



A Digital First Primary Care Model in the National Health Service (NHS): A Perspective from a Digital Health Provider

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PERSPECTIVE



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ABSTRACT

Primary care has been instrumental in delivering high quality care since the inception of the National Health Service (NHS) in the UK. However, increased complexity and demand in the system has resulted in difficulty in accessing clinicians and low morale in the workforce. Policy makers have recognised that new models of care need to be implemented to fulfil patients' needs. Technology is expanding at a rapid pace with a potential to improve patient care. The devastating impact of COVID-19 has highlighted the need to implement innovative digital solutions in the system. However, lack of resources, physician reluctance and digital literacy issues have highlighted the gaps in the NHS. A Digital First model of care has the potential to provide high quality care to all patients in the community setting. The clinical workforce is key to this transformation, policy makers should provide them with the best resources to implement this vision.

The authors discuss the challenges that General Practice has faced and their experience of delivering a Digital First model of Primary Care in the NHS, highlighting that there is an emphasis on self-care and easy accessibility for patients in the post-COVID world. Further work must take place to tackle digital literacy and research into the benefits of a Digital First model of care.

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1. INTRODUCTION

General Practice has been vital to the National Health Service (NHS) since its inception in 1948. However, significant pressures in the healthcare system have resulted in burnout amongst General Practitioners (GPs) and difficulties in recruitment [1]. In response to this, NHS England acknowledged that patients are now living longer with more complex health conditions, that there is no 'one size fits all' model of care [2]. Furthermore, the authors recognised that technology will play a vital part in delivering high quality care and encouraged a roll out of new models that are relevant to a community's health needs [2, 3]. The NHS long term plan made a commitment that all patients should have access to digital first primary care by 2023 [4]. We discuss the benefits of a Digital First model of care and our experiences as one of the first organisations to implement this in the NHS.

1.1 PRIMARY CARE IN THE UK

The NHS has been ranked as one of the top amongst other industrialised countries around the world, for its safety, affordability and accessibility [5]. General Practice has been a vital part of this success and has been described as 'the jewel in the crown' of the NHS [6]. Primary care staff are in a privileged position to act as the gateway to the NHS and enhance the lives of patients. However, others have argued that with a reduction of funding to General Practice, we will not be able to sustain this 'fading jewel in the crown' [7]. Primary care workload has increased in complexity, with a 13% increase in physical appointments and a 65% increase in telephone consultations between 2010/2011 to 2014/2015 [1]. In response to this, NHS England has committed an additional £2.4 billion a year by 2020/2021 to invest in premises, staff and technology through its 'GP forward View' programme [8]. As part of this programme, there has been an additional investment in promoting 'online consultation' systems for all GP practices [8]. The workforce is vital for the success of these new proposals, however with the increase in workload and low morale, we must find ways to develop their skills for the General Practice of tomorrow [9]. Health Education England (HEE) recognised that we must prepare the NHS workforce for the digital future, by developing their skills in online consultations and the use of Artificial Intelligence (A.I) to supplement their clinical skills [10].

2. TRADITIONAL GENERAL PRACTICE

Over the years, General Practice consultations have not significantly changed. Face-to-face consultations have an important role in the diagnosis and management of complex health issues. However, the NHS has explored implementing alternatives to the physical consult.

Telephone triage has traditionally been used to meet the demands in primary care, the aim of which is to reduce physical appointments [11, 12]. Technology has been rapidly evolving in major sectors such as banking and transport [13]. Yet the NHS has been slow in adopting such methods, particularly as patients' have more technology available to them to monitor and manage their health, moving to more personalised health care and doctors acting as advisors [13].

2.1 THE CASE FOR A 'DIGITAL FIRST' PRIMARY CARE

Moore's Law has predicted that computer chips would double in speed every 18 months [14]. This increase in the speed of computer chips have largely proven to be an accurate prediction, leading to significant technological advances over the years. These technological advances have allowed society the capability of using smartphones to manage their lives. Healthcare systems across the world have been slow to implement technology in routine care. Early trials of telemedicine in secondary care have shown that there is evidence of a reduction in hospital admissions and mortality rates [15]. Until recently, the extension of such technology into primary care has yet to be accomplished. Low uptake of digital technology in primary care has been associated with reluctance from clinicians to move away from a traditional model, lack of appropriate equipment and security issues [16]. Evidence suggests that the uptake of digital consultations is mainly amongst the young, healthy and affluent population [16]. However, there has been no definitive data to confirm this. Moreover, there is a 'Digital Literacy' gap amongst patients. Digital literacy is defined as "those capabilities that fit someone for living, learning, working, participating and thriving in a digital society" [17]. There is evidence suggesting that those over 65 years old have the lowest share of internet access, though this gap is narrowing over time [18]. Patients are more likely to use this technology if they are supported by clinicians in using their medical records to promote self-care and is easily accessible [19]. A Digital First model of care provides online access to primary care in the first instance. A Digital First model empowers patients to self-care when they can (through a range of tools such as a symptom checker) and access to digital consultations (video) when they require it. Digital consultations enable the needs of patients to be assessed and provide appropriate treatment. When this is not possible patients are invited to a physical appointment with their Primary Care clinician.

2.2 DIGITAL FIRST AND COVID-19

The COVID-19 pandemic had resulted in a devastating impact on society. Healthcare across the globe has been under tremendous pressure with inpatient admissions on the rise. This has unfortunately had a knock-on effect on

routine care. The British Medical Association (BMA) has estimated that between April and December 2020, there were 2.7 million fewer elective procedures and 18.7 million fewer outpatient attendances [20]. It is also estimated that there were 280,000 fewer urgent cancer referrals between April and June 2020 [21]. Healthcare organisations and policy makers have had to radically alter the way care was delivered during this crisis. Preliminary studies from a sample size of 809 GP practices, has shown that 76% of GP practices have now established video consulting as a direct response to Covid-19 compared to only 20% before the pandemic [22]. NHS England has also indicated that video consultations are now available in 99% of GP practices to promote a Digital First model of care [23].

A Digital First approach has been shown to ease the pressure on the system [24]. Healthcare professionals have the ability to screen patients in real time and provide appropriate advice without putting vulnerable patients and staff at risk [24]. National bodies have provided GP practices with guidance on remote consultations using platforms such as Skype and WhatsApp [25].

Although the shift to a digital first model has been encouraging, it does require patients to have access to the internet. Adequate support should be provided to those who either require access to the internet or need help in understanding how to operate the digital platform. However, many are unable to access healthcare through a Digital First model resulting in unequal access and a two-tier system. Whilst access to digital healthcare will always be more convenient and can be arranged at short notice (as it does not require travel), we still have a duty to ensure that those without digital healthcare are not increasingly disadvantaged by making it harder to access physical appointments [26].

3. DIGITAL FIRST PRIMARY CARE IN PRACTICE

Babylon Health is a digital health company that has developed a mobile health app allowing patients to access an Artificial Intelligence (A.I) driven symptoms checker and video consultations with clinicians. The organisation has partnerships across the world such as the NHS (UK) and the government of Rwanda [27]. Patients can choose the type of clinician, make an appointment and access their consultation notes. GP at Hand (GPaH) (the NHS practice powered by Babylon Health) has implemented a Digital First model in London and Birmingham. GPaH offers patients digital access to patients and physical appointments across eight sites in the two cities [28]. Approximately 15–20% of patients will subsequently need physical appointments following a digital consultation [29]. In collaboration with Hammersmith and Fulham Clinical Commissioning Group (CCG), GPaH has over 90,000 patients registered on its list [30].

The Organisation has used its existing infrastructure during the COVID-19 pandemic. Recognising that patients needed accurate and up-to-date information, the 'COVID-19 Care Assistant' was launched for NHS patients. The assistant provides information on self-management as well as providing the option to speak directly with a clinician using a live chat function [31]. As a service already digitally enabled at the first point of contact, patients are then signposted to speak to a clinician via video consultation if needed. This means that existing GPaH Primary Care services are not flooded with COVID-19 queries. The development of the COVID-19 Care Assistant, highlights the need to establish an infrastructure that responds to new challenges and demands without adversely affecting existing services.

3.1 WORKFORCE CONSIDERATIONS

The digital workforce is vital to the future of an evolving healthcare system. GPaH patients have access to a team of: GPs, advanced nurse practitioners, physiotherapists, pharmacists and mental health nurses. This clinical skill mix represents the current landscape of primary care clinicians seen in traditional practices [32]. Recognising that some patients have complex needs, GPaH has a multi-professional Care Coordination Team (CCT) [33]. The CCT is a multi-professional clinical team whose main aim is to coordinate the care of patients with complex care needs ensuring that they have continuity of care. Clinicians undergo a digital training programme to ensure they are practicing safely and confidently in the remote setting. A quality assurance team has been developed to guarantee that clinicians deliver the highest quality of care and ensure that they are well supported throughout their digital health journey. An independent evaluation of GPaH indicated that staff felt satisfied working as remote clinicians and well supported despite working in isolation [34].

4. DISCUSSION

Digital Health has the potential to transform the way we deliver care to patients for the better. Technology is evolving at a very rapid pace and healthcare has a role to utilise this to meet patients' needs. Policy makers in the UK have encouraged the development of alternative models of care through the 'Five year forward view' and the 'NHS Long Term Plan'. The use of innovative digital solutions will be vital in this journey [2, 4]. In response to this, NHSX was created by the UK government in an effort to drive digital transformation in the health system [35]. These proposals have been encouraging and as a result this has led to the development of numerous online GP apps within the NHS and private sector. The NHS is known for its health care system due to its multi-professional workforce [5]. The workforce must now adapt to the rapid

evolution of technology and policy makers need to act to build an infrastructure in collaboration with experts in the field [10, 19].

Babylon Health has implemented a Digital First model of care in the complex organisational structure of the NHS [36]. Although there were concerns that GPaH might not meet the needs of those with complex health issues, we argue that the development of a multi-professional workforce such as the CCT has proven that this can work for all patients. The digital workforce is satisfied with this model of care and there is high morale in a well-supported environment [34]. Evidence has shown that health care staff who feel valued and supported bring positive outcomes throughout all levels of the system [37]. The COVID-19 pandemic has demonstrated that there is a willingness from both patients and the wider primary care community in adopting this technology.

There is a duty to extend this model of care to those who are vulnerable and disadvantaged. The NHS widening digital participation programme (from 2013–2016) demonstrated it was possible to reach digitally excluded groups such as those in deprived communities [38]. Through the development of local digital health information networks and face-to-face support, 59% of patients felt they were able to access and use online information resulting in 21% fewer GP appointments [38]. It is vital that partnerships are formed with local providers, commissioners and patients to co-produce digital services that meet the populations' needs to prevent further digital inequalities [39].

CONCLUSION

The health needs of our patients have significantly changed over the years. Patients are now living longer with more complex health conditions. There is therefore a duty to provide the highest quality of care with an emphasis on access to a healthcare professional. The rapid advancement of technology has resulted in a major transformation in several industries. Until recently healthcare has lagged in implementing digital solutions. The COVID-19 pandemic has transformed the way healthcare is delivered. Babylon Health's Digital First model is an example of how this can be implemented in the NHS. Other Digital First models are also being developed in England, demonstrating the benefits for patients and staff [40, 41]. Further research into and evaluation of models that integrate digital consultations within the NHS Primary Care system is needed. Although the NHS has developed programmes to tackle digital literacy issues in the community, the COVID-19 pandemic has exposed these issues at a much larger scale. NHS organisations, the voluntary sector and policy makers, should collaborate to enhance access to Digital First models of care for vulnerable patients.

COMPETING INTERESTS

Mazin Alsaffar is a member of the editorial board for the *International Journal of Digital Health*, this is on a voluntary basis. All other authors have no competing interests.

AUTHOR CONTRIBUTIONS

Mazin Alsaffar: Conceptualization, formal analysis, Writing – Original draft. Matthew Noble: Supervision, Writing – Review & Editing. Shirjeel Tahir: Supervision, Writing – Review & Editing. Frank Schneider: Supervision, Writing – Review & Editing. Tejal Patel: Supervision, Writing – Review & Editing.

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