

Which technologies offer the biggest opportunities to save time in the NHS?

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Key points

- In the face of huge demand pressures, technology presents a significant opportunity to support workforce capacity in the NHS, as recognised in the 2024 Spring Budget and NHS Long Term Workforce Plan. Drawing on new Health Foundation research – including a UK-wide clinical staff survey and expert interviews – this analysis spotlights clinicians’ views about which technologies might help the NHS boost productivity and release time for care, and sets out what steps will be important to realise these gains.
- Our survey found that electronic health records (EHRs) and tools for professional-to-professional communication (including videoconferencing and digital messaging tools) ranked highest in terms of which technologies are saving staff time right now. This contrasts with the typical health policy emphasis on cutting-edge clinical and patient-facing technologies. Maximising opportunities to free up time in the NHS will require focusing on technologies that can help with administrative and operational tasks and inter-professional communication as well as clinical tasks.
- Many immediate gains will come from optimising and spreading existing technologies rather than adopting new technologies. Our research found that not only are EHRs helping to save time now, but staff said they were one of the technologies most likely to offer further gains over the next 5 years and beyond. With the vast majority of trusts now having EHRs, it is important to have a strategy in place to realise their benefits.
- The clinical staff we surveyed were on balance optimistic about the potential of artificial intelligence (AI) to save them time in their work within the next 5 years. Two of the technologies that ranked highest as likely to save staff time within this period were clinical documentation tools and software for analysis of images and test results – both areas where AI will play a significant role. Our interviewees also highlighted the potential of AI to improve data analysis, risk prediction and population health management. To seize these opportunities, it will be important to look beyond the hype surrounding AI and support rigorous, real-world testing and evaluation of emerging technologies.
- Productivity gains will come not just from technology itself but from how well it is used. We found the biggest barriers staff face in using technologies effectively in their work include underlying IT and digital infrastructure and capability, as well as challenges with implementation and usage. Specifically, we identified considerable frustrations about the lack of IT support, lack of funding to implement new technologies and poor-quality connectivity and equipment. Action is needed to tackle these barriers if the benefits health technologies can offer are to be realised.
- Too often, the development and spread of health technology are driven by suppliers and procurement processes rather than by what the NHS workforce wants and needs. Technology in the NHS is more likely to be successful if staff have greater involvement in demand signalling and the development and deployment of technologies. This will also help build the coalition between

policymakers, industry, health care providers and staff that is needed for technology to transform how the NHS provides care.

1. Introduction

In the face of huge demand pressures, technology presents a significant opportunity for the NHS. While it is not a panacea – and needs to be accompanied by greater investment and action to tackle workforce shortages – recent technological advances (including in fields like artificial intelligence (AI)) have unsurprisingly stimulated interest in the potential of technology to boost productivity and release more time for patient care.

This potential was a key focus of the [2024 Spring Budget](#), which highlighted technology as ‘central’ to realising the ambitions set out in the [NHS Long Term Workforce Plan](#) (2023). Crucially, the plan envisaged taking advantage of ‘new technology that frees up clinicians’ time to care’. Such aspirations have been articulated by the major political parties and reinforced by industry voices and developers promoting the benefits of new health technologies.

With this narrative becoming widespread, how do clinical staff feel about the prospect of technology boosting NHS productivity and releasing time for care? Over the past year, the Health Foundation has explored these issues by working with professional bodies to conduct a staff survey and expert interviews (see Box 1), carrying out wider stakeholder engagement and undertaking our own desk research. We also commissioned the Evidence Centre to carry out a rapid review of the evidence base on the impact of technology on staff time in health care.

In a debate often dominated by policymakers, commentators and industry, our work seeks to put clinical staff views centre stage and draw out practice-based insights. In the [first output](#) from our work, published last year, we argued that the NHS workforce has a key role to play in shaping how health care professions and occupations should develop with greater use of technology. Elsewhere, we explored [public attitudes](#) towards the use of digital health technologies and data, highlighting that public support is critical if these are to become business as usual.

In this new analysis, we look at clinician views on which technologies offer the biggest opportunities to support staff capacity and release time. We set out challenges and priorities for realising this vision, including actions for key stakeholders such as policymakers (the Department of Health and Social Care, NHS England and arm’s-length bodies, and their equivalents in the devolved administrations), providers and industry.

Given that the change enabled by technology depends on the staff who use it, we argue that centring clinical perspectives and insights is crucial to achieving the coalition and leadership for change required to transform NHS care now and in the future.

Box 1: Our methodology and commissioned rapid evidence review

Our research draws on an anonymous online survey of clinical staff across the UK and semi-structured qualitative interviews with experts on the use of technology and AI in clinical practice.

We targeted eight professional groups in which there are workforce shortages and thus particular hopes for technology to save time and support staff capacity. To reach and represent each group, we worked directly with the relevant professional body:

- anaesthetists (via the Royal College of Anaesthetists)
- GPs (via the Royal College of General Practitioners)
- intensive care doctors (via the Faculty of Intensive Care Medicine)
- nurses (via the Royal College of Nursing)
- obstetricians and gynaecologists (via the Royal College of Obstetricians and Gynaecologists)
- physiotherapists (via the Chartered Society of Physiotherapy)
- psychiatrists (via the Royal College of Psychiatrists)
- radiologists and oncologists (via the Royal College of Radiologists).

The survey and interviews were conducted by the Health Foundation with support from these partners, who collaborated with us on the survey text and interview script.

Partner organisations promoted the survey to their members across their communications channels. It was also shared with practitioners from relevant specialties via the Health Foundation's own networks. The survey was open between 24 November 2023 and 31 January 2024 across the survey platform Qualtrics. We received 614 completed responses. 54 of these were removed from the final dataset because they did not meet our eligibility criteria, which excluded those not working within one of our specific staff groups, not currently practising (for example, those who had fully retired) or working fewer than 4 hours per week. As the survey asked about current uses of technology and the potential for saving time, we wanted to focus on staff whose practice exceeded a minimum number of hours. These criteria left 560 eligible responses, which we used for our analysis and reporting.

For the qualitative interviews, partner organisations connected us with experts on the use of technology and AI in their respective specialties or staff groups. We conducted 17 video interviews between January and April 2024. The details of our interviewees appear in the acknowledgements.

We also commissioned the **Evidence Centre** to carry out a rapid review of the evidence base on the impact of digital and telephone technology on staff time in health care to help us understand the scope of literature. The review drew on published and unpublished studies available in English from any country between January 2010 and September 2023. The review was designed to provide an indication of the body of literature on this topic rather than to undertake a systematic review or a critique of the evidence base, and we deliberately set broad parameters. It sampled 500 studies most relevant to our search parameters on the impact of digital and telephone technology on health care staff time and workload.

2. Which technologies are widely used right now?

We asked survey respondents to choose from a list of options which technologies they have used in their work. The top three selected were: electronic health records (EHRs; chosen by 87% of respondents), videoconferencing to speak to colleagues (86%) and digital messaging tools for communicating with colleagues (73%). This suggests widespread usage of technologies supporting staff communication and interaction. In contrast, videoconferencing to speak to patients and digital messaging tools for communicating with patients were each selected by around one-third of respondents. Unsurprisingly, more novel technologies ranked much lower. Only 3% of respondents selected virtual or augmented reality to train health care staff or treat patients, and only 1% reported using robotic helpers and care devices.

Given the professional groups we targeted, our survey had greater representation of those working chiefly in secondary care (almost 50% of respondents). But among those chiefly working in primary care and community care, the top three technologies did not change, pointing to their relative ubiquity.

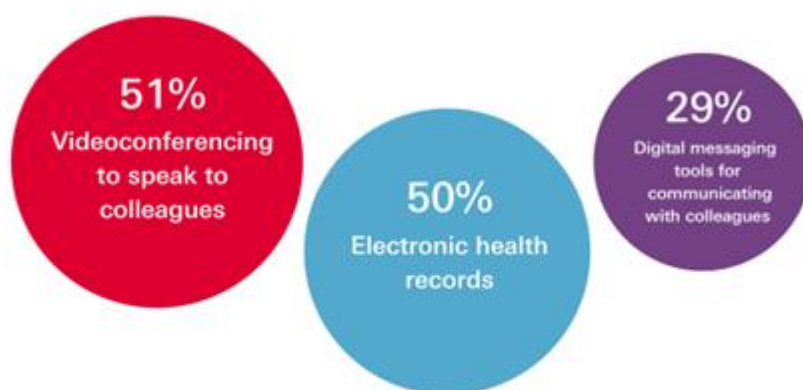
3. Which technologies are saving time right now?

We then presented survey respondents with the list of technologies they indicated having used in their practice and asked them to choose up to three that save them the most time compared with non-digital ways of working. Videoconferencing to speak to colleagues was selected by more than half of respondents (51%), followed by EHRs (50%) and digital messaging tools for communicating with colleagues (29%) (see Figure 1).

These technologies also came out on top when we looked at the results as a proportion of respondents who said they have used these particular technologies rather than as a proportion of respondents overall. 60% of those who said they have used videoconferencing to speak to colleagues chose it as the technology saving them the most time, 57% of those who said they have used EHRs chose EHRs as the technology saving them the most time and 40% of those who said they have used digital messaging tools chose these tools as the technology saving them the most time.

Figure 1

Top 3 technologies that clinical staff we surveyed said were saving them the most time in their work



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Scores for other options: systems for electronic prescribing and medicines administration (17%), clinical documentation tools (16%), staff e-rostering software (13%), digital messaging tools for communicating with patients (10%), videoconferencing to speak to patients (9%), devices to help staff monitor patients' health (8%), health information websites (6%), devices to help patients monitor their own health (4%), mobile health apps (4%), portals/digital platforms for gathering patient info and supporting triage (4%), digital tools for clinical audit/performance measurement (3%), referral management software (3%), software for analysis of images and test results (3%), clinical decision support tools (2%), appointment scheduling software (1%), systems for patient flow/bed management (<1%), health-related digital assistants (<1%), self-check-in systems for patients (<1%), health-related smart home devices to help patients look after their health (<1%), robotic helpers and care devices (0%), virtual or augmented reality to train health care staff or treat patients (0%).

Indeed, the role of and potential for technologies to support administrative and operational work and inter-professional communication was a prominent theme in interviews as well as the survey. Reflecting on opportunities across both primary care and the wider NHS, Toyosi Adeniji (GP Partner and national First5 Chair, Royal College of General Practitioners) commented that 'technology has huge potential to release time in routine administrative tasks,' adding that it 'really helped [with] communication between some specialties.'

The rankings of videoconferencing to speak to colleagues and digital messaging tools for communicating with colleagues seem especially significant. In the wake of COVID-19, there has been considerable interest in technologies for patient-facing communication (for example, telehealth), but tools to support interaction between staff – even those as relatively simple as Microsoft Teams – have attracted far less attention in policy discourse. This is despite [research](#) showing that 'social technologies' that can improve communication and collaboration among employees may offer significant productivity benefits for organisations.

The evidence on whether EHRs save time is mixed, as indicated by the rapid evidence review we commissioned (see Box 1). Of 72 studies about EHRs and related tools identified in the review's sample, 56% found staff time savings, while 44% found no time savings. There were similarly mixed results in the evidence base around some of the more novel clinical technologies, such as robotic-assisted surgery. (Though it should be noted that this was not a systematic review of the evidence and, as such, the findings need to be interpreted with caution.) Our own analysis of the literature suggests that one key reason many reviews of technology find mixed results is differences in the effectiveness of implementation across different contexts.

It is notable that the highest-ranking technologies in our survey – EHRs (and the access to data they permit) and tools for inter-professional communication – are both central to helping the NHS move towards more joined-up, integrated care for patients. However, the interviews and survey responses also indicated significant concerns that EHRs in particular are not yet being used effectively or to their full potential. Several interviewees described in detail the frustrations they encountered in being unable to access notes and test results from other providers, leading to time-consuming efforts to contact colleagues from other sites to track down patient information. This highlights some of the challenges the NHS faces with interoperability and data sharing, where there is clearly substantial scope for improvement.

Our survey and interviews focused on clinical professions; more work is needed to gather insights from non-clinical staff. For example, only one survey respondent selected self-check-in systems for patients as saving the most time in their work. This may not reflect the time-saving potential of this technology for the NHS, but rather that the work of checking in patients tends to sit with administrative rather than clinical staff. Our survey also asked respondents what saved them time individually as opposed to what saved time for their team, department or the wider NHS. These broader issues were explored in the interviews and in our wider stakeholder engagement. Notably, while our expert interviewees did mention more niche clinical technologies that might save time within their particular professional discipline, there tended to be greater interest in general use technologies that would save time across the NHS more widely.

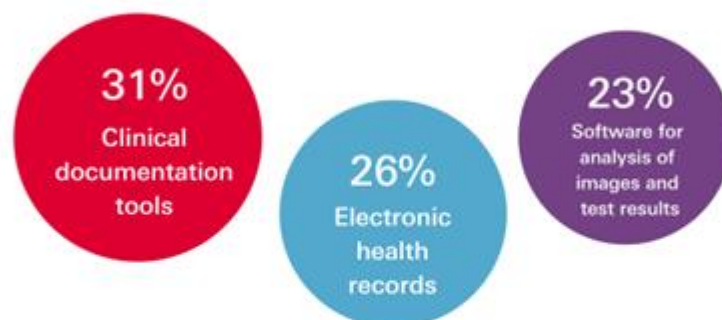
4. Which technologies might save time in the future?

Our survey respondents were presented with the original list of technologies, irrespective of which they said they have used in practice. We asked them to select up to three technologies they thought had the greatest potential to save them time in their work within the next 5 years. The responses were less consistent than those for technologies currently saving time, but three options emerged as clear frontrunners: clinical documentation tools (for example, voice recognition software that converts speech to text) (chosen by 31%), EHRs (26%) and software for analysis of images and test results (23%) (see Figure 2). As with the results for what saves time right now, many of the highest-ranked technologies were to support administrative rather than clinical tasks.

Comparing these responses with those technologies respondents said save them time right now, it is notable that there was much less optimism about the capacity of videoconferencing and digital messaging tools for communicating with colleagues to save more time over the next 5 years. Only 10% chose the former and 7% the latter. Staff may feel that the gains from these technologies have already been realised, with further potential likely to come from elsewhere. By contrast, the continued interest in the time-saving potential of EHRs identified in our survey and interviews suggests there are still more gains to be derived from this technology.

Figure 2

Top 3 technologies that clinical staff we surveyed said have the greatest potential to save them time in their work within the next 5 years



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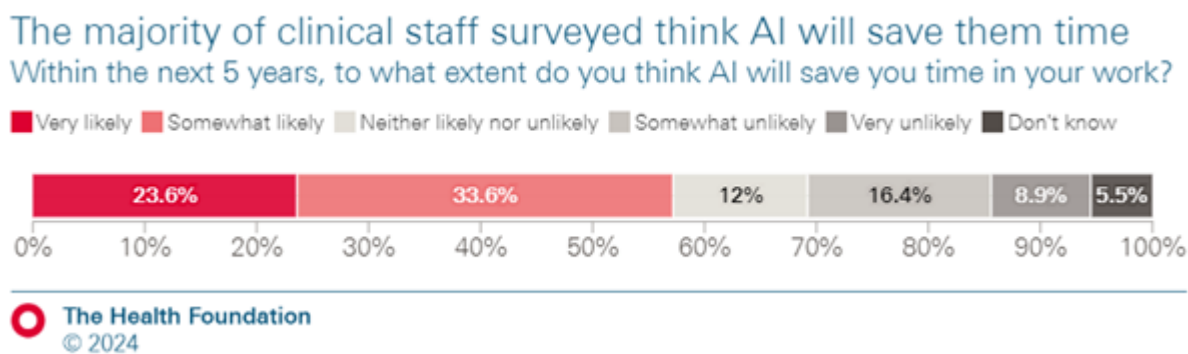
Scores for other options: digital tools for clinical audit/performance measurement (16%), systems for electronic prescribing and medicines administration (15%), portals/digital platforms for gathering patient info and supporting triage (13%), clinical decision support tools (12%), mobile health apps (11%), videoconferencing to speak to colleagues (10%), health-related digital assistants (9%), devices to help patients monitor their own health (8%), digital messaging tools for communicating with patients (8%), virtual or augmented reality to train health care staff or treat patients (7%), digital messaging tools for communicating with colleagues (7%), devices to help staff monitor patients' health (7%), health-related smart home devices to help patients look after their health (7%), staff e-rostering software (6%), videoconferencing to speak to patients (6%), systems for patient flow/bed management (5%), appointment scheduling software (5%), referral management software (5%), self-check-in systems for patients (3%), robotic helpers and care devices (3%), health information websites (2%).

Significantly, our findings suggest there are gains to be made from technologies that are not yet widely used, with only 39% of respondents reporting they have used clinical documentation tools and only 13% reporting they have used software for analysis of images and test results. It is perhaps unsurprising that staff across different groups felt technology that supported these activities could release time, given the burden of clinical documentation across settings and the reliance of so many patient pathways on imaging and test results.

We also asked survey respondents to what extent they thought AI will save them time in their work within the next 5 years. 57% said this is either somewhat or very likely (see Figure 3). This indicates reasonable optimism among clinical staff about the potential time-savings from AI in the near future. Similarly, among our interviewees, while AI technologies were not perceived as making a significant difference to work in the NHS right now – largely because their use was seen as patchy and uneven – there was hope about realising benefits in future. Nevertheless, several interviewees expressed caution about some of the aspirations surrounding new technologies. Nick Woznitza (Consultant Radiographer, University College London Hospitals and clinical academic, Canterbury Christ Church University) warned that 'AI is not going to save the world in and of itself'. There was scepticism about some of the hype – perhaps unsurprising given challenges to effective implementation of AI within the NHS due to factors such as poor IT infrastructure, problems with data quality and concerns surrounding the potential impact on health equity. Despite the

need to address these challenges, interviewees also identified how AI functionalities could be plugged into and optimise existing technologies, like EHRs.

Figure 3



AI will also play a significant role in the other two technologies ranked highest by respondents as likely to save them time within the next 5 years: clinical documentation tools and software for the analysis of images and test results. One example of the former is AI-driven ambient voice technology (AVT), which uses voice-to-text software to auto-transcribe patient consultations and then natural language processing to turn these transcriptions into summary notes and letters. Asif Bachlani (Consultant Psychiatrist, Priory Group and Associate Non-Executive Director, Kent and Medway NHS and Social Care Partnership Trust) indicated that voice recognition technology could offer ‘a massive reduction in the admin burden for front-line clinical staff’. Ben Jeeves (Associate Chief Clinical Information Officer, Clinical Safety Officer and Advanced Practice Physiotherapist, North Integrated Musculoskeletal Service, Midlands Partnership University NHS Foundation Trust) similarly highlighted the ‘heavy burden’ of admin and imagined a future where AVT could lead to ‘the complete removal of the admin processes associated with all of the clinical interactions that we have now to then give us far better quality in terms of the consultations that we’re having, how we interact with our patients’.

When it comes to software for the analysis of images and test results, some of the more ambitious aspirations about their time-saving potential may take a while to realise. Stephen Harden (Consultant Radiologist, University Hospital Southampton and Vice-President for Clinical Radiology, Royal College of Radiologists) told us about his experiences with AI-enabled lung cancer screening, where the current technology effectively identifies possible lung nodules and measures them. ‘It doesn’t speed me up a great deal, but it does to some extent’, he noted, but also emphasised that the technology offered ‘real benefit’ in helping to maintain the quality of image interpretation. Longer term, however, there is considerable interest in the potential for AI to act as a ‘pre-reader’ for images, which could offer a more transformational way to save time and support workforce capacity. As Harden explained, ‘the hope is that when reliable and accurate AI is fully developed and implemented, there would be really helpful assistance to radiologists and imaging departments’.

In the rapid evidence review, the sample of 500 studies found a potentially promising evidence base for the time-saving possibilities of automated screening and interpretation of test results, X-rays, patient records, voicemails, and so on. Of the 34 studies in this space included in the sample, 85% reported a positive impact on staff time. As the review noted, however, newer technologies tend to have less evidence available about their impacts, and studies with positive findings may be more likely to be published than those where new technology did not work well. In contrast, more established technologies like EHRs have generated a broader evidence base, which is more likely to contain studies with mixed or negative findings.

Imagining which technologies could release time beyond the immediate future requires a significant degree of speculation. The exploratory nature of the interview format helped us to grapple with the nuances of this question. We asked experts to comment on potential opportunities over the next 10 years and then 20 years and beyond – though many interviewees remarked on the inherent difficulty of envisaging these longer-term time horizons.

Several interviewees discussed the potential of AI and other innovations to improve data analysis to support patient care and wider population health. Experts talked about a more ‘proactive’ model of care, whereby AI could generate intelligence about a patient’s health or identify individuals or groups at risk of developing certain conditions or in vulnerable circumstances with the aim of targeting earlier interventions and supporting patient self-management. Interviewees described how this could not only improve patient health and tackle health inequalities but also potentially reduce demand and create more capacity in the system:

We already have the data in front of us. It's how we use it. And I think if we start to learn how to use that data that is already available, then we could really make a difference and we could actually save a lot of time if we are automating some of that information gathering and those analytics... If you're identifying things early, whether it's disorders, whether it's risks, whatever it is, if you identify it earlier, it will save you time in the long run.

Faith Ndebele, Consultant Psychiatrist, Solent NHS Trust and Chair, Digital Psychiatry Special Interest Group, Royal College of Psychiatrists

That would be enormously powerful, if I could use my voice assistant within an EHR to ask, ‘This patient’s blood pressure’s a bit low, what in the last 24 hours could I have done differently to stop that happening?’ And then [for the technology] to look through all the blood results, medications, etc. and then to come [up] with the relevant information. That would be the most useful thing I could think of. It would save so much time.

Joseph Alderman, Anaesthetic and Intensive Care Registrar, University Hospitals Birmingham NHS Foundation Trust and doctoral researcher, University of Birmingham

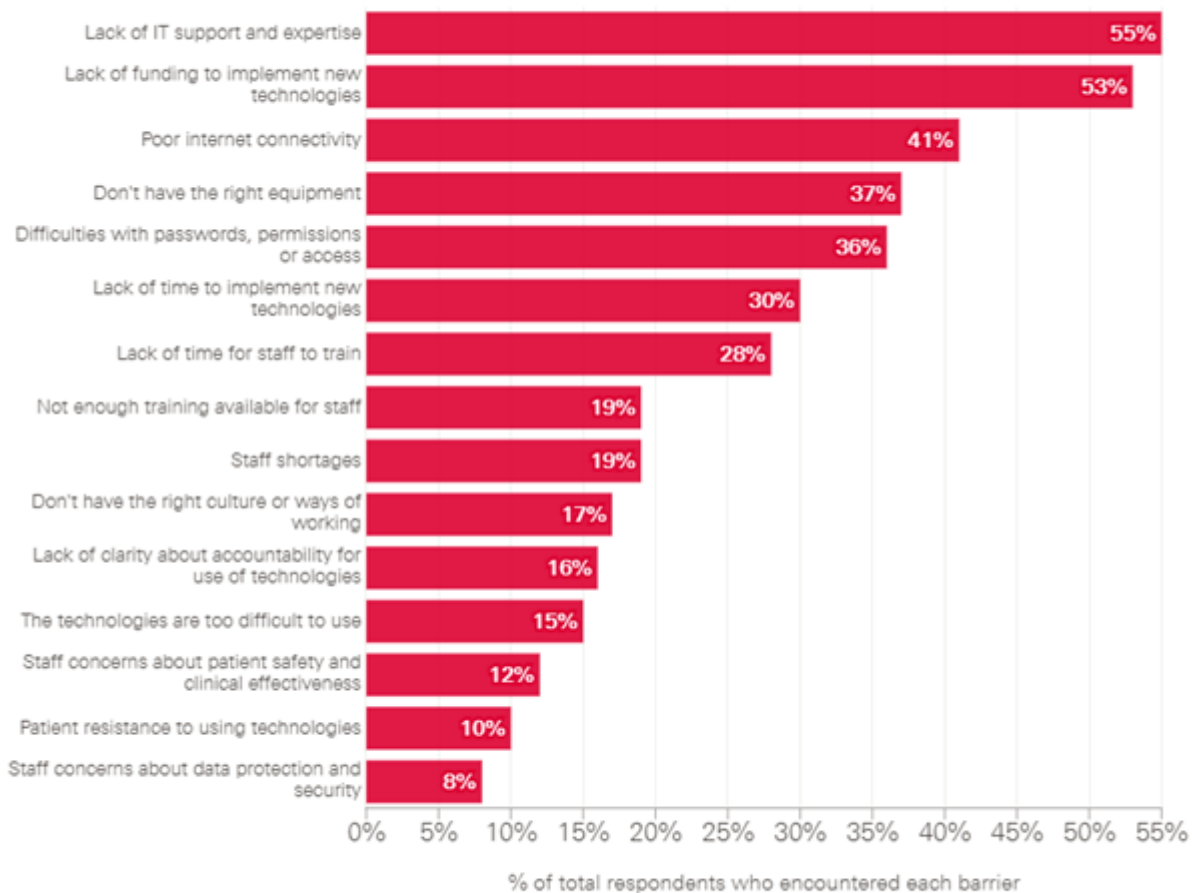
Interviewees also acknowledged the barriers to realising these ambitions, however, including variable data quality and the need to develop greater data analytical capability among the NHS workforce.

5. What challenges do staff face in using technology?

Survey respondents were asked to choose up to five main barriers to using technologies effectively that they have encountered in their work. More than half of respondents chose a lack of IT support and expertise (55%) and a lack of funding to implement new technologies (53%). Other commonly cited challenges were poor internet connectivity (41%) and not having the right equipment (37%), as well as difficulties with passwords, permissions or access (36%) (see Figure 4). This suggests major barriers that include underlying infrastructure and capability, as well as implementation and usage.

Figure 4

Main barriers to using technologies effectively that clinical staff we surveyed said they encountered in their work



The prominence of these kinds of reported barriers is perhaps unsurprising, given that **successful technology use** requires embedding it effectively in local contexts and having the right skills and ways of working to derive the benefits. As noted, it is not uncommon for systematic reviews of the effectiveness of

technologies to find mixed results; a central reason for this is that **gains from technology are contingent on effective implementation and use** rather than simply the technology itself. Further, time savings may be distributed across different staff groups in complex ways that can be hard to measure.

The relevance of context for realising the benefits of technology was also highlighted in our interviews. Dawn Dowding (Professor of Clinical Decision Making, University of Manchester and Co-Chair, Digital Nursing Forum, Royal College of Nursing) told us that while experiences of using a particular piece of technology might be positive in some places, ‘you can have individuals that use the same technology but work in a different organisation and their experiences will be very poor and that’s nothing to do with the technology and much more to do with organisation and culture and implementation’.

It is notable that, in our survey, staff and patient concerns about or resistance to technologies were among the lowest-ranked challenges. When presented with a list of barriers, only 12% of respondents selected staff concerns about patient safety and clinical effectiveness, while 10% chose patient resistance to using technologies and 8% chose staff concerns about data protection and security. This does not mean that these issues do not present challenges, however. In particular, some survey respondents (when given free-text fields to expand on their answers) and interviewees referred to encountering resistance among some staff, which they typically framed around scepticism towards technology and/or poor digital literacy. This indicates the ongoing need to both secure staff support for the use of technologies and provide training to improve digital skills and confidence across the workforce. In our survey, 28% of respondents chose ‘lack of time for staff to train’ as a major barrier to using technologies effectively, followed by almost 1 in 5 who said there was ‘not enough training available for staff’. As Adrian Hayter (GP Partner and Medical Director for Clinical Policy, Royal College of General Practitioners) explained, ‘unless we also invest in the training, education and development of people, we’re not going to use technology to the best of our ability’.

Some respondents and interviewees complained about the quality of technology procured by the NHS, in some cases even highlighting that their workplace equipment was inferior to the modern technology they used in their personal lives. For example, one survey respondent elaborated in a free-text comment that technology in the health service is done ‘on the cheap’, adding, ‘my set up at home is more advanced than my NHS office set up’.

When it comes to optimising existing technologies (including EHRs), our interviewees suggested that interoperability, user experience and functionality are key areas for improvement. Sandy Jackson (Specialty Trainee in Anaesthetics and Intensive Care Medicine and National Institute for Health and Care Research doctoral fellow at the University of Southampton) told us:

My hope is that some of the biggest opportunities over the next 5 years are improving the user experience and the user interface of existing technologies. So, actually making computer systems that are easier and better for clinicians to use, that work faster and can actually predict some of the things that clinicians might want to input.

Further challenges cited in our interviews included the ongoing need for rigorous testing and evaluation of technologies. Several interviewees also raised concerns about a lack of clinician involvement in technology development and procurement, with the consequence that the solutions being implemented are not always best suited to the needs of the NHS and clinical practice. Dawn Dowding described how, 'quite often, what you end up with is technology companies coming to you with a solution looking for a problem to solve', and she identified significant scope for greater engagement with staff. Similarly, Joseph Alderman said it would be positive to move towards a future where technology is seen as 'something that is developed with clinicians and patients rather than something that is kind of developed for them and then applied to them'.

6. How can the NHS realise the potential gains from technology?

Technology can clearly play a significant role in helping tackle the demand, workforce and efficiency challenges the NHS faces. However, realising these potential gains – including the productivity ambitions signalled in the 2024 Spring Budget – requires understanding the needs and experiences of those who have to use the technology and supporting them effectively. This includes front-line clinicians working in the NHS as well as the wider workforce, patients and the public.

Our research has highlighted several important areas for action:

- 1. Give greater priority to technologies that can help with administrative and operational tasks.** The traditional policy focus on niche clinical and specialty-specific applications of technology risks underplaying the huge productivity gains that could be made – both now and in the immediate future – from general purpose technologies and those that support administrative and operational tasks. The NHS productivity plan announced in the 2024 Spring Budget was an important development in this regard, emphasising the potential for AI to boost back-office functions. Our research heard that tools to help with clinical documentation, inter-professional communication and information-sharing across care settings could make a considerable difference in freeing up staff time.
- 2. Recognise that many of the most immediate gains will come from the optimisation and spread of existing technologies.** Rather than fixating on technologies still in development, policymakers and providers should focus on spreading proven technologies and maximising the benefits of technologies already in widespread use. With the vast majority of trusts now having EHRs, attention needs to shift beyond the current focus on take-up towards the longer-term potential of this technology. For example, emerging evidence suggests that adding wider datasets and/or using EHRs to develop machine learning algorithms could enable **pattern recognition, risk prediction and decision support**. We need a strategy that looks at how to harness AI to boost the returns from EHRs.
- 3. Support rigorous, real-world testing and evaluation of emerging technologies.** This includes opportunities highlighted by our research such as AI tools for clinical documentation and the analysis of images and test results. Such testing and evaluation will generate the evidence base needed to both inform decisions about whether to use technology and provide insights about what can help providers successfully adopt and spread it in different contexts.
- 4. Tackle the barriers staff face in the effective implementation and day-to-day use of technology, including improving underlying infrastructure.** The gains from technology do not come simply from procuring it, but from successfully embedding and using it. Our survey and interviews

highlighted several barriers staff currently face, and concerted efforts are needed at both provider and policymaker levels to overcome them. These include improved access to IT support, modernising outdated equipment, greater interoperability and more funding to support the effective implementation of new technologies. Longer term, stable and greater investment in improving data quality and data capability will help the NHS capitalise on the considerable gains that could be made from better uses of data and AI in areas like risk prediction, early intervention and population health management.

5. Increase staff involvement in demand signalling and technology development and deployment.

Our research highlights the key technologies staff say are currently saving them time and might save time in future. It also demonstrates a degree of staff optimism about the opportunities presented by AI. But we also heard frustrations that technology solutions are not often enough driven or informed by staff demand. As set out in our previous [analysis](#) on technology and the future of work, there is much greater scope to involve both the clinical and non-clinical workforce in priority setting, technology development, procurement and implementation. [Elsewhere](#), we have [explored](#) the importance of patient and public involvement in technology development and deployment.

Through greater engagement with staff perspectives and expertise, policymakers, providers and industry will be better equipped to identify and implement technology solutions that could make a real difference, not only to productivity but to clinical quality, patient care and the working lives of NHS staff. Critically, this engagement is also part of building the consensus and coalition for change between staff and stakeholders that is needed if technology is to transform how the NHS provides care.

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Professional body partners

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Royal College of Nursing

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- Christine Callender – Head of Nursing
- Sarah Seeley – Senior RCN Officer

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- Louise Thomas – Head of Quality Improvement

Royal College of Psychiatrists

- Thomas Rutherford – Policy and Campaigns Officer

Royal College of Radiologists

- Stephen Harden – Vice-President for Clinical Radiology
- Alex Burns – Policy Adviser

Interviewees

1. Adrian Hayter – GP Partner and Medical Director for Clinical Policy, Royal College of General Practitioners
2. Asif Bachlani – Consultant Psychiatrist, Priory Group and Associate Non-Executive Director, Kent and Medway NHS and Social Care Partnership Trust
3. Barney Kennedy – Assistant Service Manager Physiotherapy, Belfast Health and Social Care Trust and Vice-Chair of the Chartered Society of Physiotherapy Northern Ireland Board
4. Ben Jeeves – Associate Chief Clinical Information Officer, Clinical Safety Officer and Advanced Practice Physiotherapist, North Integrated Musculoskeletal Service, Midlands Partnership University NHS Foundation Trust
5. Dawn Dowding – Professor of Clinical Decision Making, University of Manchester and Co-Chair, Digital Nursing Forum, Royal College of Nursing
6. Faith Ndebele – Consultant Psychiatrist, Solent NHS Trust and Chair, Digital Psychiatry Special Interest Group, Royal College of Psychiatrists
7. Joseph Alderman – Anaesthetic and Intensive Care Registrar, University Hospitals Birmingham NHS Foundation Trust and doctoral researcher, University of Birmingham
8. JP Lomas – Consultant in Anaesthesia and Intensive Care Medicine, Bolton NHS Foundation Trust and Chair, UK Society for Computing and Technology in Anaesthesia
9. Laura Rowlinson – Clinical Lead Physiotherapist, East Lothian Rehabilitation Service, East Lothian Health and Social Care Partnership
10. Mark Simmonds – Consultant in Critical Care Medicine and Deputy Medical Director, Nottingham University Hospitals NHS Trust
11. Nick Woznitza – Consultant Radiographer, University College London Hospitals and Clinical Academic, Canterbury Christ Church University
12. Paul Bradley – Consultant Psychiatrist and Chief Clinical Information Officer, Hertfordshire Partnership University NHS Foundation Trust and Specialist Advisor for Mental Health Informatics, Royal College of Psychiatrists

13. Sandy (Alexander) Jackson – Specialty Trainee in Anaesthetics and Intensive Care Medicine and NIHR doctoral fellow, University of Southampton
14. Stephen Harden – Consultant Radiologist, University Hospital Southampton and Vice-President for Clinical Radiology, Royal College of Radiologists
15. Susan Shelmerdine – Consultant Paediatric Radiologist, Great Ormond Street Hospital for Children and member, Royal College of Radiologists' AI Clinical Radiology Working Group and AI Conference Programme Committee
16. Toni Brunning – Consultant Anaesthetist, Worcestershire Acute Hospitals and Council Member and Trustee, Royal College of Anaesthetists
17. Toyosi Adeniji – GP Partner and National First5 Chair, Royal College of General Practitioners

8. Supporting information

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