HTA172

# Health Technologies Using Artificial Intelligence: What Is Being Assessed in the UK by NICE?

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## BACKGROUND

- Artificial intelligence (AI) is rapidly evolving, creating new landscapes for health technologies. Developers, regulators, and health technology assessment (HTA) bodies are trying to keep up.
- The National Institute for Health and Care Excellence (NICE) published a statement of intent for the approach of AI use in November 2024. NICE defined AI broadly as technologies performing tasks requiring human intelligence, including machine learning.[1]
  - The statement is intended to be a flexible framework, identifying 3 priority domains: guidance for technology developers, evaluation of AI technologies, and using AI to streamline the processes and increase efficiencies.
- With the increased use of AI, it is important to gain a better understanding the current landscape of health technologies using AI, which will help future HTA submissions.

## OBJECTIVES

- To identify the published and in-development NICE guidance on technologies using AI
- To evaluate the outcome of the NICE assessment

## METHODS

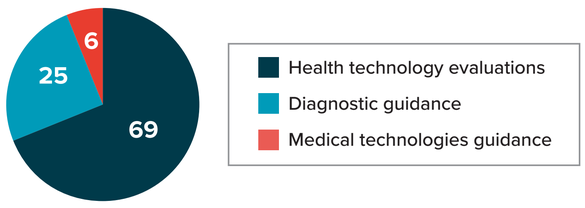
- A review of the NICE website was conducted in January 2025.
  - First, the AI section of the NICE website[2] was searched to identify initial technologies.
  - The entire NICE website[3] was then searched using key words [e.g., artificial intelligence, AI, and machine learning] to identify further guidance on health technologies using AI to ensure all technologies were captured.
- For each technology, data were extracted on the status of the technology, the use of AI, and the recommendation made.
- This table presents the overview of technologies and their NICE recommendations.

## RESULTS

- Sixteen guidance documents relating to AI technologies were found.
  - 9 documents were listed on the AI section of the NICE website.
  - The remaining 7 were identified through the general search, and it is not clear why these technologies were not listed on the AI section of the NICE website.
- The 16 identified NICE documents were:
  - 13 (81%) published guidance, and 3 (19%) in/awaiting development, with estimated publication dates up to March 2026 (Figure 1).
  - Health technology evaluations (69% [n = 11]), diagnostic guidance (25% [n = 4]), and medical technologies guidance (6% [n = 1]) are featured in Figure 2.
  - There are 2 technologies in development and 1 awaiting development, all of which are being developed to improve diagnostic accuracy using AI technologies for detection.

**Figure 1. Published Versus in Development**


**Figure 2. Types of Guidance**




**Three of the 16 guidance documents did not recommend use of AI and did not support restricted use of it in the NHS while further evidence is generated.**

For example, in 2023, a AI-derived computer-aided detection software designed to identify and measure lung nodules on computed tomography (CT) scans for suspected lung cancer underwent HTA (DG55[14]). NICE concluded there was not enough evidence to recommend the technology in routine practice. However, the software could be used in research setting to help detect, measure, and assess the growth of lung nodules until stronger evidence is generated on the diagnostic accuracy, clinical impact, and cost-effectiveness.



**Most of the guidance recommends (8 out of 16) restricting use of AI due to insufficient evidence.**

For example, in 2025, an AI software developed to help healthcare professionals detect fractures on X-rays in urgent care underwent HTA (HTE20[12]). NICE concluded that the AI technology can be used as an option in the National Health Service (NHS) while more evidence generation is collected.



**Only 1 of the 16 guidance documents recommended use of an AI technology that had evidence of clinical value and cost-effectiveness.**

A wearable electrocardiogram (ECG) patch was recommended for use in the NHS by NICE in 2020 (MTG52[4]). It enables monitoring of cardiac arrhythmias, and AI is featured to analyse the ECG recordings and, ultimately, produce a technical report to be used with interpretation from healthcare professionals.

**Table 1. Summary of Identified Health Technologies**

| NICE | Technology | Recommendation |
|---|---|---|
| MTG52[4] | Device for detecting cardiac arrhythmias using AI to produce a technical report for the healthcare professional | Recommended |
| DG57[5] | AI-derived software to help clinical decision making in stroke | Allowed with evidence generation |
| HTE11[6] | Nine AI technologies to aid contouring for radiotherapy treatment planning used with healthcare professionals | Allowed with evidence generation |
| HTE5[7] | Cloud-based system for radiotherapy data storage, communication, and management | Allowed with evidence generation |
| HTE8[8]/HTE9[9] | AI-based apps with a cognitive behaviour therapy (CBT)–based self-help programme and digitally enabled therapies for adults with depression/anxiety | Allowed with evidence generation |
| HTE19[10] | Seven AI-enabled exacerbation prediction capability digital technologies to support self-management of chronic obstructive pulmonary disease (COPD) | Allowed with evidence generation |
| HTE12[11] | AI-derived software to analyse chest X-rays alongside clinician review for suspected lung cancer in adults referred from primary care | Allowed with evidence generation |
| HTE20[12] | AI technologies to help detect fractures on X-rays in urgent care | Allowed with evidence generation |
| HTE24[13] | AI technologies for assessing and triaging skin lesions within the urgent suspected skin cancer pathway | Allowed with evidence generation |
| DG55[14] | AI-derived computer-aided detection (CAD) software for detecting and measuring lung nodules in CT scan images | Not recommended, only use in research |
| DG46[15] | Aid for assessing risk of lung cancer in solid lung nodules using AI for CT surveillance | Not recommended, not enough evidence |
| HTE4[16] | Aid for predicting cardiac risk in suspected coronary artery disease, AI to analyse images from CT coronary angiography | Not recommended, not enough evidence |
| DG10118[17] | AI-supported digital technologies can help reduce the rate of missed polyps during colonoscopy | In development, expected March 2026 |
| HTE10059[18] | AI technologies to aid the opportunistic detection of vertebral fragility fractures on radiographic images | In development, expected October 2025 |
| HTE10062[19] | AI technology for mammography is proposed as a way of improving workforce shortages and enhancing cancer detection | Awaiting development |

## CONCLUSIONS

- The different AI technologies and different publication types pose a challenge to efforts to identify information or predict HTA outcomes. It is evident that AI use is new in healthcare, and the guidance and technologies in development appear positive but lack evidence.
  - This highlights that evidence gaps can limit NHS adoption of AI.
- There are clear opportunities for technology developers, but a strong evidence platform should be generated to meet requirements.
- The NICE statement of intent has made clear to developers and companies the opportunities on how to approach these new technologies using AI. There is an emphasis on evidence requirements as well as the need for transparency and reproducibility in AI-driven evidence. NICE's stance is adaptive, with the framework likely to evolve with the pace of AI.

### References

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