

THE IMPACT OF AI IN HEALTH TECH

TANK



WHAT'S NEXT FOR AI IN HEALTH TECH?

- **Data and artificial intelligence (AI) can be as a force for good, but only when used responsibly.**
- **To avoid losing out to the U.S. and Asia-Pacific, the UK government must invest more in health tech and champion private enterprise.**
- **Work needs to be done to address the distrust created during the COVID-19 pandemic between the government and the wider population.**
- **With the right tools and technologies, individuals can take proactive control of managing their own health, reducing the burden on healthcare services.**

The case for implementing new technology across the healthcare sector has, arguably, never been more compelling.

Throughout June, July and August 2023, almost 400,000 NHS appointments had to be rescheduled due to industrial action.

The demand for cancer services reached a new record in July, with the number of urgent suspected cancer referrals at 130% of pre-pandemic levels.

Despite good progress being made in general practice, with 27.8 million GP appointments taking place in July 2023, the service is undeniably still under pressure.

An increase in access to community diagnostics services saw more than 25.3 million checks and scans carried out over a 12 month period, but more could be done to engage harder to reach demographics.

The first Tank roundtable of 2024 saw clinicians, academics, health tech and data security experts discuss the potential benefits of implementing new technologies, focusing specifically on the role of AI, in helping to ease these challenges and bring about better patient care.

The panel also highlighted that the UK government must urgently do more to champion innovation across the health tech space, with indications that many businesses would favour the U.S. or Asia-Pacific region.



Home to the highest number of health tech companies in the UK, as well as world class universities, centres of excellence and BioCity – the nation’s largest bioscience innovation and incubation centre – the Midlands is an increasingly attractive location for health tech investment.

PANELLISTS



Ian Ellis
Professor of Cancer Pathology at the University of Nottingham



Neil Shaw
Co-founder and Director, True MSP



Paul Christie
Co-founder and CEO of Tachmed



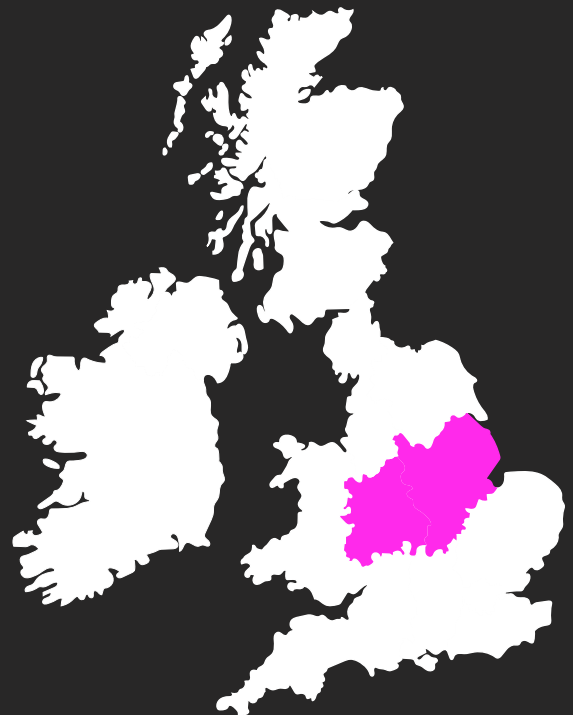
Melanie Davidson
CEO, Medilink Midlands



Deborah Knight
Director of Customer Experience and Success at Doctify



Professor Stephan Reiff-Marganiec
Head of the School of Computing and Engineering at the University of Derby



AI IS ALREADY EMBEDDED IN A NUMBER OF INDUSTRIES, IMPROVING ACCURACY AND HELPING TO MAKE SENSE OF VAST DATASETS, SO WHY IS THE HEALTHCARE INDUSTRY LAGGING BEHIND?

Ian Ellis

If you look at diagnostics and image analysis, humans and technology both have an important role to play. Humans are good at recognising patterns and traits, but AI-enabled technology can undoubtedly assist with the metrics. This will help free up time – therefore reducing costs. Of course, for the NHS to implement something on this scale, there has to be a compelling reason to do so, it's all about weighing up the benefits, versus cost.

Deborah Knight

There's always a cost associated with bringing in new technology and businesses should start by attracting, and engaging with, those who are the most receptive. In the case of AI, this will be the 'tech-savvier' generation. However we need to remember that these people are unlikely to be the most in need, AI can have a positive impact across the board - we just need to work on educating the entire population about its benefits.

Neil Shaw

In a way, AI is the new big pharma. There's a huge amount of investment in the area, but it remains largely unaffordable to the masses. The industry is ready to implement it, but the question is more around who's going to invest?

Paul Christie

While there's a lot of talk about AI, there needs to be more of a focus on how we can access the best quality data and information, otherwise the technology won't work. Currently, healthcare systems in the UK are too backward, the business models and service provisions are antiquated. It's ready for disruption. Everybody thinks we're about to enter a new 'Terminator era', but we're nowhere near that.

Professor Stephan Reiff-Marganiec

I agree very strongly, we are nowhere near the 'Terminator era' that some people fear. Fundamentally, advances in data science will give us new tools and make healthcare services more accessible to a broader section of the population, but this relies on patients agreeing to share their data and that's of course, very personal.



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HOW IMPORTANT IS BUILDING PATIENT TRUST IN THE SUCCESS OF AI?

Ian Ellis

When I was at university, I spent some time working in Germany and a friend highlighted to me how patients in the UK are notorious for not taking responsibility for their own health. Due to the way our healthcare systems are set-up, we are far too reliant on GPs.

A more community health-focused system, fuelled by good quality data and AI-enabled technologies, will help combat this, by connecting the population with the health services they need. This will allow them to take more ownership of their own care. However, this relies on data and not everyone is comfortable with their data being monitored, tracked and shared. It's all about education at this point.

Professor Stephan Reiff-Marganiec

Building patient trust is crucial to the success of AI, as AI learns from the data it has available. The more we share the more we get a true picture of what's there. It needs to learn what unhealthy and healthy looks like, but at the moment we don't have all of this data.

Paul Christie

The idea for my business came from when I was standing in a field in Africa. People were saying we don't have enough doctors, we don't have enough nurses, we're going to import them from around the world. However, what they didn't realise was that this still wouldn't resolve the situation. Why? Because they didn't have the infrastructure. What the African continent did incredibly well was highlight to patients how by sharing their health data, they would benefit. We need to see a similar thing happen here.



Building patient trust is crucial to the success of AI, as AI learns from the data it has available.

WHAT IMPACT DID THE PANDEMIC HAVE ON THE POPULATION'S FEELINGS TOWARDS SHARING THEIR DATA?

Paul Christie

We had a very interesting bit of feedback during one of our research phases. Because of the way that the government handled testing for COVID-19, people are less inclined to share their personal health data. In addition, the media continues to scaremonger and make people fearful of sharing their data, which is having an incredibly detrimental effect on the health tech sector and its ability to innovate.

Melanie Davidson

As the population gets older, more people will have multiple health conditions that need tracking and assessing – something that became much more apparent during the pandemic. If that process can be managed remotely and these people remain at home, hospital space will be freed up and the patient can stay in a safer environment. To do this, data sharing needs to significantly improve.

Neil Shaw

The generational differences are stark. Older generations don't want people tracking their data and are very suspicious, while the younger generations actually embrace tracking their health data via apps like Strava. When we deal with business owners, the picture is exactly the same.

Typically, older business owners are still reluctant to adopt cloud based technologies. While younger generations are a lot more receptive. My industry and the wider IT industry is telling people to protect their data from the 'bad guys', but it's important that we start to educate people on the data that can, and should – be shared freely.

Professor Stephan Reiff-Marganec

We see people sharing all sorts of data on social media, without even thinking about it. There's a huge education piece for society, to help them understand how their data can be used for good. For example, AI can process data on your phone to help you when it really matters – you could take your mobile phone to your doctor so they can tap into the data that has been tracking you in the background. This is the case with mobile banking apps, so why is healthcare so far behind?



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ARE SMALLER COMPANIES DOING ENOUGH TO HELP PATIENTS ACCESS NEW TECHNOLOGIES?

Paul Christie

I agree with Deborah's point. I sit on the Association of British Health tech Industries' (ABHI) digital health committee and I've heard multi-national companies say that they come to the UK last, because it takes so long to go through the regulatory journey. We used to have world class facilities for clinical trials, now we just scrape into the top 10. If big pharma and big consumer electronics companies can't get around the red tape, then SMEs certainly can't.

The UK government urgently needs to review how much it's investing in smaller companies across the health tech space to avoid losing out to the U.S. and Asia-Pacific.

Deborah Knight

From a start-up perspective you've got your investors wanting a quick return on investment and due to the pace at which the NHS works, this makes health tech a challenging market to crack.

Melanie Davidson

I think it's quite a challenge for smaller companies because they don't have a big enough voice. They often need to be working with, or in parallel with, the NHS and service providers. For example, mental health services could be helped enormously by AI, helping patients to access the right services more quickly but rolling this out on a large scale will take time.



ARE SKILLS SHORTAGES SLOWING THE ROLLOUT OF AI IN HEALTH TECH?

Paul Christie

It's not necessarily the skills that are the main problem, it's the data we have access to. It's insufficient and not representative of the population. Getting better data and encouraging people to measure their health is the first place to start. Then we can talk about machine intelligence and the wider rollout of AI – which of course requires funding into new programs and training.

Melanie Davidson

I think skills are a problem. A lot of the fundamental skills required to use these new technologies and systems are lacking, therefore adoption remains slow. We need to educate people on the potential impact, not only on the health service but also on people's lives. When you're looking at triage for example, data can have an immensely positive impact, helping patients access the service they need in a fraction of the time.

HOW ARE TECHNOLOGICAL DEVELOPMENTS FUELLING GROWTH ACROSS THE MIDLANDS SME HEALTH TECH AND LIFE SCIENCES SECTORS?

Melanie Davidson

Certainly since the pandemic, people have realised that the population suffers with so many different conditions. This has sparked an array of new ideas for technologies that can help the population, but it's been a steep learning curve.

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Getting better data and encouraging people to measure their health is the first place to start.

WOULD YOU AGREE THAT HEALTHCARE PROFESSIONALS AREN'T NATURAL ENTREPRENEURS?

Deborah Knight

Healthcare professionals have to be inquisitive, and that's what entrepreneurs are. Both have to approach things in different ways to achieve the right outcome. There's actually a lot of support networks out there for start-ups, helping experts to bring their knowledge and ideas to market. When considering the rollout of AI, we need to think more about how we can bring the science, technology and business world together to solve problems. What we sometimes see is a product solution and a science solution but these two need to merge.

Paul Christie

My team is made up of aerospace engineers, biochemists, bioscientists, and incredibly talented professors. Notably, Oxford, Cambridge and Imperial are not the only universities in the country innovating, both the University of Nottingham and Nottingham Trent University are investing significantly in health tech.

Melanie Davidson

For AI to be a success, you need to bring in lots of different people from different areas to get the best possible understanding of what the problem is and how it can be resolved, all elements can come together to create these new solutions.



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HOW WILL AI CHANGE THE HEALTH SECTOR?

Professor Stephan Reiff-Marganiec

AI will allow for earlier screening and treatment, which will free up the highly trained experts.

Ian Ellis

One of the fears about AI is that it will take over people's jobs, however humans will always be needed. AI can simply allow experts to focus on the clinical aspects of the job, while the AI can take on a lot of the time-consuming tasks.

Paul Christie

I think it will allow for people to be diagnosed in the home, much more frequently, enabling earlier interventions. Not only will this prevent health issues from deteriorating, it will create a more efficient health service, more innovation and automation of patient pathway management. The impact will be profound.

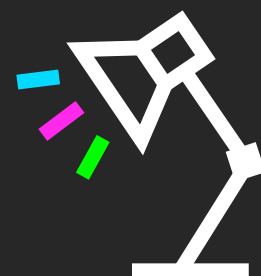
Melanie Davidson

When a condition is diagnosed, it can be continually monitored and checked. This situation will prevent the gaps between patients being assessed, as their data can be tracked over time – one of the main challenges the NHS grapples with.



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CONCLUSION

From the discussion it's clear that the convergence of data and artificial intelligence (AI) presents significant opportunities for the healthcare sector, provided it's deployed responsibly. However, a number of misconceptions need to be addressed to gain public trust and educate different demographics on the benefits of new technology.

Rebuilding trust

Empowering individuals with the right data-driven tools will enable them to actively manage their health, improving overall patient care - but this process will take time. It will also require trust to be rebuilt between the government and the public, something that was damaged during the COVID-19 pandemic.

Investing in innovation

Smaller health tech companies face some clear challenges when navigating regulatory hurdles and securing investment in the UK. To prevent falling behind global competitors, particularly in the U.S. and Asia-Pacific region, the UK government must increase investment in health tech and better support private enterprise initiatives seeking to raise investment.

Addressing the skills gap

The successful adoption of AI in healthcare will require certain skills and capabilities, creating opportunities for universities and other academic institutions. The organisations investing early are likely to reap the rewards, with the Midlands' already standing out as a hub for health tech.

Engaging with the public sector

AI will never replace humans across the healthcare landscape, but it will enable more personalised and better quality care to be delivered. AI's impact on the healthcare sector promises earlier diagnosis, continuous monitoring, and task automation, enabling the experts to focus on improving patient outcomes.