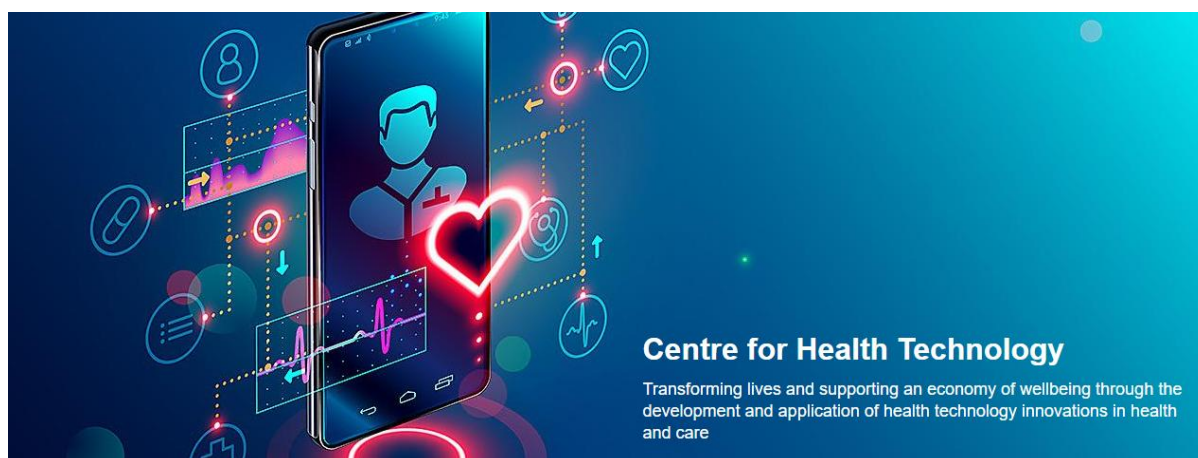


# An Introduction to Digital Health Resources for Clinicians and Researchers



**Date: 20/05/2020**

## Networks and updates

The COVID-19 pandemic has increased the need for online versions of face-to-face provision. This short guide aims to introduce clinicians and researchers to the basic resources, networks and literature around digital health services in the UK.

There are many useful resources to help staff to learn more about digital health. One that includes podcasts, news and a weekly webinar series is the [Digital Health Network](#), which is UK-focused and has a useful newsletter. Researchers and clinical staff can also sign-up for the NHS [COVID-19 Primary Care bulletin](#).

Extensive information is also available on the [Future NHS](#) collaboration platform that has expert forums about digital primary care, and links to emerging resources. Including a COVID specific [webinar library](#).

For more SW specific local resources, the [SW AHSN](#) have set up a Google site mapping out resources for businesses and researchers.

## Apps

If you want to know more about what products are available, databases of digital health products include the [NHS App Library](#), and

[ORCHA Library](#), where you can find examples of certified products. ORCHA also has a specific [COVID-19 library](#). Products in these libraries will have diagnostic features designed by registered clinicians. In addition, each product in these libraries has passed an assessment to ensure their data handling and protection is safe for public use. In both libraries, the assessment scores (data protection, usability, etc.) are publicly available for your consideration. While many apps are free, some operate under a paid prescription model.

Apps cover a wide variety of health areas. However, there are fewer products in more regulated medical spaces, such as medical devices or mental health. There are tens of thousands of 'well-being' and lifestyle-related applications – if they have not been rated by ORCHA they should be treated with caution.

Neither the ORCHA nor NHS apps libraries make any recommendations about which product would function best in any given real-world scenario. For example, there are eight apps on the NHS App Library for depression. The library cannot tell you which would be the best option in any given scenario.

## Evaluation

NICE, whose [evidence framework for digital technologies](#) remains the gold standard for determining how effective a digital product is, published several papers detailing what they consider the most effective evidence base for this type of service. [Campbell et al \(2018\)](#) analysed five years of submissions to the medical devices technology assessment panel, looking at which types of evidence were submitted and the outcome of the device being accepted by the panel (i.e. commissioned). They found no significant relationship between RCTs and devices being accepted. Instead, it seems the panel prefers a spread of evidence, namely smaller studies in specific areas such as usability, economic analysis and implementation. In short, if looking for an evidence base for a technologically-enabled intervention, RCTs are less useful than economic, patient and practitioner usability, and implementation studies.

However, the existing literature on digital health comes with the caveat that most of it was not conducted with COVID-19 patient groups in mind. Rather, studies looked at healthier patient cohorts, in non-pandemic settings, not all of which are in the UK.

To this end, there are a number of sources for learning about evaluation for digital health services; perhaps the most comprehensive introduction is Public Health England's [Evaluating Digital Health Products series of online guides](#). Also useful can be:

- ✚ NHS Digital's [Assessment Questions](#) which helps you understand what developers have to do to get into the NHS App Library
- ✚ NHSx [Digital Data and Technology Standards](#)
- ✚ For a specifically Primary care focus, you might consider the NHSE's [Using Online Consultations in Primary Care Implementation Toolkit](#)

Researchers also might consider the guidance produced by [Trisha Greenhalgh](#) about video consultation. The paper includes a useful decision-making tool for how and when to use remote triage in primary care. Some NHS organisations have moved away from providers like Zoom for security reasons and are utilising Microsoft Teams for video conferences work instead.

Further educational material can be found on [Health Education England's COVID online training packages](#), with specific sections on primary and secondary care.

## Moving to an online service

Researchers who are looking into how to transition their face-to-face service into an online version should look at the NHS Digital's [Digital Inclusion Guide](#) or the similar digital exclusion/widening participation [literature](#). Beyond the technical issues, it is an acknowledged fact that these transitions may result in particular groups being excluded from services – typically patients who are not technology users, or in itinerant population groups. Alternatively, the opposite can also occur, whereby a new set of service users can access care, particularly those who are physically immobile or reluctant to engage with clinicians in person, pregnant mothers or those with childcare responsibilities. Patients who are not technologically enabled will not necessarily be excluded from services, but rather staff may have to consider ways to support them, or encourage their carers/family to support activities. For example, a carer can book in a video consultation for a patient.

A second point to consider is that new technology necessitates new workflows in care pathways. This often means new roles for reception staff and others in the triage process. If possible, co-producing and iteratively refining these processes with colleagues is the best way to get them to work. Peer learning is also important, and it would be advisable to

identify staff members with expertise in digital health who can teach/provide leadership.

The exclusion issue can have effects beyond those with low levels of digital literacy, who typically can struggle to access services. For example, research in Cornwall from the EPIC project shows that when trying to provide digital services for care homes, not all homes had good internet access. Slow speeds made video-calls impossible for some. Furthermore, care homes that did have internet connections may not have them throughout the building but typically only in communal areas.

While there is a current and pressing need for digital healthcare, it is not always possible to offer services due to these sorts of pragmatic limitations. The first step in trying to transition any service to an online version is to assess what implementation issues might arise, who might be excluded as a result, and what can be done to mitigate these issues. For example, not all NHS-issued computers have webcams, meaning that if a member of staff wanted to conduct a video consultation they would have to provide their own (although the NHS is working hard to provide all with webcams). Staff should also identify the essential features required for their intervention (eg internet connection or webcam) and not worry about overcomplicating the solution. Choosing a complex process will frequently result in user dissatisfaction or disengagement; it is much easier to click on a link to start a video conference than it is to download and install software.

Solutions do not have to be overly technical in nature, and often simple implementation issues are the ones that prevent effective roll-out. Staff should have a mind-set of Quality Improvement, whereby the technology is

facilitating staff to support patients, rather than being the central focus.

If you feel that you might be slower delivering an online consultation, spend more time familiarising yourself with the patient's record or issue the patient forms to complete before the call to obtain basic clinical information. In short, some of the limitations of digital services can be mitigated with small amounts of planning, and scaffolding.

### Data Security

Data security will be a consideration for staff whose research involves switching to online surveys. Institutions typically require researchers to use an agreed platform for data collection and processing. For example, to use an account with a private company like SurveyMonkey may require the researcher to get a copy of a data processing agreement. Trusts are likely to have similar concerns.

### UK-focused Implementation Literature

There is not much literature that would give clinicians or researchers specific instructions about how to transition your face-to-face service to an online version in the UK. In addition, none of the studies were conducted in a pandemic, so the findings will need to be adapted. Suggested reading includes Clouder et al. (2006), Greenhalgh et al. (2018), Greenhalgh (2018), Varsi C et al. (2019), Abimbola et al. (2019), Schimmer et al. (2019), Greenhalgh et al. (2020). There is a wider set of literature concerning the transition to online delivery of medical education. However, large sections are not relevant to the current situation. Further to this the NIHR's Research Design Service (NW) have produced a collection of [COVID-relevant research methodologies](#), largely aimed trials work.

## The Centre for Health Technologies

This introduction was created by the Centre for Health Technology staff. The University of

Plymouth's [Centre for Health Technologies](#) digital health testbed is a project between Kernow Heath CIC (a network of 59 GP

practices) and digital health researchers at the University. Kernow Health CIC offers a service to digital health providers connecting them to practices in Cornwall to review and evaluate different products, known as the Digital Health Testbed. University of Plymouth academic staff provide service evaluation, protocol and research expertise. We evaluate products against the most up-to-date NICE framework for digital health, providing real world, independently conducted evaluations of digital health products.

The Centre's staff have been engaging with senior commissioning figures in the local trusts to provide examples of health tech companies to deliver services, as well offering potential evaluations for these new products in light of the COVID-19 situation. We continue to work with a lead-generation company in London to identify additional, established international companies in the Nordics, Israel, Spain and Italy that might have potentially useful digital products for the NHS during this time of crisis.

## References

- Abimbola, Seye, Bindu Patel, David Peiris, Anushka Patel, Mark Harris, Tim Usherwood, and Trisha Greenhalgh. 2019. "The NASSS framework for ex post theorisation of technology-supported change in healthcare: worked example of the TORPEDO programme." *BMC Medicine* 17 (1):233. doi: 10.1186/s12916-019-1463-x.
- Borg, Kim, Mark Boulet, Liam Smith, and Peter Bragge. 2019. "Digital Inclusion & Health Communication: A Rapid Review of Literature." *Health Communication* 34 (11):1320-1328. doi: 10.1080/10410236.2018.1485077.
- Campbell, Bruce, Mark Campbell, Lee Dobson, Joanne Higgins, Bernice Dillon, Mirella Marlow, and Chris J. D. Pomfrett. 2018. "ASSESSING THE VALUE OF INNOVATIVE MEDICAL DEVICES AND DIAGNOSTICS: THE IMPORTANCE OF CLEAR AND RELEVANT CLAIMS OF BENEFIT." *International Journal of Technology Assessment in Health Care* 34 (4):419-424. doi: 10.1017/S0266462318000466.
- Clouder, Lynn, Jayne Dalley, Julian Hargreaves, Sally Parkes, Julie Sellars, and Jane Toms. 2006. "Electronic [re]constitution of groups: Group dynamics from face-to-face to an online setting." *International Journal of Computer-Supported Collaborative Learning* 1 (4):467-480. doi: 10.1007/s11412-006-9002-0.
- Greenhalgh, Trisha. 2018. "How to improve success of technology projects in health and social care." *Public Health Research & Practice* 28 (3):e2831815.
- Greenhalgh, Trisha, Joe Wherton, Chrysanthi Papoutsis, Jenni Lynch, Gemma Hughes, Christine A'Court, Sue Hinder, Rob Procter, and Sara Shaw. 2018. "Analysing the role of complexity in explaining the fortunes of technology programmes: empirical application of the NASSS framework." *BMC Medicine* 16 (1):66. doi: 10.1186/s12916-018-1050-6.
- Greenhalgh, Trisha, Joe Wherton, Sara Shaw, and Clare Morrison. 2020. "Video consultations for covid-19." *BMJ* 368:m998. doi: 10.1136/bmj.m998.
- Schimmer, Robyn, Carljohan Orre, Ulrika Öberg, Karin Danielsson, and Åsa Hörnsten. 2019. "Digital Person-Centered Self-Management Support for People With Type 2 Diabetes: Qualitative Study Exploring Design Challenges." *JMIR Diabetes* 4 (3):e10702. doi: 10.2196/10702.
- Varsi C, Solberg Nes L, Kristjansdottir OB, Kelders SM, Stenberg U, Zangi HA, Børøsund E, Stubhaug A Weiss KE, Asbjørnsen RA, Westeng M, and Eide H Ødegaard M. 2019. "Implementation Strategies to Enhance the Implementation of eHealth Programs for Patients With Chronic Illnesses: Realist Systematic Review." *J Med Internet Res* 21 (9):e14255. doi: 10.2196/14255.

This report is supported by the National Institute for Health Research Applied Research Collaboration South West Peninsula. The views expressed in this publication are those of the author(s) and not necessarily those of the National Institute for Health Research or the Department of Health and Social Care.

## Contact

John Tredinnick-Rowe <sup>a,b</sup>

**(a) Project Development Manager**- Research and Innovation (Clinical & Life Sciences)

**(b) Research Fellow** – NIHR Applied Research Collaboration South West Peninsula (**PenARC**)

Faculty of Health: Medicine, Dentistry & Human Sciences. Peninsula Medical Schools'  
Community and Primary Care Research Group

Email✉: [john.tredinnick-rowe@plymouth.ac.uk](mailto:john.tredinnick-rowe@plymouth.ac.uk)