ANATOMY OF SUCCESS

DIGITISING THE NHS BY 2035

Sasjkia Otto
March 2026

Acknowledgements

Thank you to HCL Tech for supporting this editorially independent project – especially Alan Flower, Paul Montgomery, Mohsen Amiribesheli and Sumit Narain.

Thanks also to other independent experts who helped inform the work – variously through participation in our roundtable and interviews, and feeding back on drafts of the report. These include: Dr Allison Gardner MP (Science, Innovation and Technology Select Committee), Dr Amit Aggrawal (Association of the British Pharmaceutical Industry), Alice Ainsworth (Department of Health and Social Care), Anna King and Catherine Dale (NHS Health Innovation Network), Anna Steere and Rezina Hakim (NHS Confederation), David Parkin (British Medical Association), Fabian Chessell (Policy in Practice), Florence Chalker (National Institute for Health and Care Excellence), James Higgott (NHS Digital), Kate Jones (UNISON), Kir Nuthi and Lewis Stewart (Tech UK), Liam Cahill (Together Digital), Pritesh Mistry (King's Fund), Rebecca Stephens (Department for Science, Innovation and Technology), Stephanie Kumpunen (Nuffield Trust).

Finally, thanks to the team at the Fabian Society for support and challenge delivering this research – particularly Bradley Young, Iggy Wood, Joe Dromey and Luke Raikes.

About the author

Sasjkia Otto is a senior researcher at the Fabian Society.

CONTENTS

SUMMARY

The NHS needs an urgent upgrade. In particular, it needs to deploy modern technology to deliver on its founding principles: to put a "megaphone" to the mouth every patient and to serve the needs of ordinary people. This government has rightly made the adoption of new technologies a key priority.

But the track record of tech in the NHS has been mixed. There are pockets of exciting innovation across the system. But the first time the government tried to digitise the NHS resulted in "the biggest failure in the history of the UK public sector". Repeating these mistakes could cost taxpayers £21bn.[1]

Nonetheless, the past also holds lessons that could help the government's plans succeed.

To deliver NHS digitisation effectively, the government should:

1. **Champion life-saving data use.** Clearly communicate why data use is important and what safeguards are in place; leverage the potential of privacy-enhancing innovation; and allow patients to track and manage data use via the NHS app.

2. **Make technology synonymous with good work.** Develop cross-cutting support to help engage and train staff and prioritise and properly resource the most critical initiatives.

3. **Make care more human.** Improve digital inclusion by accelerating technology adoption and designing inclusive systems; develop shared tools to engage patients quickly and at scale; and ensure the right type of evidence-based support reaches those who need it.

4. **Back innovators.** Strengthen support for the best innovators to work with the NHS at scale.

5. **Make services work as one.** Leverage standards, data infrastructure and digital public infrastructure to integrate systems across public services, and clarify accountability and coordination under new governance structures.

INTRODUCTION

Every government since Blair has pledged that digital innovation will revolutionise the NHS. And there has been no shortage of tech firms pitching their technologies as the cure for ailing public services.

Many people are wary of these claims – and understandably so. In 2013, Jeremy Hunt, then the health secretary, set the NHS a target to go paperless by 2018.[2] By July 2025, the NHS was still spending £230m per year on paper records.[3] This has helped fuel accusations of "hype" directed towards claims about what new tech can deliver for patients. And implementing new technology in such a sensitive setting carries well-documented risks that could exacerbate health inequalities or harm patients. After decades of overpromising, and amid significant uncertainty about the future impact of technology, cynicism feels like a rational response.

But what if these challenges could be overcome? Invitations to appointments arriving on time, not after the appointment has taken place. Patients heard the first time they tell their story instead of being forced to repeat themselves every time they encounter a new service. Clinicians' time spent caring for patients, not whittled away by admin that does not use their skills. World-class care available to all – not rationed by chance and misfortune.

This is not beyond the realm of possibility. Other countries have shown what can be done, and the UK now benefits from a quarter-century of experience. It is time to move beyond diagnoses of failure and ask what it would take to succeed.

This paper draws on lessons from past health service modernisation initiatives. It identifies the key priorities the government must get right to achieve its health goals over the next decade.

1. THE STATE OF NHS TECHNOLOGY

NHS patients too often struggle to have their needs met

Aneurin Bevan, the founder of the NHS, famously declared his desire to put a "megaphone" to the mouth every patient. He envisioned a service that would finally give a voice to and serve the needs of ordinary people – who had until then suffered in silence and accepted whatever healthcare they could get.[4]

There was strong progress towards realising this vision during the early days of the NHS and under the last Labour government, with the expansion of universal provision and infrastructure to understand and respond to patient concerns.[5]

But the situation has deteriorated since the mid-2010s. In 2024, an independent review into the state of the NHS, led by Lord Darzi, found that Labour had inherited a health service where "the patient voice is not loud enough" and "there are real problems in responsiveness of services to the people they are intended to serve."[6]

The review found declining patient satisfaction, increasing complaints, and record compensation payments totalling nearly £3bn – 1.7 per cent of the entire NHS budget. This disconnect between the care patients expect and what they receive reflects barriers to accessing the right care, poorly coordinated services, failing administrative processes, and burnt-out staff feeling increasingly powerless to give patients what they need.[7]

Many patients feel stuck: among those who experienced poor care, for instance, 56 per cent took no further action – with many expressing doubts that raising concerns would make a difference.[8] And 42 per cent of those who have encountered administrative problems report being put off seeking care in future.[9]

Acute issues are rooted in long-term structural failures

The NHS has faced increasing headwinds in recent years. Demand is growing as the population ages, while medical advances expand treatment options for the rising numbers experiencing illness. Recent government reforms have helped boost productivity well above the long-term trend for health.[10] But productivity remains below pre-pandemic levels.[11]

Investment has been below the level needed to stave off these headwinds. The Health Foundation found that average day-to-day health spending in the UK between 2010 and 2019 was 18 per cent below the EU14 average. Had it matched EU14 spending levels, the UK would have spent an extra £40bn per year during this period.[12] Lord Darzi found underinvestment in other public services also contributed to the nation's deteriorating health.[13]

But how the NHS budget is allocated also matters. Capital investment in the same period was 55 per cent lower than the EU14 average – partly because capital budgets are often used to plug gaps in day-to-day spend.[14] This, in turn, has forced a greater share of available capital funds towards an ever-growing maintenance backlog. This relentless pressure to catch up has crowded out the forward-looking investment needed to modernise the NHS.[15]

The new Labour government has already made solid progress on addressing these failures. Its 10-year health plan sets out a vision for creating an NHS "fit for the future" that is there when people need it. In support of this plan, the latest spending review commits to increasing NHS spend by 3 per cent per year, and the capital budget by 20 per cent in real terms by the end of the spending review period.[16]

Early signs are promising. The NHS exceeded the manifesto target to deliver 2m additional elective appointments, seven months ahead of schedule, and patient satisfaction has ticked upwards.[17]

But there is a long journey ahead. Improvement on waiting times has been uneven across the country, with struggling hospitals citing challenges including staffing shortages and IT problems, and the UK lags behind other countries on quality-of-care metrics such as patient safety.[18]

New technologies could help put a megaphone to the mouth of every patient

The government has committed to delivering a "shift from analogue" – the paper-based or dated administration and care processes, still prevalent in many parts of the NHS – to smarter and more efficient digital systems. Fulfilling this ambition could deliver care when, where and how patients need for decades to come – thus securing Nye Bevan's vision of a megaphone at the mouth of every patient. This can be achieved through:

- **Patient control.** Patients could access information and services, manage their own care, and share feedback more conveniently through online channels. The NHS app has been expanding to support this. New features include an Amazon-style prescription tracker, digital appointment management, and home testing and health monitoring support.[19] Further updates scheduled for rollout by 2028 include a "single patient record," providing a shared view for patients and clinicians to understand and manage care needs, and a Health Store App Marketplace featuring approved digital products to manage a range of health conditions from home.[20]

- **Responsive services.** Innovation could help push the boundaries of the NHS care model – to go beyond simply listening and responding to patient needs with standardised interventions, to proactively offering those in need personalised support. Five "big bets" outlined in the 10-year plan – on data, AI, wearables, genomics and robotics – could help monitor information from a range of sources, and identify and bring together multiple services.[21]

- **Financial sustainability.** Health spending as a share of GDP is 11.1 per cent, and has more than doubled over the past 30 years.[22] The NHS needs ambitious solutions to deliver world-class care as demand pressures and fiscal constraints intensify. Used effectively, innovations such as AI scribes could help reduce labour intensity. Additionally, data sharing and analytics could help improve productivity and reduce demand by better targeting and coordinating care, and intervening before problems get particularly serious and expensive to treat.[23] Highly digitised trusts, for example, have 13 per cent lower cost per admitted patient episode and a 5 per cent shorter average inpatient stay.[24]

The government cannot afford to fail

History has shown how challenging these changes will be. The first time the government tried to digitise and integrate NHS systems, a quarter of a

century ago, resulted in what was described as "the biggest failure in the history of the UK public sector". The National Programme for IT ran for nine years, from 2002 to 2011, and cost taxpayers £7.3bn while delivering just £3.7bn in benefits. It was dismantled after it became clear it could not be rescued, as forecast costs ballooned to more than double what was originally budgeted.[25]

The consequences of getting things wrong could be even bigger today. The Health Foundation estimates that the shift from analogue to digital envisioned by the 10-year plan would cost £21bn over five years – or £4.2bn per year.[26] This is roughly equal to the full 2029-30 reduction in disability benefits spend envisioned in the 2025 spring statement.[27]

This presents significant risk for the government. A 2025 YouGov poll found that, while 83 per cent thought the government should increase spending on the NHS, just 42 per cent thought the same about science and technology, including AI.[28]

But dithering would be even more risky. Research from the University of Oxford, Imperial College London, and Bocconi University has evidenced a link between NHS underperformance and support for populist-right parties.[29] And opportunistic politicians have proposed to address capacity constraints through changes that could mean the NHS is no longer free at the point of use.[30] The longer current conditions persist, the greater the risk. So it is critical that the government delivers improvements that patients can feel – and soon.

This reveals an uncomfortable truth. Anti-technology sentiments are more prevalent among those who care deeply about society's most vulnerable. The National Centre for Social Research has found that those with left-wing views are more likely to be worried about a range of potential negative outcomes.[31] These views are often grounded in understandable concerns about the potential risks, and scepticism of what these technologies can realistically deliver. But they too frequently ignore the broader stakes. The NHS' ability to deliver for patients is under significant threat. New technologies must be a part of the solution.

So it is time to adopt a solutions-focused mindset. The government must examine both what has gone wrong in the past and what has gone well, so it can use every tool at its disposal to create the "NHS fit for the future" it has promised.

2. PRIORITIES TO DELIVER

The NHS 10-year plan presents an ambitious vision for the role technology can play in a modern health service, which has been widely welcomed. Turning this ambition into reality, however, will require a clear and credible delivery plan.[32]

This section draws on lessons from health service modernisation over the past quarter-century to identify the key priorities the government must get right to achieve its health goals over the next decade.

1. Champion life-saving data use

There is a critical tension at the heart of NHS digital transformation. Patients broadly understand that data is essential infrastructure for modern healthcare, and most support its use by both government and private health technology companies (64 per cent and 58 per cent, respectively).[33] Yet many potentially transformative initiatives have failed because patients and workers were worried about *how* data would be used.

Some of these concerns are well-founded. Medical information in the wrong hands can cause serious harm. Documented cases of staff and supplier misuse, and cyber security breaches, have enabled interpersonal abuse, commercial exploitation, and clinical failures with fatal consequences – which disproportionately affect the most marginalised patients.[34] It is critical that the government overcomes these failures so data can more consistently deliver for patients. There are three key steps the government should take.

Clearly communicate the stakes

A strong public understanding of why data use is important can save lives. The National Immunisation Management System, for example, successfully linked and used extensive patient data to prioritise people for vaccinations during the pandemic and then invite them and book their appointments. It did so with broad backing because the public quickly understood the benefits for themselves and society. This buy-in helped deliver one of the fastest vaccine rollouts in the world.[35]

But concern too often eclipses positive stories. The Federated Data Platform – which integrates databases across the NHS to help coordinate, plan and deliver care – has not landed well with the public for at least two reasons. First, the government has struggled to articulate the purpose and value of the platform.[36]

Second, there is significant lack of clarity around the safeguards in place. The government has confirmed security measures, including that all data must be held in the UK, is subject UK data protection law, cannot be viewed by anyone outside the UK, and cannot be sold onwards.[37] But substantial contract redactions have made it impossible to scrutinise arrangements. There might be legitimate reasons for redactions, including platform security. But the supplier, Palantir, has been subject to significant scrutiny of its core business in supporting US national security surveillance and its leadership's critical views of the NHS. This has left major stakeholders fearing the worst and led to calls for the contract to be scrapped.[38]

These communication failures are widespread, and have resulted in significant uncertainty about who can access data and how it is used. For example, 61 per cent mistakenly believe a single patient record is already in place. This reflects poor communication of the reality of data use in the NHS: 57 per cent do not recall ever receiving information about the data in their records.[39]

The scale of digitisation planned in the coming years makes the case for a more strategic approach to communicating the benefits and safeguards of data sharing increasingly pressing.

Innovate to do more with data

Several initiatives have been discontinued, in part, because they did not use all available tools to limit access to sensitive information. Take the care.data programme, which sought to create a national dataset of patient information to improve healthcare and support research. The platform was widely perceived to allow overly broad access to GP data, including by commercial researchers, without sufficient patient consent. This ultimately proved fatal to the programme, despite its potential benefits.[40]

However, this is not an intractable problem. Advances in governance and privacy-enhancing technologies now make it possible to use data with little or no risk to patients. OpenSAFELY, developed during the Covid-19 pandemic through collaboration between UK public institutions and private partners, demonstrated this approach. It enabled rapid analysis of patient records while keeping data securely within NHS environments and out of view of researchers – contributing directly to evidence that informed life-

saving policy decisions. The use of the platform is now being expanded to enable research into other diseases, such as cancer.[41]

Innovations that limit the risk of unauthorised access to patient data will become increasingly important as the single patient record goes live, the supplier landscape becomes more complex, and services become more integrated.[42] New powers in the Data Use and Access Act (2025) to standardised security arrangements present an opportunity to ensure this approach is adopted in every part of the NHS.

Put patients in the driving seat

Patients who feel they lack control over their data often resist its use, even where they might otherwise be willing to consent.[43] The GP Data for Planning and Research programme, which sought to collect GP data to support planning and research, illustrates this clearly. The programme replaced an ageing system serving a similar purpose. But an extra 2 million patients withdrew permission for the NHS to share their data for any purposes after the scheme was launched, amid widespread concerns about how the data might be used.

This failure was as much about how patients were engaged as how they were protected. The scheme suffered from poor execution, by launching before a "trusted research environment" was in place. But it was also subject to media scrutiny and legal challenge amid concerns that patients were automatically opted in with little time or information to understand the consequences.[44]

Such failures needn't happen in future. Technologies that can give patients confidence in how their data is used – through greater choice and transparency – already exist. If baked into rollout of the single patient record, patients could use the NHS app to see and manage how their data is used, and understand the benefits, as easily as they manage their care – thus bringing data control closer to those directly impacted by poor data flows.[45]

Next steps to champion life-saving data use

- Clearly communicate the benefits and safeguards of data sharing initiatives.
- Invest and standardise approaches to leveraging privacy-enhancing technologies and effective governance to unlock NHS data.

- Allow patients to track, choose access permissions and manage data use via the NHS app as a foundational capability of the single patient record as soon as it goes live.

2. Make technology synonymous with good work

Workers too often experience a disconnect between the promise and reality of digitisation. Most want the NHS to modernise, and believe that technologies could help address capacity constraints and improve patient care.[46] But the real-world impact has been mixed.[47]

Take the government's push to "end the 8am scramble". Under new contract changes, GPs now must provide continuous online, telephone and in-person access throughout core hours. Changes were implemented with the expectation of making bookings and other requests more efficient. But the expectation did not match staff experience at the outset. A BMA survey of GPs, conducted a month after implementation, found that 75 per cent experienced a higher workload, 68 per cent more stress, and 55 per cent worse patient care after the changes were introduced. This job pressure and moral injury has important consequences for staff wellbeing.[48]

This presents a challenge for addressing the NHS capacity crisis. There are reports that new technologies, which are supposed to help relieve staffing pressures, are increasingly cited in exit interviews as reasons for leaving.[49]

It is critical to engage with these concerns, so technology can help strengthen, and not erode, job quality. There are two key steps the government should take.

Partner with workers

New systems fail when they don't reflect workers' lived reality. A Health Foundation study found that poor design and process failures can create unnecessary extra work resulting from extra tasks or barriers to using the technology.[50]

The National Programme for IT illustrates the consequences. Every major audit has found that top-down implementation, without involving the workforce, was a major contributor to the project's failure.[51] One minister reflected: "The programme forced doctors and nurses to bend over backwards to meet the needs of the systems. The result was that IT became

the enemy, innovation was stifled, enthusiasm was sapped, and real progress was delayed."[52]

By contrast, the most successful projects have empowered workers as key partners in success through continual engagement and skills support – backed by meaningful action on key staff priorities. Examples of staff engagement initiatives have included: the West Suffolk NHS Foundation Trust "Clinical Digital Leads" model, where clinical staff participate in transformation leadership; a Moorfields Eye Hospital training partnership with a local college; and South Warwickshire University NHS Foundation Trust's "Rumour Mill" digital feedback tool, which allows staff to flag issues with technology and other systems.[53]

Back priorities with appropriate resources

The cost of digitisation initiatives often balloon well beyond overly-optimistic initial funding allocations. Staffing costs, in particular, are often underestimated – putting significant pressure on workers, who struggle to deliver requirements to time and to budget.[54] This reflects two challenges.

First, digital transformation requires substantial investment in financial and human capital, often with some productivity loss during a transition period, before the full benefits are realised. In many trusts, basics such as ageing hardware require significant investment before high-level improvements can even begin.[55] But more advanced technologies also carry costs. For instance, the introduction of robotic-assisted surgery will place further demand on staff time in the short term because of training, integration and maintenance. But improved surgical efficiency and quality could eventually help increase the number of surgeries undertaken per member of staff and improve hospital bed capacity through reduced recovery and readmissions.[56]

Second, in some cases, lifesaving innovation increases labour demand, even in the long term. For example, AI can facilitate more effective diagnostic scans. But earlier diagnosis can increase total workload, because more cases are detected, more people are treated, and more survivors need ongoing care.[57]

The Primary Care Support England programme, which aimed to deliver efficiency savings of 35 per cent, demonstrates the risk of being swayed by false economies. The complexity of the task was significantly underestimated, and staff were cut prematurely, before new systems were in place. Consequently, headline financial savings masked other costs: medical records and letters were delayed or lost and support hotlines were overwhelmed. The Public Accounts Committee concluded that the initiative was a "shambles": the "short-sighted rush to slash… cost to provide these

services was heedless of the impact it would have on the… GPs, dentists, opticians and pharmacists affected."[58]

Ongoing funding constraints, then, imply challenges ahead.[59] The King's Fund reports that recent capital budget increases remain significantly overshadowed by building and equipment maintenance backlogs.[60] But cuts in revenue spend are also of concern – as this funding is needed to help embed new systems as well as maintain, further develop and upgrade existing systems.[61] Against this backdrop, NHS leaders report trying to digitise in "quicksand".[62] And 96 per cent of health professionals report workforce pressures as a barrier to digital progress.[63]

With new incentives for integrated care services to cut costs, it will become increasingly important to prioritise the highest-impact initiatives, rather than spreading limited resource too thinly – but the ambitions in the 10-year plan are unlikely to be delivered without more substantial resources.

Next steps to make technology synonymous with good work

- Create shared and adaptable tools, systems and processes to help engage and train staff when new technologies are rolled out – with clear mechanisms and accountabilities to prioritise and act on staff concerns.
- Prioritise initiatives that can deliver best impact, and ensure they are appropriately resourced.

3. Make care more human

Technology could help make care more personal and more human. This thesis is supported by a large body of research, which has found digital technologies are associated with improved care quality and patient experience. These benefits are being felt increasingly as more of the NHS goes online.[64]

But some groups of patients feel frustrated by new systems that feel disconnected from their lived reality.[65] For example, a 2024 Patients Association survey found that, while most patients valued the NHS app, a third did not, and one in five did not find it easy to use.[66] Teething problems are a normal part of deploying new technologies, but these could become more noticeable with the scale of change envisioned over the next decade.

As more services go online, it is critical that the patient experience remains front and centre. There are three key measures the government should take.

Leave no patient behind

Digitisation is helping more patients access care in a way that works for them. Reflecting this, 2022 Health Foundation analysis found that just 10 per cent of patient care requests made to GP practices indicated a preference for face-to-face appointments.[67]

But some patients are unable to make the most of new digital services. Ofcom recently found that 1.8 million people in the UK do not use the internet at home or elsewhere, and about 18.5 million are "narrow" internet users who conduct only a small number of tasks online.[68] Those who rely most on the NHS are overrepresented among excluded groups: the 2025 Lloyds Consumer Digital Index reports that 37 per cent of people who are offline say they have a health condition that affects accessibility, and 53 per cent are aged 65+.[69]

Getting more people online as quickly as possible should be part of the solution.[70] But the Covid-19 pandemic laid bare the challenges in doing this. While it accelerated digital adoption for some, the most vulnerable were left isolated from the rest of the world.[71] And poorly designed services can leave even more digitally savvy patients behind.[72]

This demonstrates the urgency of the case for making services intuitive, appropriate for local context, and "inclusive by design" for people with different abilities and accessibility needs. This is most effectively enabled by co-design and effective data gathering to support deployment decisions and ongoing monitoring and evaluation – complemented by access to healthcare through a variety of channels.[73]

Amplify the patient voice at scale

Co-design is the gold standard for digital design, and is essential for ensuring the most vulnerable are served in high-stakes settings.[74] But it is not possible to repeat this engagement process with each new deployment in every part of the country. Instead, the scale of transformation required over the next decade will demand fast-paced and scalable ways to understand and meet patient needs in real time.

The NHS app team is pioneering approaches to amplify every patient's voice. It prioritises face-to-face engagement with user groups experiencing the biggest barriers to support, alongside wider-scale automated feedback

mechanisms such as live in-app surveys, A/B testing and analytics. This means the team can engage with about 7,000 users a week.[75]

This philosophy can be replicated for technology deployment in trusts across the country if the right shared tools are available.

Ensure the right evidence-based support reaches all who need it

New technology can enhance care and reduce exclusion for the most vulnerable patients. Data analytics can help identify those who most need support;[76] remote consultation can improve access for people with mobility restrictions; and health monitoring equipment can help relieve the pressure that some with high-support needs feel to self-advocate. Yet technologies can also create barriers to quality care. Which of the two is the most likely outcome depends on the details of a given technology's implementation.[77]

Maintaining personal contact with clinicians is essential to ensuring the most vulnerable patients are supported. For many, dialogue and reassurance are an important part of care, and physical examinations are a prerequisite for timely intervention. Recognition of these facts can help inform more effective strategies. For instance, one GP surgery in Sheffield chose to forego its waiting list targets, and instead contacted its highest-need patients for in-person consultations. Over the next five years, this intervention significantly lowered prevalence of preventable diseases and pressure on the surgery.[78]

This helps explain the controversy surrounding the rollout of the Babylon "GP at hand" service. To sign up, patients had to de-register with their local GP and transfer their care to a practice in Fulham, London. Thousands of patients signed up without realising they would no longer be able to see their own doctor. This resulted in mass exodus, with more than a quarter of patients who signed up leaving within a year.[79] The app was eventually removed from the NHS digital library.[80]

To ensure that every patient gets the care they need, it will be critical to support access to healthcare through a variety of channels and ensure that time savings from technology deployment translate into more patient contact where needed.[81]

Next steps to make care more human

- Improve digital inclusion by supporting technology access and adoption and designing services that every patient can use.
- Develop shared tools to continually monitor the impact of online and offline services, and support co-design and patient feedback at scale.
- Use data to identify patients in need and use the time saved through technology to deliver in-person support.

4. Back innovators

The UK is widely regarded as a global powerhouse for health innovation – supported by a unique "triple helix" of world-class academia, a large integrated public health system, and a thriving private sector.

In principle, this should give the UK a decisive advantage in turning the best digital products into world-class care. But in practice, too much hard work and investment goes to waste. While there is no shortage of innovators wanting to work with the NHS, the barriers to doing so are substantial.

Many health tech companies that struggle to achieve impact in the UK are going abroad. Some businesses that have expanded their footprint successfully in countries such as Spain, Poland and the US have received significant public funding and engagement from NHS staff.[82] Too much of this precious resource has not benefited NHS patients.

The government must support this ecosystem to maintain the NHS's leading international status. There are two key issues the government should prioritise.

Help innovation scale

There is no shortage of innovation in the NHS. MediShout – a healthcare app that helps staff quickly solve operational issues – is a case in point. The idea was conceived by an orthopaedic surgeon after a broken light in a theatre caused three cancelled operations. The app – which is partly owned by the NHS – is now used in 140 sites across the UK, Ireland and the Nordics. Trusts report 44 per cent fewer cancellations and £1m in efficiency savings.[83]

But this is not a well-trodden journey. Eighty per cent of projects fail to scale beyond the pilot phase. While experimentation and failure are an important part of innovation, the sheer scale of activity that does not lead anywhere signals a systemic problem.

Entrepreneurs have a lot to contend with. After navigating complex regulatory approvals processes, they must still prove their product to each new trust they deal with. The government is creating national infrastructure to make it easier to prove innovation and get it adopted – including an "innovator passport" scheme.[84] But even proven innovations face significant barriers to achieving impact at scale. Challenges include finding decision-makers and navigating governance processes across NHS trusts with different capacity, digital maturity and risk appetite while contending with limited budgets and fragmented procurement pathways. What works in one trust may also not work in another because of differing patient profiles or trust activities.[85]

Some organisations have established regional partnerships to help overcome these challenges. For example, trusts in Yorkshire and Northamptonshire are working together to find AI opportunities that can solve shared problems and implement them at scale using shared governance and funding overseen by Innovation Boards.[86] And health innovation networks increase the spread and adoption of innovation across large populations.[87] These approaches could be supported more widely to ensure the best innovations are not lost to the UK.

Engage the most effective suppliers

Most NHS contracts are concentrated among a small number of large suppliers. Some of these businesses have earned their success through delivering valued and reliable products and services.

But market consolidation has created barriers to new entrants and to innovation. Trusts are often trapped in expensive, inflexible contracts that make it difficult to switch to newer and better solutions tailored to local needs. And some vendors' technical standards and business processes create additional costs and barriers to introducing new technologies to the ecosystem. Growing geopolitical risk could amplify these vulnerabilities in the coming years through increased concerns around resilience, supply chain security, and technological dependency.[88]

To counter this, the government is leveraging procurement policy and technical mandates to shift the power balance back to the NHS. This includes action to leverage collective buying power.

But without intervention, reliance on a small number of powerful suppliers is likely to continue – for several reasons. First, digital markets naturally tend towards consolidation to leverage economies of scale and scope. Second, the policy environment has favoured convergence as a means of streamlining systems and rooting out ineffective vendors – sometimes at the expense of innovators that do not yet have a large NHS footprint.[89]

Third, there are significant gaps in trusts' commercial capability and national data sharing infrastructure.[90] A Fabian Society freedom of information request found that most trusts do not centrally track digital contract spend and performance. These capability gaps create barriers to consolidating information to support national infrastructure rollout. And they result in costly failed procurements that delay lifesaving transformation and deter innovators from working with the NHS.[91]

To engage the most effective suppliers, the government must be explicit about promoting federated architectures, and strengthen local procurement capabilities and data infrastructure to hold suppliers to account.

Next steps to back innovators

- Complement national tools to support adoption of proven innovation with governance and relationship building to strengthen regional capability and coordination on implementation plans to scale successful pilots.
- Strengthen local commercial capability and coordination, alongside national policy frameworks, to improve supplier diversity and accountability.

5. Make services work as one

A health service that meets every patient's needs should be able to connect and coordinate services at every level – within and between hospital departments, trusts, GPs, pharmacies and public services beyond the NHS.

The London Care Record – a collaboration between five integrated care systems and the London Ambulance Service – has demonstrated the potential for improvement. Through significant investment around core capabilities known as the 'one London tech stack', it creates a secure view of health and care information accessible to health services, care providers and

local authorities. It allows patients to share their care preferences and support needs and transfer seamlessly between different services.[92]

But achieving something similar at scale has been the most elusive challenge on the way to better digitisation. Fragmentation between systems and organisations prevents vital coordination and accountability, with far-reaching consequences: patients repeating the same conversations with their GP, their hospital and their local authority; clinicians lacking the full picture about their patients or their needs; millions of hours of staff time wasted manually trying to coordinate support – sometimes logging into multiple systems and sharing the same information repeatedly to care for a single patient;[93] and support that steps in too late to make a real difference.

It is critical for patient care that all parts of the system work together more effectively. There are two key steps the government should take.

Clarify governance and accountability

The NHS is currently undergoing one of the biggest operational changes in its history. This includes consolidating within the Department of Health and Social Care functions that previously sat in other departments and the NHS, placing substantial cost reduction targets on integrated care boards, and reviving the principle of "earned autonomy," which gives high-performing trusts greater freedom from central oversight.[94]

There is an important paradox at the heart of this restructure. On the one hand, this could help accelerate NHS digitisation by making it easier to coordinate strategically across larger geographic areas and prioritise high-impact initiatives, while incentivising integrated care boards to work together across a larger footprint. [95]

On the other hand, restructures often disrupt digitisation. This was demonstrated when the Health and Social Care Act was implemented. Part of the challenge was the fragmentation introduced by distributing commissioning across smaller geographic areas and creating new tiers of governance. But shifting priorities, staff turnover, and lack of clarity on roles also eroded capability, momentum and accountability.[96]

Without action, similar dynamics could emerge under the current restructure.[97] The loss of digital capability and leadership presents a particular risk.[98] An NHS Confederation survey of Integrated Care System leaders found that 95 per cent were very or fairly concerned about the impact on their ability to deliver against priorities.[99] Some report that constraints are forcing them to prioritise core activities over digitisation.[100] There is also a risk that earned autonomy could introduce coordination challenges.

To avoid unnecessary delays, it will be critical to define roles and put in place effective governance processes to ensure the system works as one to fund and deliver digitisation.

Embed interoperability across the public sector

The NHS suffers from an "interoperability challenge" – meaning it operates on multiple incompatible IT systems that cannot communicate with each other. Many vendors charge a premium and require lengthy implementation processes to support integration.

This problem is currently playing out in the transition to the NHS app. While the app launched six years ago, 13 per cent of hospitals do not yet share information with patients through the app. This includes several major hospitals that share the same electronic patient record supplier. This supplier is currently working with trusts to integrate with the app.[101] But having shared standards and expectations from the outset could make such processes quicker and easier in future.

Now, the NHS stands at a critical juncture. The Data (Use and Access) Act 2025 created new powers for the government to set and enforce standards to support interoperability in health and social care. But success will depend heavily on implementation choices not yet made. The government's 2022 Data Saves Lives Strategy sets out a vision for linking data across the NHS, and care providers are already subject to interoperability requirements. But vision and intent have not translated into sustained focus on implementation – leaving compliance below 50 per cent. This is enforcement powers are not strong enough, organisations lack capacity to implement them, and market concentration means suppliers unwilling to cooperate could create risk to systems resilience.[102]

And moving beyond the NHS creates an extra layer of complexity. Social care providers typically have lower levels of digital maturity than the NHS. And, while moving governance to central government can help integration with other government departments, the new legislation does not apply to other public services – leaving patients some way off from truly integrated care.

Countries that have overcome barriers to interoperability have typically done so in two ways. First, mandatory standards supported by appropriate investment, governance, oversight and enforcement. Second, "digital public infrastructure": shared digital "building blocks" – such as digital identity, payment wallets, and communication and data exchange services –operating on the same open standards which all public and private digital systems link up with. This approach has been pioneered by India in recent years.[103]

Next steps to make services work as one:

- Clarify how organisations under the new NHS structures will work together to implement new systems.
- Accelerate development and enforcement of standards and use digital public infrastructure to support interoperability.

Endnotes

[1] Hardie, T, Gerhold, M, Fozzard, K, Hall, J and Watt, A, Digitising the NHS and adult social care, *Health Foundation*, 2025
[2] Committee of Public Accounts, NHS financial sustainability, House of Commons, UK Parliament, 2025
[3] Hoeksma, J, NHS spending £230m annually on paper patient records, *Digital Health*, 2025
[4] Rees, J, What Nye Bevan actually said, reestheskin, 2015
[5] Vizard, P and Obolenskaya, P, Labour's Record on Health (1997-2010), Centre for Analysis of Social Exclusion (CASE), 2013.
[6] Darzi, Lord, Independent investigation of the NHS in England, Department of Health and Social Care, 2024
[7] Ibid
[8] A pain to complain: Why it's time to fix the NHS complaints process, HealthWatch, 2025
[9] Patients put off seeking care due to 'dysfunctional' NHS admin, warn patient groups and healthcare experts, *National Voices*, 2025,
[10] NHS recovery continues with above target productivity growth, Department of Health and Social Care, 2025
[11] Moody, N and Powell, T, NHS productivity, House of Commons Library, 2025
[12] Rebolledo, I and Charlesworth, A, How does UK health spending compare across Europe over the past decade? 2022
[13] Independent Investigation of the National Health Service in England, Department of Health and Social Care, 2024
[14] Ibid
[15] Ibid
[16] Spending Review, UK Government, 2025
[17] Over two million extra NHS appointments delivered early as trusts handed £40 million to go further and faster, Department of Health and Social Care, 2025
[18] Triggle, N and Wainwright, D, The hospitals where waiting times are getting worse. Is yours one of them?, *BBC News*, 2026
[19] Digitising the NHS to give patients more control over their care, UK Government, 2025
[20] Roadmap for a Modern Digital Government, Digitising the NHS to give patients more control over their care

[21] 10 Year Health Plan for England: fit for the future, Department of Health and Social Care, 2025
[22] Total healthcare expenditure as a share of GDP in the United Kingdom from 1980 to 2024, Statista, 2025
[23] Arzoglou, E, Dovcik, J and Iosad, A, Public-Service Reform in the Age of AI, Tony Blair Institute for Global Change, 2026
[24] NHS England board discuss EPR coverage, digital maturity, and tech and digital investment, *Health Tech News*, 2025
[25] Committee of Public Accounts, The dismantled National Programme for IT in the NHS - Public Accounts Committee Contents, UK Parliament, 2013
[26] Hardie, T, Gerhold, M, Fozzard, K, Hall, J and Watt, A, Digitising the NHS and adult social care, *Health Foundation*, 2025
[27] Spring Statement 2025 health and disability benefit reforms - Impacts, HM Treasury, 2025
[28] Smith, M, Where does public opinion stand after the 2025 spending review?
[29] Dickson, Z, Hobolt, S, De Vries, C and Cremaschi, S, Public Service Decline and Support for the Populist Right: Evidence from the National Health Service in England, 2025
[30] Mitchell, A, Farage calls for end to funding NHS through taxes - but fails to say how it should be paid for, 2025
[31] Political attitudes shape public perceptions of artificial intelligence, *NatCen Social Research*, 2025
[32] 10 Year Health Plan for England: fit for the future, Department of Health and Social Care, 2025
[33] Binesmael, A, Thornton, N, Horton, T, Hardie, T, How does the public feel about health technologies and data?, 2024
[34] Campbell, D, 'I felt anger, fear and horror that she had obtained my data and shared it', Guardian, 2023
Green, C, Pharmacy2U: NHS-approved online chemist fined £130,000 for selling patients' details without their consent, Independent, 2015
Kan, M, Patient Dies After Ransomware Attack Disrupts UK Hospital, PC Mag, 2025
[35] The inside story of how England's COVID-19 vaccination booking system was built in just weeks, Microsoft, 2022
[36] Byrne, N, The NHS Federated Data Platform: the importance of building bridges with the public, National Data Guardian, 2025

[37] Written questions, answers and statements, Health: Data Protection, UK Parliament, 2025
[38] Osborne, R, NHS England must cancel its contract with Palantir, BMJ, 2024
[39] Hakim, R, Wheatland, B, Inch, A, Digital transformation in the NHS: a reference guide, NHS Confederation, 2025
[40] Evans, H, Using data in the NHS: the implications of the opt-out and GDPR
[41] Expansion of OpenSAFELY analytics platform, Kings Fund, 2018
[42] Managing healthcare easy as online banking with revamped NHS App, Department of Health and Social Care, 2025
[43] Welzel, C. Ostermann, M, Smith, H, Minssen, T, Kirsten T and Gilbert, S, Enabling secure and self determined health data sharing and consent management, Nature, 2025
[44] Freeguard, G, General Practice Data for Planning and Research: Summary of a private roundtable, Institute for Government, 2023
[45] National engagement on data: cohort 2 report, NHS England, 2025
[46] Ireland, B, Millions of hours of doctors' time lost each year to 'inadequate' IT systems, BMA, 2022
[47] Shemesh, B, Coughlan, E, Horton, T, Tech to save time: how the NHS can realise the benefits, 2025
[48] Survey of GP practices in England reveals over half of practices reporting adverse impact on patient care from changes to online access, BMA, 2025
[49] Sollof, J, Technology increasingly cited as reason for NHS staff leaving jobs, Digital Health, 2025
[50] Shemesh, B, Coughlan, E, Horton, T, Tech to save time: how the NHS can realise the benefits, 2025
[51] Wachter, R, Making IT Work, Department of Health, UK Government, 2016
Comptroller and Auditor General, The National Programme for IT in the NHS, National Audit Office, 2006
[52] Life after the NHS National Programme for IT revealed, Building Better Healthcare, 2012
[53] Tsounis, C and Gonzalez, D, Building digital skills at Moorfields Eye Hospital, NHS Employers, 2025
Elliott, D, Building on success in staff engagement, NHS Employers, 2025

McLaughlin, L, Digital strategy 2022-2026, West Suffolk NHS Foundation Trust, 2022
[54] Comptroller and Auditor General, Digital transformation in the NHS, National audit Office, 2020
[55] Unlocking Healthcare's AI Potential: Frontline voices expose technology gaps and deliver four steps to transformation, Presidio, 2025
[56] Shemesh, B, Coughlan, E, Horton, T, Tech to save time: how the NHS can realise the benefits, 2025
[57] NHS Long Term Workforce Plan, NHS England, 2023
[58] Committee of Public Accounts, Primary Care Support England, House of Commons, UK Parliament, 2018
[59] Chishick, N, Why we're trying to scale digital on quicksand and how to fix it, Digital Health, 2025
[60] Anandaciva, S, What does the Autumn Budget 2025 mean for health and care?, Kings Fund, 2025
[61] Wray, S, NHS leaders call for funding overhaul to accelerate digital transformation, Global Government Forum, 2025
[62] Chishick, N, Why we're trying to scale digital on quicksand and how to fix it, Digital Health, 2025
[63] Lovell, T, Workplace pressures holding back NHS digital plans, finds survey, 2025
[64] Dodson, P, Haase, A, Hales, C, Capturing patient experiences of care with digital technology to improve service delivery and quality of care: A scoping review, Digital Health Journal, 2024
[65] Ge, X, Chappell, P, Ledger, J, Bakhai, M, Clarke, G, The Use of Online Consultation Systems and Patient Experience of Primary Care: Cross-Sectional Analysis Using the General Practice Patient Survey, Journal of Medical Internet Research, 2024
[66] Public and patient experience of the NHS app, Patients Association, 2024
[67] Analysis finds 10% of patient care requests indicate a preference for face-to-face GP consultation, Health Foundation, 2022
[68] A demographic deep dive into internet use Analysis using Ofcom's Technology Tracker 2025, Ofcom, 2025
[69] 2025 Consumer Digital Index, Lloyds Banking Group, 2025
[70] Mitigating risks of digital exclusion in health systems, Good Things Foundation, 2024

[71] Virgin Media O2—written evidence (DCL0072), House of Lords Communications and Digital Select Committee inquiry 'Digital exclusion and the cost of living', 2023
[72] Bradway, M, Wang, B, Lauvhaug Nybakke, H, Agnete Ingebrigtsen, S, Dyb, K, and Rødseth, E, Rethinking the digital divide in health: a critical interpretive synthesis of research literature
[73] Mitigating risks of digital exclusion in health systems, Good Things Foundation, 2024
The future role of remote consultations & patient 'triage', Royal College of General Practitioners, 2021
[74] Patient and public participation in commissioning health and care: Statutory guidance for clinical commissioning groups and NHS England, NHS England, 2017
[75] Galloway, T, How we scaled up user research in the NHS App at speed, NHS England, 2024
[76] COVID-19 Population Risk Assessment, NHS England, 2025
[77] Farre, A, Fang, M, Hannah, B, Makita, M, McFadden, A, Menezes, D, Rodriguez, A, Sixsmith, J, Gray, N, Exploring the use of digital technology to deliver healthcare services with explicit consideration of health inequalities in UK settings: A scoping review, Digital Health Journal, 2023
[78] Sheffield based GPs join forces to reach vulnerable patients during pandemic, NHS England, 2025
[79] Flaherty, A, Comment: Over 25% of patients leave GPs at the hand of a digital service, Fletchers Solicitors, 2025
[80] Crouch, H, Babylon and others removed from NHS Apps Library, Digital Health, 2018
[81] Mistry,P and Jabbal, J, Moving from exclusion to inclusion in digital health and care, Kings Fund, 2023
[82] Hughes, L, Regulation and 'poor alignment' are stymying health innovation, says report, Financial Times, 2024
[83] MediShout: A digital platform improving hospital efficiency by streamlining reporting of operational and logistical issues, SBRI Healthcare, 2025
[84] 10 Year Health Plan for England: fit for the future, Department of Health and Social Care, 2025
[85] State of the Nation: Insights from UK Health Innovators, UCL Partners Health Innovation, 2025
[86] Mistry, P, Implementation and scaling of AI in health and social care, Kings Fund, 2025

[87] Impact report, Health Innovation Network, 2025
[88] Lynch, J, The CLOUD Act and UK Data Protection: Why Jurisdiction Matters, Kiteworks, 2025
[89] Hakim, R, Wheatland, B, Inch, A, Digital transformation in the NHS: a reference guide, NHS Confederation, 2025
[90] Davies, G, Government's approach to technology suppliers: addressing the challenges, National Audit Office, 2025
[91] Procurement Act 2023 & PSR: What NHS Leaders Must Learn from Recent Failures
[92] One London, 2025
[93] Rafalski, K, Why Healthcare Interoperability Still Fails? UK's EMR Systems in 2025, Netguru, 2025
[94] 10 Year Health Plan for England: fit for the future, Department of Health and Social Care, 2025
[95] Williamson, S and Tether, V, ICB clusters and mergers: what you need to know, NHS Confederation, 2025
[96] Wachter, R, Making IT Work, Department of Health, UK Government, 2016
[97] Dayan, M, Reed, S, Davies, N, Hoddinott, S, Edwards, N and Fisher, R, Abolished to perfection? Building a better centre for the NHS, Institute for Government, 2025
[98] Hakim, R, Wheatland, B, Inch, A, Digital transformation in the NHS: a reference guide, NHS Confederation, 2025
[99] Williamson, S, Bliss, A, Kiely, J, Brennan, L, The state of integrated care systems 2024/25: delivering through change, NHS Confederation, 2025
[100] NHS restructures are eroding digital leadership at the worst possible time, Digital Health, 2025
[101] Cellan-Jones, R, Is the NHS App facing an Epic Battle?, Substack, 2025
[102] Data (Use and Access) Bill - What does it mean for health data?, Understanding Patient Data, 2024
[103] Elliman, D, Digital foundations: Why NHS transformation depends on interoperability, Zuehlke, 2025
Wilkinson, R and Krasodomski, A, The case for expanding digital public infrastructure, Chatham House, 2025