American College of Physicians' Position on AI and Machine Learning

In recent years, the integration of artificial intelligence (AI) and machine learning (ML) technologies has significantly altered the landscape of healthcare. These advancements have sparked both excitement and caution among physicians, who are increasingly reliant on these tools to enhance clinical decision-making and streamline patient care.

The application of AI in medicine has a storied history, with significant growth observed since the early 1970s. However, the recent surge in FDA approvals for AI- and ML-enabled tools underscores their transformative potential in healthcare delivery. These technologies promise to alleviate the burdens of clinical documentation, enhance diagnostic accuracy, and provide critical decision support for physicians grappling with an overwhelming volume of patient data.

Despite these promises, adopting AI in medicine is not without its challenges and ethical considerations. One primary concern is the opaque nature of some AI models, often referred to as "black boxes," where the underlying algorithms and decision-making processes are not transparent to clinicians. This lack of transparency raises valid concerns about accountability, patient safety, and the potential erosion of the patient-physician relationship.

Ethical Guidelines and Research Imperatives: ACP's Vision for AI in Healthcare

The American College of Physicians (ACP) has taken a proactive stance on these issues, advocating for ethical guidelines that prioritise patient-centred care, transparency in AI development, and the protection of patient privacy. The ACP's position paper emphasises the importance of AI technologies complementing rather than replacing human intelligence in medical decision-making. This approach, termed "augmented intelligence," underscores the role of AI as a supportive tool that enhances clinical efficacy while preserving the judgement and empathy that are central to medical practice.

Central to the ACP's recommendations is the call for rigorous research to assess AI's clinical and ethical implications in healthcare. This includes evaluating its impact on patient outcomes, healthcare disparities, and physicians' overall well-being. Furthermore, the ACP advocates for continuous improvement in AI technologies through robust testing and validation processes that involve diverse patient populations and real-world clinical settings.

Recommendations from the ACP

1. ACP firmly believes that AI-enabled technologies should complement and not supplant physicians' and other clinicians' logic and decision-making.
2. ACP believes that the development, testing, and use of AI in health care must be aligned with medical ethics principles. This would enhance patient care, clinical decision–making, the patient-physician relationship, and healthcare equity and justice.
3. ACP reaffirms its call for transparency in the development, testing, and use of AI in patient care to promote trust in the patient–physician relationship. ACP recommends that patients, physicians, and other clinicians be made aware, when possible, that AI tools are likely being used in medical treatment and decision-making.
4. ACP reaffirms that AI developers, implementers, and researchers should prioritise the privacy and confidentiality of patient and clinician data collected and used for AI model development and deployment.
5. ACP recommends that clinical safety and effectiveness, as well as health equity, must be a top priority for developers, implementers, researchers, and regulators of AI-enabled medical technology and that the use of AI in the provision of health care should be approached by using a continuous improvement process that includes a feedback mechanism. This necessarily includes end-user testing in diverse real-world clinical contexts, using real patient demographics, and peer-reviewed research. Special attention must be given to known and evolving risks associated with using AI in medicine.
6. ACP reaffirms that using AI and other emerging technologies in health care should reduce rather than exacerbate disparities in health

care. To facilitate this effort, ACP calls for AI model development data to include data from diverse populations for which resulting models may be used and ACP calls on Congress, HHS, and other key entities to support and invest in research and analysis of data in AI systems to identify any disparate or discriminatory effects. ACP recommends that multisector collaborations occur between the federal government, industry, nonprofit organisations, academia, and others that prioritise research and development of ways to mitigate biases in any established or future algorithmic technology.

7. ACP recommends that developers of AI must be accountable for the performance of their models. A coordinated federal AI strategy should be built upon a unified governance framework. This strategy should involve governmental and nongovernmental regulatory entities to ensure the oversight of the development, deployment, and use of AI-enabled medical tools; the enforcement of existing and future AI-related policies and guidance; and mechanisms to enable and ensure the reporting of adverse events resulting from the use of AI.

8. ACP recommends that AI tools be designed to reduce physician and other clinician burdens in support of patient care at all stages of development and use.

9. ACP recommends that training be provided at all levels of medical education to ensure that physicians have the knowledge and understanding necessary to practice in AI-enabled healthcare systems.

10. ACP recommends that the environmental impacts of AI and their mitigation should be studied and considered throughout the AI cycle.

While AI and ML offer unprecedented opportunities to revolutionise healthcare delivery, their integration must be guided by patient-centeredness, transparency, and ethical responsibility principles. By embracing these principles, medical physicians can harness the full potential of AI to improve clinical outcomes and enhance the quality of care for patients worldwide. The journey towards a more AI-enabled future in medicine demands collaboration, education, and unwavering commitment to the highest standards of ethical practice.

Source: Annals of Internal Medicine

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