Rapid Responses are brief summaries of the best available evidence prepared to inform time-sensitive decision-making. Rapid Responses are not peer reviewed, are current only at time of publication, and do not constitute recommendations. They should be considered alongside existing guidance applicable to NHS Scotland.

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<table>
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<th>Topic</th>
<th>Digital inclusion in health and care in Scotland</th>
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<tr>
<td>Date of search</td>
<td>21 July 2020</td>
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<tr>
<td>Referrer</td>
<td>Scottish Diabetes Group</td>
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<tr>
<td>Report published</td>
<td>24 August 2020</td>
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</table>
**HIS Evidence Conclusions:**

The most up to date information at National level is the 2018 Scottish Household Survey which found that 13% of households did not have home internet access and 27% of people with long-standing ill health reported not using the internet.

The Scottish Government has recognised this as a priority issue, launching Connecting Scotland in 2020 with £50m to connect up to 9,000 more people on low incomes who are considered clinically at high risk so they can access services and support and connect with friends and family during the coronavirus pandemic.

Developers of digital health services need to:

- focus on equity
- work with users to actively identify and address barriers to digital inclusion
- integrate means to promote access to technology and
- provide the support required for users to build skills and confidence.

These principles are highlighted in findings of studies in people with diabetes.

1. **What were we asked to look at?**

We were asked to examine published information on access to and attitudes towards the use of digital technologies. Aspects related to accessing healthcare and links with chronic health conditions, particularly diabetes, were of specific interest.

2. **Definitions and context**

An evidence summary on digital inclusion, exclusion and participation described how definitions in this topic area have evolved from a focus on internet user/non-user to categorising different levels of use and skills. Access to different device types and combinations facilitates different types of internet use.

A 2018 report on digital inclusion in health and care in Wales offers that digital inclusion (digital participation/digital capability/digital engagement) is about people being able to use digital technologies, particularly the internet, in ways that enhance their lives and contribute to helping them overcome other disadvantages. One recommendation of the report was that digital inclusion should be recognised as a social determinant of health, alongside other inequalities, and in future included in public health mapping.

The Carnegie UK Trust describes digital access as having four components. Firstly the technology and its connection, secondly affordability, thirdly ability and skills and finally the component of equality/fairness. The Institute for Research and Innovation in Social Service (IRISS) notes that without tackling digital exclusion, there is a risk that digital transformation widens health inequalities rather than narrowing them.
The issue of inequality is reflected across the literature with examples of studies around digital exclusion across a wide range of population groups including residents of sparsely populated areas\(^6\), people experiencing homelessness\(^7\), mental health problems\(^8,9\) intellectual\(^10\) or physical disabilities\(^11\), as well as ethnic minorities\(^12\) and gypsies/travellers\(^13\).

The research summarised in this rapid response was conducted prior to the Coronavirus pandemic. Commentators point to how the pandemic may highlight digital poverty and increase inequity of access to services\(^14\)\(^-\)\(^16\).

### 3. Methodology

A literature search was conducted on 21 July 2020. A rapid review checklist was used to search key resources from 2017 to present. Appendix 1 lists key reports that are summarised in this rapid response. Appendix 2 outlines the search strategy.

### 4. Scottish survey data on internet access and use

Data from two Scottish surveys provide information on levels of internet access and use and illustrate how, although access and use is increasing over time, the people who most need health and care services (older people, people with long term conditions and disabilities, people living in poverty/with social deprivation) are those least likely to be able to use digital health services\(^1\).

The Scottish Government’s digital strategy for Scotland states that\(^17\):

> The very groups likely to gain disproportionately from the benefits of being online [...] are those most likely to be excluded.

#### Home internet access

The 2018 Scottish Household Survey provides information around home internet access (n=10,532 private households)\(^18\).

- In 2018, 87% of households had home internet access. This proportion has increased steadily from 42% of households surveyed in 2003. The vast majority (99%) of households with internet access at home had a broadband connection.
- Home internet access tended to increase with household income. For households with an income of less than £10,000 per annum, 69% reported home internet access whilst for households with an income greater than £40,000 the proportion was 99%. Since 2003, the gap in home internet access between the lowest income group and the highest income group has decreased from 69 percentage points to 30 percentage points in 2018.
- Households in the 20% most deprived areas in Scotland as defined by the Scottish Index of Multiple Deprivation (SIMD) were less likely than those in the 20% least deprived areas to have access to the internet at home (82% and 94% respectively). The gap in home internet access between households in Scotland’s 20% most and 20% least deprived areas has decreased gradually over time from 36 percentage points in 2006 to 12 percentage points in 2018.
- Home internet access varied by housing tenure. 90% of households who owned their home and 91% of those in private rented housing had home internet access compared to 75% of those in social rented housing.
Based on urban rural classification there was no significant variation in access between households across different geographies (urban, accessible, remote, rural).

In 2017 Citizens Advice Scotland conducted a survey of people who were seeking advice at 33 of their bureaux across Scotland\(^9\).

- Based on n=1,034, 80\% of respondents accessed the internet from home.
- Based on n=1,018, 11\% of respondents hardly ever (if at all) were able to access the internet in private.

### Internet use

The 2018 Scottish Household Survey provides information around levels of internet use by age, health condition and income/area deprivation. This is based on interviews with randomly selected adults within the private households surveyed (n= 9,702)\(^8\).

- 13\% of all adults stated that they did not use the internet at all. For adults who have some form of long-standing physical or mental health condition or illness, 27\% reported not using the internet, compared with 8\% of those who do not have any such condition.
- 100\% of adults aged 16 to 24 reported using the internet compared with 38\% of those aged 75 and over. Although older adults were less likely to use the internet, the gap in internet use between adults aged 16 to 24 and adults aged 60 and above has fallen over time from 57 percentage points in 2007 to 35 percentage points in 2018.
- There is a broadly positive relationship between household income and the proportion of internet users accessing the internet on the move via a smartphone or tablet.
- A positive relationship is also displayed between income and the proportion of internet users making personal use of the internet at work.
- Younger internet users were more likely to access the internet using a smartphone than older users, with 96\% of 16-24 year olds using smartphones compared with 61\% of adults aged 60 to 74 and 29\% of adults aged 75 and above.
- In the 20\% most deprived areas, 10\% of respondents reported wearable technology (Fitbit/smart watch etc) in the house compared with 23\% in the 20\% least deprived areas.

The 2017 Citizens Advice Scotland survey of people who were seeking advice (n= 1,034 to n= 1,254) reported that\(^9\):

- Almost one in five respondents (18\%) reported that they never use the internet. For the subset of respondents seeking advice for health/disability benefits (n=368) only 32\% were able to complete an online form without assistance.
- One-fifth of respondents (21\%) living in the most deprived areas reported never using the internet, in comparison to only 8\% of respondents living in the least deprived areas.
- 34\% of respondents had difficulty using a computer or simply cannot use one at all.
- Over two-thirds of those aged 18 to 24 years (72\%) reported being able to use a computer
very well, compared to only 12% of those aged 65 to 79 years.

- Survey respondents living in the least deprived SIMD areas were almost twice as likely to report being able to use a computer well (52%) than those in the most deprived areas. Similarly, only 9% of respondents from the least deprived areas reported that they could not use a computer at all, compared to 19% of those located in the most deprived areas.
- 20% of respondents accessed the internet by smartphone only.
- Poor broadband signal (n=135) was more likely to be experienced in remote small towns or remote rural areas than in any other area type.

**Non-users of the internet**

The 2018 Scottish Household Survey explored aspects of online engagement amongst those identifying as non-users (n=580)\(^{18}\).

- The most common reasons that could convince people to go online were keeping in touch with family and friends at no extra cost (10%), finding information about personal interests (6%) and accessing information about public services (5%). The proportion of non-internet users stating that none of the reasons offered would convince them to go online was 80%.

The 2017 Citizens Advice Scotland survey of people who were seeking advice explored barriers and opportunities around going online (n=1,267)\(^{19}\).

- 17% of respondents had no interest in going online.
- 18% noted that broadband costs were a barrier and 9% indicated that device costs acted as a barrier. Less than half of the survey respondents (45%) reported that they would be willing to take up an offer of free training or support, while 25% were ‘not sure’. It is difficult to interpret these data since it appears that responses from internet users and non-users were combined.

The report stated:

> [...] those who are digitally excluded in any respect present a real and ongoing challenge for all service providers and organisations looking to lessen the digital divide.

### 5. Understanding barriers to digital inclusion

A digital inclusion guide for health and social care set out the benefits of digital health services and identified primary barriers to digital inclusion as access, skills, confidence and motivation\(^{20}\). The Scottish Council for Voluntary Organisations (SCVO) has developed a toolkit for measuring essential digital skills\(^{21}\). Detailed research into the motivation of non-users of the internet identified four personas. These were; seeing no personal relevance / fear around safety, not having the right support / devices, feeling it’s all too complicated and the cost is too much\(^{22}\). For some people non-participation may represent an active stance\(^{23}\).
6. Increasing digital inclusion

Publications

One of the conclusions of a rapid review of evidence for basic digital skills was that programmes concerned with digital skills development must recognise the importance of relevance, interest and motivation if usage is to be encouraged and sustained. The review also noted that ambassadorial and digital leader models represent promising approaches to address digital disengagement when they strike the right balance between local, face-to-face and repeated delivery. However, they require ongoing funding and associated support in the early stages if activity is to be sustained beyond early successes\(^2\).

NHS Digital describe a number of practical approaches to improving digital inclusion\(^2\).0.

- Widening Digital Participation
- Digital skills training
- Digital champions
- Intergenerational mentoring
- Assistive technology
- Free public Wi-Fi
- Social prescribing
- Improving digital skills of staff
- Raising awareness

Connecting Scotland ([https://connecting.scot/](https://connecting.scot/))

Connecting Scotland is a Scottish Government programme set up in response to coronavirus. The initiative is being delivered by the Scottish Government, in partnership with local authorities, Healthcare Improvement Scotland, The Scottish Council for Voluntary Organisations (SCVO) and the digital and IT sectors led by ScotlandIS. It is supported by organisations including Microsoft, Leidos, the Data Lab, Accenture and Gartner. Eligible digitally excluded people are identified by local authorities and third sector organisations and offered a device with a mobile internet data package, delivered to their homes. A ‘digital champion’ provides phone and online support for an initial period of six months.

Near Me case study ([https://www.nearme.scot/](https://www.nearme.scot/))

Primary Care in Scotland have moved many services online through the Near Me rollout.

Staff at Edinburgh Access Practice identified the use of NHS Near Me video consulting facilities as a potential way to provide services that had not been possible to deliver during the pandemic. However, many people experiencing homelessness do not have access to a device which would enable them to use Near Me to access the service. The practice recognised the need for kit and support and successfully sought funding to buy laptops for people experiencing homelessness. These were distributed across homelessness accommodation sites in the city.

A description of the project and insights gained from this new way of providing services are outlined at: [https://ihub.scot/media/7230/20200714-edinburgh-access-practice-v02.pdf](https://ihub.scot/media/7230/20200714-edinburgh-access-practice-v02.pdf)
7. Diabetes specific reports

A narrative review from the US outlined barriers to the use of health information technology and suggested that health service providers should apply a digital inclusion lens to identify and overcome barriers around digital connectivity and skills in order to avoid widening disparities in type 2 diabetes care. The review concludes that healthcare systems should partner with local digital inclusion advocates to help patients obtain low-cost internet service, equipment, and basic digital skills training.

One US cross-sectional study suggested that offering mobile (as another alternative alongside computer) access to personal health records may improve engagement with healthcare among vulnerable patients with diabetes.

A UK evaluation of a self-management program for people with type 2 diabetes (HeLP-Diabetes) retrospectively analysed routinely-collected data on the use of the web-based program. There was no association between demographic characteristics and use of the program, apart from weak evidence of less use by the mixed ethnicity group. The study authors noted:

Developers of digital health interventions need to acknowledge barriers to access and use including health literacy, computer literacy, motivation and concerns about internet security if they are to navigate and reduce health inequalities successfully.
8. References

2. van Deursen AJAM, van Dijk JAGM. The first-level digital divide shifts from inequalities in physical access to inequalities in material access. New Media & Society. 2019;21(2):354-75.
### Annex 1

**Key Reports (Most available at: [https://digitalparticipation.scot/resources](https://digitalparticipation.scot/resources))**

<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Evidence summary</th>
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<tbody>
<tr>
<td>2020</td>
<td>Digital inclusion, exclusion and participation¹</td>
<td>The scale of digital exclusion, why it matters, what are the barriers, basic digital skills, examples of support, the role of libraries, improving digital inclusion.</td>
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<tr>
<td>2020</td>
<td>Switched On</td>
<td>Describes the impacts of a lack of digital access, which have potential repercussions in many aspects of young people’s lives.</td>
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<td></td>
<td>Exploring the challenge of adequate digital access for all children and young people⁵</td>
<td>Summarises a number of existing policies and initiatives that exist to promote digital inclusion for vulnerable groups of children and young people.</td>
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<td><a href="https://d1ssu070pg2v9i.cloudfront.net/pex/carnegie_uk_trust/2019/02/21143338/LOW-RES-3999-CUKT-Switched-On-Report-ONLINE.pdf">https://d1ssu070pg2v9i.cloudfront.net/pex/carnegie_uk_trust/2019/02/21143338/LOW-RES-3999-CUKT-Switched-On-Report-ONLINE.pdf</a></td>
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<tr>
<td>2019</td>
<td>Scottish household survey 2018: annual report¹⁸</td>
<td>Survey of trends in internet access and use by age, income, housing tenure, SIMD area.</td>
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<td>Safety and security online.</td>
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<td>Title</td>
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<td>2019</td>
<td>Digital inclusion guide for health and social care</td>
<td>A guide to help healthcare providers, commissioners, and designers ensure that services delivered digitally are as inclusive as possible, meeting the needs of all sections of the population. Includes case studies</td>
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<tr>
<td>2019</td>
<td>Digital Motivation: Exploring the reasons people are offline</td>
<td>Survey and qualitative interview data</td>
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<tr>
<td>2018</td>
<td>Disconnected - Understanding digital inclusion and improving access</td>
<td>Survey of people using Citizens Advice Scotland services</td>
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<td></td>
<td>Computer use and internet access</td>
<td>Computer skills</td>
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<td></td>
<td>Barriers and opportunities</td>
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<td>2018</td>
<td>Scotland's Digital Health and Care Strategy: enabling, connecting and empowering</td>
<td>Scotland's Digital Health and Care Strategy shows how we will use technology to reshape and improve services, support person-centred care, and improve outcomes</td>
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<td>2017</td>
<td>Literature review examining barriers associated with digital exclusion and exploring learning from projects and programmes focused on tackling the issue.</td>
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<td>Source</td>
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Annex 2

Search strategy

Database: Ovid MEDLINE(R) ALL <1946 to July 21, 2020>

Search Strategy:

--------------------------------------------------------------------------------
1 exp Digital Divide/ (55)
2 digital poverty.mp. (1)
3 digital exclusion.mp. (14)
4 digital participation.mp. (4)
5 digital access.mp. (56)
6 1 or 2 or 3 or 4 or 5 (128)
7 limit 6 to yr="2017 -Current" (80)

Re-run across OVID databases: Embase, ERIC, APA PsychInfo