



# The Implementation of AI in the NHS

**Authors:** Katrina Thornber, EMJ, London, UK

**Citation:** EMJ Innov. 2025;9[1]:13-15. <https://doi.org/10.33590/emjinnov/XVPR1225>



**SUCCESSFUL** integration of AI and machine learning into the NHS depends on the implementation of practical education, at varying levels of intensity, across the entire NHS workforce, medical school students, and the general public. During the NHS National AI Conference on 10<sup>th</sup> December, 'Beyond Implementation: Building Healthcare's AI-Fluent Workforce', experts discussed the current and future innovative approaches being implemented to improve AI literacy, develop educational AI curricula, and enhance confidence and trust in AI-implemented healthcare systems.

## A LACK OF AI LITERACY

Keith Grimes, Digital Health & Innovation Consultant, Curistica Ltd, UK, began the session by warning that healthcare professionals may be using AI models, such as ChatGPT (OpenAI, San Francisco, California, USA), without having had the adequate training to ensure it is being used safely, responsibly, and equitably. "It is estimated that one in five GPs use ChatGPT, but actually, one in five GPs haven't had the adequate training," Grimes explained. He also highlighted the publication of the European Union's Artificial Intelligence Act in July 2024, and how non-compliance with the legal framework for the regulation of AI systems will be met with a maximum financial penalty of up to 35 million EUR.<sup>1</sup>

This led to an in-depth discussion on building an "AI-fluent workforce" in the UK, featuring Alex Aubrey, Clinical Lead for AI at Health Education and Improvement Wales, UK, and Nick Fuggle, co-organiser of the Clinical AI Interest Group at the Alan Turing Institute, London, UK.

Aubrey is responsible for mapping the landscape of AI literacy within the healthcare and social care workforce in Wales, and Fuggle is working on scoping a clinical AI curriculum and potentially

a broader healthcare AI curriculum for everyone working in the NHS. Together, they proposed the key steps needed to ensure that current healthcare professionals, the future workforce, patients, and the general public develop a sufficient understanding of AI: what it is, how to use it effectively, and when its application is appropriate.

Aubrey began by emphasising that improving AI literacy requires hands-on experience, noting: "You have to use it enough to start making mistakes that are very low risk". This approach, he explained, helps individuals recognise that while AI can be beneficial, it can also make mistakes and is not always appropriate to use. He highlighted the importance of combining formal education pathways with safe, playful experimentation, enabling users to better understand AI's practical applications and limitations.

## A NATIONAL AI CURRICULUM

Fuggle outlined the three main areas to consider in an AI curriculum: who is the target audience for the curriculum, what will be the core components, and how will these educational frameworks be implemented.

### Who Should be Taught?

Fuggle raised the question of who the curriculum will be directed at. Will it target medical students, postgraduate medics, those in continuing medical education, everyone working in healthcare, or the entire NHS workforce?

Aubrey explained that medical schools are already taking steps to include AI in their educational frameworks. For example, from next year, Cardiff University, UK, will introduce mandatory AI workshops and training for medical students. Regarding the entire NHS workforce, Fuggle admitted that he has shifted his perspective from thinking everyone in the NHS needs a deep understanding of AI, to thinking that everyone should be aware of it, and have access to education if needed in their specific job role.

“**Medical schools are already taking steps to include AI in their educational frameworks**”

### Core Components of the Curriculum

The discussion then turned to the curriculum's content, with Fuggle emphasising the importance of defining a curriculum that is flexible enough to adapt to the rapid developments in AI. “I think it's really difficult to tell people what they're

going to need if they qualify in 2 years, but I think that the one thing we probably would agree on is we need to give people the foundational tools to equip them so that they can ask the right questions and understand that basic literacy.”

Fuggle suggested including background knowledge, such as the theory behind machine learning and key terminology. For medical students, he proposed that ethics must play a central role, alongside legal and regulatory considerations. Additionally, training on the implementation in clinical practice is crucial, with training on how to explain to patients how these tools are being used and how they're influencing their care, to ensure patients can fully consent to the use of AI in their care. Aubrey also brought to attention the issue surrounding differing definitions within AI terminology. He explained that confusion arises quickly when everyone operates with slightly different terminology, so he relies on the NHS AI Lab dictionary to ensure a consistent and standardised language when discussing AI.

Another issue he highlighted was the hesitation to let students use AI. He proposed that when students use AI to enhance their learning, they can find answers to basic questions quickly, and therefore, have more time to explore more complex topics and apply their knowledge to real-world settings.



## Strategies for Rolling Out the Curriculum

Finally, the panel discussed how the AI curriculum may be delivered, with emphasis on key drivers within the government and other stakeholders, with the introduction of leadership training for AI. Fuggle highlighted initiatives such as AI champions, leaders within medical schools who are expected to play a pivotal role in driving these efforts and fulfilling some of the goals discussed.

Aubrey dove into an initiative he has been working on, though still a work in progress, it's anticipated to be ready for rollout to staff by 2025 or 2026. The concept is "using AI to learn AI". He explained that creating educational material for the entire NHS workforce, from nurses to surgeons, physiotherapists, opticians, pharmacists, administrative staff, and many more, would

"take a lifetime". Instead, they decided to leverage AI, specifically a large language model, to develop training tailored to different job roles. Based on a user's specific role, the AI model can highlight basic applications relevant to their field, then delve into potential challenges, risks, and biases that need to be considered. The plan is to ensure reliable data sources, aiming to minimise the risk of AI "hallucinations" and inaccurate information. He noted that the potential risks of this application are relatively low, with guardrails being put in place. He concluded by highlighting the importance of transitioning from a mindset of risk avoidance to one of risk management. This shift, he stressed, is essential for the successful implementation of AI within the NHS, with the ultimate goal of ensuring that the benefits of such initiatives outweigh the potential risks.

---

## References

1. EUR-Lex. Document 32024R1689. Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) (Text with EEA relevance). Available at: [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L\\_202401689](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202401689). Last accessed: 20 January 2025.