THE HILL

Digital Inclusion in Virtual Wards
A Summary Report

for Buckinghamshire, Oxfordshire and Berkshire West Integrated Care Board (BOB ICB)

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EXECUTIVE SUMMARY

The NHS national direction to increase the offer of virtual wards and hospital at home services, driven in part by the covid-19 pandemic, could transform the options open to patients for their care. For some people, this means more convenient and efficient services, but for others this can be overwhelming and confusing, with the risk of creating additional barriers – for patients and staff.

This digital inclusion report summary was commissioned by the BOB ICB to TheHill OUH to inform the implementation of digital technologies within a virtual ward/hospital at home service, to avoid exacerbating inequalities, creating additional barriers to access, or hindering positive experiences of healthcare services for some groups of patients. The research question that this summary report aims to answer is how to design inclusive virtual ward services across the BOB ICS and where providers are along that journey.

Currently, services are focusing on setting up the foundation, understanding the patient demographics most suitable for the virtual ward service, and increasing their limited experience of digital technology for remote monitoring. The overall message from the staff consulted was that it is too early to discuss and/or evaluate digital inclusion.

So, the questions we have tried to answer are where colleagues are on the journey and what are the key inclusion considerations to keep in mind as services are designed. The work done so far guides us to think about a good approach to digital inclusion.

The healthcare providers involved in workshops and ad hoc conversations for this report were:

- Oxfordshire: Oxford University Hospital (OUH), Oxford Health (OH), Principal Medical Limited (PML);
- Buckinghamshire: Buckinghamshire Healthcare Trust (BHT).

Unfortunately, we were unable to set up workshops with Berkshire West providers, either with Royal Berkshire Hospital (RBH) or Berkshire Healthcare NHS Foundation Trust (BHFT), however we were able to include some feedback directly received from colleagues.

This summary report looks at the wider considerations from the application of digital technology to virtual wards and highlights key findings on the topic of digital inclusion from a combination of literature research, conversations, and workshops.

Throughout the duration of the project, we also established:

- The wider context, challenges posed by the Digital Divide and key concepts of virtual ward, hospital at home and remote monitoring.

- Key barriers represented by needing access to networks and devices, skills, motivation and attitude alongside providing a detailed understanding of the digital exclusion data across the BOB ICS (including the correlation between existing inequalities and likelihood of digital exclusion);

- The application of the Virtual Wards in BOB looking at the wider challenges and more specific digital inclusion considerations.

- Key findings emerged from engaging with healthcare providers across the BOB ICS involved with virtual wards, hospital at home or a form of digitally enabled service, alongside suggesting a framework for what a good approach should cover along the four steps of the patient pathway.

- Best practices and recommendations for the BOB ICB and BOB healthcare providers to become more inclusive of vulnerable and disadvantaged groups and improve the experience of patient and carers.

KEY FINDINGS

Wider considerations from the application of digital technology to virtual wards emerged as follows:

It is crucial to provide a reliable digital infrastructure and access to patient's record to inform effective clinical decision making. *"Infrastructure and connectivity are the backbone of reliable digitally enabled services"*[1]. Clinicians all agreed on the importance of being able to access patient's data across the system, ideally having access to one single patient record platform to enable adequate data sharing across the system, to ensure data oversight of the whole patient's journey to have visibility of patterns and trends, to achieve a more proactive population health management based on risk management/stratification of patient who need to be prioritised to improve prevention;

It is more about people than tech. Changing culture, including ways of working, process of care, wanting to share information rather than the mere provision of digital technologies, automating and digitising processes is what will ultimately help to unlock collaboration across primary, secondary, community care/care homes, ambulance services alongside volunteer organisations and local authorities. Providing the wrap around care to address specific needs for different segment of population require a system wide and multi-agency approach;

Remote monitoring technology can be patient operated (e.g., wearables for vital signs monitoring) or staff operated (e.g., point of care testing for diagnostics). Some services do not use complex technology but use phone or video calls to keep in touch with patients. **It is most important to match the technology provision to the needs of the patient,** which varies across pathways but also from patient to patient.

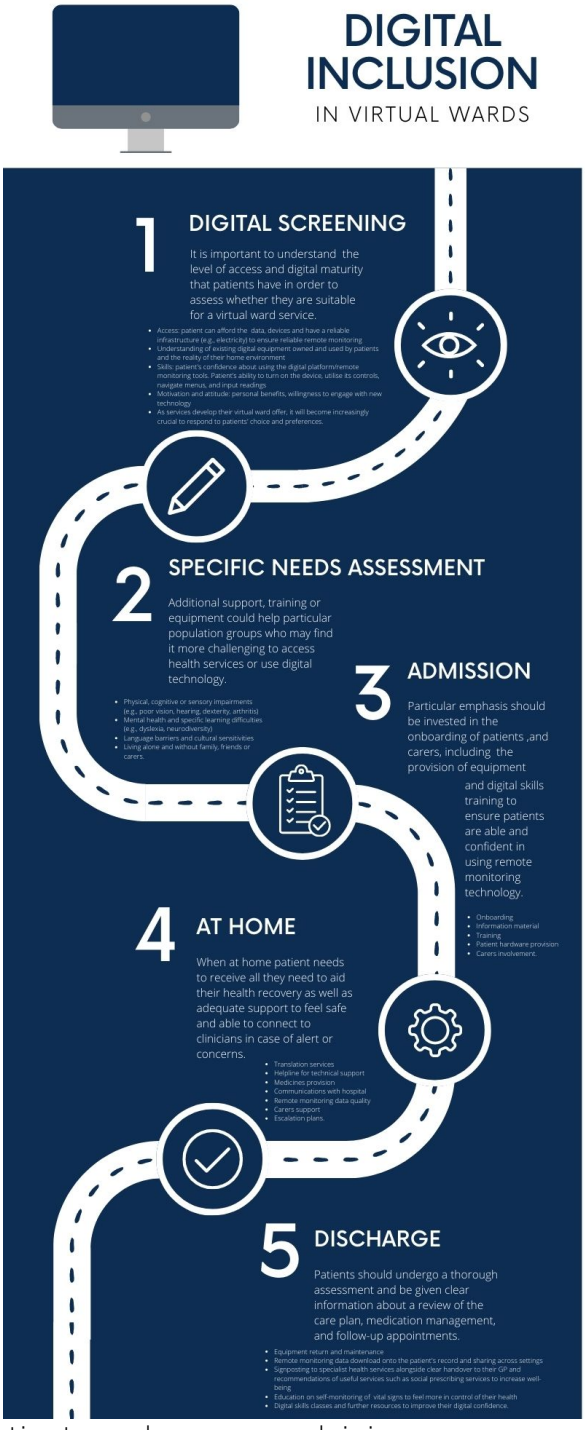
[1] Pritesh Mistry, King's Fund Digital Innovation Fellow, HTN Let's Talk interview and podcast, available at: https://htn.co.uk/2023/04/13/infrastructure-and-connectivity-are-the-backbone-of-reliable-digitally-enabled-services-pritesh-mistry-on-htn-lets-talk/

The first phase of the Current Health pilot run by Oxford Health, the Hospital at Home evaluation completed by OUH, and the implementation of Docobo within Buckinghamshire, have each been using different type of remote monitoring devices or approaches. Thus far, patients admitted to the pilot projects have come from a range of backgrounds and the use of virtual wards has not been shown to exacerbate existing inequalities. The element of training, onboarding and ongoing technical support may be expanded to provide better support to patients and carers at home. There are other services such as Respiratory, Heart failure and Diabetes who do not have a formal virtual ward service but feature more advanced digital technology in some cases;

Several moral and ethical elements need to be considered. These include the need to establish the purpose of remote monitoring and how this can affect clinical decisions - 'what to measure and why', the importance of considering the wider implications of remote monitoring and the subsequent moral implications of collecting data when they cannot be constantly monitored or cannot be acted upon swiftly, the ethics of using AI for data analysis and interpretation of trends/health insights. Some clinicians strongly raised the importance of having dedicated team for monitoring and reviewing patient's data.

The Sussex digital inclusion framework explores key digital inclusion themes: awareness, access and affordability, motivation, trust, skills and digital support, accessibility and usability with guidance and support throughout the process. The King's Fund identifies five factors that support digital inclusion: user skills, design, technology, privacy, and support. They also recommend that providers and authorities need to focus on: **fixing the fundamentals** (devices, data, and skills), **co-developing services with communities** to develop more inclusive services (addressing their needs and preferences), **improving the quality and consistency of services,** offering services with different level of digitalisation, and **working in partnership and across ICS's.**

With this work, we have developed a framework for digital inclusion on virtual wards and hospital at home services, outlining key elements for BOB ICS and local providers to consider **within the four steps of the patient pathway**. Speaking to colleagues across the BOB ICS healthcare providers, we found that it is mainly about patients having the confidence, skills, support, and the ability to fully and reliably use the digital technology required to safely be cared for at home.



Factors that may lead to exacerbating digital exclusion and widening existing health inequalities include cognitive and physical impairment, dexterity issues, being able to call for help if people live on their own. Often devices are provided fully functioning, with Bluetooth and 4G connection. For staff it's mainly about the confidence to trust their patient's ability to take the readings and call if they need to escalate care; having dedicated resource for onboarding, distributing equipment and providing support when patients are confused; having designated resource for data analysis and action upon alert. We heard it might sometimes also be challenging to 'sell' the virtual ward service and technology to patients and carers, explaining risks and personal benefits. Carers' support was mentioned from all stakeholders - an area that needs further work to fully understand the issues. Successful change means to look at the cultural change required to upskill both patients and healthcare professionals and change process of care, improve collaboration and integration across the system to act as one for the benefits of patients and carers.

Key findings on the topic of digital inclusion from a combination of literature research, conversations and workshops were considered as below:

The main barrier to digital inclusion is not represented by access to devices and network, as the BOB ICS has got good broadband coverage for residential homes, there are a few initiatives for supporting people with technology, and often equipment is provided by the hospital with 4G connection. Although there may be subsidiary access issues in some settings such as accessing wi-fi in community care homes, broadly we think that there are more gains to be harvested by investing in skills and motivation than connectivity. Access is more to be thought of in terms of affordability for those with limited financial resources, for example electricity for oxygen plug-in, and heating costs connected to being cared for in homes.

Training is the biggest enabler to support segments of the population who might be more digitally excluded, to upskill their capabilities to use digital technologies, thus improving both their experience of care and their ability to cope with their health condition. Factors that may contribute to exclusion are deprivation, age, education, income, working status, specific learning difficulties/disabilities, cognitive/sensory/physical impairments, dementia, English not as first language, communities, cultural sensitivities and living alone with no carers. Some clinicians strongly raised the importance of having a dedicated team for onboarding patients, including the provision of training and support;

It is key to consider the role that confidence plays both for staff to feel reassured in the patient's ability to take their readings and therefore ensure clinical safety at home, and for patients to understand key risks **and benefits of choosing virtual ward over the traditional hospital service.** Keeping people motivated along the whole journey is paramount to ensure patients and carers engagement which ultimately will lead to a good experience of care, feeling more empowered and in control of their health;

Artificial Intelligence (AI) can make a big difference in the analysis of data in real time, identification of trends, together with pattern recognition. To help clinicians identify where best to focus their limited clinical time, AI can help with some activities such as: automating medication optimisation, spotting early warning signs of deterioration and alerting clinicians, parsing data to help clinicians focus on the most relevant and urgent information. **AI can also help with improving prevention through risk stratification** and population health management analysis.

Assistive technology might have a role to play in the implementation of virtual wards, especially for patients with special needs. Patients with disabilities, or who are older, may experience challenges in operating digital devices, and one solution might be to provide them with voice-activated assistive technology or "virtual assistants" like Siri or Alexa, to help people be more independent in their homes with tasks like reading the news or playing audiobooks. To help some people with poor literacy and translation, it might be helpful to use captions and transcriptions during clinical consultations to help those with hearing loss, as well as using text-to-speech software and voice notes to help dictate and listen to written text read aloud, for example, to make it easier to fill out forms online. A clinician suggested to use Alexa to prompt people to take the medications, particularly if patients have been dependent on nurses administering them. **This technology could also enable patients to interact with their digital devices through voice commands,** eliminating the need for typing or using a touch screen when people have poor vision, hearing, or dexterity issues;

Having robust data security protocols in place will ensure patient's data is protected, stored, and used appropriately by healthcare staff. Aggregated and anonymised continuous monitoring data can also be used for research purposes, to help understand health trends, develop new treatments, and improving patient outcomes. It is therefore important to **ensure adequate information governance processes are in place** to fulfil the mutual trust expectations between patients and healthcare professionals;

Ensuring a patient is clinically safe at home include several elements to consider, such as the ability to use the equipment, take reliable readings, take their medications and be able to call for help when needed. For some people who are living on their own and have cognitive or physical impairments might not be obvious. Also, services need to ensure the provision of clinically safe remote monitoring equipment that has been serviced and deemed medically fit, alongside dedicated resource to ensure adequate clinical oversight.

IN SUMMARY

Digital inclusion has not been a priority for service providers yet, as services are just starting up. However, **this should become more of a priority as services develop**. Key access barriers exist around skills, confidence and motivation for patients, carers, and staff, more so than device and network access. There are also concerns about the mechanics of implementing remote monitoring, including data capture and accuracy, getting information to the right clinicians, data safety and ensuring that appropriate and timely use is made of the data collected.

Further work needs to be done in several areas, most notably engagement with patients and carers to get their views; and discussion of the approach to delivering services and the role of technology, including both what technology is required (sometimes minimal) and what the specification of that technology should be.

It is important to clearly state that the conclusions drawn in this report about Virtual Wards and Acute Hospital at Home aim to reflect colleagues' voices heard during the digital inclusion engagement with clinical teams and healthcare professionals, however they are independent of any of the six healthcare providers and their clinical strategy.