

## EDITORIAL

# ARTIFICIAL INTELLIGENCE IN MEDICINE: CLINICIAN EMPOWERMENT, TRUST, AND THE CLINICIAN-PATIENT RELATIONSHIP

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Artificial intelligence (AI) has quickly become a disruptive force in healthcare, improving operational efficiency, personalizing treatment, and improving diagnostic accuracy. AI applications are already helping doctors identify illnesses early, optimize processes, and customize care for each patient, which holds promise for empowering medical professionals and enhancing patient outcomes. However, trust issues are also brought up by the integration of AI, both in the relationship between the patient and the clinician and the technology itself. Although AI has the potential to empower physicians, how it is developed, applied, and incorporated into clinical workflows will determine its impact on trust.<sup>1-3</sup> A systematic review found that five out of ten studies indicated improved trust with Explainable AI (XAI) as compared to standard AI, demonstrating that XAI can boost clinicians trust when it provides clear and pertinent explanations. The need for careful design in XAI systems is highlighted by the fact that complicated or contradictory explanations can erode trust. It is crucial to form interdisciplinary teams with clinicians, engineers, and ethicists to guarantee that AI systems are not only technically sound but also morally upright and easy to use.<sup>4</sup> AI powered imaging analysis for instance, has greatly increased the detection rates of cancer and predictive analytics allows for the proactive treatment of complicated illnesses like COVID-19.<sup>1,2</sup> According to a survey of 265 medical professionals, people who see AI as a way to lighten

their workload are more likely to trust it and use it when making decisions. On the other hand, doctors who are worried about the dangers of AI are typically less convinced, which might hinder adoption.<sup>5</sup> However as AI is incorporated into clinical practice more and more, serious issues with accountability and trust emerge. A recent incident in a rural hospital highlighted the dangers of biased training data when an AI system failed to detect a tumor, the patient life was saved by Dr. Lee's prompt intervention.<sup>3</sup> This case brings to light the open question of who carries responsibility when AI algorithms fail?<sup>3</sup> Emerging research suggests doctors may over rely on AI results, which can occasionally result in incorrect diagnoses. This emphasizes the necessity of a balanced integration that maintains human judgment.<sup>2</sup> Concerns about data privacy, transparency, and the possible loss of the human touch in care all contribute to the fragile patient trust in AI.<sup>1,6</sup> Studies show a significant discrepancy between patient skepticism and clinician optimism, especially among older adults.<sup>6</sup> The difficulty is in establishing a fair perspective where AI is viewed as an assist rather than a substitute for human decision making.<sup>7</sup> Transparent AI systems, ongoing clinical education and inclusive stakeholder engagement, including patients during AI development and deployment are all necessary to close this gap.<sup>3,8</sup> To address these moral and practical issues, regulatory frameworks must evolve. To ensure safety and equity, AI tools must be thoroughly validated and

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regularly monitored.<sup>2,3</sup> In order to maintain the trust that is essential to providing quality healthcare, AI should ultimately be seen as cooperative partners that enhances rather than replace clinician expertise. To prevent mistakes, trust in AI must be balanced. Strategies for measuring trust should be improved in future studies. While appropriate trust in AI can enhance accuracy, if doctors disregard AI advice, it can have negative consequences.<sup>4</sup> In conclusion AI has enormous potential to transform medicine

and empower medical professionals. However, achieving this potential requires establishing and maintaining trust via openness, responsibility, and human centered design. Medical AI future depends not only on advancements in technology but also on interdisciplinary cooperation, ethical stewardship, and constant communication between physicians, patients, engineers, and legislators. Only then will AI be able to improve healthcare without sacrificing the essential human relationships that lie at its heart. When AI is used responsibly, it can strengthen rather than weaken public confidence in medicine.

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### CONFLICT OF INTEREST

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All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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