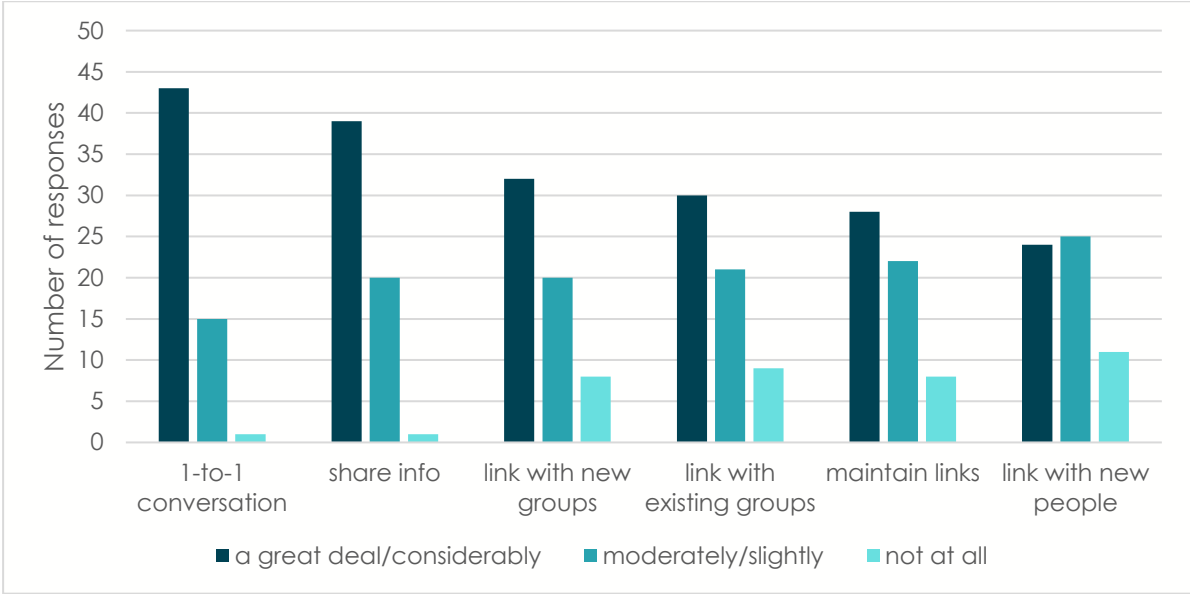
Compared with figure 6, figure 7 below shows that digital software (such as social media posts, used by almost 47% of respondents very frequently/frequently) were used less frequently than landline calls (used by around 67% of respondents very frequently/frequently) for communicating with service users for the purpose of preventing or reducing loneliness. However, of the digital software used, social media and email were used slightly more frequently than texts/WhatsApp and videocalls.

Figure 7: Organisations’ use of software to communicate with service users to prevent or reduce experiences of loneliness



Respondents provided information about ways their organisations had used technology to prevent or reduce loneliness and social isolation in older adult service users since the first lockdown of the Covid-19 pandemic (Q15). Figure 8 below indicates that technology played at least a moderate role in each of these. The role of technology use for 1-to-1 conversations emerged as central; for 73% of respondents (n=43) technology had been used ‘considerably’ or ‘a great deal’ for this purpose. Technology also clearly had a recognised role in creating and maintaining links with new and existing groups and people.

Figure 8: Ways in which technology was used to reduce loneliness and social isolation



Service providers noted that phone calls were generally considered as a sufficient and unproblematic option by service users:

“I think as I said the Zoom things were really frustrating because you have to take a code. You get the code, you get your link, you miss one digit or one lower case. These guys just want to switch something on and it happens. Because when you make a phone call you put the number in and you speak to the person. And I think both myself and my admin colleague did your questionnaire, and we phoned each other up afterwards and he said to me ‘so the last bit about which technology worked best for us, what did you say?’ And I went ‘the phone’ [...] [Older adults] were like ‘I just want to talk to somebody’”. (Service Provider, P002)

“[Interviewer: So focusing on loneliness and isolation within that then, what were the particular things you would try to engage people with in terms of technology, what went well I suppose?] Participant: It was just with telephone calls. Just having that conversation, touching base with people. And putting third sector in touch with them so that they were part of a ring around service for example, so that they felt that somebody was checking in with them if they had no family that could do that. Just having that contact.” (Service Provider, P006)

Some of the older service users were reticent about using smart phones; their extensive functionality was seen as far in excess of their capability or needs (which they described as just needing to make or receive calls).

“Even though I’ve got a smartphone I don’t use it for all of the stuff that it could be used for. I’ll give you an example of that actually. I was with my daughter in Burry Port and the sun was going down and I said to them, “Oh, god, I wish I’d brought my camera.” She looked at me as if I was stupid and said, “Well what’s wrong with your phone?” It didn’t dawn on me phone, smartphone, camera.” (Older adult, P311)

Similarly, one of the organisational interviewees reflected:

“Smartphones really throw people. Because you’ve got that amount of power in your hand and you can do anything. And they want things to be easier.” (Service Provider, P002)

On the other hand, there were also examples of newer technologies that were successfully deployed with service users. A service provider explained the strengths and weaknesses of the Komp, used to help provide support for a couple with severe disabilities including poor sight. The large screen of the Komp used to receive calls was an important benefit to them:

“Yeah, with the Komp it’s a big device, so it’s a big TV. So that’s our plus side for us on that one. Whereas the other ones are small devices, they’re about the size of the Alexas. That’s the downside to them, so they’ve all got their ups and downs. If we had the Komp with a calling out system as well it would be perfect.” (Service provider, P001)

The interviews with older adults also provided some examples of new technology being used and enjoyed:

“I have an Alexa now and an Echo Dot in my bedroom and that is my world now because whenever I want to know anything, I go into that [...] I did ask her to marry me one time! She said it’s against robotic law! It’s a wonderful device. ... because I had a computer I knew how to formulate questions, I knew what questions to ask and Alexa was set up, there are things you learn as you go along, a lot of things you learn as you go along but it’s a mine of information.” (Older adult, P307)

In summary, against a background of organisational strategies primarily focusing on one-to-one contact via phones, there is also evidence of organisations promoting and enabling the use of other technologies to support older adults to connect with broader networks of family and friends. Although the one-to-one phone call was key to connection and conversation, there was ample evidence that other digital technologies were provided and used in order to reduce loneliness and social isolation during the COVID-19 pandemic.

Enablers and barriers to using technology to address loneliness and social isolation among older adults

Service providers were asked to estimate the number of older adults that (a) have started to use devices or applications that they *didn't use before* the pandemic to connect with others (Q21), and (b) were using devices or applications *in different ways* than they did before the pandemic (Q22). Some respondents indicated that they had no idea about this, but the results in Table 1 below suggest there was a clear view amongst other service providers that 'some', if not 'many' older adult service users had increased their capability to use technology to connect with others. This provides an important backdrop against which to consider the barriers and enablers of using technology to reduce and prevent loneliness and social isolation.

Table 1: Changing patterns of device and application use to connect with others during the pandemic as estimated by service providers*

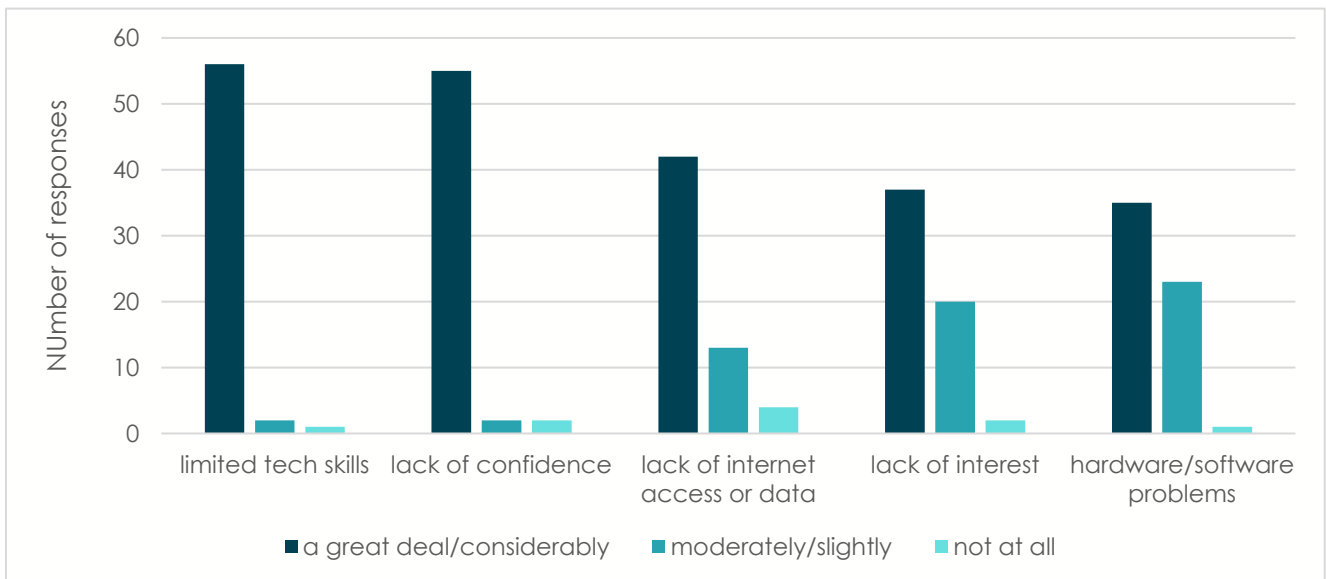
	Number of service users starting to use devices or applications to connect	
	..that they did not use before	..in different ways
None have	3	3
A few have	13	11
Some have	30	26
Many have	10	15

*Numbers indicate the number of respondents endorsing each estimate

Barriers to technology use to address loneliness and social isolation

First, respondents were asked about the barriers that made adoption of technology difficult for their older adult service users and the extent to which each was problematic (Q18). Figure 6 indicates that although a few service providers said that each of the barriers was not problematic at all, they were all reported - to some extent at least - as constraining or preventing adoption. Lack of confidence and limited technical skills appear to be considered more problematic than lack of interest and desire to use technology.

Figure 9: Barriers to technology adoption for older adult service users



A lack of familiarity and confidence and the associated discomfort were barriers to older adults' engagement with digital technology. Both older adults and service providers recognised the difficulties in addressing this:

“So that’s quite off-putting for a lot of people. It takes a long time to learn how to use a computer I think...And I have observed how my memory is failing, and I am understanding therefore how a lot of people find it difficult getting to grips with a computer when it’s not something that they’ve ever done or ever needed to do, and to start having to do it now is really quite tough” (Older adult, P303)

“...people who haven’t used digital equipment are afraid of digital equipment because it’s a whole different ball game. It is like learning a whole new language, it is very challenging to establish those skills and people will [say things like] ‘I don’t need to use a computer’, ‘why do I need to use a computer’, ‘I’ve got this’, ‘my daughter does everything for me, my son does everything for me’” (Service provider, P004)

Lack of confidence was also evident in the worry that doing something wrong on a device might result in breaking or spoiling it. Service providers also recognised that this was a reason for lack of confidence:

“A lot of people were very frightened of all those sorts of things, because if you press on something and it turns out to be the wrong thing, your computer can really get into a terrible mess.” (Older adult, P303)

Lack of interest

Sometimes barriers were less about ability and more about the preferences of older adults; they did not *want* to engage with technology. The quotes below, from an older adult and a service provider respectively, suggest that what might present as a simple and clear preference might be usefully thought about as the tip of the iceberg, providing little sense of the complexity of the issues beneath:

“...but when I see people that I talk to in Morrisons at the coffee morning and they’re afraid to switch the computer on and that I found was sad. The older people, “Oh, I don’t want to touch technology, it’s not for me,” and that was one of the things I felt that was lacking really [...] and some just don’t want – they’re happy reading and doing their own thing and they’re just quiet people that are happy in their own skin you know, they’re just happy.” (Older adult, P304)

“She wouldn’t even try. I even offered her one of these tablets which, hand on heart, I did think to myself at the time, I can’t just give her a tablet; she does need help. But I was quite willing to go over it on the phone with her, which is not ideal, but it would have been better than nothing. But she wouldn’t even entertain it, and she is quite a stubborn lady. So I didn’t pursue it really.” (Service provider, P105)

The first example above may illustrate people not wanting to go online because they do not see the need for it and are content with their non-digital activities, or the preference expressed may be about distancing a potentially threatening prospect of needing to engage with unknown equipment with no sense of having any skills to meet the challenge. In the second quote, what is presented as the stubborn refusal to consider a tablet may simply be the recognition and refusal of a worse-than-nothing scenario: unfamiliar digital equipment where the instructions for use were to be delivered over the phone. What presents as a lack of interest on the part of service users may actually be concealing a lack of confidence or understanding of what is entailed in engaging in particular digital activities (Centre for Ageing Better, 2018) or

may result from having internalised stereotypes and assumptions of age-related limitations (Wilson-Menzfeld and Brittain, 2022).

Lack of access to resources

A further barrier from the perspective of older adults related to a lack of access to physical resources – hardware, appropriate software and the requisite broadband and data capacity – the use of which on an ongoing basis, had implications for often already-stretched personal finances.

“It was about 80% didn’t have access to a smartphone or a tablet or had broadband. That was the biggest one [barrier, and] was because we live in a rural area, a lot of people didn’t have good broadband” (Service provider, P005)

“That was a barrier that if you haven’t got wi-fi – because some of them haven’t because they haven’t got a computer or a laptop – they couldn’t really afford to be paying £15 for a SIM card when they’re on pension credits” (Service provider, P104)

Concerns about online safety

Finally, though not mentioned in the survey, in both service user and service provider interviews, chiming with the findings of Wilson et al. (2021), concerns about safety online and being scammed were presented as a significant barrier to embracing online activity. In part this related to the device having the potential to have extensive functionality and multiple purposes – which may be used or unused. The fact that devices may be linked to personal finances or resources was considered particularly worrying for older adults:

“It’s the fact that somebody can access their bank accounts and their hard-earned pensions. And so there is a fear. It’s a bit like having smart meters as well. There’s a lot of resistance against having smart stuff.” (Service provider, P002)

There were concerns about breaches of privacy and scams that could result from the inadvertent click of a link online: extensive negative consequences could follow a small thoughtless or unknowing action:

“People are very fearful of scams, because it’s very difficult sometimes to recognise a scam. I mean even now I’ve got one that’s come through on my message stream, and I’m looking at it and reading it and thinking, is that a scam or is it not a scam? Is it

something I should actually be taking care of, because it's sort of threatening me with lots of money costs, you know, sort of.. this is going to charge you loads..." (Older adult, P303)

Such fears and concerns can lead people to switch devices off. They may not appreciate that a device needs to be on standby in order to receive calls or messages – or may be aware of this but feel better when it is turned off. Some organisations recognised this and provided simple, generally applicable guidance about using devices safely. Organisations that provided managed tablets were able to remotely monitor/control them. The sense of safety that this can provide can facilitate their use:

"We just had to persuade people not to click on anything suspicious. But then when you get a Zoom invitation to something, that's full of links. It looks scary enough. One piece of advice in the training we had from XXXX was to simplify Zoom invitations so that they became familiar what to expect when they had a Zoom invitation" (Service provider, P102)

"So because it is a managed system we made it quite clear to those individuals that actually if somebody tries to get through on those things. So we have had a couple of occasions when individuals were contacted, told by the person on the phone "well if you log into your computer now". "Have you got one?" "Yes". "Right, go onto a Google search and type this in". They've gone and done that and it's blocked it, so they haven't been able to be scammed then really. So I think for us knowing that that managed device has actually got all of those backups there has meant that we've actually been able to stop people from being in those vulnerable positions really" (Service provider, P005)

This organisation also used managed devices to monitor engagement, used simplified software and had accessibility features turned on (big tiles rather than little icons) as well as being able to remotely update devices and add new applications.

Family and friends were also concerned about older adults falling for a scam and this sometimes led to a broader reluctance for them to have a device at all:

"We came across a lot of family members who were worried that they would be perhaps scammed and they didn't want their parents or grandparents to perhaps have access to technology in case, they

were frightened that they might be scammed because they wouldn't be aware of what could happen" (Service provider, P005)

As this evidence highlights, there are a range of barriers to the adoption of technology to address loneliness and social isolation. The co-occurrence and interaction of many of these barriers created particular challenges in the context of a pandemic where at times the possibilities for face-to-face contact were minimal or absent. The absence of skills, confidence and interest all constrained uptake of hardware or software. Heightened concerns about scams and security were a significant barrier to engagement.

Enablers of technology use to address loneliness and social isolation

Conversely, despite older adults talking about lack of confidence in using technology as a problem, there were examples of specific areas where they did feel more confident and capable. While this confidence was sometimes limited to particular types of use, (e.g., Netflix, online shopping) there were also examples where confidence in one area transferred to enable adoption and usage for other purposes:

"Those that already could use a computer but only used it perhaps to tinker about, play around, perhaps order something online, those kinds of people, once they'd got into Zoom calls and face to face meetings, they progressed very quickly to really enjoying that process and their wellbeing improved and they gained confidence." (Service provider, P009)

Some service users were more confident and in the examples below this was linked both to having had a previous professional life that involved use of technology and to having become happily familiar with technology during the pandemic itself:

Cardiff Council Digital Team set up community hubs and provided people facing isolation with tablets and data allowances. The hubs provide 1-to-1, in-person assistance to help people to use their devices – in the case study provided, the tablet and support enabled an older woman to join in with her choir's Zoom sessions, access her emails and stay in contact with her family. The team have found that building people's digital confidence is important – showing people how they can benefit from technology and teaching how to use it safely, step-by-step is crucial to overcome their fears. Also being able to provide free devices has greatly helped.

"But I think my own friends are all very computer literate really. Most of them have been professional women one way or another, and

they've had to, maybe in schools, teachers, or in hospitals, they've had to as part of their jobs, they've had to learn how to use a computer anyway, so they've become much more literate. It's other people who hadn't actually worked with computers at all who have difficulties.” (Older adult, P303)

“Before, like I said, if you said ‘computer’, I was five miles down the road before you got to the end of the word. Now I can have a conversation with people about technology. I know what they're talking about with a smartphone and a tablet or an iPad and Word, Excel, Google, etc. I understand what they're talking about.” (Older adult, P311)

“No, I, because I had a computer I knew how to formulate questions, I knew what questions to ask and Alexa was set up, there are things you learn as you go along, a lot of things you learn as you go along but it's a mine of information.” (Older adult, P307)

Using digital technology in the context of mitigating or preventing loneliness was seen by older people as a means to an end rather than an end in itself. A number of older adult service users described being motivated to maintain existing social connections or meet new people as reasons for engaging with technology:

“I suppose a lot of the people who use Zoom tend to be people like me, are on their own, and so Zoom is a friendship group. Anything that you do on Zoom puts you in contact with human beings, and maybe if you've got a family around you, you don't need it.” (Older adult, P303).

“...every Sunday there was the church that she used to attend, that went online, but she used to come to the library, not open on a Sunday, and sit outside, just so she could connect to the Wi-Fi. She had Wi-Fi in her home, she didn't know how to connect to it or anything like that, and there was no real support network, so it was about, like I said, it's just a story that sticks in my mind because I think of this old lady sat outside the hub on a rainy day with her church group, which is the kind of thing that we were trying to avoid doing.” (Service provider, P004)

The example above poignantly demonstrates how using technology to connect with others depended on having a purpose and a clear goal, for which the use of

technology was simply the means. It is under these circumstances – where the goal is to seek or enhance social connection - that loneliness is reduced rather than increased (Nowland et al, 2018)

Enablers of technology use to reduce loneliness and social isolation were less easily identifiable than the barriers. The question of how to become more familiar, skilled and interested in using technology to connect with others is best answered by highlighting the need for purpose. What purposes and goals does the use of technology to connect with others enable?

Organisational barriers to older adults' use of technology

Barriers to increased uptake and use of digital technology to address loneliness were not simply located with older adults. These were also located within those organisations where readiness for a greater reliance on technology to address loneliness and social isolation was limited. First, staff were not always confident to use technology themselves and thus also had reservations about how best to encourage and enable this with older adults. Some bad experiences of technology stemmed from responsibility for digital access residing with staff that did not have the appropriate skills sets or did not consider that providing such support was part of their job description:

“So they already had to have some tech savviness basically already. And sometimes it has been hard to recruit people to do that as well because we found that because of the demographics of the volunteers as well some of them weren't very confident, and some of them weren't sure about showing people.” (Service provider, P007)

There was also evidence of greater organisational readiness for digital support where service providers had experience with technology, had developed capacity through their networks and were able to provide motivation and support attuned to the challenges for service users:

“So we had good networks, good contact with groups already in place, and when the pandemic hit, so basically we had loads of people put their hands up to volunteer and to be part of existing support groups that we already had in place.” (Service provider, P003)

“I try to explain that to a lot of people when I go out. So I use my own experiences of the technology back in the community as well, and what I've learned I try to pass onto other people to say “if my

mother in law, she's 79, she can do it, you guys can do it". (Service provider, P001)

The survey results also suggested that greater use of digital technology within organisations might increase readiness to engage with service users in this way. Given our data are cross-sectional we cannot infer a causal relationship, but in line with this hypothesis, Spearman's rank correlations were computed to assess the relationship between an organisation's use of each technology in communicating with(in) the organisations and with service users. There were positive correlations in relation to desktop and laptop computer, tablet/iPad, landline phone, mobile phone, smart phone and social media⁴. Organisations who used these technologies to communicate amongst staff were more likely to use them with service users too.

As noted earlier, there was considerable variability in how much organisations were using technology with older adult service users prior to the pandemic. Once the face-to-face interaction constraints necessitated by the pandemic were in place, the learning curve was very steep for those that did not have experience of providing greater tech-enabled support. Even when there were established patterns of tech-based interaction, more was required in terms of staff confidence and skills, physical resources and the processes required to bring these together into a digital offering for service users. The quotes below illustrate the complex set of conditions that needed to be in place, for which many organisations were largely, if understandably, unprepared:

"We had the software and the hardware and we were able to access stuff, we had to go up in quality with all our recording equipment and things like that, that had to be improved because initially it was just on a phone and standing there holding it, so we had to get a lot of equipment in and we had to talk about GDPR..."
(Service provider, P008)

"That was really difficult because there was a huge shortage. We couldn't get any hardware at all. I know our library service had 100 iPads actually on order but it was delayed and they couldn't get them. So actually we couldn't do anything with helping people access new hardware. We had to work with the people who already had access to digital services. Which was a shame really because we could have reached so many more people if we could have got

⁴ Desktop computer $r(57) = .51, p < .01$; Laptop computer $r(60) = .42, p < .01$; Tablet/iPad: $r(51) = .60, p < .01$; Landline phone $r(55) = .61, p < .01$; Mobile phone $r(52) = .65, p < .01$; Smart phone: $r(58) = .27, p < .05$; Social media $r(59) = .63, p < .01$.

our hands on iPads or something that was available for people”
(Service provider, P007)

It was clear that inter-organisational working was key in increasing capability for more effective development of digital strategies and access to resources:

“Because I know that our Care and Repair have also got the Alexas and they’ve been rolling them out. So we worked quite closely with Care and Repair. So I know they’ve been doing it as well because they’ve learned from ours.” [Service provider, P001]

“We realised that we didn’t have a digital strategy in Pembrokeshire, so we also worked with our partners to look at a digital provider forum of organisations that could provide digital support. We also looked at then how we could support communities with a community kit, so we accessed some funding to be able to loan community kit out to village halls, community groups, so that they could also encourage people to go online” [Service provider, P005]

Evidently, it would be a mistake to locate the barriers to increased technology use solely with the capacity of individual service users. The familiarity, skills and motivations of service provider organisations also matters, as well of course as their ability to supply, or at least service, the supply of, the appropriate equipment. All these aspects of organisational readiness could be enhanced by interorganisational working.

Supporting older adults to use technology

Service providers were asked about what support older adults required (Table 2). Encouragement was viewed as the most important form of support required. There was also broad agreement that support was required in relation to one-to-one support, provision of devices & software and technical set up support. Building on this, Table 2 also depicts service provider views as to who had provided this support. Outside of the support offered by service providers themselves, family and friends were identified as key sources of support to meet these needs.

Table 2: Frequency of support requirements for technology adoption

	Support required	Provided by our organisation	Provided by another organisation	Provided by family/friends	Required but not provided
Provision of devices/ software	40	26	13	13	4
Technical set up support	41	23	14	17	3
1-to-1 help and support	42	31	14	16	4
Encourage	51	41	13	24	1
Financial support	24	13	6	6	4

Friends and family were considered a key source of motivation for older adults, demonstrating to them the value of being online, as well as supplying devices and skills and support to enable their effective and confident use:

“Yes, it’s only a small one because my daughter bought it for me for one Christmas, I’ve had it a few years now, I said, “What’s that?” so she said, “It’s a tablet” I said, “Tablet?” well I said, “How am I going to use that?” “I’ll show you” she said and now I love it!” (Older adult, P308)

“I’ve just had a new iPhone and my friend Pete gave me some advice, I didn’t want one of these where you swipe it, I wanted a press button one. So he found for me the most modern up-to-date press button one, and one of my young university friends took me in the car with my walker to Apple and we went in, and we knew exactly what we wanted. Again it all had to be ordered on technology, even in the store in Apple, and she just did it for me along with the young assistant, paying and everything. I’m lucky, I couldn’t do it myself” (Older adult, P314)

Family can also be key to professionals gaining a client’s trust as well as decreasing the reliance on training and support provided by organisations:

“But certainly I think it’s the family is the key. So if you’ve got family or you want to keep in touch with family, that’s the key to encouraging, so the gran or grandparents to be more involved with it, and I think sometimes they become your tech people as well. They’re in the house and you can have sometimes those conversations them; well if you pull this out and do it that way.”
(Service provider, P011)

Of course, family members may not be familiar or confident with using technology for social connection and may not be the best teachers. Resources to enhance the capabilities of the community networks around older adults may well be a cost-effective strategy.

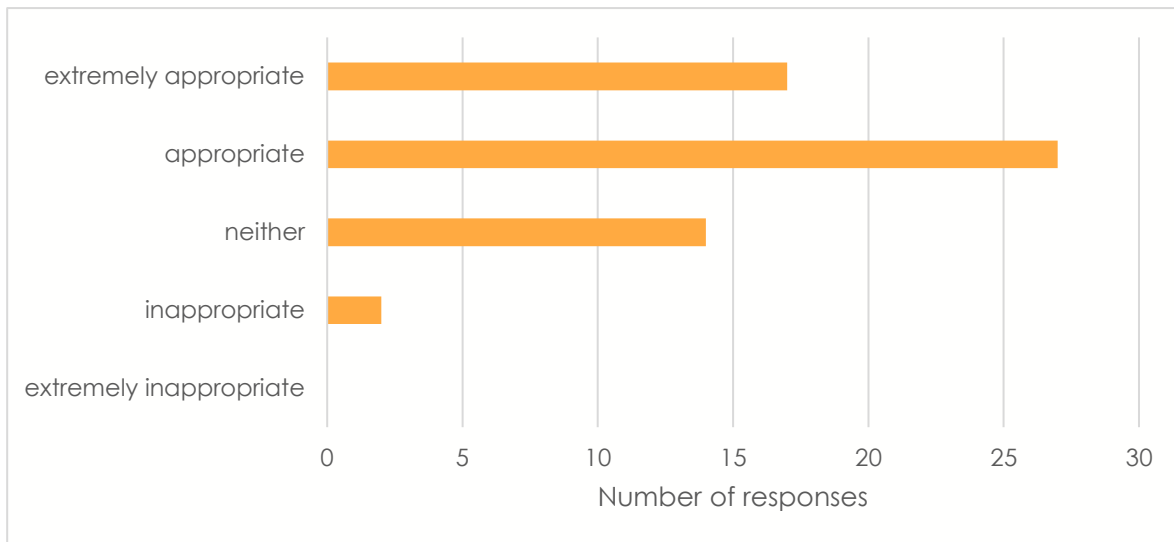
“I think having, if you’ve got nobody to communicate with, if you don’t have family and friends, what use is technology? You wouldn’t have the human contact for a phone.” (Service provider, P010)

Of course, many older adults do not have family or broader support networks. As the case studies in Annex 7 indicate, organisations in Wales had a key role in brokering links to relevant groups for such older adults - for example, connecting them up to exercise groups, coffee mornings, cooking groups, art groups - that offered the possibilities of social connection. Where social isolation is amplified by a lack of physical resources and motivation, encouraging the uptake of digital technology to enable social connection is extremely challenging.

Benefits and challenges of using technology for loneliness and social isolation

We now focus on the impact and challenges of using technology following its uptake or roll-out. Most service providers (44, 72%) thought that it was appropriate or extremely appropriate to communicate with older adult service users using technology (Q23) (Figure 10).

Figure 10: Appropriateness of using technology to communicate with service users



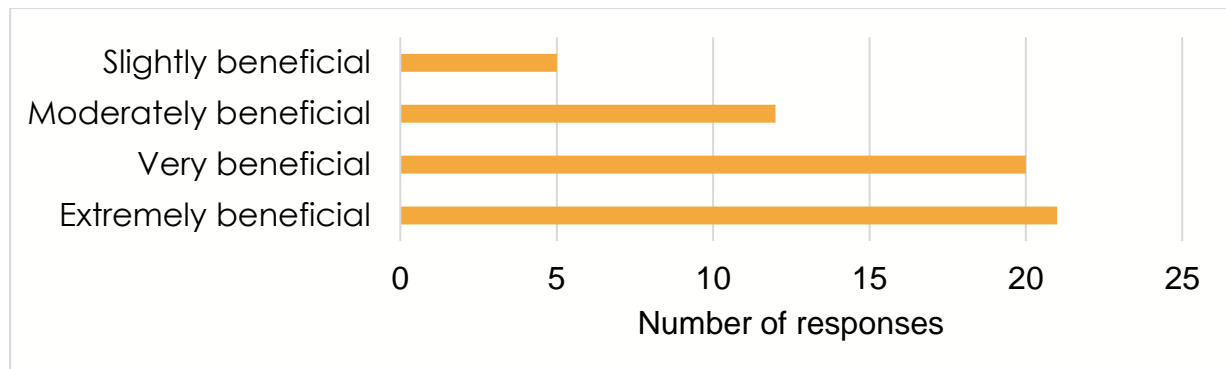
Those who considered it to be inappropriate (n=2, 3%) and that were ambivalent (n=14, 23%) cited the primacy of in-person rather than virtual support, suggesting that the latter should be secondary to face-to-face contact. Those (n=27, 45%) who considered that it was appropriate to use newer technology to communicate with older adult service users also acknowledged the importance of face-to-face contact and of taking individual preferences into account, but also focused on the benefits of the additional options that technology use can afford. Finally, for those that considered the use of technology to communicate with service users as extremely appropriate (n=17, 28%) there was a clear focus on the benefits: the role it plays in daily life, that it breaks down barriers, opens up opportunities that encourage social inclusion and reduce loneliness, helping to keep people in touch and feel valued.

“In a time when we are limited with how much face-to-face meetings we can do, the use of technology becomes even more important and necessary to allow effective communication between care provider and service user. This also plays a part in combatting social isolation and loneliness and it opens up an avenue to allow service users to have someone to talk to.

It was unexpected but technology gave older people a new way to communicate with each other and something that kept them from becoming more isolated. A chance to discuss and enjoy the things that mattered to them prior to lockdown.” (Service provider – survey response)

Service providers were asked whether the use of technology was beneficial in helping their organisation to prevent or reduce loneliness and social isolation for older adult service users. The profile of the responses can be seen in Figure 8 below. No one selected the option of 'not at all beneficial'.

Figure 11: Benefits of using technology to prevent or reduce loneliness and social isolation



Service providers that considered technology as only slightly beneficial (n=5, 8%) did so as it was not being used, said there was a lack of evidence as to how beneficial it was, or felt that it excluded those without confidence or understanding. Service providers who indicated it was moderately beneficial (n=12, 20%) highlighted the necessity of using technology during the pandemic but noted that although it increased the confidence of those who had access, it excluded or upset others. Those that said technology was very beneficial (n= 20, 34%) highlighted the ways in which it facilitated organisational contact with and support for service users, allowed individuals to stay in touch and make new friends and allowed social groups to continue.

“COVID moved councils to look at new ways of engaging with older people, forced staff to embraced technology themselves and then to have conversations with older people about the variety of tech opportunities they could engage with - widened the use of technology to support people and to think outside the box.” (Service provider – survey response)

The positive effects on how different organisations worked were noted, as illustrated in the quote above. Frustrations were expressed that it was not possible to broaden the service and include others more effectively.

Service providers who indicated that technology had been ‘extremely beneficial’ in preventing and reducing the social isolation of older adult service users (n=21, 36%)

stated the benefits yet more strongly, emphasising that the use of new technologies and apps meant that social groups could continue and that this was vital in a context where all the face-to-face groups had closed.

More use of technology will be made over the coming years as more people will feel more confident to engage and communicate with services. We will see a new norm established with a mix of face to face and virtual meetings taking place. We envisage our virtual hubs programme will play a key role over the coming months and years.

We had to adapt very quickly in the early stages of lockdown, in particular on how to reach out to those who were not digitally enabled. By supporting a number of people with the loan of an iPad we prevented a number of vulnerable people [from becoming] more isolated and lonely. (Service provider – survey response)

Clear examples were provided of new groups that were set up and that received good participation and feedback, one person describing the virtual support during lockdowns as a ‘lifeline’. Indirect benefits were also noted, for example that virtual support systems sometimes prevented or reduced calls to emergency services or GPs, and that those who had digital access had reduced waiting times for health assessments. Another unanticipated benefit was that some technology introduced to keep in touch with the outside world (like Alexa) could be deployed for other purposes:

“For her the Alexa has brought more for her because she’s been talking to it. She said it was like a lifeline to her. It’s not so much she was talking to other people, it was more that she was able to talk to something, and she found that to be more humbling more than anything” (Service provider, P001)

“It’s a wonderful device [...] I can’t read newspapers anymore, it gives me all the news of the day and I even get the radio station, BBC Radio Wales, I have that on all through the day, I even get Radio Bristol as well so I know what’s going on in the world!” (Older adult, P307)

Service providers noted the potential for service users to participate in virtual groups beyond the duration of COVID-19 restrictions, where distance, a lack of transport options or mobility issues would normally prohibit participation. Along the same lines, in theory, more frequent and flexible participation was possible with virtual groups where physical proximity was no longer a requirement:

“I think older people who perhaps had transport issues or maybe couldn’t get to perhaps some events that, you know, like an art group. Instead of having to get on a bus and travel to Haverfordwest, which is the main town in Pembrokeshire, they could take part from the comfort of their home” (Service provider, P005)

“Another advantage with technology, we saw, was – and Dementia Actif have done this as well – was being able to do things that are accessible 24 hours a day. Whereas before there would be a set time for the project or whatever and if you couldn’t be there or weren’t available, you couldn’t join in.” (Service provider, P102)

Participation in virtual groups had continued after the pandemic and in some cases, participants had gone on to meet face-to-face as well as online:

“They made new friends. Some of the groups have gone on to meet in person. Our Zoom group which is still on Zoom has been out three times and the people that were on it didn’t know each other before so they’ve actually made new social contacts.” (Service provider, P104)

Against the backdrop of the pandemic, some drew attention to how video calls had improved previous phone-only contact, as they were now able to see the person/people in the conversation. Echoing Wilson et al. (2021) the visual capabilities provided by technology provided motivation for older adults embedded in networks with family and friends to communicate with family via video calls rather than just on the phone. This had benefits for the family too as being able to see the older adult enabled a clearer assessment of their wellbeing:

“Yes, we did some video calls, but I usually had a video call to our granddaughter because she’d just had our great granddaughter so we video called her so we could see the baby, because we couldn’t go and visit the baby, so we couldn’t go and see her.” (Older adult, P312)

“We’ve changed people’s lives by them being able to now have WhatsApp groups that they wouldn’t have been part of previously. So they get to see what’s going on in their family’s lives on a regular basis, even outside of COVID and lockdown.” (Service provider, P015)

“But I suspect, as I say, that you’re finding that the people who didn’t have a computer were probably a lot lonelier, because they

couldn't make contact visually. They could talk on the phone but they couldn't see somebody's expression. They couldn't see a smile or a laugh [...] and communication, physical communication of friendship.” (Older adult, P303)

Moving from the benefits to the challenges of using technology to prevent or mitigate loneliness during the pandemic, firstly service providers noted that even when working well, digital technology that connects people is not a 'magic bullet' – people can still feel lonely. Indeed, some raised the scenario that virtual connections may intensify feelings of loneliness and isolation (Barbosa Neves et al., 2021). There was also a keen awareness of the ways in which technological links could not replace or reproduce the benefits of face-to-face contact:

“Part of the project was to recruit digital befrienders, to train digital befrienders who would then buddy up with people and help them through the process. But obviously those people couldn't go out and meet people in person to talk them through the process or to show them how to do things. [...] And I was doing that remotely as well. It's not like I could see them to instil that confidence. So it was all remote and you just lose something remotely in supporting people.” (Service provider, P007)

“Some people said it's not the same as meeting people, which it isn't, is it? They try it and see if they liked it but when they did try it, it didn't really replace the face-to-face contact.” (Older adult, P104)

A second challenge, especially for the organisations that had little or no experience of using technology to foster social connections prior to the pandemic, was needing to be reactive, having little chance to plan and needing to learn rapidly on the basis of trial and error. There was limited uptake of some opportunities offered to older service users – and sometimes there was limited understanding of why this was the case.

Maintaining and facilitating services to enable digital connection was an ongoing challenge in a context of constrained resources and capacity. These constraints led to links and

During the pandemic, Men's Sheds moved their meetings online via Zoom. Initially seemed promising but gradually numbers declined to about 10% of usual audience although some individual local groups persisted. Older members seemed to feel more comfortable using PCs/laptops rather than phones but access to these sometimes an issue as well as lack of tech support and fear of scams. They are not pursuing the tech route for now but found talking on the phone (old fashioned calls) is a good option.

Men's Sheds Cymru

partnerships with other organisations being established.

The challenges for older adults centred around digital exclusion. In part this related to the frustrations around learning to use digital technology. Once 'behind', it felt like a hopeless endeavour to try and 'catch up':

“Like this morning, first I had to put in the codes and it’s a bit daunting but if the link comes up with the blue line, just click on it and that’s great. It’s frustrating if there seems to be barriers.” (Older adult, P315)

“...the individual was also getting very frustrated with like, when you say, ‘Press this button’, I could tell you, it’s easy, it’s easy for me to press that button, but at the same time it’s not so much for somebody who has been digitally excluded all their lives, essentially” (Service provider, P004)

As noted earlier, take up of formal training was sometimes limited. Older adult service users that had attended training provide clues as to why this might be the case. The quotes below highlight the challenges they experienced with training that overestimated their base line knowledge:

“If you didn’t have any knowledge of typewriting or any knowledge of keyboard, you’re a little bit stumped. The teacher doesn’t seem to start there – they seem to assume everybody knows all the keys.” (Older adult, P311)

“I really haven’t a clue how to do it despite the instruction. They leave out the essential little link which is clearly so normal in practice that it doesn’t occur to the person to write the instruction: ‘put it in as an attachment’.” (Older adult, P315)

On the one hand service providers were confident that older adults’ confidence and capability had increased. On the other hand, it was clear that for some service users, the challenge of using technology to complete everyday tasks in unfamiliar ways was still considerable, leaving them feeling alienated.

The pandemic forced physical restrictions and isolation. In this setting, if the only route to connection involved using unfamiliar technology with few skills and little confidence, the consequences of being able to use technology to connect or not were amplified, potentially intensifying loneliness:

“It’s all very well saying, “You can make appointments online or you can talk to your doctor online, etc and so on.” If you don’t know how to do it that remark means absolutely nothing because they don’t know what online is but they would know what a telephone number is.” (Older adult, P311)

“They weren’t happy with ‘well you need this certain light, and you need to sit here, and you need to get the camera on your laptop or on your computer facing this, and if you can plug in your headphones’. They were like ‘I just want to talk to somebody’.”
(Service provider, P002)

Finally, we addressed the question of whether there were particular groups of older adult service users for whom the use of technology to connect with others had particularly positive or negative impacts. Of the 39 survey responses regarding the negative impacts of technology, 11 (28%) specifically said there were no negative consequences that they were aware of, and another 11 drew attention to service users with dementia, highlighting that even with support, digital devices had been challenging and difficult for this group, at times adding to distress and confusion.

Some clients that have dementia diagnosis or cognitive impairments have struggled with using the digital systems and mechanisms to communicate through the lockdowns but although this may not have been the right solution for them it needed to be tried and other solutions to support them could be sought. Digital and remote methods are not going to be right for everyone - it is about ensuring that there are other options available and perhaps providing services in different ways to suit as many people as possible. (Service provider – survey response)

“...but the problem is just fundamentally that does not cut it very well with a lot of people living with dementia because they just don’t understand it. You can have a lot of support but you would have people not really engaging because, like this, you look like someone on the telly so you don’t understand that that might be your family member or you don’t recognise it as your family member, or very distressed or very confused by it. ‘Well why are you on the telly?’ sort of thing.” (Service provider, P012)

Carers were one group that may have unexpectedly benefited from heightened digital provision during the pandemic. Carers often feel lonely due to their caring

responsibilities which can constrain their interactions outside of the home. In this setting, the benefits of technology and the online interactions it afforded may have favourably compared with the usual situation of very limited opportunity for face-to-face interactions outside the home.

Meeting virtually has been a huge support for members of the deaf club. Individuals have been able to use technology to access all of our services virtually and all have reported how pleased they have been that they have been able to access support when required.

(Service provider – survey response)

Some service providers noted that it was difficult to stay in touch with older adults with physical, sensory or learning disabilities using technology – hearing difficulties were noted as being particularly problematic. A contrasting view is provided by the adjacent quote. Certainly, those with a sensory impairments experienced challenges in using technology but a tailored approach was at least partially effective in addressing this.

Participants shared their experiences of how in some cases, physical and sensory limitations could be exacerbated through device design. A big screen, large buttons or icons may be needed for older service users. Having an inaccessible device could be doubly frustrating, and both service providers and users noted that this could have the effect of intensifying loneliness:

“.. they can’t use a smartphone because they haven’t got dexterity either. So that again is just increasing the loneliness of not being able to communicate with people.” (Service provider, P001)

“I had computers and mobile phones and various other technology platforms but of course I haven’t now because I can’t see. So, there’s been a difference there.” (Older adult, P307)

Overall there was considerable consensus that technology was largely beneficial in helping to prevent or reduce loneliness during the pandemic where options for face-to-face contact were, at times, non-existent. The value of video technology that enabled ‘virtual face to face’ contact was evident although this and other forms of connection via technology could at times intensify loneliness. This crystallises the challenge of how to provide training to support people with a range of abilities to access technology that enhances their experiences rather than inadvertently being alienating: “investment in responsive, personalised and ongoing community-based support is essential” (Centre for Ageing Better, 2018).

Discussion and implications

In this section we offer some final reflections on the research questions we set out to address and consider how services might best capitalise on the lessons learnt.

First, however, we acknowledge the limitations of the survey data. While we obtained a broad and diverse range of responses which was sufficient to indicate trends and ranges of response, the size of the sample was too small for definitive statistical comparisons. Accordingly, we adopted a largely descriptive approach to the quantitative analysis, supplementing this with data from the open-ended questions in the survey. Although the research questions are best addressed by talking to those that have experience of technology, we acknowledge that we have a partial picture. We did not recruit any providers or organisations who did not use any technology to try and address loneliness and social isolation. However, our sample, i.e. those that to varying degrees were using existing and new technologies, are exactly the people who are best positioned to provide insights into the way in which new and existing technology was mobilised during the pandemic.

In the final section below we seek to highlight the main implications of the work that might usefully form the basis of policy recommendations.

Evaluation

There was little evidence of formal and planned evaluation of the impact that the use of technology had upon the loneliness and social isolation of older adult service users. Given the unexpectedness and the speed at which the first lockdown of the COVID-19 pandemic occurred, this is perhaps to be expected. However, given the clear organisational priority of preventing or mitigating loneliness in most cases, it is surprising that there was little evidence of routine evaluation already in place prior to the pandemic. Going forward, collection of relevant data that is routinely embedded in existing patterns of contact with service users would be useful. Recommending the use of standard validated items of loneliness⁵ to be used in evaluations would start to provide broader indications of what interventions are working where and for whom. An explicit focus of evaluation should be around digital exclusion, exploring whether the impact of providing equipment and support reduces or expands differences in social isolation and loneliness for different groups. For example, are the effects

⁵ ONS measures of loneliness:

<https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/methodologies/measuringlonelinessguidanceforuseofthenationalindicatorsonsurveys>

amplified for those with physical or mobility limitations who may struggle to leave the house, and for those with/without existing local networks? A realist approach to evaluation could be usefully considered (HM Treasury, 2020). Realist evaluation does not simply ask whether something works or how much it works. Rather it asks what works, for which people, in what ways, in what contexts and how.

The smartphone as an entry point to broader digital engagement

Phones were the most important device used by service providers to communicate with older adults. We do not know the extent to which older adults were using smart phones rather than mobile phones and land lines, or how this changed after the onset of the pandemic. However, given the centrality of the phone, consideration might usefully be given to how smart phones could serve as a 'gateway' device to encouraging more confident and broader engagement with the other ways in which they can afford social connection (e.g. messaging, video calls, digital personal assistants). This approach may enable the uptake of other devices (tablets, other cloud-based voice services) that can have a role in enabling online social connection. It would also be useful to explore whether the use of phones reflects service user preferences, or pre-COVID-19 assessments of capability. Some services users may prefer video calls where they are now equipped to do so, so a flexible approach to future provision should be open to change.

In sum, smart phones might be used as a gateway device to encourage uptake of other digital functionality that can help to afford social connection but, for some, the use of digital devices may be constrained and compromised by fears of exploitation (see below).

Introducing managed devices

However, we also found that the extensive functionality of devices sometimes carried a sense of threat. The worry about 'something going wrong' or that 'I might do something wrong' could be pervasive, result in devices being turned off and a reluctance to use them. There was a fear about inadvertently doing something that led to being tricked and scammed and of consequent financial loss. Challenging this fear through clear messaging or offering a telephone helpline (which could be shared across organisations), might provide a safety net to encourage more users to try this out.

Where resources allow, consideration can usefully be given to taking a more targeted and programmatic approach to providing some older adult service users with 'managed devices' i.e., where the functionality is more limited and/or where the

organisation controls elements of this. We recognise that to some this would be more concerning than reassuring but could help to address the heightened concerns of both older adult service users and their families about being scammed. There is a fine line to walk and the appropriate course of action depends on the capabilities of older adults and the nature of their support networks. On the one hand, there is a value in simplification and concerns about too much/unwanted functionality. On the other, some of the added functionality – for example around video calls or voice activated technology – can enhance and extend social connections.

Assessing technological readiness of service users

Older adults can be viewed as a homogenous group. However, there is huge variability in the technical abilities of older adults, in the resources that they have access to and in their motivation and interest in using digital devices. The evidence in this area suggests uptake of social technologies is primarily determined by what individuals need, value and what motivates them (Centre for Ageing Better, 2018). Chen and Schulz (2016) suggest the value of identifying the configuration of characteristics of older people that can benefit most from engaging with digital technology is a worthwhile endeavour. Consideration therefore might usefully be given to integrating a brief assessment of technological readiness, motivation and capability within initial routine assessments conducted by organisations. This could help to understand what physical, social and motivational resources older adults have at their disposal and identify the most cost-effective ways of enhancing or maintaining them. Developing and routinely deploying such assessments, for example in the context of social prescribing, would, in turn, enable local authorities and other organisations to use their resources more effectively (Leicester Ageing Together, no date). The impact of these assessments, as well as of any subsequent interventions, require evaluation – ideally longitudinally. Of course, it is not enough simply to be able to characterise an individual's technological readiness – it is also important to use this information appropriately to more effectively deploy the limited resources of the organisation or link the individual to other resources.

Organisational strategy and workforce training

Organisations varied in how equipped they were for supporting people to make and maintain digital connections to reduce social isolation and loneliness during the pandemic. Given the health and wellbeing impacts of loneliness and the evident organisational commitments to preventing or mitigating loneliness in Wales, plans to increase the digital capability of older adults should be a priority even though – or indeed *because* – the immediate crisis of the pandemic is over. This means attending to organisational processes and people that can support this as well as how best to

encourage and amplify the resources of, where present, informal networks of family and friends. The suggestions above may assist with this process.

We should also not ignore the workforce challenges involved in upskilling both staff and volunteers involved in the delivery of services to be comfortable with, and equipped with, existing technology, as well as ensuring support is in place for their training as technology evolves. Waycott et al. (2016) note the important role played by those responsible for introducing the technology to service users. In the same way as not all older adult service users' needs, preferences and abilities are the same, the commitment and confidence of those providing services will also differ. Poor equipment and lack of private space to make video calls have been flagged as barriers to greater virtual provision of care in other settings, such as in the NHS. Shifting some parts of people's work online, may mean different allocation of space and considerations around how privacy is ensured. Similarly, service providers recognised that providing virtual care and support may mean more appointments could be made, as a result of reduced travel time. While this may be true and very valuable in some cases, it requires monitoring for any unintended negative effects. The time between visits can be useful for staff to process challenging visits, and providing a buffer to prepare for the next, which can be important for performance and wellbeing. That is, the time may not be the only important factor in scheduling appointments for some types of role and service user.

Conclusion

Loneliness and social isolation in older adults were exacerbated during the COVID-19 pandemic due to lockdown restrictions. This resulted in increased reliance on technology to facilitate contact and encourage social connection. Using a mixed method approach, this research examined how service providers used and promoted new and existing technology among older adult service users to address loneliness and social isolation among older adults. Barriers to, and enablers of, engagement with technology were not simply located with older adults themselves but also with service provider organisations and – where present - the older adult's social networks. Digital interventions that are designed and deployed in ways that are maximally aligned with the needs, aspirations, capabilities and desired outcomes of older people are most likely to be effective.

This is challenging as although the immediate crisis of COVID-19 has subsided, the challenges of loneliness and social isolation continue to be accompanied by serious resource constraints. To be effective in using these resources to address loneliness and social isolation this research suggests the value of engaging social networks of

friends, family and community organisations, building on existing technology use to enable confidence and self-efficacy, embedding brief assessments of service user digital capabilities and aspirations in existing conversations, and learning from evaluations of what training and which technology works for who, why and how.

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Annex 1: Survey participants

Who took part in the survey?

Using contact lists provided by the Welsh Government and WCPP, we contacted a range of organisations in Wales to invite participation from groups that provided services for older adults: social care commissioners, social care providers, and voluntary and community sector providers. Email invitations for the survey were sent to these organisations with the request to forward them to eligible colleagues. Recruitment started in September 2021 and the survey closed in early November 2021.

As we used ‘gatekeepers’ within organisations to recruit, we do not know the exact numbers that were asked to participate in the survey and are thus unable to calculate a response rate. The survey was accessed by 128 people. Thirty-nine people did not respond to any questions and a further 28 people completed less than 55% of the survey, most of whom did not answer any questions about use of technology with service users. We therefore made the decision to focus the analysis on the 61 service providers who completed all sections of the survey, i.e., those who had experience of using technology to engage with service users during the COVID-19 pandemic. The relatively small and homogenous sample (in terms of technology use) limits the applicability of inferential statistical analyses. Non-parametric tests are used when testing the strength of relationships or exploring group differences⁶.

We considered if there were any differences between those that completed all sections of the survey and those that did not. There were no statistically significant differences between the two groups in terms of how often they used a range of devices and software to communicate with service users (Q9) nor in the extent to which preventing or reducing adult service users’ loneliness and social isolation was a priority for their role (Q6) or for their organisation (Q7).

Survey respondents worked in organisations that provided services in all 22 local authorities in Wales (Table 3) – many provided services in multiple local authorities. and were drawn from a range of public, private and third sector organisations (Table 4).

⁶ Using parametric tests requires certain assumptions to be made about whether or not it is normally distributed. If these assumptions are not met, then non-parametric tests - sometimes called distribution-free tests – should be used.

Table 3: Number of surveyed organisations active in each Local Authority

Local authority	No. of orgs in survey active in that LA	Local authority	No. of orgs in survey active in that LA
Blaenau Gwent	11	Merthyr Tydfil	8
Bridgend	11	Monmouthshire	9
Caerphilly	10	Neath Port Talbot	10
Cardiff	16	Newport	11
Carmarthenshire	13	Pembrokeshire	11
Ceredigion	8	Powys	10
Conwy	14	Rhondda Cynon Taf	10
Denbighshire	12	Swansea	12
Flintshire	11	Torfaen	9
Gwynedd	11	Vale of Glamorgan	11
Isle of Anglesey	11	Wrexham	18

Table 4: What roles did individuals occupy in organisations?

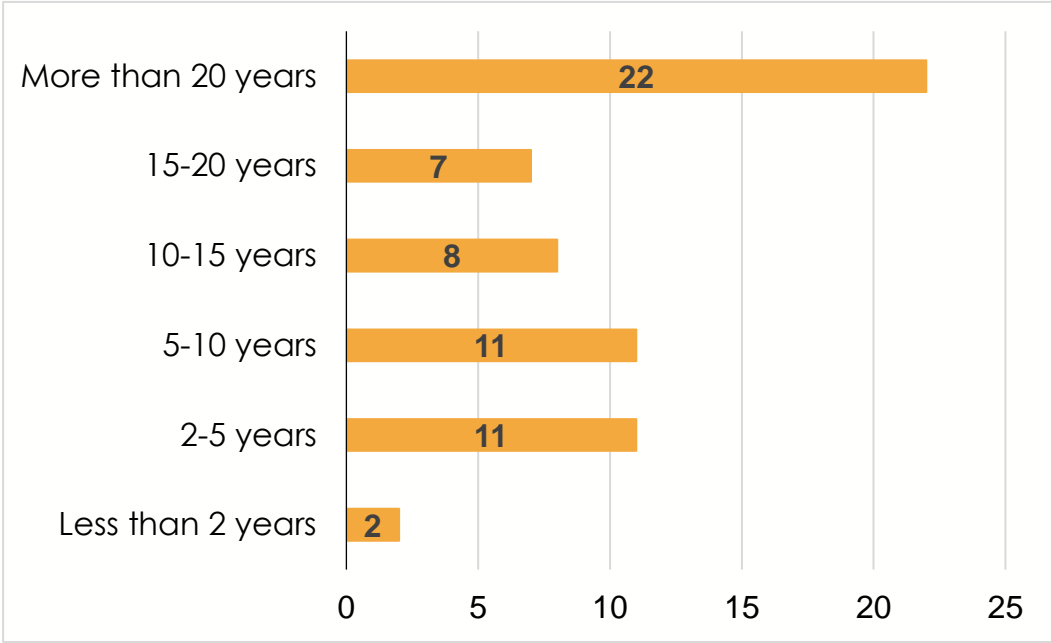
Role	No. of individuals in role
Adult social care commissioner	2
Work for an organisation that provides adult social care	17
work/volunteer for a community/voluntary sector organisation that provides support for older adults	25
Other (<i>Community agents (n=4), Home fire safety officer (n=2), councillor (n=1), support for social care organisations (n=1), social care (n=6), community/voluntary (3)</i>)	17

Some organisations only provided support for older adults (e.g., over 50 or 65), others for adults of all ages. Most organisations also provided services for adults with a range of specific health needs or disabilities (e.g., 22 organisations supported

adults with physical disability or reduced mobility; 10 supported those with learning /cognitive disability and 7 those with mental health needs). Thirteen organisations specifically mentioned supporting those with low incomes.

Almost all respondents (89%, n= 54) had direct contact with older adult service users (whether online, by phone or videocall, or face to face), only 7 (in more managerial roles) did not. Forty-eight respondents (79%) were female and 13 (21%) were male. There was a spread of ages: two respondents were aged between 18-24, eight were over 64, with 18 in the most frequently populated category of 45-54. There was considerable variation in respondents' length of service in the care, voluntary or community sector (Figure 9)

Figure 9: Number of years length of service in the care, voluntary or community sector



Annex 2: Survey

11/10/2021, 15:35

Qualtrics Survey Software



English ▾

Default Question Block

Use of technology to tackle loneliness among older people during the coronavirus pandemic.

The purpose of this survey is to understand the ways in which technology might have been used in Wales to make social connections and seek to address loneliness and social isolation among community dwelling older people during the COVID-19 pandemic (i.e., from the first lock down in March 2020 to the present).

We would like to ask if, how, when and why your organisation has used technology with older adults (65+ years) and what impact this may have had on loneliness and social isolation. We are interested in uses of technology (such as phones and digital communication devices) that have helped to address loneliness and social isolation, even if they were not designed or intended specifically for this purpose. Before completing this survey, please make sure you have read the participant information sheet and privacy notice - you can download these by clicking the links below.

[PARTICIPANT INFORMATION SHEET](#)
[TAFLEN WYBODAETH I GYFRANOGWYR](#)

[PRIVACY NOTICE](#)
[HYSBYSIAD PREIFATRWYDD](#)

In this survey we use the term 'older adult service users' to mean any community dwelling older adults (i.e. not living in residential care or nursing homes) receiving care or support that you commission or that your organisation provides. This is a national survey, and we acknowledge that 'older adult service users' covers a huge range of ages and abilities/needs – when answering these questions, please think about the older adults that you provide services for.

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..

Your organisation and your role

First, we would like to ask a few questions about your organisation and your role.

Q1. Which of the following best describes your role?

- I am an adult social care commissioner.
- I work for an organisation that provides adult social care.
- I work/volunteer for a community/voluntary sector organisation that provides support for older adults.
- Other (please specify)

Q2. Please briefly describe the population of older adults your organisation supports (e.g., "low income, varied education levels, many with mobility problems").

Q3. Which Local Authority is your organisation based in? (mark all that apply)

- Blaenau Gwent
- Bridgend
- Caerphilly
- Cardiff
- Carmarthenshire
- Ceredigion
- Conwy
- Denbighshire
- Flintshire
- Gwynedd
- Isle of Anglesey
- Merthyr Tydfil
- Monmouthshire
- Neath Port Talbot
- Newport

- Pembrokeshire
- Powys
- Rhondda Cynon Taf
- Swansea
- Torfaen
- Vale of Glamorgan
- Wrexham

Q4. Please state your job title in your organisation.

Q5. **In your role**, do you have direct contact (whether online, by phone or videocall, or face to face) with older adult service users?

- No
- Yes

Q6. **In your role**, during the pandemic, to what extent has preventing or reducing older adult service users' loneliness and social isolation been a priority? (Mark the box that best represents your view, with **1 = Not a priority at all**, and **7 = A primary priority**)

- | | | | | | | |
|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------|
| 1 (Not a
priority at all) | 2 | 3 | 4 | 5 | 6 | 7 (A primary
priority) |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q7. **In your organisation**, during the pandemic, to what extent has preventing or reducing older adults' loneliness and social isolation been a priority? (Mark the box that best represents your view, with **1 = Not a priority at all**, and **7 = A primary priority**)

- | | | | | | | |
|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------|
| 1 (Not a
priority at all) | 2 | 3 | 4 | 5 | 6 | 7 (A primary
priority) |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

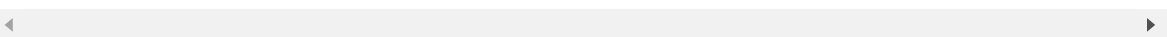
.. Technology in your organisation

In order to help us understand how organisations may have used or encouraged use of technology with older adult service users, we first want to ask about what devices and

which software have been used to communicate between colleagues in your organisation or with other organisations throughout the pandemic.

Q8. In your organisation, how much are the following **devices and software** used to communicate *between colleagues in your organisation or with other organisations* (mark all that apply)

	Never	Very rarely	Rarely	Occasionally	Frequently	Very frequently
Desktop computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laptop computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tablet/iPad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landline telephone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile phone (not smart phone)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smart phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email (e.g., Microsoft Outlook, Gmail)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Video conferencing software (e.g., Microsoft Teams, Zoom, Skype, Facetime, WhatsApp call)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Text messaging to individuals or specific groups (including WhatsApp, Facebook direct messages etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media posting (e.g., Facebook, Twitter, Instagram)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



.. Using technology with older adults

We would now like to ask for your views about how – if at all – your organisation uses technology to communicate with older adult service users. This part of the survey is focused on communication in general, and is not focused on addressing loneliness and social isolation in particular.

Q9. In your organisation, how often **do you or your colleagues** use any of the following devices and software to communicate *with older adult service users*?

	Never	Very rarely	Rarely	Occasionally	Frequently	Very frequently
Desktop computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laptop computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tablet/iPad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landline telephone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smart phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email (e.g., Microsoft Outlook, Gmail)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Video conferencing software (e.g., Microsoft Teams, Zoom, Skype, Facetime, WhatsApp call)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Text messaging to individuals or specific groups (including WhatsApp, Facebook direct messages etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media posting (e.g., Facebook, Twitter, Instagram, Next Door)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input style="width: 150px; height: 15px;" type="text"/>						

Q10. In your experience, approximately what proportion of older adult service users use the following **devices and software** to communicate with other people (e.g., friends, family, professionals)? We realise you will probably not have an exact knowledge of this – we are interested in your general impression. **(1 = None of our older adult service users and 7 = All of our older adult service users)**

	1 (None)	2	3	4	5	6	7 (All)	Don't know
Desktop computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laptop computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tablet/iPad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smart phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landline telephone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SmartHome devices (Amazon Echo, Google Home)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1 (None)	2	3	4	5	6	7 (All)	Don't know
Email (e.g., Microsoft Outlook, Gmail)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Video conferencing software (e.g., Microsoft Teams, Zoom, Skype, Facetime, WhatsApp call)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Text messaging to individuals or specific groups (including WhatsApp, Facebook direct messages etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media posting (e.g., Facebook, Twitter, Instagram, Next Door)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

.. Loneliness and social isolation among older adults.

Q11. Does your organisation assess/measure loneliness and social isolation in older adult service users?

- No
 Yes

Q11.2. Please tell us how you do this?

Q12. To what extent do you believe the **radio** has a role in preventing or reducing social isolation in your older adult service users?

- A great deal
 Considerably
 Moderately
 Slightly
 Not at all

Q13. To what extent do you believe the **TV** has a role in preventing or reducing social isolation in your older adult service users?

- A great deal
- Considerably
- Moderately
- Slightly
- Not at all

.. We are now interested in whether your organisation has used devices and software to address loneliness and social isolation among older adult service users.

Q14. Has your organisation sought to *prevent or reduce older service users' experiences of loneliness and social isolation* by encouraging or enabling them to link with people outside your organisation (e.g. support groups, friends, family, other service users)?

- No
- Yes

Q14.2. Please can you tell us a little more detail to explain your answer.

Q15. For each of the options below, please indicate how often they have been used **by your organisation** to communicate with older adult service users to *prevent or reduce experiences of loneliness and social isolation*.

	Never	Very rarely	Rarely	Occasionally	Frequently	Very frequently
Desktop computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laptop computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tablet/iPad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landline telephone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smart phone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email (e.g., Microsoft Outlook, Gmail)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Very rarely	Rarely	Occasionally	Frequently	Very frequently
Video conferencing software (e.g., Microsoft Teams, Zoom, Skype, Facetime, WhatsApp call)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Text messaging to individuals or specific groups (including WhatsApp, Facebook direct messages etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social media posting (e.g., Facebook, Twitter, Instagram, Next Door)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

.. In the following questions we would like to know more about the use of technology to prevent or reduce loneliness and social isolation.

Q16. When did your organisation start using technology with older adult service users for the purpose of helping prevent or reduce loneliness and social isolation?

- Before the first lockdown of the COVID-19 pandemic in March 2020
- Since the first lockdown of the COVID-19 pandemic in March 2020

Q17. We are interested in how technology has been applied to prevent or reduce loneliness and social isolation in older adult service users since the first lockdown of the COVID-19 pandemic. To the best of your knowledge, how much has technology been used for the following purposes in your organisation?

	A great deal	Considerably	Moderately	Slightly	Not at all
To share information with older adult service users about available support (e.g. other services)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To engage in one-to-one conversations with older adult service users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To enable older adult service users to maintain links with friends and family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	A great deal	Considerably	Moderately	Slightly	Not at all
To enable older adult service users to link up with individuals they did not know prior to the pandemic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To enable older adult service users to link up with groups they belonged to that previously met face to face	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To enable older adult service users to link up with new groups set up since the start of the pandemic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q18. Were there any barriers that made using technology difficult for your older adult service users during the pandemic? Please indicate the extent to which you think each of the following were an issue for your older adult service users.

	A great deal	Considerably	Moderately	Slightly	Not at all
Hardware/software problems (e.g., lack of devices, software incompatible with devices)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of internet access or data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Limited technological skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of confidence in using technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of interest in/desire to use technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (Please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<div style="border: 1px solid black; height: 60px; width: 100%;"></div>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q19. Have your older adult service users **required** any support *to use technology to connect with others* during the pandemic?

	Support was required
Provision of devices or software	<input type="checkbox"/>
Technical support to set up devices/software	<input type="checkbox"/>

	Support was required
One to one help and support	<input type="checkbox"/>
Encouragement	<input type="checkbox"/>
Financial support (e.g. to pay for internet, data or phone contract)	<input type="checkbox"/>
Other (please specify)	
<div style="border: 1px solid black; height: 60px; width: 100%;"></div>	<input type="checkbox"/>

Q20. Have your older adult service users **been provided with** any support to use *technology to connect with others* during the pandemic? (Please mark the columns to show from whom support has been provided)

	Support provided by our organisation	Support provided by another organisation	Support provided by family/friends	Support required but not provided
Provision of devices or software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technical support to set up devices/software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
One to one help and support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Encouragement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial support (e.g. to pay for internet, data or phone contract)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify)				
<div style="border: 1px solid black; height: 60px; width: 100%;"></div>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q21. As far as you know, how many of your older adult service users have started to use devices or applications that they didn't use before the pandemic to connect with others?

- Many have
- Some have
- A few have
- None have
- I have no idea

Q22. As far as you know, how many of your older adult service users have started to use devices or applications to connect with others in different ways than they did before the pandemic?

- Many have
- Some have
- A few have
- None have
- I have no idea

Q23. In your experience, how appropriate do you feel it is to use technology to communicate with older adult service users?

- Extremely appropriate
- Appropriate
- Neither appropriate nor inappropriate
- Inappropriate
- Extremely inappropriate

Q23.2. Please explain your answer.

Q24. In your experience, how confident have you felt using technology to communicate with older adult service users?

- Extremely confident
- Confident
- Neither confident or unconfident
- Unconfident
- Extremely unconfident

Q24.2. Please explain your answer.

Q25. Are there groups of older adult service users for whom the use of technology to connect with others had a particularly **positive impact**? If so, please provide brief

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details.

Q26. Are there groups of older adult service users for whom the use of technology to connect with others was **not appropriate** or had a **negative impact**? If so, please provide brief details.

Q27. Has your organisation formally or informally evaluated the impact of older adult service users using technology for preventing or reducing loneliness and social isolation? (Mark one box only)

- No evaluation and no feedback gathered.
- Informal feedback gathered (e.g., listening to anecdotal comments)
- Formally evaluated (i.e., information purposely gathered to understand effect of technology use)
- Formal evaluation and informal feedback gathered.

Q28. What did you find out from the information that you gathered? Please tell us some details below

Q29. If there is a report of your evaluation, we would love to see it – if that is possible, please send this to yourviews@bath.ac.uk

Q30. Do you think the use of technology was beneficial in helping your organisation to prevent or reduce loneliness and social isolation for older adult service users?

- Extremely beneficial
- Very beneficial
- Moderately beneficial
- Slightly beneficial
- Not at all beneficial

Q31.2. Please explain your answer.

.. Face-to-face support and use of technology in the future

Q32. We recognise that during the pandemic it has been extremely difficult to deliver face-to-face support. Before the pandemic what was the balance of face to face and remote support your organisation provided for older adult service users?

- Fully face-to-face
- Mostly face-to-face
- Equal balance of face-to-face and remote
- Mostly remote
- Fully remote

Q33. Looking ahead to the coming months, what do you anticipate the balance of face to face and remote support your organisation provides for older adult service users will be?

- Fully face-to-face
- Mostly face-to-face
- Equal balance of face-to-face and remote
- Mostly remote
- Fully remote
- Not applicable

Q34. Of the older adult service users you supported before the pandemic, roughly what proportion did you keep in contact with using technology throughout the pandemic?



Q35. Of those you did not keep in contact with using technology, please tell us the reasons for this.

Q36. Are there any technologies you have not used thus far that you would be interested in adopting *in your organisation* to help prevent and reduce loneliness and social isolation among older adults?

- No

Yes

Q37. Which kinds of technologies would you like to use?

Q38. Do you think technology should be used more to help prevent or reduce loneliness and isolation among your older adult service users?

No

Yes

Q39. Please explain your answer.

Q40. Are you aware of any organisations in your local authority (other than your own) currently using devices or software to prevent or reduce loneliness and social isolation among older adults?

No

Yes

Q41. Please can you tell us the names of those organisations and what they are doing.

Q42. Are there any technologies you think should be considered/tried to help reduce loneliness and social isolation among older adults?

No

Yes

Q43. Please provide details.

Q44. What is the best example of preventing or reducing loneliness and social isolation using technology that you know of? Please provide brief details.

46. Do you think the use of technology could be beneficial in helping your organisation to prevent or reduce loneliness and social isolation for older adult service users?

- Extremely beneficial
- Very beneficial
- Moderately beneficial
- Slightly beneficial
- Not at all beneficial

Q46.2. Please explain your answer.

Q47. Do you think technology should be used more to help prevent or reduce loneliness and isolation among your older adult service users?

- No
- Yes

Q47.2. Please explain your answer.

Q48. In your experience, how appropriate do you feel it is to use technology to communicate with older adult service users?

- Extremely appropriate
- Appropriate
- Neither appropriate nor inappropriate
- Inappropriate
- Extremely inappropriate

Q49. Please explain your answer.

Q50. Does your organisation have plans to start using technology to prevent or reduce social isolation and loneliness for older adult service users?

- No
 Yes
 Don't know

Q51. Are you aware of any other organisations in your local authority currently using devices or software to prevent or reduce loneliness and social isolation among older adults?

- No
 Yes

Q52. Please can you tell us the names of those organisations and what they are doing

Q53. Are there any technologies that you think should be considered/tried to help reduce loneliness and social isolation among older adults? If yes, please provide details.

Q54. What is the best example of preventing or reducing loneliness and social isolation using technology that you know of? Please provide brief details.

Thank you so much for completing the survey so far. We now have a few questions about you.

Your responses to these questions will help us understand if/how people's characteristics impact on their use of technology in work.

Q55. What gender best describes how you see yourself?

- Male
- Female
- Non-binary / third gender
- Prefer not to say

Q51. What is your age?

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 64+

Q52. How long have you worked in or with the care, voluntary or community sector?

- Less than 2 years
- 2-5 years
- 5-10 years
- 10-15 years
- 15-20 years
- More than 20 years

Q53. Finally, as mentioned in the information sheet, we are very keen to interview some survey respondents to find out a bit more about your experiences and understanding of technology, loneliness and social isolation among older adults in Wales. If you would be willing to take part in an interview via telephone or video call (which would last about 45 minutes) please leave your contact details below.

Name	<input type="text"/>
Email address	<input type="text"/>
Telephone number	<input type="text"/>

Q54. We are also keen to include some 'case studies' of promising examples of using technology to prevent or reduce loneliness and social isolation among older adults. These would be short descriptions of what has been done and what impact it has had.

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If you would be happy for us to contact you about a case study, please leave your contact details below.

Name	<input type="text"/>
Email address	<input type="text"/>
Telephone number	<input type="text"/>
Name of organisation	<input type="text"/>
Job title	<input type="text"/>
Brief description of case study	<input type="text"/>

Q55. We would be happy to let you know the results of this survey if you are interested. If you would like to receive a copy, please leave your name and email address below.

Name	<input type="text"/>
Email address	<input type="text"/>

Q56. If you would like to be entered into the prize draw for a chance of winning one of three vouchers (£50, £30 or £20), please leave your name and email address below.

Name	<input type="text"/>
Email address	<input type="text"/>

.. Thank you again, we really appreciate the time you have taken to complete this survey.

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Annex 3: Interview participants – service providers

Table 5: Characteristics of service provider interview participants

Participant Number	Gender	Age	Role	Length of service in the care, voluntary or community sector
P001	Female	45-54	Case worker	5-10 years
P002	Male	55-64	Development officer	5-10 years
P003	Male	55-64	Co-ordinator Strategy	More than 20 years
P004	Male	25-34	Assistant into Work Manager	10-15 years
P005	Female	55-64	Programme manager	15-20 years
P006	Female	55-64	Social worker	More than 20 years
P007	Female	45-54	Outreach/information officer	2-5 years
P008	Female	45-54	Project manager	10-15 years
P009	Female	64+	Appointed volunteer	More than 20 years
P010	Female	64+	Co-ordinator	More than 20 years
P011	Female	35-44	Principal officer	More than 20 years
P012	Female	35-44	Responsible individual	2-5 years
P013	Female	45-54	Managing director	More than 20 years
P014	Male	55-64	Co-ordinator	5-10 years
P015	Female	45-54	Manager	15-20 years
P102	Female	25-34	Co-ordinator	2-5 years
P104	Female	55-64	Community agent	More than 20 years
P105	Female	55-64	Community agent	2-5 years
P107	Female	45-54	Engagement lead	More than 20 years

Annex 4: Interview schedule – service providers

[Prior to the interview, the researcher will have reviewed the interviewee’s survey responses, particularly their job role (Q4), whether or not they have used tech with older adults (Q14, 15, 16, 17) and if they evaluated this (27), and their perceptions of barriers/positive impacts (Q18, 25, 26)]

Thank you for taking part in this project. As you know, we are interested in your experiences and understanding of technology, loneliness and social isolation among older people in Wales. In this call, I’ll ask you some questions about this. There are no right or wrong answers, we are just interested in understanding your experiences. I’ll record what is said in this call so that it can be typed up later, but any information that could identify you, such as names of people or places, will be removed. If at any time during the call you would like to stop, just let me know, and you do not have to answer any questions that you do not feel comfortable with.

Before we start the questions, I just need to run through the consent statements that were attached to the information sheet. I’ll read each statement out and if you could just state that you agree to each, or ask me to clarify anything.

→ refer to consent form

[Begin recording]

Background/scene setting

1. To start, please could you give a brief overview of your role and of the organisation that you work for.
2. Could you tell me about the work that your organisation does (or the organisations you commission do) with older people? (*Prompt – (if applicable) how does this differ, if at all, from the work you do with other populations?*)
 - How much focus is there on preventing loneliness and social isolation? (*Prompts – which groups most affected*)

Role of digital in preventing/mitigating loneliness

3. If you think back to the early days of COVID-19, what sorts of conversations were had in your organisation about how digital technology could/should be used to prevent or mitigate loneliness or social isolation? (*Prompts – how different was this from what you were doing pre-COVID-19? Did you have a choice in what or how technology would be used, or was this mandated?*)

- What did you and your colleagues think were the pros and cons of using technology to this end? (*Prompts – what were these views based on – what others said, personal experience?*)
 - Why did you decide to use/not to use tech? [refer to survey responses on whether or not they used tech – Q14, 15, 16, 17] (*Prompts - What did you consider, was access to hardware and software discussed, was data security discussed, what evidence did they base their decision on?*)
 - Have you tried any tech previously that hasn't worked?
 - Why did it not work for them (e.g. did it not meet their users' needs, was there a lack of long term support etc)?
4. [If they DID use tech] Can you tell me **some more details** of the main ways digital technology was used in your organisation to address loneliness and social isolation during COVID-19? (*Prompts - what was done, why, using what platforms, with whom, how often*).

1

- Overall, did you achieve your goal; do you consider this was a success? (*Prompts: what does success mean?*)
 - Was it more successful at reducing loneliness and social isolation for some groups compared to others? [Q25 (pos) Q26 (neg)] (*prompt: who did it work well/less well for; why do you think this was?*)
 - Of those service users who did engage with the technology, what do you think was their motivation to do so and to keep engaging?
 - If there were any service users who tried using technology but then stopped, do you know why they stopped? What do you think could be done, if anything, to help these people continue to engage with the service through technology?
 - If your service users encountered any technical problems, what support was provided (if any)? [refer to survey responses for questions 18-20]
 - One issue we know to be a barrier for some older adults is a **fear of using technology**, either due to not wanting to break the devices or being afraid of internet scams. Was this an issue for the older adults you work with and, if so, what (if anything) was done to help overcome these fears?
 - What effect did using technology in this way have on you and your colleagues and the work you do?
5. Were there any **unexpected positive effects** of using/not using digital tech to address loneliness and social isolation? Were there any **unexpected negative effects** of using/not using digital tech to address loneliness and social isolation?

- *(Prompts – details?)*
6. In your survey responses, you said that you anticipate the balance of face-to-face and remote support your organisation provides in the coming months would be [question 33 response] – why have you decided to go with/not go with a blend of both face-to-face and remote? *(prompt: what would be needed to make a using both face-to-face and remote delivery successful for your service users and organisation, or do you feel this isn't appropriate?)*
 7. [If they will use tech in future] Do you plan to do any formal evaluation of loneliness and social isolation of your service users and/or the [technology they plan to use]?
 - [If yes] How will you do this? Is there any support that would help you do this?
 - [If no] Why not? Is there any support that could help you do this?

CASE STUDY

If they said 'no' in survey ...but it seems appropriate - Ask about possibility of completing a case study. Advise: there is no pressure but I will follow up after the interview by sending a template which you can complete and return to me with a case study of a promising example of how technology has been used to reduce loneliness and social isolation among older adults'

If they said 'yes' in survey

Thank you for taking the time to talk to me today. Finally, at the end of the online survey, you told us that you would be willing to share a 'case study' of a promising example of how technology has been used to reduce loneliness and social isolation among older adults. [They may have already mentioned examples during the interview]. In order for us to collect these case studies together, we've created a template for you to fill out to describe what was done and what impact it had. If I send you this template after today's interview, would you be happy to fill it out and return it to me?

- Ideally it would be helpful if you could get this back to me within 2 weeks – would that be possible?
- *[We can be flexible on the deadline if they need a little more time, and we can send a reminder email]*
- *[If any problems with this process, offer participant the option of sending across other relevant documentation they may have, or telling the story verbally if there is time]*

Recruiting older adults

Advise participant – ‘We may also be in contact with you again in the new year about the possibility of helping us to recruit some older adults by inviting them to participate in the study. We will contact you about this separately and you can decide nearer the time so there is no pressure today.’

[If they feel they would be able to help with this] – ask them how many invites they might be able to send out and what kinds of people these might be? E.g. people who have maintained a social group that went online, or people they kept working with but who have/have not used technology etc.

Thanks very much and close.

Annex 5: Interview participants – older adults

Table 6: Characteristics of older adult interview participants

Participant Number	Gender	Age*	Local authority
P301	Female	70	Denbighshire
P302	Female	76	Wrexham
P303	Female	Unknown	Vale of Glamorgan
P304	Female	Unknown	Powys
P305	Female	81	Powys
P306	Female	Unknown	Unknown
P307	Male	81	Caerphilly
P308	Female	Unknown	Ceredigion
P309	Male	Unknown	Carmarthenshire
P310	Male	Unknown	Carmarthenshire
P311	Male	80	Rhondda Cynon Taf
P312	Male	71	Carmarthenshire
P313	Male	87	Carmarthenshire
P314	Female	78	Cardiff
P315	Female	77	Gwynedd
P316	Male	77	Cardiff
WP317	Female	Unknown	Unknown

* the minimum qualifying age for participants was 65

Annex 6: Interview schedule – older adults

[If the participant shows signs of distress at any time during the call, the interviewer will pause the interview and ask the participant if they would like to stop or take a break. The interviewer will offer the participant details of support services that they might find helpful – Age Cymru and the Samaritans – and suggest the participant contact their GP practice, if appropriate.

Thank you for agreeing to take part in this project. As you know, we are interested in hearing about people's experiences of loneliness and social isolation and in the pandemic and the things that have helped this or perhaps made it worse. So in this call, I'll ask you some questions about these issues -there are no right or wrong answers, we're just interested in your opinions. I'll record what is said in this call so that it can be typed up later, but any information that could identify you, such as names of people or places, will be removed. If at any time during the call you would like to stop, just let me know, and you do not have to answer any questions that you do not feel comfortable with.

Before we start the questions, I just need to run through the consent statements that were attached to the information sheet. I'll read each statement out and if you could just state that you agree to each, or ask me to clarify anything.

→ refer to consent form

Background/scene setting

To start, it would be helpful for me to get a picture of your life before the pandemic. So, please could you tell me a bit about how you socialised and stayed in touch with people in the year leading up to the pandemic (2019/early 2020)?

- Interested in: friends and family; communication for work/volunteering; receiving any care/support from organisations; regularity and frequency of communication (i.e. try to get a picture of how much social connection occurred in a typical week)

And, still thinking about before the pandemic, what technology, if any, did you use to stay in touch with people? By technology we mean things like phones (landline and mobile), video calls, text messaging and so on

- Did you use any of these things to keep in touch with people before the pandemic? Which ones? Why these? How did this go? Easy/difficult, did you have help (e.g., any lessons to get you started with using technology)?
- How confident were you using this technology? Are you more confident using technology to do other things, such as shopping or booking appointments? How frequently would you do this?

Did you watch TV or listen to the radio much before the pandemic?

If you think about the people you know – do you think any of them were lonely or isolated in the COVID-19 pandemic? And how about you?

What, if any, experience of loneliness or social isolation did you have before the pandemic?

- (if they felt lonely/isolated) What did you do if you were feeling lonely/isolated? Was there anything that helped you feel less lonely or isolated?

Experience during the pandemic

Thinking now about your experience during the pandemic, can you tell me a bit about how your connections and interactions with people were affected?

- Prompt re the relationships and interactions mentioned for pre-pandemic. Did they have any opportunities to make new connections?

[Take cues from what is said above about previous experiences of loneliness] That sounds like you sometimes felt more/less lonely and isolated in the pandemic than you did before? Could you tell me a bit about that?

- [If more] Has anything helped to lessen this (prompts – TV/radio/hobbies/phone calls etc)?
- [If less] What do you think helps prevent you feeling lonely/isolated?

Have you used technology more, or tried any new technologies, since the start of the pandemic to stay in touch with people?

- [If yes] Can you tell me a bit about this – what have you tried? How easy or difficult have you found using X to communicate? What do you feel about using technology to communicate with people (fear/confidence/lack of interest – what causes these feelings)?
- [If no] Why is this (fear/confidence/lack of interest – what causes these feelings)?

Would anything help or make you want to use technology more to communicate with people?

- Do you think technology should be used more to help prevent loneliness and isolation? [If yes] How? [If no] Why not?

That's all of my questions but is there anything else you would like to add?

Thank participant for their time.

Ask which £20 vouchers they would like to receive (John Lewis, Marks & Spencer, supermarket, Amazon) and how best to send (email or post).

Annex 7: Case studies provided by service providers

These are summaries of all the case studies provided that involve older adults.

Delta Wellbeing, Carmarthenshire

Edward, widower recovering from surgery in late 2019, joined **Delta Connect service** in March 2020 when lockdown prevented regular visits from his family. Was assigned a community wellbeing officer, who called once a week, and had a 'Lifeline' home unit and pendant fitted for emergency calls. Found the weekly chats brought him 'back from the depths of despair' – helpful to have someone other than family to talk to and reassuring from family.

Beryl was provided with a tablet by the Connect service, which also built her confidence to use it in a demonstration session, also attended by the woman's son and daughter-in-law. She uses the tablet to connect with family living abroad, listen to music and to receive wellbeing calls from the Connect team – which were particularly welcome during lockdown as she enjoys a chat.

Ceredigion

Mrs Jones joined Delta Connect in October 2020 – she particularly values the tablet they provided, which she uses to receive digital support from Delta. She find it easy to use.

Mr and Mrs Evans joined Delta Connect in December 2020 after the husband had fallen on several occasions, requiring hospital visits. He has multiple health issues including dementia. They received technology enabled care (TEC) equipment and 24/7 access to the Connect Community Response Team, who assisted with future falls, resulting in fewer hospital visits. Wife also enjoyed wellbeing calls and received support to re-engage with the community. Couple found the service reassuring and valued the fact it enabled them to live relatively independently at home.

A Delta Tech Officer signposted a woman to the Connect service when fitting TEC equipment in her home, after learning that she had made numerous falls recently. The 24/7 access to the Connect Community Response Team and falls detector technology has provided peace of mind for her and her family.

Pembrokeshire

Mrs Rees and her husband were referred to Delta Connect for a care assessment as they had recently moved to the area prior to COVID and so had no family/friends living locally to help with her husband, who had COPD. They were given a tailored TEC package, including 24/7 access to the Connect Community Response Team and regular wellbeing calls, and were provided with a tablet that has helped them connect with people in the community via the '**Connect to Wellbeing**' app. The wellbeing calls with Delta helped her with accessing/interpreting shielding letters, Carers cards, food parcels and maintenance help for husband's wheelchair.

Mrs Edwards (80) joined Delta Connect in January 2021 – she is a carer for her 61-year old son who has a brain injury but needed extra help due to her deteriorating health. The TEC lifeline equipment has given her peace of mind and she enjoys the weekly wellbeing calls (her son is unable to talk).

Delta provided Mr and Mrs Davies with tablets and showed how to use them, which enabled them to stay in touch when Mr Davies moved into a nursing home during COVID. Delta liaised with the home to ensure a router was placed in Mr Davies' room.

Innovate Trust

Developed the **Insight app** at the start of the pandemic for people with learning disabilities in Wales (including some people 65+). Enables users to stay in touch safely and for Innovate to deliver online the activities they normally provide in-person, e.g., yoga, music lessons, gardening cooking etc. There are regular meetings with users to provide feedback and suggestions for improving the app. Members have increased their digital skills and gained confidence. The app is award winning and has enabled Innovate to reach people who they would not normally (e.g., with poor physical health, living rurally or just low confidence). The app has greatly expanded since starting and they have just been awarded funding to continue development.

Men's Sheds Cymru

During the pandemic, Men's Sheds moved their meetings online via Zoom. Initially seemed promising but gradually numbers declined to about 10% of usual audience although some individual local groups persisted. Older members seemed to feel more comfortable using PCs/laptops rather than phones but access to these sometimes an issue as well as lack of tech support and fear of scams. They are not pursuing the tech route for now but found talking on the phone (old fashioned calls) is a good option.

Newport City Council

OT team provided Mr K with a smart home device and showed him how to use it. Also provided smart light bulbs and windows, which help Mr K live more independently (he has MS). The video call function of the device helped him keep in touch with his son during Covid.

Cardiff Council Digital Team

Set up community hubs and provided people facing isolation with tablets and data allowances. The hubs provide 1-to-1, in-person assistance to help people to use their devices – in the case study provided, the tablet and support enabled an older woman to join in with her choir's Zoom sessions, access her emails and stay in contact with her family. The team have found that building people's digital confidence is important – showing people how they can benefit from technology and teaching how to use it safely, step-by-step is crucial to overcome their fears. Also being able to provide free devices has greatly helped.

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