

Checklist for the use of AI in hospitals

Artificial intelligence is playing an increasingly prominent role in healthcare. However, it also raises important questions about its safe and effective use. A new study from Austria offers valuable insights.

What can artificial intelligence (AI) really achieve in healthcare? What must be considered during implementation, and how can the benefits of a specific AI system be assessed? The Austrian Institute for Health Technology Assessment (AIHTA) has examined 30 HTA analyses and developed a guide with a checklist for assessing the benefits of various AI technologies and their use in hospitals. The conclusion: AI is currently being used in hospitals to support specific tasks such as image-based diagnostics or analysing health data. While AI can help reduce the workload of healthcare staff, it also introduces new challenges. As a result, it creates ongoing demands and requires tailored assessment methods, the AIHTA research team notes. On the one hand, regulatory requirements such as the EU's Artificial Intelligence Act and the Medical Devices Regulation must be met. On the other hand, the growing use of AI-enabled digital health technologies (DHTs) raises a number of questions that need to be addressed before implementation.

Different ways of using AI

According to the studies analysed, AI is primarily used in diagnostics and screening—especially in radiology, where it assists with image analysis by recognising patterns. It also supports organisational functions, including administrative systems. AI-enabled DHTs are expected to improve efficiency by reducing workloads and waiting times, enhance diagnostic accuracy, streamline workflows and processes, and ultimately improve patient outcomes and access to care. Several international assessment models provide guidance. The AIHTA identified five such models, including the 'Evidence Standards Framework' (ESF) from the UK's National Institute for Health and Care Excellence (NICE). This distinguishes between three categories: Technologies without direct patient contact and without potential harm to health (e.g. administrative systems); technologies with patient contact but low potential for harm (e.g. health information, documentation of symptoms, simple monitoring functions) and technologies for the diagnosis and treatment of diseases or for the active monitoring of health parameters that have a direct influence on patient decisions and therefore have an increased potential for harm. The more significant the impact of a DHT, the stricter the requirements for demonstrating its effectiveness—and the more rigorous the testing must be.

AI requires constant work

Certain aspects must be considered across the board—for example, algorithms are constantly evolving, and final decisions should always remain in human hands. Methods of evidence-based medicine should be applied consistently throughout the entire product life cycle. “Since AI is constantly evolving, ongoing support costs arise because the systems require continuous evaluation,” explains Michaela Riegelneegg, first author of the report and a research associate at AIHTA. Staff must be properly trained, and the necessary infrastructure—such as AI-compatible hardware—must be available throughout the hospital.

The successful integration of AI in healthcare depends heavily on the quality of existing digital infrastructure.

“AI systems must also be compatible with the existing data infrastructure,” notes Gregor Götz, project lead at AIHTA. Many digital health technologies currently used in Austria function as isolated systems, with data confined to individual hospitals. A well-developed digital infrastructure with strong interoperability is often essential for AI-enabled DHTs to work as intended. This is especially crucial for data risk management and security. Hospitals must also develop strategies for the continuous monitoring of data quality.

Götz explains: “The performance of AI algorithms can change due to software updates or new training data. If these changes significantly affect system performance or alter its original intended use, a reassessment—and potentially a new medical device certification—may be required.”

AI offers potential. But it also requires resources

It is therefore essential to first clarify the purpose and expected benefits of using AI. “Which specific healthcare processes are affected? Who are the intended users? Are there established standard methods?” Riegelneegg asks—highlighting key considerations. In addition to security issues, technical, ethical, organisational and economic aspects need to be considered. The training data used for AI must also be critically assessed, as it may contain algorithmic biases that fail to represent all population groups adequately.

The HTA experts recommend that Austrian hospitals use established methods—such as the EUnetHTA Core Model—as a foundation. These should be supplemented with existing frameworks for digital health technologies and AI-specific checklist components. Particular attention should be paid to the continuous monitoring of performance over the entire life cycle. Given AI’s strong reliance on digital infrastructure, it is essential to strengthen and expand these systems overall. Götz concludes: “These questions and challenges shouldn't discourage the use of AI—but they highlight the need for careful planning and thoughtful implementation.”

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For further information please contact:

AIHTA

Michaela Riegelneegg, MA

Gregor Goetz, MSc, MPH

p.: +43(0)1-2368119-0

e-mail: office@aihta.at

HTA Austria - Austrian Institute for Health Technology Assessment GmbH

Josefstädterstraße 39

1080 Vienna

p: +43(0)1-2368119-0

fax: +43(0)1-2368119-99

e-mail: office@aihta.at

aihta.at