



What Good Looks Like for Our Communities



Report 1, July 2023: Research Results from work by whg peer
researchers

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Executive Summary

The introduction of digital technologies into the health system has the potential to bring about major long-term improvements in health outcomes for communities. Concerns exist however that the digital transformation of healthcare will also result in the widening of existing health inequalities as digital technologies become a new barrier for communities to access the healthcare they need. Ensuring that digitalisation does not lead to greater health inequality, requires a deep understanding of how different groups and communities - above all those who live and work in economically and socially deprived neighbourhoods – access and use digital devices, applications, and services. Integrating this knowledge into the innovation process from the beginning should lead to the development of digital technologies and services that meet the needs of communities resulting in greater adoption levels.

Building Inclusive Digital Health Innovation Eco-Systems project

The first step of our project '*Building Inclusive Digital Health Innovation Eco-Systems*' involved gathering qualitative data about the way people engaged with online technologies through interviews conducted by *peer researchers* from whg, 'Just Straight Talk' (JST), and the 'African Caribbean Community Initiative' (ACCI). *Peer researchers* are people who have lived experience of the issues being studied. Because peer researchers are known and trusted by their communities, their conversations are likely to be more relevant to the people being interviewed leading to more open and honest responses. Sixty-eight people were interviewed by whg *peer researchers* from whg customers. This report focuses on the initial set of 68 interviews.

Our findings from whg peer researchers

Interview data collected by *peer researchers* shows that:

- Despite initiatives such as the Click Start and Black Country Connected programmes that distributed digital devices, data, and basic training to whg customers, significant inequalities exist regarding both the use of digital technologies and people's ability to access online health services. Though the high cost of technology remains an important factor, amongst the people interviewed from whg, the main source of inequality is the lack of skills and confidence to engage with online services.
- The adoption of digital technologies requires significant investment of money, time, and energy and the regular upgrading of skills. Our study suggests the need for very local systems of *training, skills development and on-going technology support* to enable people that do not regularly engage with digital technologies to do so in a sustainable and meaningful way.

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- Our study indicates that people see both benefits and challenges associated with the adoption of digital technologies. Nearly everybody interviewed saw the benefits of digital communication systems that enabled mobile calls and texts. Those with basic digital skills also showed enthusiasm for digital services that are easy to use (e.g. NHS repeat prescriptions). Enthusiasm for online services fell sharply the more complex, unreliable, and costly the service. What people find ‘easy’ or ‘difficult’ is something that must be explored with communities in their specific contexts. It is also likely to change over time as digital proficiencies develop.
- Digital services (e.g. online GP appointments) were not seen as adequate replacements for face-to-face interactions with health professionals even by those who are confident users of digital devices. The importance of healthcare in people’s lives, the complexity of information exchanged between clinicians and patients, and the role of trust were identified as the main reasons for the need for face-to-face appointments. Our study suggests, therefore, that to avoid exacerbating health inequalities, digital and in-person healthcare services need to be well integrated and developed side-by-side rather than digital replacing in-person care in a digital-first strategy.
- Our study revealed widespread concerns about individual data privacy and data security. These concerns were expressed both with regards to the general use of online services as well as in the specific context of healthcare. While some people expressed trust that the NHS would take steps to guarantee the privacy of their data, this was not a general feeling amongst those interviewed. The extensive nature of this concern amongst our interviewees, suggests that how healthcare systems collect, store, share and use patients’ personal and health data needs greater discussion in communities. This result also indicates that respect for individuals’ data privacy - that is privacy by design- must be adopted as a key principle in the design of online health systems. Steps to generate greater trust such as education and discussion in communities about data privacy and security as well as the integration of community advocates in the design and governance of health data systems needs to be adopted to ensure confidence in the delivery of healthcare.

Our study suggests that ‘*What good looks like for our communities*’ are digital technologies that are:

- Affordable
- Simple to use
- Safe
- Inclusive
- Well-integrated with in-person services
- Guarantees individual’s data privacy
- Is supported by local and accessible digital skills training and support networks

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We conclude that to avoid increasing health inequalities, the digital transformation of health services needs to:

- Be based on an in-depth understanding of the specific characteristics of the communities and individuals the technologies and services are designed to serve
- Be aligned with the characteristics and needs of communities as well as professionals
- Create very local networks of skills development and support that are aligned and accessible to the people who need them. These networks could also become important vehicles for community participation in the early stages of digital health co-innovation



Figure 1 - Walsall customer describing her use of a smartphone, Image: Mark Tomlinson

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Introduction

The introduction of digital technologies such as mobile phones, computers, and tablets into the health and care system has the potential to bring about enormous long-term improvements in health outcomes for communities. Concerns exist however that the digital transformation of healthcare will also result in widening existing health inequalities, increasing health exclusion and the undermining of universal health coverage as digital technologies become a new barrier for communities to access the healthcare they need¹.

Ensuring that digitalisation does not result in greater health inequality requires a deep understanding of how different groups and communities - above all those who live and work in economically and socially deprived neighbourhoods whose voices are not usually heard in the innovation process - use digital devices, applications, and services. Integrating this knowledge into the innovation process by involving communities in the co-innovation of digital health technologies and services from the beginning should lead to greater adoption of digital health technologies contributing to lower health inequalities and marginalisation from health services². This greater understanding of people with lived experience as *technology users* and their active involvement as co-innovators in the design of digital health technologies and services should guide the digital transformation of how healthcare services are delivered.

The *Building Inclusive Digital Health Innovation Eco-Systems* project aims to get a better understanding of how digital technologies are used by communities living in areas of high economic and social deprivation to access the health services they need. The first step of our work involved gathering insights and developing an in-depth understanding of peoples' use and engagement with digital technologies by collecting qualitative data through conversations

¹ The *Lancet* and *Financial Times* Commission on governing health futures 2030: growing up in a digital world (2021), Ilona Kickbusch, Dario Piselli, Anurag Agrawal, Ran Balicer, Olivia Banner, Michael Adelhardt, Emanuele Capobianco, Christopher Fabian, Amandeep Singh Gill, Deborah Lupton, Rohinton P Medhora, Njide Ndili, Andrzej Ryś, Nanjira Sambuli, Dykki Settle, Soumya Swaminathan, Jeanette Vega Morales, Miranda Wolpert, Andrew W Wyckoff, Lan Xue, on behalf of the Secretariat of the Lancet and Financial Times Commission, The Lancet, Vol 398 November 6, 2021. www.thelancet.com

² Donia and Shaw 2021; O'Brien 2021; Care Quality Commission, 2021
https://www.cqc.org.uk/sites/default/files/20210208_InnovationPrinciples_report.pdf

and interviews conducted by *peer researchers*. The peer researchers for the project were chosen by *whg*, a housing association in Walsall with a strong Health and Wellbeing programme, *Just Straight Talk (JST)*, a Community Interest Company supporting disadvantaged people across the Black Country, and the *African Caribbean Community Initiative (ACCI)* an organisation supporting individuals affected by poor mental health from the African Caribbean community. *Peer researchers* are people who live and work as members of their communities and have lived experience of the issues being studied³. Because peer researchers know and are known and trusted by their communities, they can connect with people who are often unwilling to engage with professional researchers. Moreover, given that peer researchers have deep knowledge of their communities, their conversations are likely to be more relevant to the people being interviewed leading to more open and honest responses. Peer research also reduces the risks of misunderstandings in the collection and analysis of data.



Figure 2 - Walsall customer interview by peer researcher. Image: Mark Tomlinson

³ <https://www.youngfoundation.org/peer-research-network/about/what-is-peer-research/>

Background

In August 2021, NHS England published ‘What Good Looks Like’ (WGLL)⁴ as the framework to guide the digital transformation strategy of the NHS. The document sets out “what good looks like at both system and organisation level” but did not address *what good looks like from the point of view of communities as users*. The WGLL recognises the need for Integrated Care Systems (ICSs) to develop a clear “digital inclusion strategy, incorporating initiatives to ensure digitally disempowered communities are better able to access and take advantage of digital opportunities” and calls on ICSs to build citizen-facing digital services that are led by and have been co-designed with citizens. The document, however, does not provide clear guidance on the type of initiatives needed to ensure that disempowered communities take advantage of digital opportunities nor how to involve communities in the co-innovation of digital health technologies and the co-design of health services.

The digitalisation of the NHS is happening in the context of significant health and digital inequalities, as well as a national cost-of-living crisis. The implication of social inequities in the way digitalisation is implemented and their impact on the health outcomes of poorer communities is a matter of great concern, above all if digitalisation becomes a barrier to access health and social care.

Health inequalities

According to the NHS, “health inequalities are unfair and avoidable differences in health across the population, and between different groups within society. These include how long people are likely to live, the health conditions they may experience and the care that is available to them”⁵. Poor health and health inequalities are closely linked to the conditions in which people are born, grow, live, work and age as well as inequalities in power, money, and resources - the social determinants of health⁶. As a result, people living in more deprived

⁴ <https://transform.england.nhs.uk/digitise-connect-transform/what-good-looks-like/what-good-looks-like-publication/>

⁵ <https://www.england.nhs.uk/about/equality/equality-hub/national-healthcare-inequalities-improvement-programme/what-are-healthcare-inequalities/>

⁶ <https://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review/fair-society-healthy-lives-full-report-pdf.pdf>; <https://www.instituteofhealthequity.org/resources-reports/marmot-review-10-years-on/the-marmot-review-10-years-on-executive-summary.pdf>

economic areas tend to experience lower levels of life expectancy as well as lower levels of healthy life expectancy and tend to suffer from more severe long-term health conditions⁷. The data also shows that 34% of the people who live in social housing are impacted by a long-term health condition or disability leading to a lower life expectancy and lower healthy life expectancy. At the same time, due to poor health, social housing residents are intense users of primary care and acute services. If health outcomes are not to deteriorate and health inequalities are not to be exacerbated, communities in these areas need good, timely and easy to access, health services. The introduction of digital technologies into the NHS needs to be designed and implemented with these priorities in mind.

Digital exclusion

Digital exclusion is a multidimensional, complex issue giving rise to numerous definitions and measurements. The UK Parliament, for example, defines the digital divide as “the gap between people in society who have full access to digital technologies (such as the internet and computers) and those who do not”⁸. Broader definitions include not only unequal access to digital technologies but also unequal skills and confidence to use the internet resulting in unequal intensity and complexity of use. The overall result is deep inequities in the full benefits from the use of digital technology in everyday life⁹.

Given its complexity, different measures of digital inequalities such as different levels of access (i.e. variations in broadband speed or shared access to devices in the home); differences in levels of use (i.e. frequency or complexity of use); differences in digital skills/literacy (i.e. ability to use basic features versus complex systems); differences in benefits from use (i.e. ability to benefit from digital health, banking, shopping); differences in hazards from use (i.e. levels of potential risks or harms from using the technology)¹⁰ have been developed to fully capture the different dimensions of inequity. There are also complex

⁷ <https://www.kingsfund.org.uk/publications/what-are-health-inequalities>

⁸ <https://post.parliament.uk/covid-19-and-the-digital-divide/>

⁹ Good Things Foundation 2021, Digital Exclusion and Health Inequalities.

<https://www.goodthingsfoundation.org/insights/digital-exclusion-and-health-inequalities/>; Ofcom <https://www.ofcom.org.uk/research-and-data/multi-sector-research/accessibility-research/access-and-inclusion/exclusion>; Digital Poverty Alliance, UK-Digital-Poverty-Evidence-Review-2022-v1.0-compressed.pdf); Yates, Simeon J, Carmi, Elinor, Lockley, Eleanor, Pawluczuk, Alicja, French, Tom and Vincent, Stephanie Who are the limited users of digital systems and media? An examination of U.K. evidence. First Monday, doi: 10.5210/fm.v25i7.10847

¹⁰ https://www.ofcom.org.uk/data/assets/pdf_file/0022/234364/digital-exclusion-review-2022.pdf

relationships between the different dimension of digital use. For example, Ofcom points out that “as the proportion of people without internet access declines, the negative impacts of remaining offline become more acute, as an increasing number of services and support networks become digital-only”¹¹.

Digital exclusion is linked to wider inequalities in society. Lack of online access is most likely to be faced by those on low income, people over 65 and disabled people¹². The Good Things Foundation found that people living in poorer households are four times more likely to be limited internet users and even when poorer households have access to equipment and the internet, they are less likely to have the skills to participate and fully benefit from services delivered digitally according to the local government association (LGA)¹³. How people access the internet and online services is also important. Data from Ofcom¹⁴ shows that 21% of those who are online, access the internet exclusively on a smartphone (the figure includes those who cannot afford another device). The importance of this factor is that, according to Ofcom, smartphone-only users are more likely to be ‘narrow’ internet users (defined as those who only undertake between one and four of 13 online activities).

Walsall

The 2019 Index of Multiple Deprivation ranks Walsall as the 25th most deprived English local authority out of 317, placing Walsall within the most deprived 10% of districts in the country¹⁵. Walsall fares particularly badly in terms of income, employment, education, skills and training deprivation. Life expectancy is 77.8 years for males and 82 years for women, with expected 19.6 years lived in ‘poor health’ for men and 23 years for women. In 2021, the Centre for progressive Policy (CPP) placed Walsall in the top 14 list of places where the population was at a much higher risk of dying from Covid-19.

¹¹ https://www.ofcom.org.uk/_data/assets/pdf_file/0022/234364/digital-exclusion-review-2022.pdf

¹² <https://www.local.gov.uk/parliament/briefings-and-responses/tackling-digital-divide-house-commons-4-november-2021>

¹³ <https://www.local.gov.uk/parliament/briefings-and-responses/tackling-digital-divide-house-commons-4-november-2021>

¹⁴ https://www.ofcom.org.uk/_data/assets/pdf_file/0022/234364/digital-exclusion-review-2022.pdf

¹⁵ <https://go.walsall.gov.uk/sites/default/files/2022-12/Walsall%20Joint%20Local%20Health%20and%20Wellbeing%20Strategy%202022-2025.pdf>

whg is a registered Housing Association¹⁶ with 20,000 homes in Walsall, comprising 20% of the borough, including families that live in the most disadvantaged areas. whg started life in Walsall, where most of its homes are, and it is still the place that anchors the organisation. Today, whg operates across the Midlands, owning and maintaining homes in areas such as Walsall, Telford, Wolverhampton, Worcestershire and Staffordshire. Over the last eighteen years, whg has developed a *Community Champions* programme where ‘*experts by lived experience*’ are paid to talk to whg customers in a structured way with the aim of helping people access the services they need. An important part of the programme is that the community champions choose the themes they work on and “enable people within their own community to co-design, influence and shape services”.¹⁷ As part of the Black Country ‘Building Better Opportunities’ initiatives’, whg was one of the main partners in the Click Start programme¹⁸ which provided digital and financial skills training to approximately 295 whg customers. As a result of the programme, 247 whg customers who were internet users increased their ability to use the internet with confidence. whg has also been able to distribute 84 digital devices amongst its customers as part of the Black Country Connected initiative¹⁹.

whg’s interest in digital exclusion was heightened as the result of Covid. During lockdown, whg contacted over 7,000 of their customers to offer support. This work highlighted that around a third of their customers were lonely and isolated and a large number of them were digitally excluded. This led whg to review their digital offer once life returned to normal. One example of the change was whg’s Social Prescribing service which was initially delivered online as it was launched during the pandemic. whg discovered that an online approach did suit some of their customers however, in general, most whg customers liked face to face contact with additional phone calls. Most whg customers were not confident with digital apps like ZOOM . The Social Prescribing Evaluation stressed the importance of not discarding all online approaches but to ensure customers were offered different options to access support in a way that suited them.

¹⁶ www.whg.co.uk

¹⁷ Interview with Connie Jennings (July 2023) who has developed the programme as part of her work for whg

¹⁸ Click Start was a £6.9 million project that specifically targeted social housing tenants to improve digital and financial inclusion (Black Country Click Start programme Evaluation, 2023, ARK Consultancy.

¹⁹ The Black Country Connected programme is part of the Black Country Integrated Care System

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Given Walsall's position within the most deprived 10% of districts in England and the high levels of long-term health conditions of social housing residents, a study of how people living in whg properties use digital devices and online services can contribute to our understanding of the impact of digitalisation on access to healthcare. Integrating this knowledge early into the innovation process by enabling the co-innovation of digital health technologies and the co-design of online services should result in the greater adoption of digital health technologies and contribute to lower health inequalities.



Figure 3 – whg customer outside her whg home. Image: Mark Tomlinson

Methodology

Central to this project has been the role of community *peer researchers*. Peer researchers are members of their communities who have lived experience of the issues being studied²⁰.

Because peer researchers know and are known and trusted by their communities, they can connect with people who are often unwilling to engage with professional researchers. Based on deep knowledge of their communities, their conversations tend to be more relevant to the people being interviewed leading to more open and honest responses. Peer research also reduces the risks of misunderstandings in the collection and analysis of data. The peer researchers for this project were selected by whg from their customers. Peer researchers from JST and ACCI also participated in the project but their research results are not included in this report.

Peer researchers were involved throughout. They participated in defining the themes that guided the data collection process for this study; selected the people to be interviewed; collected qualitative data in conversations/interviews; transcribed the data; and did a first round of coding of the data collected. The professional researcher for the project participated in ten of the interviews carried out by peer researchers, coded data and participated in discussions with peer researchers from whg as the first round of data was being coded, and carried out further coding and data analysis.

Peer researchers undertook training on qualitative data collection and analysis methods and participated in discussions on the nature and process of innovation in general as well as in the specific context of digital health at a two-day training workshop held at the Birmingham Business School. Discussions during the training day identified six major themes that became the basis for the organisation of data collection and analysis. The data collection process was organised around ‘open questions’ or open *conversations*’ structured around the six themes.

The methodology of ‘open questions’ organised around these set themes allowed data to be collected in a systematic manner at the same time as it enabled interviewees to establish the specific content of the conversations/interviews (i.e. the specific topics discussed in each of

²⁰ <https://www.youngfoundation.org/peer-research-network/about/what-is-peer-research/>

the six themes were determined by the people being interviewed). As a result, the specific topics discussed in each conversation arose naturally according to the dialogue between each peer researcher and their interviewees and reflected the interest and concerns of the people being interviewed. Despite this relatively unstructured nature of data collection, clear patterns emerged from these conversations.



Figure 4 – Peer researcher at the training day. Image: Mark Tomlinson

In this report, we refer to the data collection process as both *conversations and interviews*.

The six themes used by all peer researchers to collect data

1. **Qualities/Characteristics/attributes of the people using the technology:** Under this theme you should write what people said about how the way that individual people differ influences the way they use the technologies (what they like or not like, etc). Here is where you write about issues such as peoples' lifestyles; whether they like new things or not, whether they like new challenges; whether being old/or young makes a difference, etc. This is about the way individual qualities or attributes influences how technology works for them.

2. **Qualities/Characteristics/attributes of the community of person you are talking to:** Under this theme you should write what people say about how specific communities use technologies. If no one mentioned this then don't worry, you don't have to put anything down. But if people say things like "in my community or my neighbourhood or the people I know no one uses smartwatches" then this is where you need to write this down.
3. **Qualities/Characteristics/attributes of the technology:** Under this theme you should write what people said about how the nature of the technologies influences how they use it (e.g. comments people may say about the cost, ease of use, reliability of the technology)
4. **Qualities/Characteristics/attributes of the NHS.** This is where you write what people say about the NHS and how this influences their use of technology. For example in our training day some people say they trusted the NHS more than other organisations with their information but others also said they didn't trust the NHS. Both views (and others) are important and valid. We need to record all views.
5. **What is needed to make these technologies work well for your communities?** This is where you write suggestions or ideas people give you about how digital technologies could work better for them and their communities or how new services could be delivered with these technologies.
6. **Other factors that do not fit any of the categories above.** This is where you write what people have talked about in your conversations that do not fit well into any of the 6 categories above. This is a very important section as many of the most interesting ideas come from comments people make that we were not expecting.



Figure 5 – Peer researchers at training day. Image: Mark Tomlinson

The coding of data

There were several rounds of coding:

1. The data collected was transcribed and coded according to the six themes by the peer researchers.
2. A smaller group of peer researchers worked on the first round of coded data.
3. Project researcher did several rounds of coding according to the themes that emerged from the data.



Figure 6 – Peer researcher in conversation in Walsall. Image: Mark Tomlinson



Figure 7 -Peer researcher in conversation in Walsall. Image: Mark Tomlinson



Figure 8 - Peer researcher in conversation in Walsall. Image: Mark Tomlinson

Breakdown of data collected from whg

In total 68 interviews from whg customers were conducted by peer researchers from whg. The demographics of the data are as follows:

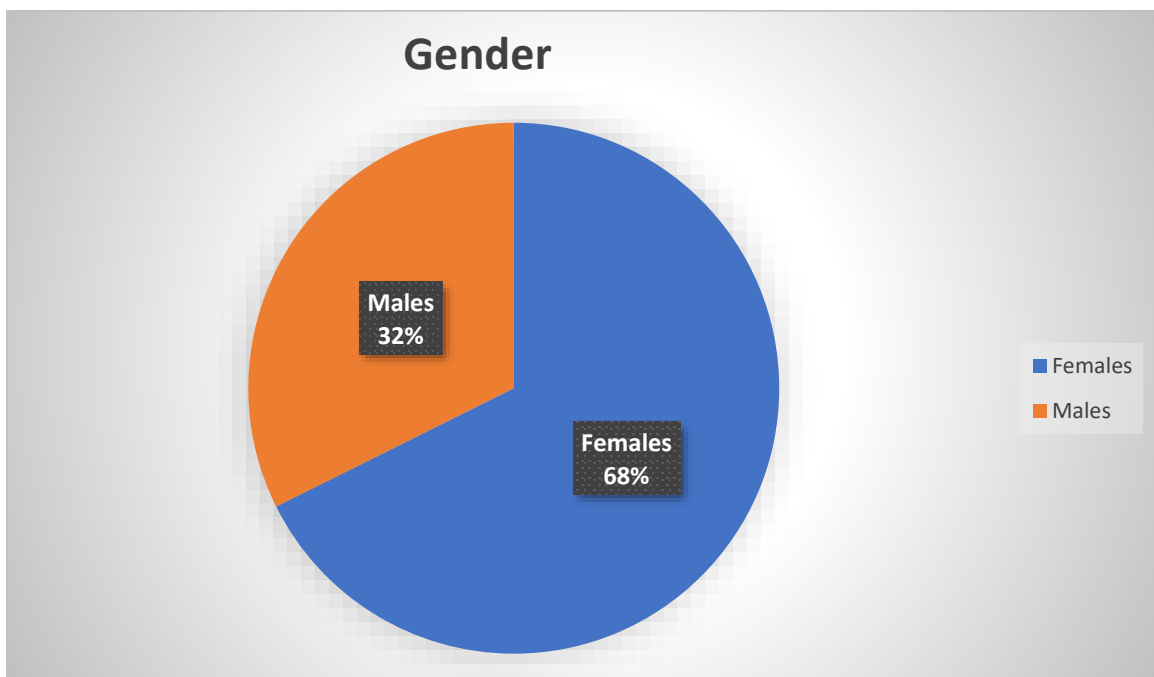


Figure 9 - Pie chart showing 32% male and 68% female conversation participants.

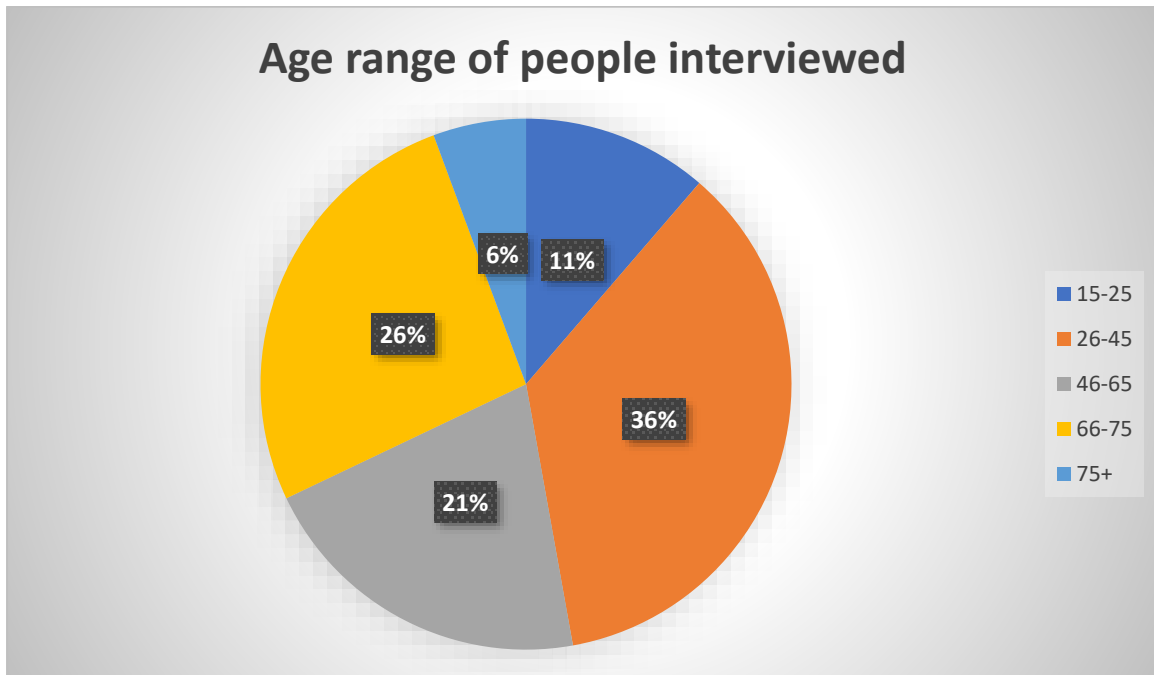


Figure 10 - Pie chart showing age range of people interviewed

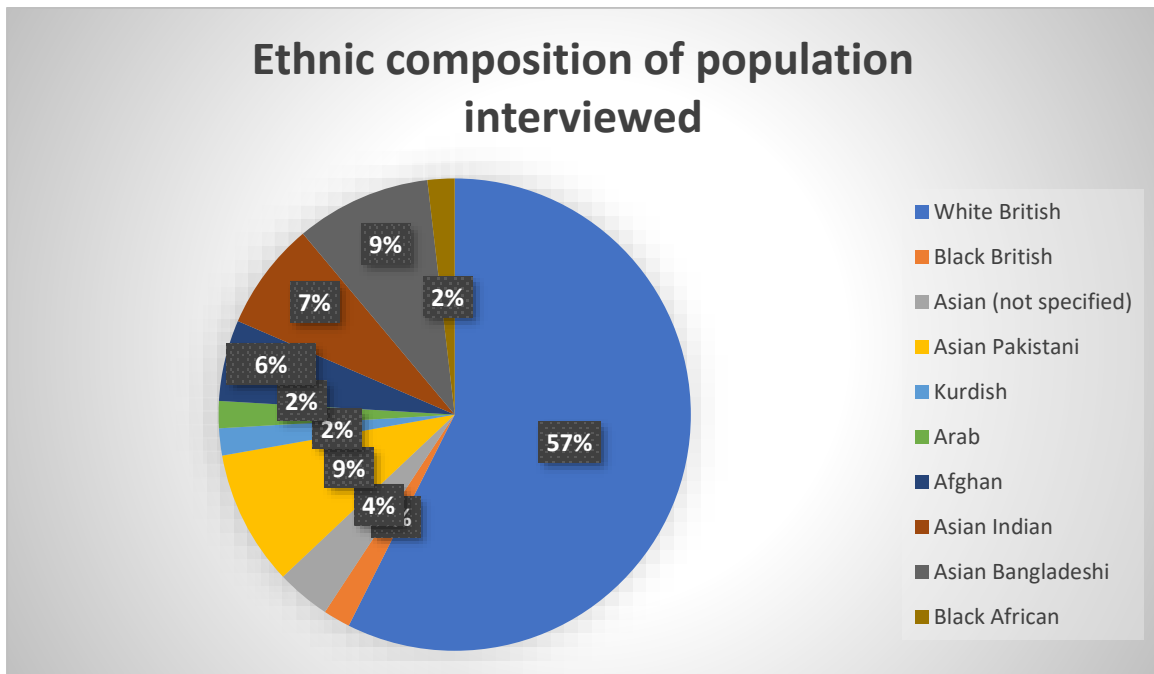


Figure 11 - Pie chart of the ethnic composition of population interviewed.

Understanding the presentation of interview data

The discussion below presents the results and analysis of the qualitative data collected in conversations/interviews by whg peer researchers. Given the limited space we are also only able to present a small sample of the quotes from interviews. We have given each interviewee a code which identifies the organisation of the peer researcher, the pseudonym of the interviewee, the age of the interview and what type of digital technology user they are (i.e. a weak [LU], intermediate [IU], or high user [HU]). So, for example, interviewee (whg 27, 16/HU) would be 16 years old and would be a high technology user.

Research Findings

The presentation of our research findings is organised according to the six themes identified in the peer researcher training days. These themes were also used to guide our conversations.

Themes 1 and 2: Characteristics of people interviewed and their communities

Conversations by peer researchers highlighted the complexity and variety of experiences and opinions regarding the digitalisation of everyday life, including health services, held by communities. Some of the people interviewed had fully incorporated digital technologies into their daily life as seen from the quotes below:

whg 27, 16/HU	“I love technology, I can’t live without my phone. It’s quick and easy and keeps me in touch with my friends and with trends. I can order stuff of line and I don’t have to go out the house, so it’s convenient. My whole life is online.”
Whg 31, 46/HU	“Once you get used to the technology it does fit in the lifestyle. I wear a smartwatch all the time except when it's charging. It allows me to easily track my movements throughout the day. Metrics such as total steps taken, heart rate, run or ride pace, or the amount and quality of sleep each night help me better identify, track and achieve my own health and fitness goals”
whg 43, 23/HU	“I do like using digital technologies as I use it everyday for entertainment purposes for example watching things online. I use Netflix, Facebook, Amazon Prime. It helps me stay connected with people as I can make calls and send messages which is really good for my wellbeing. I can order things online which means that I do not have to go out to the shops for it. I also do remote working which is really helpful for me as it saves on travel costs.”

For many people, however, the adoption of digital technologies requires significant investment of money, time, and energy. Interviewees feel that digital devices, Apps and websites are not intuitive but have to be learnt and mastered through practice. When using digital devices things often go wrong - it is also easy to make mistakes - and solutions and

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help are not readily available. Our interviewees indicate that many people often feel vulnerable in the face of these challenges.

whg 10, 73/LU	When asked how they feel about using digital technologies “I’m scared of them I just think I’m too old to learn them”
whg 39, 62/IU	“...I always get it wrong and it stresses me out... I would rather just not bother at all because it causes too much stress to figure it out.”
whg 49, 68/LU	“I get confused and lost so I give up as I can’t afford internet in my home”
whg 44, 63/IU	“I do not like technology in general. I have a hard time using them, it just seems too complicated”

Many of the people interviewed rely on family and friends to help them learn and navigate digital devices and Apps. Some of the people interviewed lived in assisted living accommodation. Our interviewees told us how about half of the 66 whg customers depended on family to help them access digital services. Those without family ask the whg Wellbeing Officer located at the residency for support. Our peer researcher was told that having regular access to the Wellbeing Officer- so they can ask for help when the problems arise- is what allows many of them to be digitally active.

whg 54, 82/LU	“Sometimes I send a text message...I just got used to doing that and taking photos... I know now how to send a photo! a friend showed me”
whg 28, 64/IU	“I do sometimes struggle to use it if it’s too complicated and I don’t know how to do it” in those situations “I ask a friend for help”
whg 58, 54/WB	“...my daughter does everything for me to do with my phone”

Our study shows that the experience and characteristics of individual people such as level of trust, education, self-confidence, attitudes to risk, general interest in technology and ‘new things’, and ability to recover from mistakes are critical factors in the adoption of digital technologies. The use of digital technologies in the context of work and employment as well as the existence of supporting networks of family, friends and neighbours also influenced the manner and speed at which people engaged with digital. Age was also a factor with younger

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people showing greater reliance and ease with technology. However, we also found numerous examples of 80+ year olds engaging with technology in a confident way, while several 50+ interviewees did not. It is important to bear in mind therefore that, even within specific communities, there will be very important differences between individuals that influence the way technology is used.

Our conversations also revealed that attitudes towards digitalisation are complex with most interviewees identifying both benefits as well as limitations and dangers of using these technologies. Interviewees often identified the specific conditions, boundaries and limitations which were important to them. Though these conditions differ between individuals, it was possible to identify clear patterns from our data.

whg 3, 66/LU	“To communicate is great a positive, scams are a negative”
whg 33, 77/HU	“At the moment my knowledge of technologies isn't much but it's helped me with my health. They are alright for me at the moment as I can find things... The NHS is so full of information, I would not like to change that...My main concern is that it goes too fast for me. How safe is it? I get concerned about it, people knowing about my personal data”
whg 45, 42/HU	“I like using my phone because it allows me to have access to so much information: i.e entertainment, news, media, fashion, sports and finance. However, what I am concerned about are the side effects from using them. For example, we are constantly being drawn away from the world, kind of like being distracted from what's truly happening around you, not to mention the lack of security concerning one's own personal details and financial details”.
whg 49, 68/LU	“There should be proper training and the technology should be free”
whg 28, 64/IU	“I feel that they help you to access things quickly and from home as my mobility isn't great” but “I worry about how older people would cope using technologies as I struggle, it's gonna be worse for them”
whg 1, 34/HU	“There's pros and cons using digital technologies but for me there's more pro's than cons”

Ownership of digital devices

Number of people interviewed	68	68% of the sample are women
Do not own any digital device	3	2 males and 1 woman
Only owns smartphone	26	84% of the cluster are women
Smartphone and tablet/phone and computer	21	62 % of cluster, 2 are women
Smartphones, tablet, laptop	18	55.5% of cluster, 3 are women

The data collected from interviews suggests that an important group of people only use smartphones to go online, indicating limited use of the internet according to Ofcom. The data also suggests that the majority of these ‘limited users’ are women.

The data collected from conversations revealed three clusters of users:

Three clusters of users
Cluster 1 (LU): (Non-users/Limited users of digital technologies): People who only used smartphone for calls and messaging (includes text, WhatsApp, Facetime).
Cluster 2 (IU): (Intermediate Users of digital technologies): People who use devices for phones calls and messaging plus basic searching the internet for information, basic use of social media (e.g. Facebook) and limited number of Apps (e.g. NHS app)
Cluster 3 (HU): (High Users of digital technologies): People who use devices for calls and messaging, searching internet for information, social media, plus broad use/engagement with internet related services such as internet shopping, banking, range of benefits, employment.

Cluster 1: Limited Users (LU)

Of the 68 people interviewed from whg, 3 didn’t own or use any digital devices at all and 26 people (38%) had smartphones that they used only for phone calls and messaging (this may include the use of WhatsApp and Facetime which is why they are classified as digital devices). *Cluster 1* include both White British as well as people from Asian, Afghan, Kurdish, and Arab backgrounds and was composed mainly of women.

We discuss people in *cluster 1* as a distinct group because they engage with digital technologies in a very different way compared to the other two groups of people. It is also the group that needs most attention if the introduction of digital technologies in healthcare is not exacerbate health inequalities due to digital exclusion.

Cluster 1: People who only used mobile phones for calls and messaging (includes text, WhatsApp, Facetime).

Our data from conversations suggests that there are a number of complex factors which explain why people in *cluster 1* don't use digital technologies including a small group of people who are satisfied with a basic mobile phone to make calls and didn't feel the need for anything else.

whg 24, 26/LU	<p>To the question “do you use digital technologies to access health services?”</p> <p>The answer was</p> <p>“ I don't know about those services and I have no access.... I have no clue. I've been at home as my children were born back-to-back. As you know for us, Afghan women, it's all about children and I don't speak English much... I have heard those service [health services] since I have been getting support from you”</p>
whg 52, 83/LU	“I've just got no interest in them [digital technologies]”
whg 64, 62/LU	<p>“I use a mobile phone, that's about it, I don't know how to use anything else”</p> <p>“With me it is just that I prefer not to use them, I feel I am passed learning stuff like that, I know I shouldn't say that, but I am happy as I am”</p>

Lack of digital knowledge and skills

One of the main factors holding people in *cluster 1* back from using digital technologies beyond phone calls and messaging, is a lack of digital knowledge and skills. This lack of digital proficiency often results in people feeling vulnerable and scared in the face of technology. Our data from conversations also indicates that many people not currently using digital devices are interested and willing to learn and develop the skills necessary to use them.

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The quotes below are examples of what interviewees said to us in conversation.

whg 2, 64/LU	<p>“I suppose I’m scared really because I don’t know about them, using the internet, I don’t know how to do anything like that and that’s what’s holding me back, lack of knowledge basically. I would like to learn how to, I’d probably struggle with it, but I’d have a go.” (whg 2, 64/LU)</p> <p>These technologies are “...very handy, I would use them more if I had the knowledge and I would access health services. My kids do try and learn me but they lose patience because I’m slow, but I would like to learn”</p>
whg 3, 66/LU	<p>I’m not very good using them, doing the internet and things like that, because I don’t know how to do it.</p>
whg 16, 47/LU	<p>“I like using my mobile phone....I struggle to use these devices. I have got reading and writing difficulties”.</p> <p>“Yes, I would love using these technologies if I know how use them”</p>
whg 17, 60/LU	<p>“I like using my smart phone....I don’t know how to use that much, I just got basic knowledge.”</p> <p>Person felt she would be able to use devices if:</p> <p>“If access is more easy and learning process is made good and approachable for everyone”</p> <p>“I don’t have access to NHS app and I don’t know what that app is.”</p>
whg 19, 36/LU	<p>“I have no access I haven’t got any laptop or tablet and don’t know how to use these services from my phone. I am not even sure what these services do “</p> <p>“If more information is provide about using these technologies and teach us how to access these services it would be great to take the advantage of these services”</p>
whg 20, 38/LU	<p>“If I can get more training about using these technologies.... I want to learn to use these technologies”</p>

Other reasons why people don’t use digital technologies included the *costs of the technology*, as well as fear of *fraud and hacking*.

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whg 35, 70/LU	<p>“I use these technologies very little, only to make calls. I don't have wifi connection at home due to cost issues. Sometimes over a call, I have to wait for a long time for someone to respond”</p> <p>“I like new things but can't access them. I can't write, I can read a bit. I can learn if someone teaches me”</p> <p>“I am old but that shouldn't stop me to know and learn new technology”</p>
whg 49, 68/LU	<p>“I get confused and lost due to no training and my privacy being very raw and having no digital background, I'm wide open to hackers”</p>
whg 50, 68/LU	<p>Uses no digital devices, doesn't text. Has a laptop but doesn't use it as doesn't know how.</p> <p>“my son tried to get me to do banking online... I didn't want to because you hear of these people being hacked and everything. So how do I know that I haven't been hacked? I don't know what it is, if I've been hacked and things like that. So, I don't trust it, I don't trust things like that.”</p> <p>“I mean they're saying they've got all these safeguards and all that, I wouldn't know how to use them anyway and then you have to pay for them anyway... what's the point?”</p>

Only three people from a total of 68 interviews with whg customers did not use any form of digital device. This is probably explained by whg's participation in the Click Start and Black Country Connected programmes which provided whg customers with digital devices, data and basic digital training. Our study therefore does not pick up people that are digitally excluded due to a lack of devices or data.

Another small number of people in *cluster 1* felt satisfied with a just a phone to make calls and receive texts and didn't feel the need for anything else. Our study also indicates however that a significant group of people in *cluster 1* are not able to use digital devices beyond basic phone calls and texting despite wishing to do so. The cost of technology was an important factor mentioned by people in cluster 1 as a factor prohibiting their use of digital technologies. However, one of the main reasons for the limited use of digital technology from people in *cluster 1* appears to be a lack of digital knowledge and skills. The most significant insight from interviews with this group of people is their wish to learn and develop the skills

necessary to use digital technologies. It suggests the need for very local systems of *training and skills development and on-going technology support* to enable these groups of the community to engage in a sustainable and meaningful way with digitalisation.

Our study shows that individual characteristics and experiences as well as existing networks of support from family, friends and neighbours influence how people learn, use and engage with digital technologies. In our study, the main factors influencing the degree and manner of people’s engagement with technology are linked to trust, self-confidence, digital skills, and ability to recover when making mistakes, elements which are not fixed but can change with appropriate training and support. Although age is an important factor due to both social and cognitive factors, our study found several examples of people in their 70s and even 80s at ease with digital technologies when they were appropriately supported.

Theme 3: Characteristics of the technology

3.1 General benefits from using digital technologies

In conversations with peer researchers, people identified many of the well-known benefits gained from using digital technologies. The main three benefits mentioned in conversations were:

- Keeping in touch with family and friends
- Convenience
- Searching for information - “Googling”

Sample of representative quotes

Keeping in touch	
whg 26, 20/HU	“I use it to chat as I have social anxiety so I don’t feel alone. I use it to book appointments and order clothes so a big part is using technology”
whg 11, 25/HU	“I think its amazing, I can keep in touch with family and friends, use my phone to navigate me to places when I’m lost. I’d really be lost without my phone and the ease of access to ready information on any of my devices”
whg 53, 80/IU	“I’ve got a friend that rings me every morning about 9 o’clock to see if I’m alright ... and me other friend, she rings me and tells me if she’s coming up to Brownhills and we’ll go to the café for a cup of tea and put the world to rights...”

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whg 44, 63/IU	“I do like using digital technology in terms of I like using facebook as I can get updates with what is happening around the world as the audio is in Bengali which I am able to understand. Furthermore I am able to stay connected with my family who reside in Bangladesh as I often use whatsapp to make phone and video calls to them. I also use tiktok which I quite like for entertainment purposes. Through tiktok I have learnt many new skills. “
Convenience	
whg 40, 78/HU	“..they make life easier. I’m getting quite lazy nowadays, I don’t even have to get up to turn my lights on and off or shut my blinds because Alexa does it for me. So having the NHS services available through Apps and online makes my life easier too”
whg 9, 73/HU	I’m having to contact solicitors at the moment so it’s making it easier to email them instead of letters. You can go on google and find out a lot. I go on YouTube to find how to do things for my DIY projects like how to change a light bulb.”
whg 28, 64/IU	“I like being able to look things up on the internet and get myself prepared and I like that I can talk to a doctor online without having to leave the house. It helps as I struggle to get about, it also helps find where to park as I can’t walk far anymore. I had an appointment at the job centre the other day and I was able to google the nearest parking spots so I didn’t have to walk too far”
Searching for information	
whg 4, 65/HU	“Basically, you can get all the information you need at hand, you can do it in your own time, I can just switch on my computer and search for things or go on a app”
whg 53, 80/IU	“I like the computer because I do a lot of craft work and I can find information and learning things.... different things”
whg 56, 45/IU	“I think it makes it easier for me because being disabled it hard sometimes for me to get out because of my spine I got um collapsed spine, so its easier for me to look on the tablet for times of buses trains then I know then what days I can go out or what time I can go out”

Other areas identified as important were:

- Entertainment
- Learning new things
- Fitness tracking
- Shopping

whg 25, 51/IU	“Yes I check my fitness on the app to see how fit and my health is which it does fit very well while using my mobile phone”
whg 56, 45/IU	“on my tablet I can do online courses if I want to from collage cause I am logged on at the collage so if I want to I can do a 6 week course and I haven’t got to go out the house then cause I can go on y table”
Whg 29, 41/HU	“I love new things that come out I love new gaming consoles and new phones and its exciting when there is new features that make them better”
Whg 43, 23/HU	I do like using digital technologies as I use it everyday for entertainment purposes for example watching things online. I use Netflix, Facebook, Amazon Prime. It helps me stay connected with people as I can make calls and send messages which is really good for my wellbeing. I can order things online which means that I do not have to go out to the shops for it. I also do remote working which is really helpful for me as it saves on travel costs.

Our interviews are consistent with the well-known benefits of digital technologies. Everybody interviewed from whg identified the important role of mobile phones and messaging as well as digital technologies such as smart phones, WhatsApp, and social media for keeping in touch with family and friends. Interviewees with positive views included the whole range of users - from *cluster 1* (from those that only used texts and non-digital mobile phones, to those that use smart phones, WhatsApp and Facetime to contact family and friends) to very confident users in *cluster 3* who used a variety of sophisticated devices.

For people in *clusters 2 and 3*, including people in their 70s and 80s, the convenience of digital technologies and the ability to search for information in your-own-time and place are major benefits. Similarly, people of a variety of ages from *clusters 2 and 3*, see important benefits from online shopping, online education, entertainment and fitness.

3.2 *The challenges, problems and areas of concern from using digital technologies*

Our interviews also revealed important challenges people face when using digital technologies. The three main challenges identified in interviews are:

- Scams, fraud, and the loss of privacy with regards to personal data
- Bad connections, unreliable technology, and the costs of technology
- Technology that is too difficult and always changing

Below we give a sample of quotes from our conversations.

Scams, fraud and breaches in data privacy

Scams, fraud and, above all, breaches in data privacy appear as the main area of concern regarding the use of digital technologies. Of the 68 people interviewed from whg, 30% said they are worried about scams and fraud. With regards to data privacy, 48% of those interviewed mentioned they are concerned about violations in data privacy, 13% mentioned that they have no concerns at all when using digital technologies (we assume this includes no concern regarding data privacy), and 39% did not specifically mention data privacy when discussing their concerns with the technology (it's not clear whether data privacy is a concern or not but they did not raise this concern in interviews). It is important to note that these concerns appeared spontaneously during interviews as questions regarding data safety or privacy were not specifically asked during conversations.

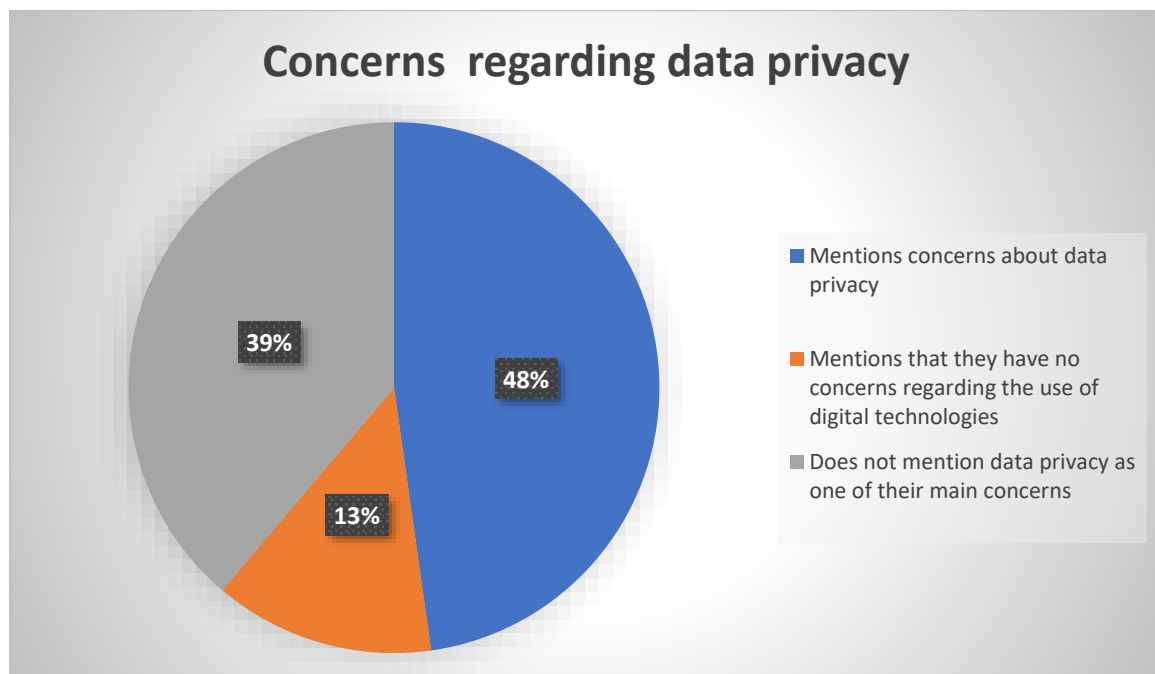


Figure 12 - Pie chart of responses related to concerns regarding data privacy.

Scams	
whg 20, 38/LU	“Data can get hacked...my husband’s online banking got hacked and some one did shopping from his bank card twice. They are not safe.”
whg 4, 65/HU	“My main concern is on Facebook, people asking me to friend them and send them messages and that. I say no because I’m always concerned that people are trying to set up false accounts and false identities, trying to get my personal information, like scamming. I keep getting calls talking about my Amazon account, I say what Amazon account because I haven’t got one”
whg 6, 42 HU	“Paying things online whether they actually get paid.... scams, I have been one of the South Staffs people’s whose data has been released. Getting lots of scams coming through because of this, so very wary about any phone calls that I don’t recognise, I don’t open any emails I don’t recognise. It’s just getting really scary how clever the people doing the scams are getting”
Data Privacy	
whg 15, 32/HU	Worried “That someone could access my personal information and potentially sell it.”
whg 16, 47/LU	Worried “If personal information get shared with other peoples.”
whg 18, 18/HU	“My concerns is about data breach or if personal information being shared or leaked”
whg 21, 45/LU	“What concern me is the safety of the digital. if it is safe to keep my information safe such as data where people can get easily access to my information”
whg 25, 51/IU	“My concern is that is it safe to use? Is my information is kept safe who they are sharing my detail with”

Bad connections, unreliable technology, and the costs of technology

The importance of an appropriate local technological infrastructure to support the delivery of digital services was also highlighted in several interviews.

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whg 5, 74/LU	“If the system worked, I might be able to use it..... you can’t get a signal in a lot of areas. I can’t get a phone call most of the time where I live, or make a call, and if I try to send a text it say’s unable to send. Technology is rubbish, to access information were being forced to have a broadband connection which is another expense, like if you want a choice you need a smart TV, but to have a smart TV you have to have broadband the cost concerns me.”
whg 27, 16/HU	“I think that Apps crash and you can lose all your stuff and think you have booked an appointment but it hasn’t worked.”
whg 7, 34/HU	She does not like the technology when “.. it’s unreliable, when your signal goes down, wifi not working properly”
whg 6, 42/HU	“...the cost for wifi which you need for some of the devices to work, sometimes I can’t afford it”.
whg 49, 68/LU	“I can’t afford internet in my home”
whg 56, 45/IU	“Um the price of them sometimes because I couldn’t afford the tablet. I got one now because I had that free doing a project with whg and you had the free tablet. So, if they haven’t had done that project, all I would have would be my phone. It’s the expense of them sometimes as well.”

Technology that is too difficult and always changing

Our interviews identified several challenges related to the complexity of user interfaces and frequent upgrades and changes that required people to regularly adjust to changes in the technology. Complexity was identified as a problem even by those proficient in the use of digital devices but becomes a greater barrier for older people, though as discussed above, our sample includes several examples of people in their 80s who feel at ease with their devices and apps.

whg 6, 42/HU	“It’s hard for the elderly people because they don’t know how to use them, they can’t use a phone let alone use a app. They can’t answer their phones quick enough and they’re not updated like ours..... make things simpler for them. Not everybody has a smart phone”
whg 19, 36/LU	“I find new technologies are difficult to use”
whg 31, 46/HU	“Some negatives of the technologies are that they are complex to use, need to update devices, not sure where to look for information, not comfortable sharing personal information, scams and fraud” Old and vulnerable patients find it difficult to operate or access digital technologies. Others need more awareness on 'How and What can be done using these technologies"

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whg 44, 63/IU	“Technology seems quite complicated for me as I don’t really understand English very well. I am often quite afraid of using it as previously I have locked my phones accidentally many times.
whg 47, 71,IU	“To start with I struggled using it [digital technologies], over the years I have got more confident using it, but things are getting more complicated at the moment, but I’m coping with it slowly”.
whg 40, 78/HU	“Remembering passwords. That drives me nuts”
whg 67, 62/IU	“It just needs to be simpler.... I will not bother if the technology is too complicated”

When talking about the difficulties they faced using digital devices and Apps, several people explained that a better understanding of the technology and greater digital skills would help them navigate ‘difficult-to-use apps’.

whg 63, 67/IU	“Probably understanding them more, and understanding how the use some of them would benefit our lives”
whg 49, 68/LU	“Would use the technology more if I got more training and felt more confident”

Other factors mentioned in interviews were:

- Language
- Technology replacing human contact

Language

Language barriers are generally acknowledged as important obstacles to the adoption of digital technologies. Our study found two types of language barriers (i) English not the first language; (ii) difficulties related to expressing complex ideas online.

When English is not your first language:

whg 44, 63/IU	“I am not very comfortable that majority of everything has to be completed online. I prefer arranging things face to face. By doing things online I really struggle using the platform which makes me feel quite frustrated at time. Most often I have to ask other family members to help translate or have to ask for help to complete certain things online. This often takes my independence away and it also means that I have to
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	rely on other people for support which I am not always comfortable with”.
whg 46, 54/LU	“New technology makes me feel a bit nervous...I feel nervous with the fact that technology can sometimes look intimidating to use. If you think about it, for someone like me who speaks very little English. I can’t really understand English so how do you expect me to use it. I’m scared of pressing a wrong button and damaging the whole thing by accident.”
whg 23, 46/LU	“What is holding me back is I have problem with my English, no support from nhs with all those technologies and we want to know more about those technologies if they could give me more support”

(ii) Articulating complex ideas online

whg 5, 74/LU	“....I can understand someone having a conversation but trying to put in words what I want to say- into a written word- so they’ll get the point I’m making, it doesn’t work through messages. I’m an older person I haven’t got the dexterity which I had, keypads are too small, and people don’t actually read what you have written. They will look at it and then they will interpret it to what they think it is, when verbally it comes across better. Speaking verbally, if they’re not sure about it and it didn’t make sense they then can ask ‘hold on what did you mean/’, but if you’ve texted it they think, oh I think this is what they meant”.
whg 62, 69/HU	“I find it easier to call and speak to someone direct and safer.”

Technology replacing human contact

The way that technology is replacing human interaction and contact was also mentioned in several of our conversations.

whg 29, 41/IU	“I like to talk to or see a real person not faff about for ages using an app that can crash easily...”
whg 8, 37/HU	“...rather than pop round for a cuppa people just phone you and it can take away the face-to-face interaction. I like to see people, it’s not the same talking to someone on the phone than talking to someone face-to-face.”
whg 43, 23/HU	“People these days have forgotten what it is really to have a conversation face to face as they are too busy with their phones, I think we are all being socially excluded.”

Conclusion

Our conversations highlighted the well-known benefits of digital technologies. Above all, interviewees from all three clusters and levels of digital proficiency pointed to the way digital technologies had transformed their ability to keep in touch with family and friends. For those with higher levels of digital skills and confidence, the convenience of digital technologies for every-day tasks such as shopping, entertainment, fitness tracking represents an important improvement to their lives. In terms of obstacles and general concerns regarding digital technologies, the complexity of the technology, the frequent upgrades that requires adjustments on the part of users, and a lack of appropriate and affordable technology infrastructure that supports the delivery of digital services were critical factors that influenced the degree and manner of technological engagement by the people we interviewed. Our conversations revealed however that concerns regarding data security and privacy were at the forefront of people’s minds when using digital technologies.

Theme 4: Digital technologies and the NHS

Our interviews found important differences in how people engaged and used NHS digital services. Differences ranged from people who didn’t know and did not engage with NHS digital services (mainly but not exclusively people from cluster 1) to people high users (HU) who comfortably engaged with all aspects of digital health.

Non-engagement with digital services	
whg 17, 60/LU	“I am not sure how to use these technologies for health services I would like to get more information about these technologies.”
whg 19, 36/LU	“I have no idea what are these and I have no access. I don’t know how to use these services”
whg 20, 38/LU	“I don’t have access to NHS app and I don’t know what that app is.... I want to learn to use these technologies”
whg 42, 29/HU	“I do not think many people are aware about how the NHS uses technology, more awareness should me made about it... My other concern would be that maybe if the NHS app could also be translated into other languages as I have family members whos English isn’t their first language. This would then allow them to be able to use the app as well and not feel excluded”

High engagement with digital services	
whg 1, 34/HU	“The positives for me is that I can just go to my NHS app/website and find out if I’ve got any appointments coming up, I can get access to my medical records straight away I don’t have to write letters go into the doctors like you used to you can get your information straight away.”
whg 4, 64/HU	“I use the patient app for my doctor.... I’m able to do repeat prescriptions, make appointments instead of ringing and being on the phone trying to get through for ages..... you can get hold of your medical history find out about hospital appointments instead of waiting for them to come through the post, it’s so much quicker”
whg 31, 46/HU	"Digital devices provide me with quick information on any health-related issues I am looking to get info on. Allows me to do self-health management"
whg 42, 29/HU	“The NHS uses technology by giving people reminders or updates regarding their appointments which is very good because often I can be very forgetful at times. Sometimes the NHS will send me questionnaires to complete about how appointment went which is very good I think. The NHS have done very well by setting an online system where people are able to seek medical advice, be able to order prescriptions, book appointments online. Furthermore, another good thing about the NHS app is that you can have your covid passport online”

4.1 Benefits of using digital technologies and NHS

Everyone interviewed, including people from *cluster 1*, found the text reminders of appointments very useful.

Text reminders of appointments	
whg 46, 54/LU	“The only main positive point that I can think of for healthcare services would be the fact that it gives us a reminder for when a medical appointment is due. This is really good for me as I often forget when and where my appointments are, I can then write it down on my calendar”.
whg 44, 63/IU	“I do not have a great understanding as to how the NHS uses technologies all I know is that they send me text messages regarding when my appointment is due which is very helpful for me as I can be forgetful”.
whg 15, 32/HU	“The positive ways that the NHS uses digital technologies includes sending text reminders and emails “

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For intermediate (IU) and high users (HU) the other three most important benefits were:

- Repeat prescription
- NHS website to search for symptoms
- Checking test results

Repeat prescriptions	
whg 9, 73/HU	“I only go on there to order my repeat prescriptions, I have the patient’s app”
whg 63, 67/IU	“It takes me a long time to get used to using something when it comes to technology. Something like the new NHS ways of ordering prescriptions, I prefer”
whg 63, 76/IU	“sometimes I use google and I also use a medical prescription service that allows me to re order my prescriptions that I use continuously “
whg 29, 41/IU	“I don’t want to use health Apps, I like the way its always been done.... I think it helped during Covid when we where in lock down and I can see how it works for some people like ordering prescriptions is easier”
NHS Website	
whg 33, 77/HU	“At the moment my knowledge of technologies isn’t much, but it helped me with my health. They are alright for me at the moment as I can find things. The NHS is so full of information, I would not like to change that.. however, my main concern is that it goes too fast for me. How safe is it? I get concerned about it, people knowing about my personal data”
whg 18, 18/HU	“...get health guidance on NHS website....Information, advice on health condition symptoms, healthy living. How to get help”
whg 43, 23/HU	“I do like using the NHS website as I often do look at health conditions, symptoms and how to treat it. “
whg 31, 46/HU	“I do frequently access official NHS website to get updates and tips on prevention and how to take care of my wellbeing”
Accessing health records and test results	
whg 13, 56/IU	“NHS app is a positive because I was able to find my results on there such as my results of bloods and scans”
whg 18, 18/HU	“I use these technologies sometimes... So I can access to my health record”

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whg 32, 40/HU	“The NHS uses these technologies to keep records of all patients and make them easy and quickly to access what they want The NHS gathers more information and contact with another professional to take their view and get advice to improve the service and expand their knowledge”
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Our conversations suggest that digital does work for very important, basic services. The experience for more complex Apps and services is, however, mixed.

whg 22, 41/HU	“... it depends which service I access. ... sometimes it helps me and sometime not”
whg 28, 64/IU	“I do sometimes struggle to use it if it’s too complicated and I don’t know how to do it “
whg 67, 72/HU	“I tried the NHS App but I gave up as I found it too complicated for me”

Answers were also mixed regarding booking GP appointments

Booking online GP consultation	
whg 7, 34/HU	“I’m able to do an e- consultation online which enables me to contact the doctor rather than me not being able to get through by phone... do one and they get back to you by the next day... also if I want to look at my records through the NHS app or website it’s easy and quicker to access to do this”
whg 4, 64/HU	“I use the patient app for my doctor.... I’m able to do repeat prescriptions make appointments instead of ringing and being on the phone trying to get through for ages..... your able to access their app, you can get hold of your medical history find out about hospital appointments instead of waiting for them to come through the post, it’s so much quicker. Been using them for years I’m ok with them or accessing anything to do with healthcare”
whg 22, 1/HU	“Yes, I look at my NHS app if I have got an appointment or to see what time appointment are available”
whg 25, 51/IU	“I use google to see some of health condition and what they mean.... I use phone to call for an appointment”
whg 6, 42/HU	“I can access health Apps” (whg 6, 42/HU). However, not phoning doctor because never have luck with app”.

whg 6, 42/HU	“I never have any luck with getting onto [the NHS app] so I can look at my details. Also, the doctor’s app gets confusing when they ask you for something like a code and you have not got a clue what they’re on about. I’m able to use app’s but some of them are not straight forward.”
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2.3.2 Concerns and challenges regarding digital technologies by NHS

In interviews on the negative side of digital technologies we picked up the general frustration with the workings of health systems at the moment, including the shortage of face-to-face appointments.

The three most important areas of concerns regarding the use of digital technologies by the NHS were:

- Data Privacy
- The replacement of face-to-face appointments by digital
- Technology is unreliable and doesn’t always work

Data Privacy

Our conversations picked up widespread concerns regarding data privacy and healthcare. It is important to note that these concerns were expressed without prompting by peer researchers but were expressed when interviewees were asked to talk about what they liked/didn’t like about their experience with NHS digitalisation. A small number of interviewees also said that though they were concerned about data privacy in general, they trusted that the NHS would keep their data secure.

Data Privacy	
whg 8, 37/HU	“I don’t know whether there could be someone sat at a computer who could just type in my name and randomly be looking at my records which goes back to data protection, so this is one of my concern my big concern to be honest apart from that i don’t have any other concerns”
whg 15, 32/HU	“Maybe if someone sells my NHS number and starts using my information, maybe extreme but doctors don’t always check if it’s you.”

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whg 22, 41/HU)	“If they could make it secure for us to use it and not sharing my information with anyone as many them share my confidential information with staff without my permission.”
whg 10, 73/LU	To the question ‘what concerns them about the NHS using digital technologies?’ “...data protection, people finding out my details and using them, you’ve got to be careful today about everything”.
whg 63, 67/IU	It is a very important part of our lives so if something went wrong then there would be a big mess.
whg 12, 29/HU	“How accessible it is for someone to get your data or for someone who works there to get it.?”
whg 33, 77/HU	“My main concern is that it goes too fast for me. With this technology. How safe is it? I get concerned about it, people knowing about my personal data”
whg 25, 51/IU	“My concern is that is it safe to use? Is my information is kept safe who they are sharing my detail with”
whg 28, 64/IU	“I feel they need to be regulated, I want to know where my information is being sorted and who has access to it as you just don’t know.”
whg 4, 65/HU	“I have faith in the NHS that they will keep all my information private”

Replacing face-to-face contact with digital technology

Though for many people replacing face-to-face contact with online consultations was welcome, this was certainly not the case for others, including those that can be considered high users (HU) of digital technologies.

whg 1, 34/HU	“It takes away the face-to-face options, and sometimes you don’t get an answer, for example my experience with GP’s- when I finally get an appointment- they ask me if I have the NHS website, if I’ve tried it, if I have followed their advise? ... and they kind of push you off, takes away the social aspect”
whg 5, 74/LU	“I find it very confusing, if it’s a health question I need to ask a person and get an answer, I don’t need to type it in and wait for them to eventually answer me.”

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whg 43, 23/HU	“I have heard about an NHS app but I am not quite sure what you can do on there. Sometimes they would send me reminders if I have any appointments. I still prefer doing things face to face or via the telephone for things like booking an appointment, ordering my medication if I need medical advice”
whg 9, 73/HU	“I have no concerns, but I do prefer face to face, in the case there’s something seriously wrong it can be explained better”
whg 29, 41/IU	“The video doctor appointments how can they get everything they need on a video? They might miss something and technologies don’t always work, you need that personal contact”
whg 39, 62/IU	“ I’m bound to mess it up and would rather talk to a real person.”
whg 67, 62/IU	“ I like have a human on the other side of the phone... especially when things go wrong you can go back on yourself”

Given the importance of healthcare, people that don’t feel confident with technology tended to prefer face-to-face contact.

Technology is unreliable and doesn't always work

whg 37, 34/HU	“These technologies are easy to use but I don't really like them, they are rubbish... they cancelled my prescriptions for no reason”
whg 29, 41/IU	“Sometimes it glitches and it can be a lot of messing about”
whg 6, 42/HU	“I never have any luck with getting onto it [the NHS App] so I can look at my details. Also, the doctor’s App, it gets confusing when they ask you for something like a code and you haven’t got a clue what they’re on about. I’m able to use App’s but some of them are not straight forward.”
whg 5, 74/LU	I’ve not had a blood pressure check now for 3 years. Tried to use the NHS app but found it very confusing. It seems to be asking the same question several times but in different ways, and if you don’t know how the system work you can get stuck on a screen continually trying to get onto the next screen. In the end I just switch it off and don’t do it”
whg 11, 25/HU	“Sometimes it’s the waiting period so if you’ve booked an appointment online you have to wait for a call back which sometimes can take a couple of days.”

Other factors mentioned refer to the complexity of information on NHS websites so that people find it difficult to understand their symptoms.

whg 39, 62/IU	The websites “can be scary and unreliable....half the time they just scare me because loads of scary answers come up with my symptoms....it’s quite scary how many possibilities could be wrong with me.”
whg 29, 41/IU	For me I don’t see much positive apart from being able to google symptoms, but even that scares the hell out of you as all of a sudden your dying of cancer when all you look up was you had a cold

Conclusion

Our conversations regarding the general benefits of digital technologies are consistent with existing research regarding its well-known advantages. Above all our interviewees highlighted the way digital contributed to regular communication between family and friends, a factor mentioned by all interviewees; their convenience regarding numerous day-to-day tasks; and the way they enabled the search for information.

Our data, however, also reflects existing inequalities in the manner and extent to which different people engage and benefit from the use of technology. In the case of the NHS’ use of digital technologies, every conversation - including with people not using digital devices - highlighted the benefit of text reminders of appointments. A broad group of people - though not those in cluster 1 - also acknowledge the significant benefits associated with online system for repeat prescriptions, the ability to check their patient records, and the NHS website as a source of health information. An important group of people in our conversations were able not to benefit from these online services due to lack of digital knowledge and skills.

Our interviews also identified several factors of frustration and concern. Technology that is too complex in its interface with users and is unreliable. The frequent need to update technologies was another factor. Whilst simple digital technologies are popular and can be used to great effect, the more complex online systems which depend on access to expensive digital infrastructure (e.g. good broadband connection) and require people to invest time and

energy to learn and keep abreast of changes were accessible to a much smaller number of people. Our conversations with people – above all from cluster 1- suggests that not everyone has easy access either to the technology infrastructure or the learning and/or social networks that allow these regular upgrades of digital skills. This indicates that to avoid any danger of increasing health inequalities, digital and in-person healthcare needs to be well integrated (allowing people to opt for either digital or in-person) and developed simultaneously.

Our conversations also revealed that serious concerns regarding data privacy is prevalent amongst this community. Interviewees from all three clusters referred to dangers regarding the privacy and safety of their personal and health data. Although a small group of people expressed trust in the NHS regarding their personal data, this sentiment was not shared by the majority of those we held conversations with. It is not clear from our interviews how concerns about data privacy influences how people use NHS online services but the widespread nature of this concern amongst our interviewees shows that how the healthcare system collects, stores, shares and uses patients personal and health data needs greater discussion in communities. Greater community representation and involvement in the design and governance of health data systems needs to be considered.

Theme 5: How could these technologies be designed so they work better for you?

Answers to the question ‘how digital technologies could be designed better so they work for you?’ tended to divide into suggestions regarding changes to the technology itself and, more widely, answers related to what we have called the supporting *social and institutional infrastructure* supporting the use of technology. The answers we have grouped under creating a *social and institutional infrastructure* supporting the use of technology focus on training and skills development and the creation of local support networks that help people deal with issues of safety and data privacy to improve the digital experience of users from communities.

How to improve the technology itself	
whg 55, 49/IU	“Perhaps all phones should be linked to the NHS...they should automatically have the app on your phone. When you Google things the

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	NHS is not always the top section, it's always something that's quite foreign, you know from a different country. So, it should always be NHS at the top so if all phones come with the NHS with all the services on perhaps that would help people."
whg 6, 42/HU	"The NHS app is very complicated, you have to sign up it's confusing you get sent to something else. They don't explain it properly "
whg 5, 74/IU	"It needs to be simpler more straight forward, maybe spread the boxes on the pages so they better to use. You go from one question to the next, you can miss a question and it doesn't let you proceed and you don't know why you can't because it's not obvious you've missed it."
whg 51, 80/IU	"Simpler, yeah. A bit louder, a bit bigger"
whg 27, 16/HU	"Make it more secure, make it simple to use as sometimes I don't understand what it wants me to do, then I just give up"
whg 27, 16/HU	"They need to be simple to use and if you get stuck have an option to speak to someone that will help"
whg 28, 64/IU	"Make them easier to use and easy to understand, simple instructions"
whg 25, 51/IU	"You need to keep it simple... there should be a guidebook about which buttons to press"
whg 21, 45/LU	"to make more secure for everyone including myself to use"
whg 21, 45/LU	"Maybe add different language for those who does not speak English as they can also understand the support which are available with the app."
whg 22, 41/HU	"They need make the app more secure and safe for us. Maybe add language option so people can use it easier"
whg 25, 51/IU	"They need to make it safer for me use it."
whg 26, 20/HU	"Maybe make them easier to use as they can be tricky sometimes and offer other options for people who struggle like voice control"
whg 31, 46/HU	"Seamless access to my reports and diagnoses without having to jump to various pages on the websites and less passwords prompts"
whg 35, 70/LU	"Make them simple to use and easy to understand. Also, free internet for old and underprivilege people"
whg 36, 39/HU	"Touch and talk devices for the blind and disabled and elderly"
whg 57, 25/IU	"I think an ambulance tracker app would be great if it worked like uber in the same way that your able to see where and how far your ambulance is after calling 999 or even just to let you know how long it will take for one to be dispatched."

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Creating a supporting social infrastructure supporting the use of technology.	
whg 28, 64/IU	“I would like to see more people in the local areas to teach how to use them and explain it so that we understand it better.”
whg 19, 36/LU	“If more information is provide about using these technologies and teach us how to access these services it would be great to take the advantage of these services”
whg 23, 46/LU	“What is holding me back is I have problem with my English, no support from NHS with all those technologies and we want to know more about those technologies if they could give me more support”
whg 25, 51/IU	“I would say it is the language and NHS does not tell me about those service they just see me for my health that’s all”
whg 34, 66/IU	“More people could be made aware of these services and educated them how to use them”
whg 15, 32/HU	“Making it accessible for all. Maybe have tablets in GP’s to book appointment for those who don’t have access to a device or credit to get online?”
whg 23, 46/LU	“Maybe they can make it safer and tell me more about so I know everything is safe”
whg 25, 51/IU	“... to make sure they make leaflet or something that help us to know about all these service which are available for everyone”
whg 39, 62/IU	“Well, they could show me how to get them for a start. Then I wouldn’t have a clue how to work them. I’ve only just figured out google. So basically, I would need help setting it up and then showing me how to use it to make it work for me.”
whg 39, 62/IU	“Maybe someone having patience to set me up and learn me to use them, other than that I don’t really know”
whg 44, 63 IU	“Maybe if someone showed me how to use these health services I could maybe give it a go. But again I still do not feel too comfortable. I feel like I will press something wrong on the app and mess everything up for myself”.
whg 56, 45/IU	“I don’t know, more courses that’s offered to them like, you know, we did from whg. It was free, and I did all these courses and achieved goals doing these courses.”
whg 37, 34/HU	“they need to be made easy for everyone to have access. Lack of internet stops you from being able to use these things”
whg 67, 62/IU	“It needs to be simpler and have somebody available when it goes wrong”

Conclusion: ‘What good looks like for communities’

Our study based on *conversations* by *peer researchers* with people from their communities highlighted the complexity and variety of experiences regarding the digitalisation of everyday life. Our interviews show that despite important initiatives such as the Click Start programme which distributed digital devices, data and basic training, significant inequalities still exist regarding the use of digital technologies and people’s ability to access online health services. Though the high cost of the technology infrastructure (i.e. broadband and Wi-Fi) needed to use digital effectively is an important factor, the main source of digital inequality identified in our study is the lack of skills and confidence to engage with digital technologies and services.

The adoption of digital technologies requires significant investment of money, time, and energy. Interviewees pointed out that using digital devices, Apps and websites are not intuitive but have to be learnt and mastered through practice. Given that the technology changes frequently, sustainable adoption requires regular upgrading of skills. When using digital devices things often go wrong. It is also easy to make mistakes - and solutions and help are not readily available. For many of our interviewees, reliance on family, friends and neighbours is usually the only source of support. Our conversations indicate that many people often feel vulnerable in the face of these challenges. Therefore, while many people interviewed for our study have incorporated digital technologies into their daily life, for many others - above all those that have not had the opportunity to develop digital skills as part of regular employment - the confident use of digital technologies presents significant challenges.

Despite these obstacles, one of the most significant insights from our *conversations* is the interest and willingness of people, even those who presently only use digital devices for phone calls and messaging, to learn and develop the digital skills necessary to engage with online services. This suggests the need for very local systems of *training, skills development and on-going technology support* to enable these groups of the community to engage in a sustainable and meaningful way with digitalisation.

Our conversations also indicate that communities can see both the benefits and challenges associated with digital technologies. Nearly everyone interviewed could see the benefits of digital for greater communication - both calls and messaging. Most people with basic digital proficiency also showed enthusiasm for digital services that could be accessed and use with ease (e.g. NHS repeat prescription; NHS website); that is where user-interfaces are easy to navigate. Enthusiasm appeared to fall sharply the more costly, complex, and unreliable the service. For many people, even confident users of digital devices, technology could not replace face-to-face conversations in healthcare given its importance to people's lives, the complexity of information exchanged between clinicians and patients, and the role of trust.

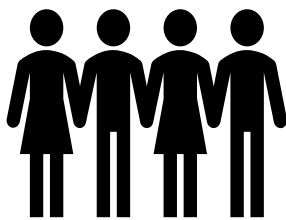
Our study suggests that although many people in communities support the introduction of digital technologies into the NHS, digital services mainly work well for communities when they are easy to use and reliable. What communities find 'easy' or 'difficult' is something which must be explored with people in their specific contexts and is also likely to change over time as digital proficiencies develop. Our study indicates, however, that to avoid exacerbating health inequalities, digital and in-person healthcare needs to be well integrated and developed side-by-side rather than digital replacing in-person care in a digital-first strategy.

Trust regarding personal information appeared as a critical issue in our *conversations*. Extensive concern was expressed about both individual's data privacy and data security. This concern was expressed both with regards to the general use of online services as well as in the specific context of healthcare. While some people expressed trust that the NHS would take steps to guarantee the privacy of their data, this was not a general feeling amongst the people we held *conversations* with. The widespread nature of this concern amongst our interviewees shows that how the healthcare system collects, stores, shares and uses patients personal and health data needs greater discussion in communities. This result also indicates that respect for individual's data privacy - that is privacy by design – must be adopted as a key principle in the design of online health systems. Steps to generate greater trust such as education and discussion in communities about data privacy and security as well as the integration of community advocates in the design and governance of health data systems needs to be adopted to ensure confidence in the delivery of healthcare and desired health outcomes.

What Good Looks Like for Communities

Based on our conversations our study suggests that ‘What good looks like for our communities’ are digital technologies that are:

- Affordable
- Simple to use
- Safe
- Inclusive
- Well integrated with in-person services
- Guarantees individual’s data privacy
- Is supported by local and accessible digital skills training and support networks



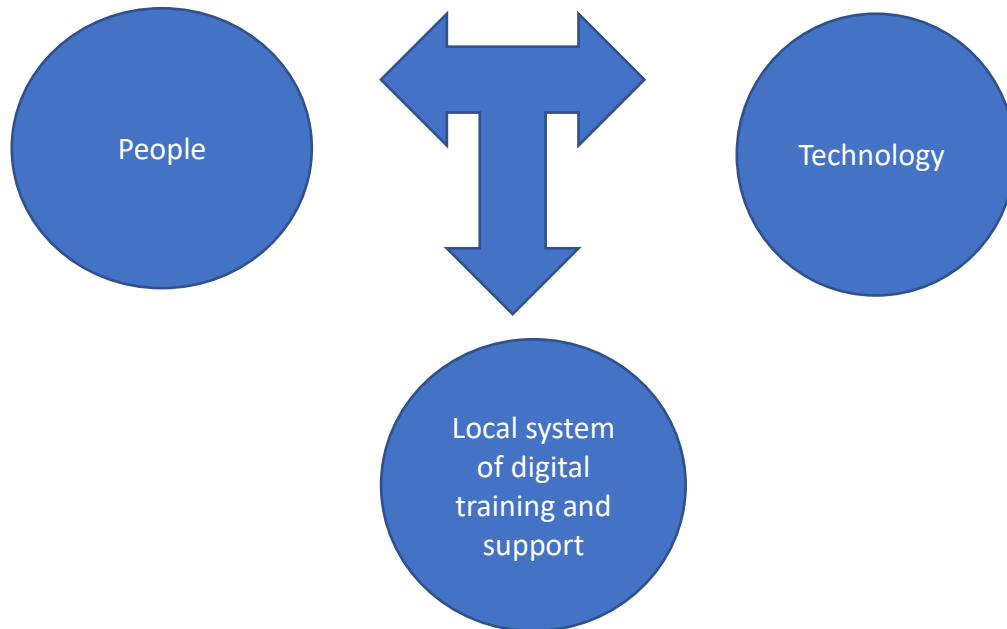
Digital technologies and online services need to be:

- Simple to use
- Affordable for all
- Safe
- Inclusive
- Guarantee individual’s data privacy
- Well integrated with in-person services
- Be supported by local and accessible digital skills training and support networks

Our study suggests that for the digitalisation of health services to be of service to communities and to avoid increasing health inequalities it is necessary to:

- Understand the characteristics of communities and individuals
- Design and implement digital technologies and services that are aligned with the characteristics and needs of communities as well as professionals
- Create very local networks and systems of skills development and support that are aligned and accessible to the people who need them. These networks could also become important vehicles for community participation in the early stages of digital health co-innovation.

Alignment



Role of local systems/networks of training and support:

- Training and skills development (including issues around data privacy)
- Systems of day-to-day technology support for communities
- Develop understanding of how people use digital technologies and how they engage with online services
- Be involved in co-innovation and co-design of digital technologies and services voicing the needs of communities
- Be involved in the selection of digital technologies of local healthcare systems so that communities may contribute their expertise to the selection of appropriate technologies for their use
- Be involved in data design and management systems with the specific tasks to monitor individual privacy as advocates for their communities