AI in London healthcare: The reality behind the hype

March 2025

Alex Lawrence, Tom Hardie, Ilias Zapantis, Osahon Ohenhen, Joe Hepworth

UCLPartners Health Innovation

The Health Foundation

Contents

UCLPartners Health Innovation

The Health Foundation

Foreword

Artificial intelligence (AI) is often portrayed with the ability to transform the delivery of care, improving patient outcomes, and easing pressures on an overstretched health system. While its potential is undeniable, the conversation around AI can sometimes become tangled with hype, complexity, and uncertainty. The reality is that AI is not a magic bullet, but another tool in our broader mission to solve the pressing healthcare challenges we are facing and redesign a more resilient health system.

London is uniquely positioned to lead the way in transforming healthcare delivery, access, and experience. With world-class medical institutions, top-tier universities, and a thriving tech ecosystem, the city is at the forefront of innovation. Its rich, diverse multimodal data resources could further help to advance AI development. Many London NHS providers are already pioneering AI adoption, piloting solutions in diagnostics, workflow automation, and intelligent proactive care, exploring the art of possible of AI to drive smarter, more efficient, and patient-centred healthcare. However, every deployment of AI needs to be purposeful, evidence-based, and aligned with real system needs.

At UCLPartners, we take a problem-first approach to innovation, ensuring that technology serves as an enabler to change, rather than a solution without clear purpose or direction.

At UCLPartners, we take a problem-first approach to innovation, ensuring that technology serves as an enabler to change, rather than a solution without clear purpose or direction. AI is no exception, it must be deployed in response to real-world clinical and operational needs, as highlighted in the **AI explainer animation** we created.

Building on this commitment, we are collaborating with Health Navigator and NHS North East London to implement **AI-guided clinical coaching** aimed at easing pressure on urgent and emergency care services. By leveraging advanced AI screening technology, this initiative proactively identifies patients at high or rising risk of unplanned emergency care, enabling timely, targeted interventions to improve patient outcomes and system efficiency.

This report, *AI in London healthcare: The reality behind the hype*, is about cutting through the noise around AI, and offering a better understanding of its current adoption within the London system. It presents insights from across different providers into where AI is making an impact, the obstacles its facing, and what needs to change to unlock its potential.

The findings highlight and reinforce anecdotal evidence that AI adoption across NHS primary and secondary care provider organisations in London is still in its early stages, with most deployments focusing on diagnostic imaging, administrative efficiencies, and non-clinical operations. Yet, as with any innovation, the fundamental challenges remain the same: navigating governance and regulation, securing sustainable funding, building digital infrastructure, and ensuring that staff have the knowledge and capacity to engage with new technologies. Although, these are not AI-specific problems but innovation challenges in general, the relative novelty of AI as well as its adaptive nature amplify such challenges but also create untapped opportunities to reimagine the future and a meaningful change in healthcare.

A key insight from this report is the need for a more strategic and collaborative approach to AI adoption. Currently, progress is fragmented, driven by individual champions or isolated funding opportunities. To unlock AI's full potential, we must move beyond ad hoc implementation and foster a culture of shared learning, best practices, and cross-organisational collaboration. By building a collective ecosystem for responsible AI integration, London's healthcare system can lead the way globally in harnessing AI's full potential to drive meaningful, system-wide transformation.

We extend our gratitude to the Health Foundation for their collaboration in this research, and to all the healthcare professionals and decision-makers who shared their insights. By staying focused on the challenges and the opportunities that arise, we can pave the way for a more preventative, participatory, and equitable future in healthcare.

Dr Chris Laing
Chief Executive Officer, UCLPartners

Dr Dominique Allwood
Chief Medical Officer, UCLPartners

With acknowledgement to the authors of the report:

Alex Lawrence, *Improvement Fellow, The Health Foundation*

Tom Hardie, *Senior Improvement Fellow, The Health Foundation*

Ilias Zapantis, *Director, UCLPartners*

Osahon Ohenhen, *Data Analyst, UCLPartners*

Joe Hepworth, *Data Analyst, UCLPartners*

Key findings

- This research explored the state of adoption of AI across NHS primary and secondary care provider organisations in London, seeking to better understand current approaches, challenges, barriers, and more. While this report spotlights how AI is being approached by some NHS organisations in London, it also provides broader learning that may be useful across the UK and for regional and national leaders and policymakers.
- Almost all providers in our research are still in the early stages of AI adoption, making it too soon to assess the success or full impact of AI solutions. Currently, AI is primarily used for diagnostic imaging, clinical documentation, and administrative tasks. Additionally, healthcare staff are increasingly exploring the functionalities and capabilities of large language models (LLMs).
- AI adoption and usage is largely occurring in an ad hoc manner, driven by the alignment of key enabling factors. For example, implementation often happens when one-off funding or a free trial coincides with awareness of a specific AI tool and the presence of an internal champion advocating for a pilot.
- The primary expected benefit of AI is improved productivity, but other benefits such as improved care quality and job satisfaction are also seen as highly important and closely interconnected.
- Many challenges and enablers for adopting AI mirror those of innovation more broadly. However, several factors are unique to AI solutions or exacerbated by its use, including its novelty, concerns about potential adverse impacts, and the complexities of monitoring and evaluation – all of which will require dedicated policy attention.
- The required foundational digital infrastructure is still not fit for purpose, making AI adoption out of reach for many providers. Getting these digital basics right will be key to enabling the uptake of AI and unlocking its full potential.
- A national AI strategy in healthcare, supported by tailored guidance and resources, particularly in key areas like information governance at a local level, is needed to provide clarity on effectively trialling and adopting AI technologies.
- Knowledge sharing across the London region, particularly around AI use cases and insights from pilots is not happening in a structured or strategic way. Greater collaboration and joint projects between organisations could further enhance AI adoption and impact and could be highly valuable in building confidence and reducing duplication of effort, especially in circumstances where resources are limited.

Introduction

With the NHS facing **record demand**, the potential of AI to help tackle challenges in health care, from operational inefficiencies to patient experience and health inequity, is attracting understandable interest. As highlighted in the Health Foundation's 2024 **Priorities for an AI in health care strategy**, AI can help **discover new drugs**, diagnose illness **faster and more accurately** and **revolutionise clinical note taking and admin**, among other things.

In the wake of the 2024 general election the government has sent clear signals that it supports the use of AI in the NHS to improve productivity and patient care – most recently in the **AI Opportunities Action Plan**, which aims to position Britain as a leader in AI innovation. And for good reason, with some promising examples demonstrating the potential of AI in this sector[1].

However, given the pace of technological development and range of ways in which AI can be deployed, it is unclear as to what extent AI is already being used across the NHS, which tools have been piloted or procured, whether they are delivering benefits, and what implementation approaches different organisations are taking.

This research was conducted to gain a deeper understanding of the state of AI adoption within the NHS in London. Although the focus was on London alone, there are important implications for national policy makers and health care providers across the country. The project is a collaboration between **UCLPartners,** part of the Health Innovation Network (HIN), and the **Health Foundation**, an independent charity. The research aimed to identify current applications of AI in NHS providers across both primary and secondary care in London, explore how AI is perceived among health care professionals, highlight key challenges and opportunities, and ascertain what kind of support would best enable responsible AI adoption.

About the report

This report presents the findings of research conducted by UCLPartners in collaboration with the Health Foundation. It first covers what we know about the extent and format of AI adoption in London, including the most popular uses for AI and the impact that providers hope to achieve. The report then looks at how NHS organisations in London have approached the adoption of AI and how they are supporting adoption internally. The second half of the report examines the barriers preventing or increasing the difficulty of AI adoption, the factors that have enabled the uptake of AI, and, finally, looks at what resources and assistance will be needed if the potential of AI is to be successfully harnessed more widely.

For this report we conducted 18 semi-structured interviews with decision-makers (including board-level executives, AI, digital and IT leads, and clinicians) from NHS organisations in London across acute trusts, integrated care systems, and primary care providers. In addition, we conducted a survey with NHS organisations in London, receiving 44 responses to this survey, consisting of 23 acute trusts, 10 primary care providers, and 11 'other' (largely respondents within Integrated Care Boards (ICB)). Using the results of the interviews and survey, we conducted a thematic analysis to identify key themes, which we present below.

[1] For example, Case study: AI tool improving outcomes for patients by forecasting A&E admissions; AI Triage System at Surrey GP Practice achieves 73% reduction in waiting times.

What does AI adoption in London look like?

What does AI adoption in London look like?

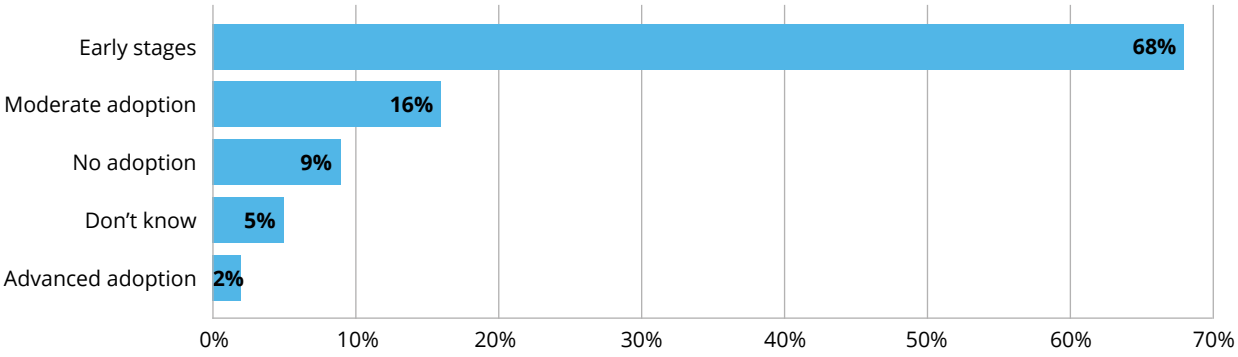
How is AI being used?

Although there is significant variation between providers, AI adoption is generally at an early stage, indicating that deployment is more limited than might be apparent from some discussions of AI **in the media**. Across London, the level of AI adoption ranges from 'no adoption' to 'business-as-usual' procurement; however, the number of organisations at the more advanced end of this spectrum is limited, with most still in the pilot phase with one or two products.

> ***"I'd say we are sort of dipping our toe in the water…We've got lots of interest in AI…Lots of people wanting to explore it and some have actually been successful in doing that. Others are just at the stage of they see the potential and would like to explore it."***

Over 68% of respondents rated their organisation's current level of AI adoption as 'early' (AI solutions are being piloted in one or more departments or pathways). Only 16% reported moderate adoption, in which AI solutions are being used across a few departments or pathways successfully, and less than 3% reported 'advanced adoption', where AI solutions are being used across multiple departments or pathways successfully. 9% reported no adoption at all.

***Figure 1:** How would you rate your organisation's current level of AI adoption?*



The most common areas in which AI is being implemented are diagnostics and imaging, operational back office and clinical and/or patient administration, with ambient voice technology (AVT) and LLMs for tasks like note summarisation and improving data quality, appearing to be the most trialled tools. AI tools for prediction and prevention remain relatively unexplored.

As might be expected, the survey also indicated that there is variance between acute sites and primary care providers in terms of the types of tools procured, with acute sites favouring tools for diagnostics or imaging, and primary care providers favouring AI for administrative or process automation.

What was the desired impact?

Decision-makers in the NHS have high expectations for AI. For example, one interviewee stated that AI could be "a catalyst to completely change the way we work and deliver a very transformed service for patients who we're not… helping the way we want to." While improving care quality and outcomes for patients were frequently cited, most of the organisations we spoke to were motivated by the potential of AI to achieve cost savings, improve productivity, and release staff time as a response to the enormous operational pressures the NHS is facing.

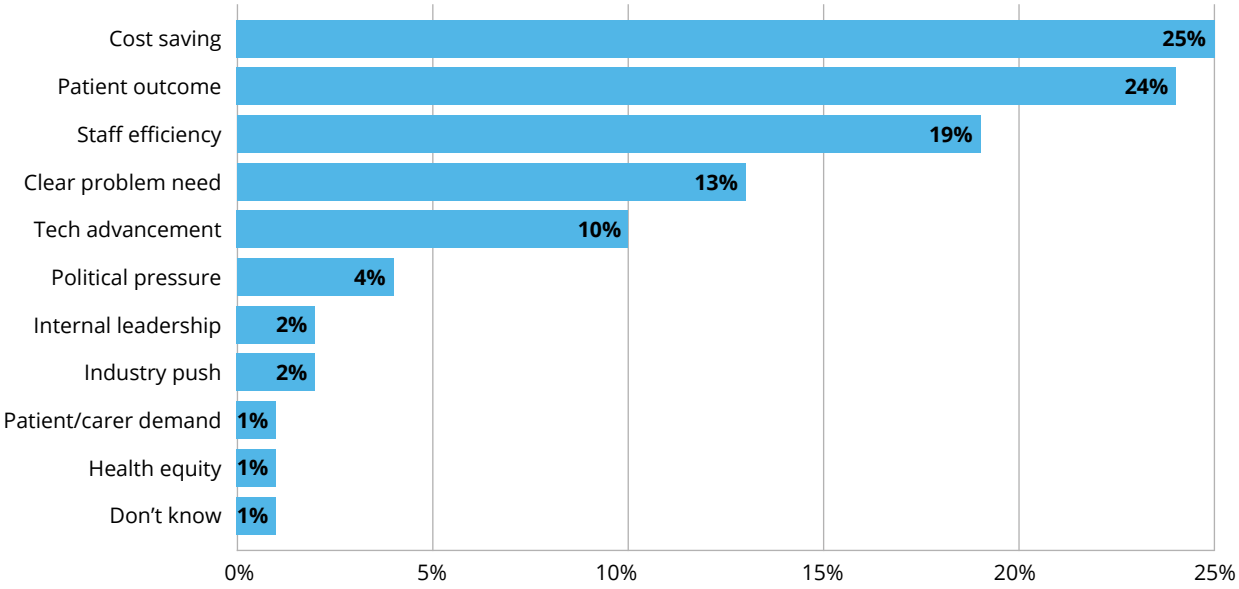
Different benefits were seen as closely interlinked. For example, productivity was often viewed in the context of a desire to make staff workloads more manageable, reducing the administrative burden on clinicians and allowing them to spend more time with patients.

> ***"What I'm probably most excited by is just to be able to reduce the administrative burden on clinicians because we don't really spend [as] much time with our patients anymore… if we can switch that around…I think patients will feel a lot better."***

The potential for AI to improve care quality was a key driver, particularly in improving diagnostic accuracy and care efficiency. Notably, these improvements were seen as closely linked to staff satisfaction. For example, one interviewee highlighted how AI could enable reporting radiographers to use their time more effectively and allow them to perform to the best of their skillset and expertise, making their roles feel more meaningful. Staff also sought improvements in access to care, such as reducing waiting lists. One organisation is already using AI to triage a backlog of unreported X-rays, while another is leveraging it to undertake smart scheduling and improve patient experience when interacting with hospitals. Likewise, there is optimism that AI could improve data quality by converting free-text clinical entries into structured data.

These findings are supported by the survey – when asked to select up to three factors that had most influenced the decision to adopt AI technologies, respondents selected cost savings (25%), improved patient outcomes (24%), and efficient use of staff time (19%).

***Figure 2:** What are the main factors influencing decisions to adopt AI technologies in your organisation?*



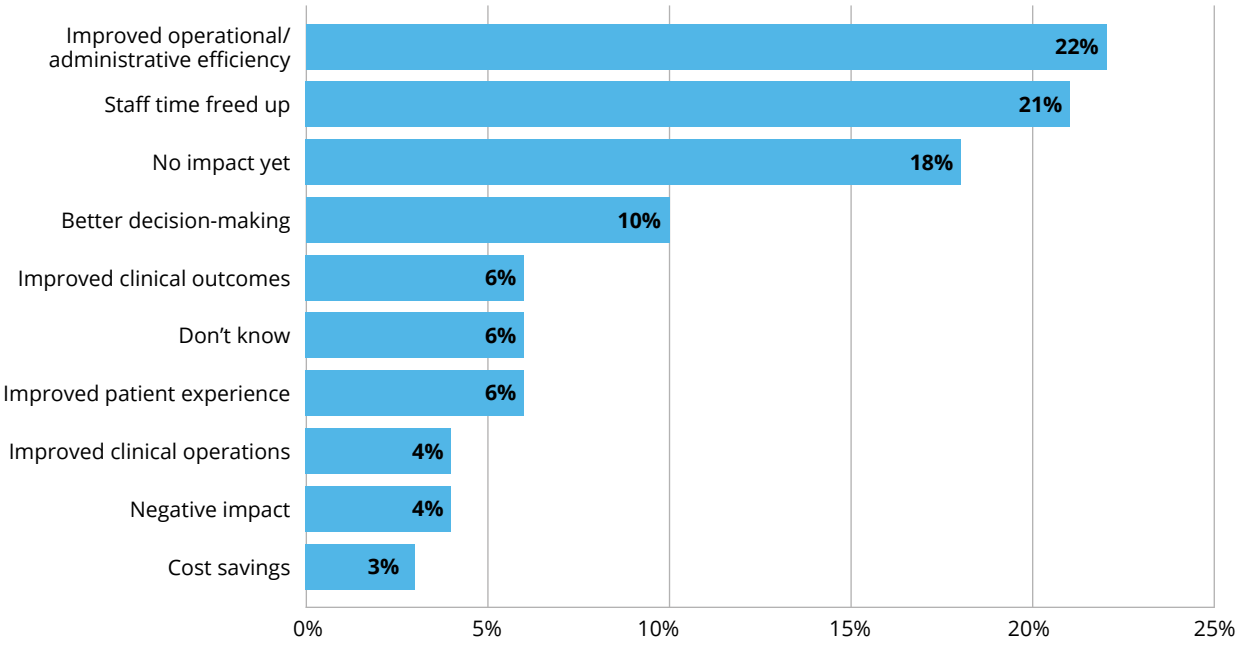
Cost savings from AI tools were seen as a necessity for building business cases but were secondary to other factors in terms of benefits desired by decision-makers. Interviewees highlighted that, without demonstrating efficiency improvements, the adoption of an AI technology would be unlikely.

What impact do people think has been achieved?

In most cases, AI tools have not undergone real-world evaluation, either because of the nascent stage of implementation or a lack of evaluation capability. As such, it is too early to say whether it is having the desired impact. Additional time, evaluation support, and resources will be required to formally assess these technologies.

When asked which impacts they had observed from AI in their organisations (with the option to select multiple responses) the most common answers were 'improved operational/administrative efficiency' (22%), 'staff time freed up' (21%), and 'no impact yet' (18%).

Figure 3: Which of the following impacts (if any) have you seen from AI in your organisation?



In a few cases clear benefits have been achieved. One organisation used AI for bone fracture identification and triage, successfully clearing a large backlog of unreported x-rays. Automation projects in areas like GP registration and payroll have realised financial benefits. In other cases, users are reporting positive experiences, with some indicating that the benefits of AI are beginning to emerge, though formal evaluation is still needed. One example of diagnostic AI technology has produced anecdotal evidence that resident doctors are gaining confidence because of the tool, noting that they are "far less likely to call the radiologist up... because they've got this [system] reassuring them that their reading was correct."

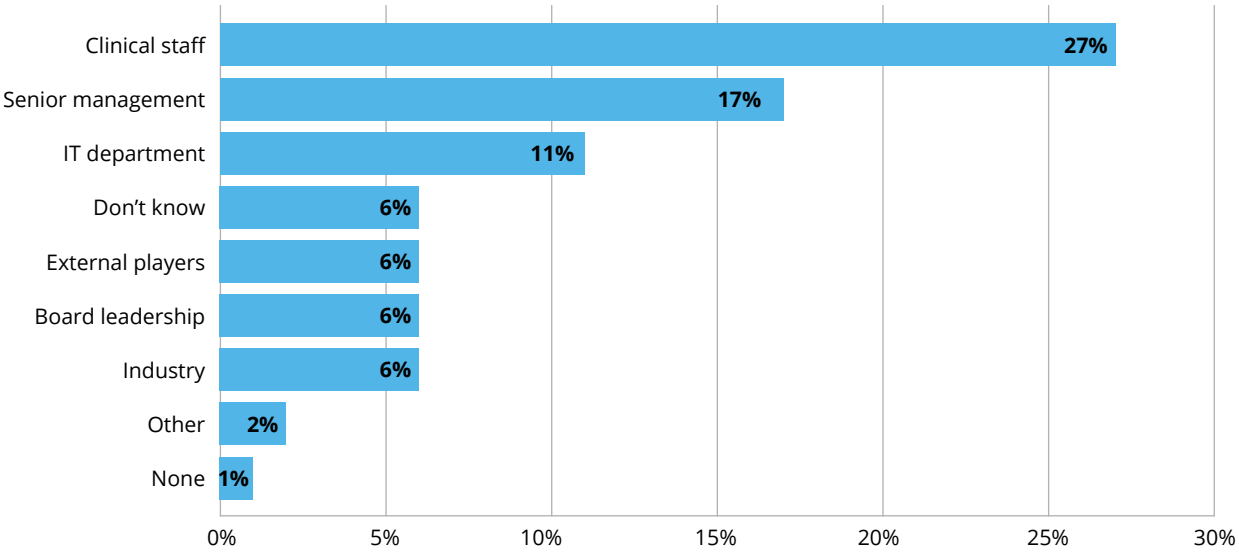
Anticipated benefits that had failed to materialise were also noted. This spanned from AI solutions that worked as intended but exposed bottlenecks in other parts of the system, to tools that saved time but did not translate into financial savings. This reflects findings from the Health Foundation's work looking at **how clinicians would use time freed up by technology**, which cautioned against the assumption that additional hours will automatically translate into the equivalent amount of time being used for patient care.

As with all innovation, there have been both successes and failures. Some AI pilots have been abandoned because they did not perform as expected. For example, one pilot which used AI tools to analyse chest x-rays for lung issues was stopped due to a high rate of false positives, while another was abandoned because staff were found not to be using the AI tool due to a lack of engagement and change management approach.

What do staff think?

NHS staff in London have varying views on AI. We found that for some staff there is a strong interest and enthusiasm for the potential of AI to improve their work and patient care. In addition, they had a general feeling that AI has the potential to be transformative and change the way health care is delivered. Indeed, clinical staff were ranked as the most influential stakeholder group driving AI in their organisation (chosen by 27% of survey respondents), followed by senior management (17%) and the IT department (11%). Interviews supported the finding that these groups are the ones spearheading AI initiatives.

***Figure 4:** Which stakeholder group has been the most influential in driving AI adoption in your organisation?*



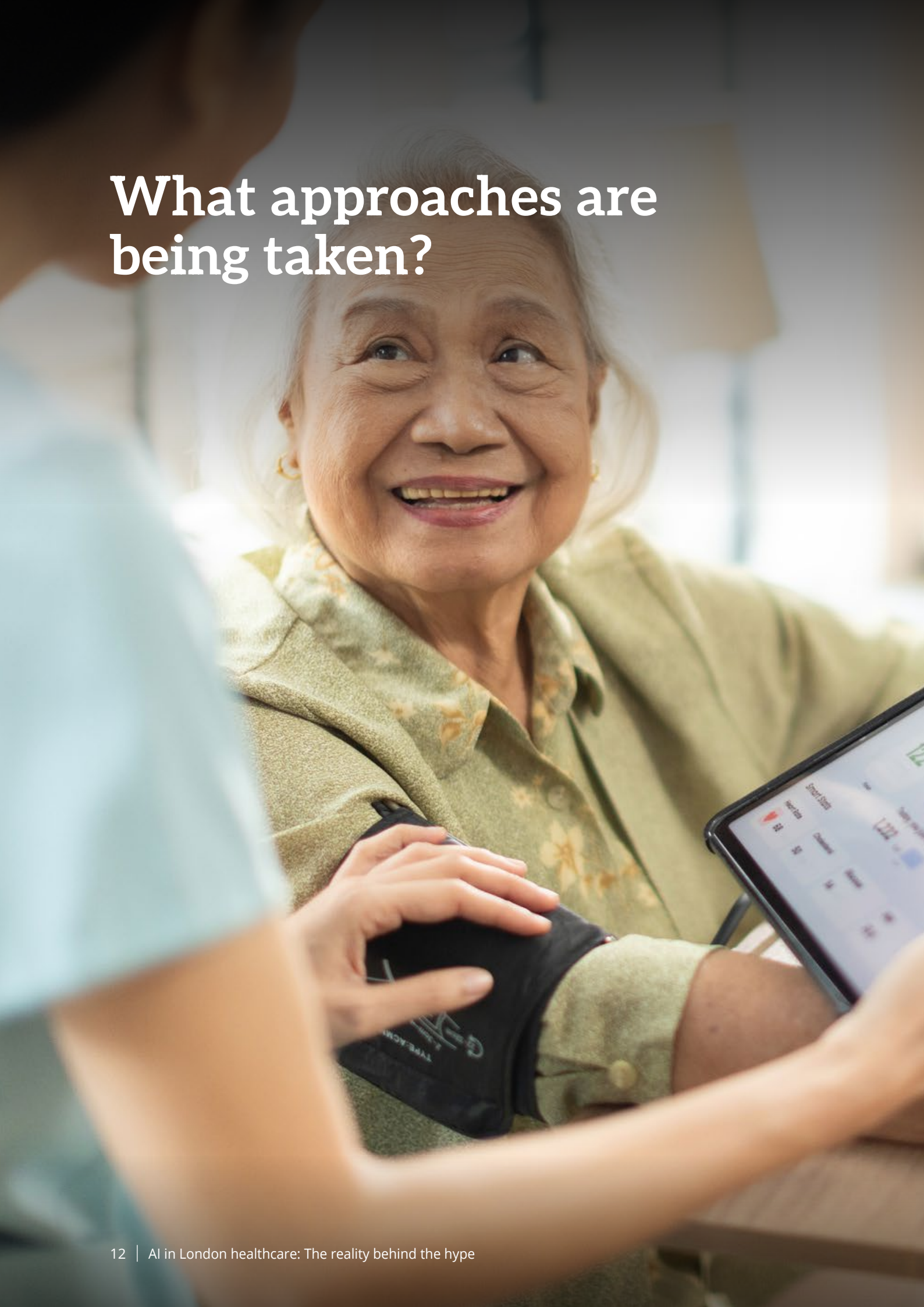
However, our survey also detected several concerns around AI, including how it will integrate with existing workflows, potential risks and biases, the need for proper training and infrastructure, and potential impact on job security.

There were also concerns about the lack of headspace for staff to engage with AI projects in a meaningful way given current capacity constraints. The adoption of new technologies requires changes to processes, workflows, and behaviours, as well as technical modifications, which can be challenging under time-pressured conditions[2]. In addition, several interviewees recognised the issue of differing aims, with one explaining that for most digital staff "their objectives aren't really to push the boundaries. Their objectives are to keep the hospital safe". Although less frequently, concerns about the environmental impact of AI tools were also noted. For example, one interviewee highlighted the connection between data storage, cost, and carbon emissions. Enthusiasm for the potential of AI often sits alongside wariness: "AI confuses the hell out of me. I know that there's… a wealth of opportunity to take out some of the mundane."

Our interviews highlighted differing perspectives across disciplines. with clinicians generally being more positive about the potential value of AI, while administrative and operational staff having more concerns. More specifically, interviewees reported that clinicians see the value in AI technologies which can support their clinical decision making, and that some administrative staff have expressed concerns regarding job displacement. Some interviewees expressed a feeling that staff should not be compelled to use AI, instead viewing it as an optional tool "to help people if they feel like they want the help."

[2] Coiera E. Guide to Health Informatics, third edition. CRC Press; 2015.

What approaches are being taken?



What approaches are being taken?

Policy and strategy

In the absence of a national or regional strategy the decision to pilot or adopt AI technologies is generally organic and ad hoc, and as one interviewee put it, often "circumstantial and based on people's perceptions". From those who responded to our research, it appears that most NHS organisations in London are not yet thinking strategically about AI, and the piloting or adoption of AI tools is happening in an ad hoc way, often influenced by proposals from industry, availability of funding pots, or a clinician's individual interest.

> ***"I think they're thinking, oh, this is a problem. I've seen an AI tool that does that. I wonder if the two could marry up. I'm not sure they're thinking about the problem as a whole and what other things could help with that problem."***

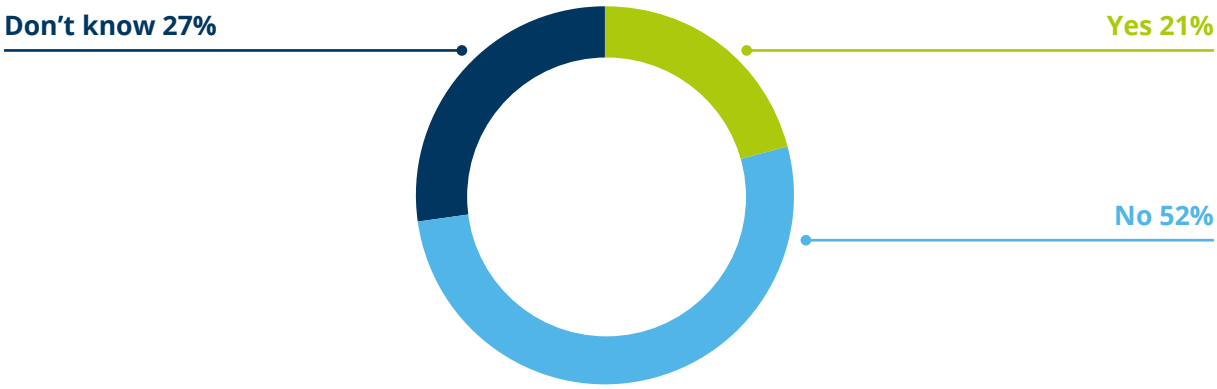
In most cases the implementation of AI appears to be the result of the fortuitous, rather than strategic, alignment of several factors: one-off funding or a free trial; awareness of an AI tool; an individual willing to shoulder risk; and the identification of an area of high need. Clinicians might come across an AI tool at a conference or hear about it from another NHS trust. One example of this includes a technology that was brought to a trust's attention by one of the surgeons who saw it at a conference, the trust then approached the company who agreed to trial the technology to see how it worked for them in practice. Many organisations have no formal policy or strategy – as one interviewee explained, "there isn't a specific strategy in place other than we're keen to implement more [AI]".

Some providers have piloted AI tools because of a relationship with or attractive pitch from a supplier, rather than following the identification of a problem and thorough assessment of the market. The proliferation of available AI technologies, combined with the absence of a strategy or appropriate guidance, means that navigating the market can feel overwhelming for NHS staff and require excess capacity.

> ***"Every startup and their cousin come visiting with their amazing solution for this, that and the other and some of them really are amazing and some of them perhaps less so, but all of them take time to explore."***

We heard that some NHS organisations have developed (or are in the process of developing) their own strategic approach. This included writing a policy statement, developing a framework, or creating a more detailed strategy to guide the adoption of AI in their organisation, which some interviewees said had been useful to provide focus and rule out some use cases. However, 52% of respondents said their organisation had no strategic policy or framework in place for AI, and 27% were unaware whether one existed. Only 21% confirmed that their organisation had a strategic plan in place already.

***Figure 5:** Do you have a strategic plan for AI in your organisation?*



Some organisations have also brought together 'steering groups' for AI. There was widespread recognition that providers will need direction and advice on what kind of tools to procure, and that the development of individual strategies is inefficient – so peer learning and sharing of policy and strategy will be useful.

The lack of strategy extends to patient engagement in AI. When asked how they were involving patients in their work on AI, almost 50% of respondents stated that there had been no patient involvement so far. **Engaging patients and staff**, particularly those often **underrepresented** in clinical research and tech development, is critical to help prevent bias and ensure new uses of technology are rooted in a deep understanding of users' needs. Previous research from the **Health Foundation** revealed that although, on balance, the public support the use of AI in health care, there is considerable variation in attitudes among different social groups, and therefore a **concerted need for public engagement, to understand and address concerns**.

How are organisations supporting the adoption of AI?

There are a range of different support approaches to AI across London. Some involve more top-down direction and coordination from senior leaders, while others are more bottom-up and organic, with clinicians driving the direction. AI projects are "taking off where there are champions that are interested", whether within senior leadership or wider staff. Where present, dedicated digital or innovation teams (or even 'AI centres'), as well as supportive information governance or clinical informatics teams, are providing essential guidance.

Some noted that it is important to have different levels of hierarchy involved in working groups to shape the direction of AI in their organisation, acknowledging the need to build knowledge and enthusiasm across a wide range of staff.

> ***"Being very inclusive to different groups of people actually makes the work better... far too much of healthcare is delivered in a very hierarchical way where the sort of 'senior old people' feel like they know it all. This is a brilliant area where... they categorically don't."***

Interviewees told us that some organisations are forming groups to discuss AI, but there was limited evidence of well-established working groups. Given the desire for more cross-organisational collaboration, including the sharing of resources, it may be useful for AI leads in London to meet regularly to discuss use cases and share strategies, enabling more formal collaboration which currently takes place ad hoc at conferences and elsewhere.

Challenges and enablers

Challenges and enablers

Many of challenges and enablers for AI adoption are similar to those experienced in the broader implementation of innovation within the NHS. For example, a lack of capacity within the workforce to learn and adapt to new tools, or the need for dedicated funding to support implementation. While AI is often considered separately from other health technologies and broader innovation, considering it within the wider context of healthcare innovation would be beneficial. Nevertheless, there are some key challenges and enablers that are more specific to AI, which we have highlighted where applicable.

What are the challenges?

Our research found that the list of challenges faced by organisations looking to adopt AI technologies is extensive. Tackling them will require a multi-faceted approach that provides clear governance, funding, workforce capacity and expertise, improved digital infrastructure, and clear guidelines.

Governance

Difficulties with information, clinical, and digital governance are a significant barrier to AI adoption. Current governance processes are seen as complex, lengthy, and difficult to navigate. On top of this, there is a general lack of clarity regarding regulation for AI, with the absence of approved frameworks causing hesitancy, while those that do exist are seen as too generic. A clear governance framework for healthcare would provide a scaffold that allows NHS providers to adopt AI with more confidence.

Clinical safety documentation requirements and other approvals were considered a "painful" process and a "blocker for adoption". Concerns around data privacy and information governance were a further challenge. One interviewee noted that a "pragmatic" information governance team can help unblock this. In one case, it took an organisation "a year to put the team together" and "then about six months to get the Data Protection Impact Assessment and ethical approval". Beyond the complexity and length of processes, the challenge of governance also extends to the importance of ensuring robustness.

Staff: Concerns, capacity and expertise

As with broader innovation adoption, lack of staff capacity and capability was cited as a significant challenge for AI adoption. Interviewees told us that many NHS staff members lack a basic understanding of AI, often creating challenges for decision-makers looking to engage staff with AI projects.

> ***"It's hard to conceptualise how things are actually working. And so instinctively, that creates a sort of slight nervousness… it's a bit more of a leap of faith, I guess, into… what these things [can deliver]."***

Although some training is available, we heard that it is not sufficient to enable meaningful participation in AI projects, and staff feel overwhelmed by the number of products on the market. The existing workload and constant firefighting of everyday challenges can leave little room for innovation.

One interviewee noted that "the reality of the environment which you're trying to deliver these things is that it's very, very reactive and difficult, so it isn't just a money problem".

Our research also surfaced concerns among staff about the risks of AI, including worries about AI errors, bias, misuse of data, potential disruption to workflows and roles, or a potential over-reliance on AI. For example, one interviewee told us that they were "very worried about misinformation and misuse of AI and people relying on it being the truth when they don't know what the source of the data or the quality of it was in the first place." Such concerns can create a culture of risk aversion, in which the NHS is "hesitant or reluctant to be an early adopter of technology."

> ***"People are hesitant because they don't know. They don't want to end up on the front page of the news because they've, you know, shared someone's data…and they don't want to compromise patient safety above all else."***

Digital and data infrastructure

We found that there is concern that AI is taking precedence over the adoption or improvement of more foundational digital infrastructure and a sense that "we are running before we're walking". What was described as "level zero stuff", such as reliable Wi-Fi and hardware, or interoperable electronic patient records (EPRs) that can get running quickly, is often seen as more of a priority for NHS staff. Poor quality data is another significant issue, with most organisations still mostly using free text (instead of coding answers in a structured way that generates usable data) or even paper. Additionally, data is often stored in siloes with different departments or systems having their own databases, making it hard to analyse and access.

The lack of adequate digital and data infrastructure exacerbates staff concerns, as "it's really hard for people to start trusting an AI [tool] when the foundations aren't there". An interviewee told us that staff must feel the AI narrative connects to their wider organisational context and the experience they have in their role: "[AI] has to fit into that bigger story of digital enabling. It can't be the sole story…we're in the situation where we're talking about AI sometimes while people still have Nokia handsets."

Funding and cost

We heard that a lack of funding within the NHS, coupled with the high cost of AI tools, can make adoption impossible without external support. The initial investment required to procure and set up AI systems can be a major deterrent, particularly for smaller organisations or those with more limited budgets. "The only reason why we've not got [ambient voice technology] in… is because we don't have shed loads of money being thrown at us to do it". For others, the funding issues are more apparent when considering ongoing costs associated with maintaining or updating systems, as AI systems need continuous monitoring and maintenance to ensure they are performing as expected.

> ***"We're not making as much impact as quickly as we can or rolling out as quickly as we could because we don't have sufficient funding."***

There is also a challenge when needing to demonstrate a return on investment, particularly when savings or benefits may not translate directly into financial gains. Where an AI tool has led to benefits for staff or improvements in care but has no cash-releasing impact, it is almost impossible to develop a compelling business case. In addition to this, access to health economic expertise is expensive "and it's very rare to find, so that needs extra funding usually."

Monitoring and evaluation

It was clear that there is a significant challenge in the monitoring and evaluation of AI technologies, resulting primarily from lack of resources, guidance, and standardised approaches and metrics. Providers either need more capacity to employ people on the ground, or funding to bring in an AI monitoring tool. An absence of robust evaluation tends to create concerns among staff about both the safety and efficacy of AI, as well as making it difficult to create a business case and prove a return on investment. One interviewee said: "I'm yet to be sold on the health economics of it as well, because I can't prove it...the companies...they struggle with it too."

Unlike more established innovations (such as EPRs), the relative novelty of AI as well as its adaptive nature makes it harder to monitor and, in the absence of national guidelines for evaluation and post-market surveillance, organisations have resorted to developing their own frameworks. This is consuming significant resource and makes it hard to compare experiences of AI adoption between organisations, share best practice, or compare different tools.

Industry partnerships

Concerns surrounding the nature of commercial partnerships or collaborations, and challenges working with industry, present a lesser but still significant barrier to AI adoption. Commercial partnerships are often essential to adopting AI: "if we don't partner with commercial companies... we just do not have the computing power capacity, brain span, and just bodies to be able to really push this type of work forward". However, this dependency can contribute to concerns around data privacy and trust.

Another challenge with industry engagement is the sheer volume of AI companies looking to engage with the NHS. Providers are "peppered every day by requests" from vendors. The Health Innovation Networks and other bodies can play a key role in helping to build relationships and confidence between the NHS and industry.

What are the enablers?

As with barriers, many of the enablers identified are relevant to broader innovations. However, several enablers also stood out as being particularly or more strongly applicable to AI. This included a problem-focused approach (rather than adopting AI for its own sake or being driven by industry), having a clear and specific use case, the availability of specialist expertise (particularly in governance), fostering interdisciplinary collaboration within the organisation, and considering the knock-on impacts on the pathway or process.

Being problem-focused

Identifying an area of high need or strategic priority is a critical factor for AI adoption. Having a specific problem in mind, such as the need to reduce a backlog of unreported X-rays or to improve cervical screening uptake, is critical if an organisation is to adopt AI effectively. It should mean that an organisation is more systematic and strategic when adopting the tool. For example, having selected an issue to tackle, one organisation created a scoring system to help select the best AI tool.

> ***"But the big realisation we had is [we need to take] a problem focused approach. So, what are some of the big problems we are thinking about and worrying about and then really prioritising them... because if you've got a company that is doing something really interesting but actually it just doesn't align to one of our priorities that's great and we'll wish you good luck. But let's not waste each other's time."***

Culture and leadership

The right culture and leadership are essential to creating conditions for successful AI adoption. Our research highlighted that this includes the presence of individual champions and leads at different levels of an organisation with expertise and interest in AI, through to the support of senior management who can champion and interrogate AI at board level. The latter category of leadership requires a willingness to make difficult decisions, shoulder risk, and take accountability for AI projects.

> ***"It's a classic leadership thing of holding the hope and holding the risk. So, it's my, you know, my job as SRO… to say to my teams, yeah, this might be risky, but I've got that risk… so you need the leaders willing to say, yeah, I'll take that. And that takes a particular type of person to say…I will take that risk, and I will hold that risk. And so, you as a team member don't need to worry about that."***

Although culture and leadership are key to the successful implementation of all innovations, AI is perceived to carry a higher level of risk, and its novelty amplifies this concern, making leadership a more critical enabler compared to other health technologies. "It just takes discipline and systems and leadership to try and hold people in that space, particularly when every day is hard and our commissioning and performance infrastructure is very much around what's happening today, [rather than] how we spend the time to understand the problems of tomorrow".

Staff buy-in

As with wider digital health technologies, we found that high-levels of staff buy-in facilitate the adoption of AI. Clinicians being involved and supportive is particularly critical. "Where it's working, it's often driven by our own clinical entrepreneurs…the clinicians who are working in the services, who understand what today's problems really are and therefore create a solution that responds to that problem".

There is often resistance to using AI technologies because of perceived risk but overcoming this barrier is essential. Demonstrating to staff that AI can improve their work is key, and this needs to be part of a wider organisational culture. NHS organisations need to empower staff through education and training, enabling them, for example, to "understand what a developer is asking them". Clear and thoughtful communication that is part of a wider transformation narrative is key here. It will also be critical to understand staff concerns and demonstrate how legitimate apprehensions are being addressed in practice.

> ***"The pathway is human, and I think human characteristics, ergonomics, heuristics still matter very much when you're thinking about the pathway; it still starts with staff and patients and ends with staff and patients."***

Funding

Substantial financial resources are required simply to establish the necessary foundational technology and systems for AI implementation. In cases where organisations have received financial resources, it has been a key enabler: "funding to deliver the infrastructure has been critical". It has resulted in some organisations being able to sustain the use of AI after initial adoption by developing partnerships with external organisations to support capacity.

Most NHS organisations we interviewed are trialling AI products through free pilots, enabling them to better understand the effectiveness, opportunities, and challenges of a particular tool without financial risk, preventing them from "investing lots of money in from a slightly less informed position". In turn, the AI supplier can gather real world evidence and potentially undertake an

evaluation. However, unless free pilots are part of a wider implementation strategy and used to build a business case, they can lead to a cycle of ongoing pilots. This creates challenges for industry and leads to what the Association of British HealthTech Industries describe as '**low and slow access to new technologies in the NHS**'.

Looking at the whole pathway

Considering the entire patient pathway, and redesigning it where appropriate, was also considered an enabler: "the worst thing you could do is optimise a part of the pathway that doesn't even need to be there in the first place". While using an AI tool to improve one part of a process or pathway can simply shift (or create) bottlenecks down the line, using that tool to instead redesign how care is delivered can be transformational. Creating interdisciplinary teams to drive forward AI implementation is crucial as it ensures that all aspects of the pathway are considered, and that diverse perspectives are integrated into the design and deployment of AI solutions. This collaborative approach helps to identify potential challenges early, streamline processes, and optimise outcomes. Effective change management, along with staff engagement and consultation is essential to ensure that any AI project realises its full potential.

> ***"Any change that involves digital should be an enabler, not a solution, and it's an enabler to service redesign. So... unless you've got an idea that's coherent for service change, then just implementing AI is kind of pointless."***

External support

External organisations such as the Health Innovation Networks, academia, and industry can play a crucial role in facilitating AI adoption. For example, an EPR supplier can assist NHS providers in integrating AI solutions into their existing systems, with one provider noting that "part of the trust strategy is every new technology we need to consider whether it needs to integrate with [our EPR]".

The Health Innovation Networks can help with building confidence in selecting appropriate AI technologies. The AI technologies they present are considered to have gone through a vetting and validation process and have an evidence base. This contributes to the development of an 'enabling culture' where organisations are willing to innovate while taking some risk. In addition, the Health Innovation Networks can also support knowledge sharing by reassuring their partners that "like minded individuals in other trusts within [their] network will also be looking at the same thing".

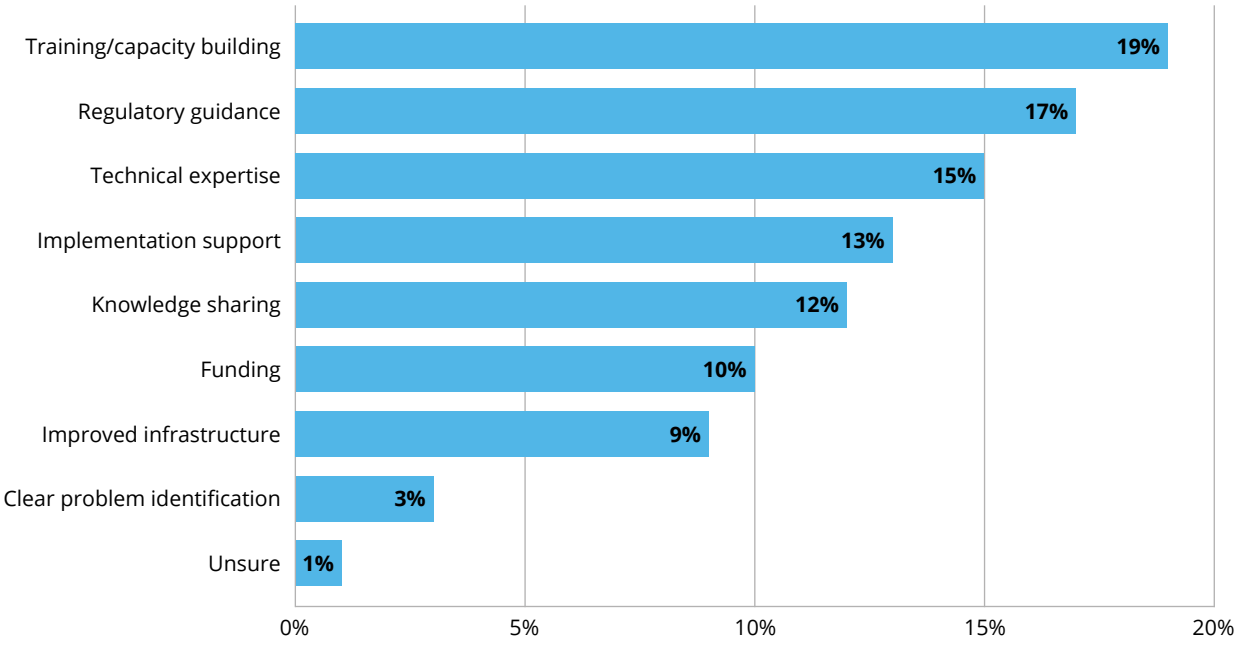
We heard that ICBs have also provided useful support by managing clinical safety cases when procuring technologies at a regional level or securing funding from NHS England when available. These initiatives can reduce the burden on individual organisations, which would otherwise have to handle these tasks on their own. In some cases, external support is also sought through "an informal network of people", pulling on existing networks of individuals with an interest in AI to discuss what good looks like.

Next steps

Through our survey and interviews we explored what the next steps should be to accelerate the adoption of AI in London in a responsible way. This surfaced a range of ideas from national strategy to local collaboration opportunities. As Roland Sinker CBE highlighted of innovation more broadly in his **recent review** for NHS England, a consistent, co-ordinated, long-term approach in which different parts of the system pull together will be essential to making progress. When asked what type of support would be most beneficial in overcoming barriers to AI adoption, the top-ranked choice was regulatory guidance, followed closely by technical expertise, staff training and capability building, and then change management and implementation support.

Although there is a clear need for support, there is less clarity on how this is best delivered. Interviewees indicated support for a mixture of top-down direction and bottom-up help, and a general sense that at a national level "someone needs to make an assessment of the current status and then see what it is that needs to be done".

***Figure 6:** What type of support would be most beneficial in overcoming barriers to AI adoption?*



Strategy

There is a clear demand for more national direction on the overall strategy for AI in healthcare, as well as tailored guidance and resources in key areas at a local level. As the Health Foundation have **noted**, the government focus on AI in the UK has been largely cross-sectoral, focussing predominantly on the **safety**, **regulation** of AI and the promotion of innovation. There has not yet been overarching strategic direction for how the NHS can capitalise on the potential of AI and address the specific opportunities and challenges it presents.

The interviews showed that existing guidance from national bodies is seen as too "vague", providing generalised advice that could be applicable to wide range of projects. This lack of clarity on how NHS providers should be looking to use AI, what kind of tools they could be procuring, and how to best implement such technologies, creates significant "stumbling blocks". Some organisations feel that "just having a bit more assurance that you can do this kind of work without being reprimanded" would be helpful, recognising the high level of risk associated with AI. As such, a strategy will need to address the breadth of key barriers highlighted in this report, including governance, staff training and concerns, infrastructure, funding, the difficulty of evaluation, and relationships with industry.

Where local context and population need are important, guidance may need to be provided or tailored at a regional or local level. For example, information governance could be standardised across an ICB (while being sensitive to local differences) to clarify and streamline current processes. There should be clear signposting of which areas are covered by national and local bodies, and where to find relevant information. We heard that currently finding the right places for the correct information is challenging and requires a trial-and-error approach. There is an **NHS England AI adoption hub** which provides a useful baseline resource for this and could be developed to provide guidance on strategy, use cases and more.

Expertise

To better enable the adoption of AI in London and across the UK, NHS organisations will need access to specific expertise in information governance, evaluation, commissioning and more. One interviewee suggested that a "directory of experts" that could be called on for advice would be useful. This was in line with the general sentiment that the NHS needs to be better at sharing existing expertise, first identifying where it is situated and then creating mechanisms by which it can be shared. Existing expertise within academic institutions, innovation hubs, and the Health Innovation Networks is useful when accessed but not felt to be easily available.

More generally, staff will need help to better understand the AI market. Given the fast-evolving landscape of AI technologies, this will need to be iterative. There is a feeling that the number of solutions available is overwhelming, and NHS staff do not know which AI suppliers to trust or the full scope of solutions. Current "power dynamics definitely feel like [the suppliers] have more of the power and understanding. And we feel like we don't have much time."

Knowledge sharing and collaboration

In addition to sharing expertise, interviewees felt that improving knowledge-sharing on AI adoption would be highly useful. Creating avenues for this to take place more formally, such as an AI adoption mentorship scheme (as suggested by one interviewee) would be a useful next step. Without structured avenues and encouragement from senior leadership, people are hesitant to share learnings "because they don't know that they're necessarily doing the right thing" and are "worried someone will pick holes".

Wider collaboration, cross-organisationally and with both clinical and non-clinical staff, will be essential to getting the adoption of AI in the NHS right. Sharing examples of AI strategies or frameworks that have been developed, or insights on how to tackle an implementation challenge, will help avoid the duplication of effort that many interviewees complained of.

> ***"I think in the NHS [one key thing will be] how can you be fast followers… so it might be that we're not going to be the first ones to use ambient voice technology, but how [can] we make it easy for us to follow in the footsteps of…other places that are doing it."***

When asked what could effectively enable knowledge sharing and collaboration in AI adoption across the London region, respondents ranked a pan-London community of practice as the most useful approach – 43% said they would be 'very likely' to participate in a pan-London community of practice. "It'd be nice if what we do is more formalised…[and] that the AI leads in London get to speak… share knowledge, collaborate. Use each other's resources. Work more as a team." Careful thought must be given to the best modality and footprint for collaboration, as interviews revealed that a narrower footprint might be useful. One suggestion was that trusts with similar levels of digital maturity should come together because they will face similar adoption challenges.

Conclusion

Although AI in London's NHS is still nascent and has not yet been implemented or evaluated widely, there is considerable enthusiasm among staff, who feel that there is potential to alleviate some of the pressures they face, improve patient care, and provide confidence in decision-making. This excitement is matched in equal measure by hesitancy, stemming largely from a lack of knowledge about AI or clarity on how to approach it. Our research found staff and organisations across the NHS in London wanted clear policies and guidelines that can give staff the confidence and tools to trial AI safely and effectively.

While conducted with a focus on London, this research has lessons and implications beyond the city, both for policymakers and providers across the country. Given the finding that there is overlap between the barriers and enablers for adoption of both AI and wider innovation, policy makers and leaders across the NHS should use learnings from previous studies and strategies to guide next steps. Where new, AI-specific strategy and guidance is needed, policymakers should work together to provide the clarity NHS organisations in London, and indeed throughout the country, need.