HealthManagement.org

LEADERSHIP • CROSS-COLLABORATION • WINNING PRACTICES

VOLUME 23 • ISSUE 3 • € 22

ISSN = 1377-7629

(non)Profitability in Healthcare

THE JOURNAL 2023

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In the Age of CO-ERA: How Essential is the Human Role in the New AI World?

In a world where AI and robotics are reshaping the landscape of healthcare, the need for close collaboration and sharing among healthcare providers, medical device companies, tech startups, patients, payers, and regulatory bodies becomes paramount. By adopting a co-era healthcare approach, where collaboration and collective effort drive innovation, integrated and patient-centric medical solutions can be developed to make a real difference in healthcare delivery. In an interview with HealthManagement.org, Attilio talks about the essential role of humans in the new AI world.

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What are your top three scenarios where AI might be a better option and your top three where it may be a worse option in human intelligence healthcare?

As in any of the greatest discoveries, the benefits and advantages don't come alone and often bring together a darker scenario.

Talking about the positive aspects, AI has undoubtedly demonstrated its potential to revolutionise healthcare in several scenarios.

In terms of prevention strategies, by analysing large datasets and risk factors, AI can, in fact, immediately identify individuals who may be at higher risk for certain diseases. This allows healthcare providers to implement targeted preventive measures and interventions, potentially reducing the incidence of diseases and promoting population health.

Another key benefit is AI-driven diagnostics. AI can serve as a diagnostic aid, particularly in regions with a scarcity of specialised medical professionals. AI algorithms can analyse medical images, lab results, and patient data to provide (preliminary) assessments and identify potential health issues, helping healthcare providers make informed decisions. In the near future, this could open doors to quality healthcare for a larger population.

Furthermore, AI has the potential to democratise the system by enabling the development of low-cost medical solutions. I strongly believe that AI can streamline healthcare workflows through automation and process optimisation, reducing operational costs and making healthcare services more accessible and affordable to a broader population. This is my fervent hope. And while we can take advantage of these immense opportunities, certain challenges need careful consideration.

Indeed, the rapid advancement in the digital world and AI technology can outstrip the development of necessary regulations and guidelines. Without proper oversight, there is a risk of creating an unregulated ecosystem where AI applications in healthcare may lack transparency and accountability. Healthcare providers and regulatory bodies must keep up with the pace of AI innovation to ensure responsible and ethical use of AI in patient care.

Another concern I see is concerning the bias and the so-called black-box algorithms: AI algorithms rely on data for training, and if the data used for training is biased or unrepresentative, the AI system may produce biased or unfair outcomes. Additionally, some AI models, known as “black-box” algorithms, lack transparency in how they arrive at their decisions, making it difficult for the person who is reading them to understand or challenge their results.

Addressing bias and increasing transparency in AI algorithms is therefore essential to ensure that AI systems provide equitable and unbiased healthcare solutions we can rely on.

Lastly, I see a crucial issue around privacy and security and how we can safeguard them. The widespread use of AI in healthcare involves handling vast amounts of sensitive patient data, and ensuring the privacy and security of this data is of utmost importance. Data breaches or unauthorised access to patient information could have severe consequences, including compromised patient confidentiality and potential misuse of personal health information. Robust data privacy measures and cybersecurity protocols must be implemented to safeguard patient data and maintain trust in AI-driven healthcare.

How would we safeguard AI in healthcare? And how does the app ensure reliable safeguarding?

We live in an era of collaboration, where cooperation and shared communication are essential. In this sense, what I would call “the CO-ERA” approach will be fundamental in this process. By proactively addressing potential risks and implementing robust safeguarding measures, all stakeholders can collectively harness the full potential of AI in healthcare responsibly.

AI has indeed the capacity to enhance patient care, improve efficiency, and transform healthcare delivery, so all involved parties must navigate these challenges and seize the opportunities that AI presents.

In this context, within the applications realm, it would be essential to develop an AI governance. Establishing a precise agenda and governance ensures that all AI applications adhere to ethical guidelines and regulatory requirements. This framework should define the roles, responsibilities, and accountability of all stakeholders involved in AI development and deployment. This would, though, not be enough if we do not also directly involve healthcare professionals, AI developers, regulatory bodies, and patients in the development process of AI applications. Collaboration and education are essential in refining AI algorithms, ensuring they align with clinical workflows, and addressing real-world healthcare challenges.

Finally, I want to emphasise the importance of investing in explainable AI, where AI algorithms can provide transparent explanations for their decisions. This helps build trust among healthcare professionals and patients, enabling them to understand how AI arrives at specific conclusions.

Do you envision the doctor-patient interaction to change? In what ways specifically through the incorporation of AI co-opting?

I think that the integration of AI through co-opting in healthcare has the potential to significantly improve the doctor-patient relationship and enhance patient trust. When doctors use AI as a supportive tool alongside their experience and expertise, it can lead to several positive outcomes.

A strong doctor-patient relationship is vital for effective healthcare delivery. AI is an impersonal technology. It cannot replicate the human connection and trust between patients and their healthcare providers. While AI can enhance medical processes, it cannot replace the human touch and bedside manner that contribute to patient satisfaction and compliance.

In this sense, it would be a big mistake to see AI as a replacement for human intelligence, but I consider it a powerful tool to augment and support healthcare professionals in delivering more efficient and patient-centred care. A collaborative approach that leverages the strengths of AI and human expertise is crucial for ensuring optimal healthcare outcomes.

How do you see this co-opting evolve with regard to human presence?

The co-opting of AI in healthcare, in line with the co-era healthcare concept, will involve a gradual evolution where AI becomes an integrated and supportive tool alongside human healthcare providers. This transformation will align with a global framework that emphasises the responsible and ethical implementation of AI technologies in healthcare settings.

As AI technologies advance, healthcare professionals will witness a shift in their roles and responsibilities. Doctors and medical teams will take on more supervisory roles, overseeing AI-driven decisions and validating their alignment with patient

needs and ethical guidelines established within the global framework. This shift allows healthcare providers to leverage AI-generated insights while maintaining the critical human element in clinical decision-making.

Interdisciplinary collaboration will play a crucial role in this evolution. Healthcare professionals will collaborate closely with experts in AI, data science, and computer engineering, adhering to the global framework's guidelines for data privacy, security, and patient safety. Together, they will co-create innovative AI solutions that address complex healthcare challenges, ensuring that AI applications remain patient-centric and ethically aligned.

What scenarios do you envision 'allowing' AI to be the final decision-maker? Or is that never going to happen?

The integration of AI in healthcare holds tremendous potential, demonstrating its ability to assist healthcare professionals, improve patient outcomes, and enhance the overall healthcare landscape. AI's data analysis and pattern recognition capabilities have proven valuable in diagnosing diseases, predicting treatment responses, and streamlining administrative tasks.

However, there are important risks and limitations associated with allowing AI to be the final decision-maker in critical healthcare scenarios. Ethical considerations, patient autonomy, and accountability become key factors when considering the role of AI in crucial medical decisions. AI systems lack human judgment, context, and the ability to consider non-medical factors, making them less suitable for complex and emotionally sensitive situations. I see AI as a valid and very useful assistant, but I do not think AI should ever be the final decision-maker.

A more promising approach lies in what I highlighted above, a collaborative co-era healthcare concept where AI serves as a decision-support tool alongside human healthcare providers. By harnessing AI's data-driven insights, evidence-based recommendations, and efficiency, healthcare professionals can make more informed decisions and deliver personalised care. This model promotes a balance between the benefits of AI-driven efficiency, the preservation of the human touch and the ability to incorporate nuances in patient care.

Looking ahead, the future of AI in healthcare is likely to involve a hybrid model that combines the strengths of AI with the expertise of healthcare professionals. In this model, AI will continue to assist healthcare providers in diagnosis, treatment planning, and administrative tasks, empowering them to deliver high-quality, patient-centric care. This integration will be governed by robust regulatory frameworks that ensure patient safety, transparency, and accountability in AI applications. AI will not replace the clinician, but it will replace the clinician that does not use AI.

While AI's role in healthcare is undoubtedly transformative, embracing a responsible and human-centred approach is essential to maximise its potential and build patient trust. The co-era healthcare concept emphasises the collaborative and integrated nature of AI co-opting, making healthcare a shared effort between AI and human expertise. This way, we can navigate the challenges, harness the opportunities, and drive healthcare into a future that optimises the synergy between AI technologies and compassionate patient care.

Conflict of Interest

None. ■