

Briefing August 2020

The impact of Covid-19 on the use of digital technology in the NHS

Rachel Hutchings

Key points

- The Covid-19 pandemic has resulted in the rapid adoption of digital technology in the NHS and significant changes in the delivery of services more widely – to free up space and capacity in acute hospitals, enable remote working and reduce the risk of infection transmission in NHS settings. Primary care in particular has seen a huge increase in remote appointments.
- There has also been a surge in patients' uptake of remote health services, including registrations for the NHS App, NHS login and e-prescription services.
- These changes have happened at an incredible pace. Central bodies have taken steps to enable the changes to occur, providing guidance on information governance and fast-track procurement frameworks, for example. Meanwhile, health care professionals have had to respond innovatively to continue to provide services to patients.
- But despite the undeniable progress that has been made, it is important to proceed with caution. Especially when changes happen at such a pace, there are possible risks and downsides.

- It is essential that we understand – through robust evaluation and research – what the impact of the rapid shift towards digital technology has been on clinical practice, patients’ access to and quality of care, and the experiences of patients and staff. Studies in these areas remain limited, so more work is needed to learn from the experience and determine whether we need to revisit existing priorities.
- To embed the positive work that has been done during the pandemic and ensure that it is sustainable in the future, it needs to be underpinned by adequate funding, infrastructure and the necessary workforce.
- The effects of Covid-19 are going to continue for a long time. As the NHS resumes routine services, understanding where digital technology can help and add most value is more important than ever.

Introduction

Even before the Covid-19 pandemic reached the UK in January 2020, the drive for the NHS to make better use of digital technology had already started to take centre stage. The government’s 2018 vision for digital, data and technology in health and social care¹ had placed a clear national and strategic focus on the actions required. Then, building on the progress made in the past few years through, for example, the Global Digital Exemplar programme*, a new government unit, NHSX, was established in early 2019, tasked with delivering an ambitious programme of work to lead the digital transformation of health and social care.

The coronavirus pandemic has resulted in unprecedented changes to the way the NHS delivers services, and the use of digital technology is no exception. This briefing explores how Covid-19 has changed the use of technology in the NHS, what has enabled these changes to happen, some possible risks and downsides and what might happen next.

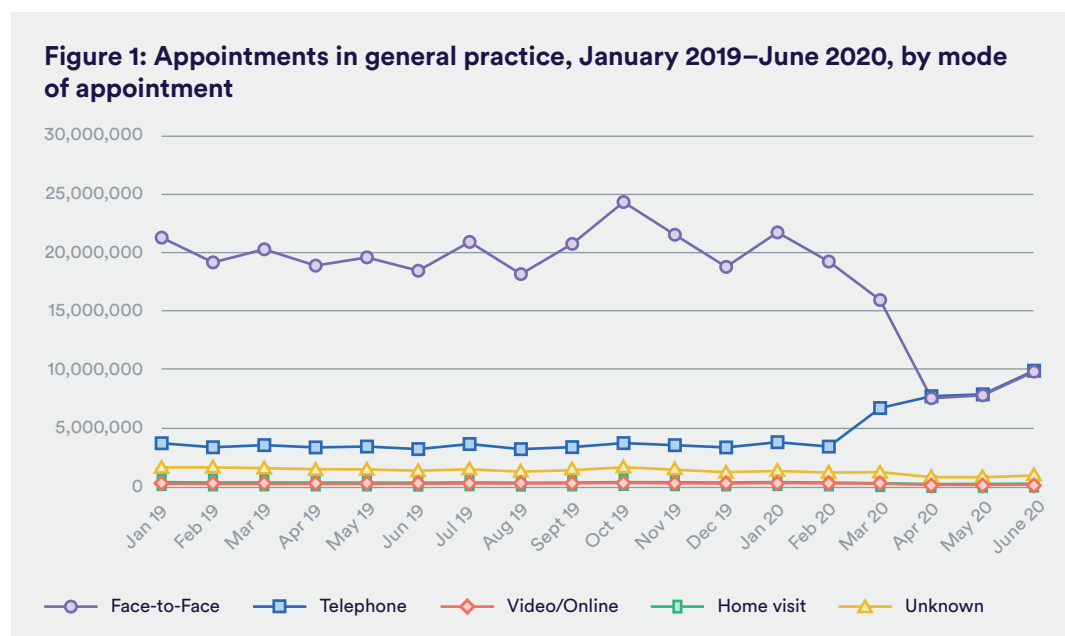
* An NHS funding programme for the most advanced trusts to accelerate their digital programmes and support others by sharing learning and best practice.

How has Covid-19 changed the use of technology in the NHS?

Increased use of triage and remote appointments in primary and secondary care

In March 2020, guidance was issued to primary care providers, stating that all patients should be triaged before an appointment, ideally through an online consultation, and that remote appointment options should be used where clinically appropriate to reduce the risk of infection from Covid-19.^{2,3} As a result, the majority of general practices have switched to a system of ‘total triage’, with 99% of GP practices using remote consultation platforms to triage patients before offering them an appointment according to their particular needs.⁴

This was an ambition of *The NHS Long Term Plan*, which stated that all patients would have a right to online GP consultations and access to a ‘digital-first’ primary care offer by 2023/24.⁵ Prior to the pandemic, around 80% of GP appointments took place face-to-face. As of June 2020, this had fallen to just under half, with around the same amount taking place over the telephone.⁶



Source: NHS Digital, Appointments in General Practice June 2020

Note: These numbers are the reported numbers of appointments, which is not the same as an estimated number of appointments for England. They may not include all data for all appointments, as multiple telephone calls could be counted under a single appointment slot, and practices using online or video appointments may not yet be reporting them in the same way as their other appointments.

This has also happened outside of primary care. With the need to free up capacity in acute hospitals and reduce the risk of infection becoming increasingly apparent in March, remote outpatients' appointments were recommended if appropriate.⁷ Around 10% of outpatient appointments were classed as telemedicine in March 2020, compared to just 3.5% in March 2019.⁸

This was also an ambition of *The NHS Long Term Plan*, with face-to-face outpatients' appointments set to reduce by a third by 2024. Bodies such as the Royal College of Physicians (RCP) have advocated for this, to address challenges such as Did Not Attends (DNAs), provide greater convenience for patients and improve the management of long-term conditions through systems such as remote monitoring.⁹

As in primary care, the coronavirus pandemic has rapidly accelerated progress on these ambitions. 'Attend Anywhere', a platform that supports video consultations in outpatient settings, was rolled out nationally at the end of March after NHSX procured a national licence fully funding the platform across all NHS trusts and foundation trusts for 12 months. Although there are other systems in place that hospitals across the country are using, this is the only one centrally procured by NHSX.¹⁰ Imperial College Healthcare NHS Trust, which was already piloting Attend Anywhere, deployed it across all of its hospital sites in just eight days at the start of the pandemic, and other trusts have followed suit.¹¹ As of May, almost 80,000 remote consultations had taken place through the platform.¹²

Technology to manage the effects of the pandemic

As well as supporting existing services, technology has been used to manage the pandemic itself. The NHS 111 online service was launched at the start of March to provide increased capacity for people needing advice about coronavirus, and to free up NHS 111 call handlers' time.¹³ To communicate information about symptoms and guidance around self-isolation, the NHS worked with social media companies such as Google and Twitter to direct people to the correct advice and counter misinformation.¹⁴ Text messaging was also used to communicate with people who were advised to shield, as well as to check in with people who registered their coronavirus symptoms with NHS 111 online.

Technology is also being offered to support patients recovering from coronavirus. In July, 'Your COVID Recovery', an online portal providing information and personalised support programmes, was launched to help people recovering from the long-term effects of the virus.¹⁵ Some trusts have also been trialling virtual wards to continue to support people outside of hospital. Virtual wards involve providing care virtually in the person's own home, depending on their particular needs, coordinated by a team of health care professionals. In the coronavirus context, these virtual wards have been used either following discharge from hospital or after referral from an accident and emergency (A&E) department to primary care. Companies that had previously developed systems for remote monitoring – such as 'my mhealth' – have also developed virtual wards especially for Covid-19 patients.

Although virtual wards are not a new idea, the coronavirus pandemic has highlighted some of the benefits they can offer. While planned at the beginning of the pandemic to prevent hospital capacity from becoming overwhelmed, some trusts have suggested that they can reduce patients' anxiety and support people to be cared for in the most appropriate setting.¹⁶ Previous evaluations of virtual ward programmes have had mixed results, so it is important that they are evaluated thoroughly to understand the benefits and what enables them to work most effectively.¹⁷

Patients' uptake of remote services

The increased use of technology has resulted in a clear uptake of remote and digital services by patients.¹⁸ In March 2020, registrations to the NHS App (which enables people to access a range of NHS services on their smartphone or tablet) increased by 111%.¹⁹ Use of e-prescription services also increased, with 1.25 million nominations (where patients choose which pharmacy they would like their prescription sent electronically to) received in March.²⁰ Areas that have had tools such as patient portals available for several years have noted a dramatic increase in rates of adoption.²¹

The reasons for this are likely to be multifaceted. While digital options undoubtedly offer benefits to patients, such as increased convenience, it is likely that some of it has been driven by necessity, with government advice to stay at home and patients wary of visiting NHS settings due to concern about contracting coronavirus. Data have shown a huge decrease in A&E attendances, with a 42% drop in May 2020 compared with May 2019.²² There have also been falls in the number of GP appointments.²³

There has been some suggestion that for patients with chronic conditions, increased use of virtual clinics has meant that patients seem more engaged in aspects of self-care and that increased use of telephone and video triage models has contributed to reduced presentations at A&E and other NHS services.²⁴ However, more evidence is required to know whether this is the case or not. It is also not clear how far patients' use of digital alternatives will continue once the NHS resumes more routine care. People may have accepted during Covid that remote care was the right and only option, but this doesn't necessarily mean that they actually prefer accessing services remotely when another option is back on the table.

In many ways, these issues are not unique to the NHS. Our recent briefing on resuming services during the Covid-19 pandemic explored a variety of ways in which countries had adapted their health services to cope with the pandemic, such as increasing bed capacity, delaying or cancelling routine care and mobilising the workforce.²⁵ This is also the case for digital technology. Analysis for the European Observatory on Health Systems and Policies has shown that, across Europe, digital health tools have been used in three ways during the pandemic: to support communications, for monitoring and surveillance and for supporting the provision of health services. Although some countries were already using digital health tools extensively before the pandemic (such as Denmark), Covid-19 has increased this use further through, for example, increased use of remote consultations in routine primary care, as well as remote monitoring of people with Covid-19. Like in the NHS, other health systems have also used digital technology to respond to coronavirus.²⁶

What has enabled these changes to happen?

Necessity has forced the NHS to adapt the way it delivers services

At a simple level, necessity has driven the huge increase in the use of digital technology. Remote options have been able to address a clear challenge facing the NHS in the risk of it becoming overwhelmed – by creating additional capacity in acute hospitals and reducing the risk of transmission in NHS settings. The introduction of lockdown, requirements for social distancing and guidance for people to work remotely as far as possible all contributed to the need to change the way the NHS was delivering care. In a Healthtech blog from the end of March, the main reason given for using digital technologies was the essential need to reduce face-to-face contact to protect both patients and staff and to minimise the risk of infection.²⁷

The Covid-19 pandemic has demonstrated that when the need arises, the NHS can adapt quickly and effectively to completely transform the way it organises and delivers services. With an increased focus on remote monitoring and self-management, there is potential for this to lead to a situation where patients are more empowered to take control of their own care. The pandemic has also forced staff to work flexibly and remotely, across different teams or professional boundaries. Importantly, it has given them the ‘freedom to innovate’.²⁸

Actions by national bodies

National bodies have taken proactive steps to support this accelerated activity. NHS England and NHS Improvement have coordinated a team of individuals from across NHS Digital, NHSX, NHS England and NHS Improvement as well as the regional academic health science networks, to work directly with sustainability and transformation partnerships and clinical commissioning groups to improve uptake. This involves working with implementation partners across primary, secondary and community care as well as mental health providers and care homes. It recognises the importance of national organisations working collaboratively with each other, and with local providers and commissioners, to enable change to happen.

National bodies have also published guidance for general practices on remote consultations, initiating fast-tracked assurance pathways for digital tools and providing an accelerated procurement process for approved suppliers.²⁹ NHSX has also provided reassurance on the information governance implications of using FaceTime, Skype and WhatsApp for practices without a video conferencing solution in place.³⁰ National procurement of platforms such as Attend Anywhere, outlined above, as well as the drawing up of a national contract with Microsoft to provide its services to NHS staff and services, have also taken place to join up services, save costs and enable deployment to happen rapidly and at scale.

The experience of Covid-19 has been against a backdrop of challenges when it comes to NHS digitisation. The widely documented shortcomings of the National Programme for IT, persistent outdated systems and underinvestment have all hindered progress.³¹ But it is clear that Covid-19 has at the very least shown that, when necessary, the NHS can harness the power of technology in a positive and transformative way. Although challenges undoubtedly remain, as chief executive of the NHS Digital Academy, Rachel Dunscombe, has put it, “people have seen up close the art of the possible”.³²

What are the potential risks and downsides?

While the transformation of NHS services to address the Covid-19 pandemic and the rapid increase in the use of digital technology are undoubtedly a great achievement, they do raise numerous questions about the long-term impact on health care service delivery, including clinical practice. Especially when change happens at such a pace, it is important to be aware of the possible risks and downsides.

Although adopting the technology is an important step, it is also essential that this progress can be maintained with sufficient resources – in terms of finances, infrastructure and the workforce – in order for it to be most effective. This can be seen with other initiatives such as the Global Digital Exemplar programme, which provided funding for the most advanced trusts to accelerate their digital programmes and support others by sharing learning and best practice.

While the additional funding has undoubtedly resulted in huge increases in digital maturity for some trusts, there is still concern about how to embed the changes and ensure that the level of investment can be maintained.³³ Implementing new ways of working also requires training and change management support for staff, as well as learning new skills such as how to interpret and understand the data. While some of this may have been understandably bypassed or fast-tracked during the Covid-19 pandemic because of the speed of change required, to ensure that technology remains effective it will be important for these things to be in place.

Furthermore, due to the pace of change needed, many of the digital technology models have been instigated during the pandemic without or with limited input from patients and the public. It is essential to understand what people's experiences have been around the use of digital tools during the pandemic, to fully understand what the impact has been on access to and quality of care. Research findings already suggest that while remote options offer a convenient and often more efficient service for patients, there is no 'one size fits all' and that, in the future, a 'blended offer', which incorporates remote alternatives while focusing on the particular needs and circumstances of the individual, will be needed.³⁴

Impact on clinical practice

The potential impact of digital-first and triage models on clinical practice and demand for health care services is wide-ranging. From a clinical point of view, there are things that could be missed during a remote consultation, whether during triage or the appointment itself. Almost a quarter of GP consultations are for undifferentiated symptoms, up to 9% are reported as related to health anxiety and some consultations can lead to discussion of a person's wider social circumstances, highlighting areas where they need further support – a face-to-face consultation may have an important role to play in all this.³⁵ There is also some, albeit limited, evidence that remote consultations can lead to increased prescribing of medication or more referrals as GPs err on the side of caution.³⁶

Impact on patients and the public

Using virtual methods is not appropriate for every specialty or patient group. The opportunities for remote working are more limited for areas such as dentistry, for example, where face-to-face contact is needed. Similarly, many services that support people with long-term conditions in the community are conducted in groups. While some aspects of these are amenable to remote alternatives – such as remote supervision or apps – often the benefit from these services is derived from the social side of the interactions, and the opportunity for people to meet others who have the same condition as they do. Furthermore, the availability of remote alternatives to services – such as cardiac rehabilitation (which often takes place in a face-to-face group class) – is variable across the country.

There has also been concern that the increasing use of digital health tools might exacerbate health inequalities if people are unable to use or access digital alternatives.³⁷ This could be a result of limited digital literacy, confidence or skills as well as limited access to technology such as a smartphone or the internet. Given the rapid expansion of digital services during the Covid-19 pandemic, there is some concern that this digital divide will worsen if remote ways of accessing services become more mainstream. Understanding what the implications of using particularly digital-first alternatives are for different groups of patients will therefore be essential to tackle ongoing issues around social exclusion and health inequalities.

There is also concern that increased use of digital tools will be detrimental for patients with particular conditions. For example, the Royal College of General Practitioners (RCGP) has highlighted the importance of face-to-face contact in supporting people with mental health problems, alongside concerns about what the future impact of limited access to face-to-face support might be.³⁸ Therefore, understanding where face-to-face interaction is required is important, emphasising the importance of digital technology offering greater opportunities for facilitating more personalised care, rather than acting as a replacement for face-to-face interaction.

Despite the above concerns, the RCGP suggests there is a ‘compelling case’ for retaining the total triage model, as it provides greater flexibility for providing care according to the patient’s preferences, while also recognising the need to consider the impact of the model on the experiences of both staff and patients.³⁹

What is important is understanding how digital technology or remote care can deliver benefits such as increased access and convenience and improved quality of care, while also preserving continuity of care and relationships between patients and clinicians. For example, digital alternatives may provide opportunities to reach people who may not otherwise engage in traditional health care services.

Impact on the workforce

The impact of digital technology on the workforce is not fully understood, although numerous studies are ongoing to determine this.⁴⁰ Before the coronavirus pandemic, in 2018, Robert Wachter and Jeff Goldsmith highlighted the risk of physician ‘burnout’ from the extensive use of digital tools such as electronic health records, but an increasingly digital or remote service has other potential implications for the workforce too, for example in terms of job satisfaction.⁴¹

Even for clinicians who are or have always been keen to use digital technologies, it is unlikely that they would want to use them full-time, with many valuing the face-to-face interactions they have with patients. For example, the RCGP has found that some GPs are concerned about ‘call-centre medicine’.⁴² However, there is also evidence that technology and remote alternatives can provide greater flexibility and independence for staff, which could have a positive impact on recruitment and retention, particularly for those with caring responsibilities.⁴³

This requires people to have access to the necessary technology infrastructure, as well as supporting people to stay connected with colleagues. The RCGP highlighted in April that access to technology was a key reason limiting GPs' ability to work remotely during the pandemic, with 55% noting difficulties connecting to their practice's computer system.⁴⁴ For the NHS to make use of the opportunities for remote working, addressing these underlying infrastructure issues will be essential.

The potential for technology to save clinicians' time – reducing administrative burdens and improving productivity – must be treated with caution. In the context of triage, there is some evidence that using a telephone-first or digital-first model has actually resulted in an increased workload for practices.^{45,46} Furthermore, our previous research has shown that while technology can play a significant role in improving access to primary care, ensuring continuity of care should be an explicit goal of implementation.⁴⁷

It is also essential to understand what impact coronavirus has had on professionals' attitudes towards using technology, where technology has improved their experience and where they need further support. This may of course vary depending on the particular use of the technology – for example, whether it is used just for triage or for the appointment itself. For example, a recent British Medical Association (BMA) survey suggested that 88% of GPs wanted to retain a greater use of remote consultations in the long term.⁴⁸

Need for a long-term, sustainable approach

As well as the above, some of the underlying challenges around NHS digitisation still exist – such as inadequate infrastructure, limited interoperability and underinvestment – which the National Audit Office recently highlighted.⁴⁹ Some trusts that have increased adoption of digital tools during the Covid-19 pandemic already had strong foundations and infrastructure in place, but digital maturity before the pandemic was variable.⁵⁰ Furthermore, social care services have been largely left behind when it comes to technology, with the pandemic highlighting that even basic infrastructure has not been in place. As a result, there have been numerous initiatives to support care homes in getting equipped with the internet and tablet computers, to enable clinicians to monitor patients remotely, and to support care home residents in keeping in touch with their loved ones.⁵¹

From a practical point of view, some decisions that have been taken during the pandemic have been on a relatively short-term basis. For example, some remote consultation providers have provided services for free, and some services have prioritised or implemented 'off-the-shelf' products to enable more rapid roll-out.⁵² These are not necessarily sustainable in the long run, and may also risk crowding out smaller companies that can also offer effective solutions. The decision to enter into a national contract with Attend Anywhere has already been reported as 'messy', with NHSX choosing not to renew the contract next year and instead focus on providing a more 'pluralistic market'.⁵³

As well as this, it is unclear how far the present accelerated procedures – such as those around procurement – or the seeming relaxation of rules around information governance will continue. The Secretary of State Matt Hancock recently acknowledged⁵⁴ that bureaucracy and rules have acted as a hindrance and that, in the future, guidance needs to be clear and enabling, rather than restrictive. As such he launched a 'bureaucracy challenge' to gather evidence on how to do this most effectively. Understandably, the actions taken during the pandemic were necessary to achieve change so quickly. But it is likely that real trade-offs will need to be made to balance the requirements for robust regulation while creating a supportive and enabling framework.

On data security especially, it will be important to ensure that the necessary safeguards are in place to encourage public confidence in data-sharing, while also capitalising on how data-sharing has enabled more effective communication and coordination of patients' treatment and care, as well as continued monitoring of coronavirus itself.

Maintaining the positive work that has come out of the Covid-19 crisis will therefore require a sustainable approach that considers how to finance and embed the most effective digital solutions, backed by robust research and evaluation.

What happens next?

Managing the effects of coronavirus will require the ongoing use of technology

The effects of Covid-19 are going to continue for some time. Although it is clear that there will be no return to 'normal', at least in the near future, the experience of Covid-19 has demonstrated the need to reconsider the way that the NHS traditionally delivers services. Restarting routine care and elective surgery also highlights the continued potential for technology. This was largely suspended in March 2020, but at the end of April, NHS England published guidance to support trusts in resuming some services. Evidence submitted by the Nuffield Trust, The King's Fund and the Health Foundation noted the challenges that the NHS faces in getting services started again while also managing the impact of Covid-19.⁵⁵

The reasons why it is so important to maintain digital technology in the NHS are multifaceted. As we have recently highlighted, using remote forms of consultation is a way not only to free up time and physical space within acute hospitals, but also to provide a way to protect staff who may need to be redeployed from frontline duties if, for example, they are at increased risk of catching Covid-19.⁵⁶ It also provides a way to offset some of the outstanding concerns around whether interactions are safe – if personal protective equipment (PPE) is required, as well as extensive cleaning, reduced activity or social distancing in order to keep people safe, remote consultations could help to alleviate some of these concerns.

In addition, it is unclear what impact the pandemic has had on public confidence in using health care services. Remote options therefore have an important role to play in enabling people to access care despite potential concerns about returning to NHS settings.

Technology has also been at the centre of discussions about the test, track and trace system, with the controversial contact-tracing app originally supposed to have a key role to play in this. However, the app has been beset with difficulties. The original plan was to develop the app centrally, but the decision has now been made to use the version developed by Apple and Google as part of the wider approach. Despite promises that this would be ready by June, the app is undergoing a new piloting phase in the Isle of Wight and the London Borough of Newham. It remains unclear when the app will be ready and, if and

when it is, how far the challenges it has faced will have affected public trust and confidence in it.

Technology has a role to play in rethinking the way NHS delivers services in the future

It is not enough just to think about how technology can be used to support the NHS as it returns to delivering existing services. The health impact of coronavirus is going to be felt for a long time – whether through the long-term impact of recovering from the virus itself, the impact of delayed diagnosis or treatment for other conditions due to reduced or cancelled services, or the impact of the long periods of isolation people have experienced during lockdown. The role that technology could play in managing the new demands on the health service as a result of Covid-19 is therefore an important part of the conversation about how the NHS should deliver services in the future.

Our experience of the coronavirus pandemic could mean we reconsider the places and ways in which health care is delivered, with technology providing an opportunity for care to be more tailored around the needs and preferences of patients. This might in turn involve a rethink of how hospitals and other health care settings are designed – not only for patient-facing care, but also for management and administrative functions.⁵⁷

The coronavirus crisis has highlighted the importance of preparing health systems around the world for the threat of future pandemics as well as Covid-19. The potential for using data and technology more effectively in order to do this is undeniable.

Concluding thoughts

The experience of Covid-19 has highlighted that NHS services can be radically redesigned in a short space of time. In many ways, digital technology has enabled the changes we have seen to occur. This shows what can happen when technology addresses a clear problem and people are provided with the space and support to be innovative. It is unsurprising that “bottling” the collaboration, pace and innovation that has been so positive during the pandemic is a key ambition for the Secretary of State,⁵⁸ and it’s clear that all of these features have been present in the context of digital technology. But, as outlined above, maintaining the progress that has been made during

the pandemic will require a thorough examination of the impact that digital technology has had on patients' access to and quality of services, clinical outcomes and the experiences of patients and staff during the pandemic. This will mean learning the lessons for how to maintain the progress we have seen while also recognising where face-to-face contact is needed.

To ensure the rapid advancements we have seen are turned into meaningful change in the NHS, we must also address the underlying challenges that have faced the NHS regarding digitalisation – such as providing adequate infrastructure and investment.

Despite the potential of digital technology in the NHS, we need to recognise that the pandemic has left huge challenges in terms of the long-term implications of Covid-19 as well as the backlog of care that has built up as a result of reduced or cancelled services during the pandemic. Therefore, it is essential to prioritise services and examine which patient and clinician interactions add value, across all care pathways. This applies to all forms of health care but is especially important in a digital and remote context.

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Nuffield Trust is an independent health think tank. We aim to improve the quality of health care in the UK by providing evidence-based research and policy analysis and informing and generating debate.

**59 New Cavendish Street
London W1G 7LP
Telephone: 020 7631 8450
www.nuffieldtrust.org.uk
Email: info@nuffieldtrust.org.uk**

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