

Editorial: Harnessing the Power of AI in Health Care: Benefits, Risks, and Preparation

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As the Editors-in-Chief of the Sage Journal of Surgical Innovation, we believe it is time to encourage our authors and readers to research and critically appraise use cases, value and potential challenges associated with the rise of artificial intelligence (AI) in health care. AI has the capacity to revolutionize surgical medical practice in many ways. For instance, it may alleviate stress from administration or repetitive tasks of busy practitioners. AI may help to further tailor patient care enhancing patient outcomes, in bridging gaps in access to care, and also in expediting the delivery of care. However, it is imperative that we comprehensively examine the benefits, proposed risks, and the necessary preparations to ensure not only the best utilizations of AI in health care, but at the same time, also safeguard it and prevent AI from doing harm.

A personalized approach to treatment is promised by the introduction of AI in medicine. To date, AI can analyze enormous volumes of data using sophisticated algorithms and machine learning, and in a pace not known to us before. With the help of AI, doctors are now able to create individualized treatment programs for patients based on their unique genetic make-up and medical background. This type of personalized medicine has the power to drastically improve patient prognosis and completely alter the way that health care is provided today.

Additionally, AI has the potential to resolve the ever-growing problem of health care access. Health care professionals may extend their knowledge to underserved communities using AI algorithms, guaranteeing that even the most remote areas receive high-quality care; especially so when the 5G networks are becoming more widespread. But even in areas where 3 or 4G is only available, it is possible to offer diagnosis and treatment recommendations, and even train medical staff using simulation technology. In regions with only limited access to specialized medical personnel, AI combined with mobile

phones and telephone networks, we foresee that well-built and ethically sound AI technology will become very promising in closing the health care gap and contribute to equality and diversity issues.

While the benefits of AI in health care are profound in theory, it is essential to acknowledge the potential risks and challenges that come with its implementation. Patient privacy and data security are primary concerns in the era of AI-driven health care. The acquisition and utilization of sensitive patient information must be accompanied by stringent privacy safeguards and ethical considerations. Striking the delicate balance between data accessibility and patient confidentiality is critical to maintain trust and ensure the responsible use of AI in health care. Indeed, it is imperative to address the associated risks and challenges, such as patient privacy concerns and stress the need for interdisciplinary collaboration. Also, it is vital to make sure that regulations are in place that are easily accessible on how to build, stress and declare an AI algorithm free of bias, or at least how to calculate with that.

Health care requires careful consideration of both technical and people-centered difficulties for the successful integration of AI, especially generative AI, where

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rules are flexible and newly developed. Strong data sources are required for the creation of accurate AI systems, as well as cooperative and iterative relationships between AI and human health care practitioners. In order to successfully navigate the numerous ethical and legal issues surrounding the use of AI and ensure that it augments rather than substitutes for human expertise, a multidisciplinary approach is needed. Safely serving as the co-pilot, AI should be built to be unable to override human intelligence –not overtaking without the user’s knowledge or permission.

To harness the full potential of AI in health care, we feel adequate preparation in many ways and aspects is vital. And we should start now to prepare. Not only technical -but also and merely-prepare human and organizational capital. Health care institutions and educational programs need time to adapt to the changing landscape. They should be helped on how to best incorporate AI training and insights into medical curricula. Medical professionals need to be schooled to better comprehend and understand AI’s capabilities and limitations. This, to enable not only ourselves, but also our near-future colleagues to effectively leverage AI tools in patient care, while maintaining clinical judgment and expertise. For that, we need scientific insights and evidence. And that is what we would like to encourage.

As we embark on a transformative journey, health care institutions, policymakers, and health care professionals must work hand in hand. We need to develop appropriate

regulations, infrastructure, and ethical frameworks to ensure responsible and effective use of AI in health care. And as a surgeon, what better way to start than to send in your research to our journal, to be shared among those with an appetite and interest for innovation in surgery.

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