

Letter to Editor

Will Artificial Intelligence Replace Physicians or Augment Their Capabilities?

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Dear Editor-in-chief

A key issue raised by increased artificial intelligence (AI) applications in healthcare is whether robots will replace physicians or work alongside them. As technologies incorporating machine learning (ML), natural language processing (NLP), and deep learning continue to evolve rapidly, artificial intelligence (AI) is increasingly improving its skill sets in disease diagnosis, image interpretation, and therapeutic guidance¹⁻³. Does this imply that physicians are becoming obsolete?

Artificial intelligence has proved to be noteworthy. In radiology, dermatology, and ophthalmology, algorithms can now detect problems with a similar level of accuracy, or even better, than that of professionals⁴⁻⁶. Google LYNA has aided the detection of breast cancer metastases and helped pathologists focus their attention on areas of highest risk, where it is most crucial⁷. In medical imaging, deep learning algorithms, especially those trained with genetic algorithms, have demonstrated immense promise to improve the accuracy of pneumonia and COVID-19 diagnosis from chest X-rays. Such breakthroughs demonstrate the pragmatic utility of AI to ease respiratory disease detection and improve

healthcare response to pandemics⁸. In the same vein, Transfer learning with DenseNet121 and CheXNeXt has demonstrated comparable accuracy to that of humans in classifying many chest ailments, highlighting the potential of AI to be a reliable clinical tool in multi-disease diagnosis based on X-rays⁹. In ophthalmology, convolutional and deep learning have made it possible to quickly and non-invasively interpret the retina. This has made possible the detection and measurement of pathological changes in macular and retinal pathologies. AI systems, now FDA-approved to screen diabetic retinopathy and promising to enable large-scale screening programs, disease monitoring, and customized treatment planning, prove the ophthalmologist's role in the current care of the eyes to be essential¹⁰. In dermatology, AI systems, and deep learning algorithms in particular, have reached levels of comparable accuracy to that of dermatologists in the detection of skin malignancies and inflammatory conditions, highlighting their potential as useful clinical decision-support tools¹¹. Additionally, IBM Watson systems have started to help oncologists by suggesting treatment plans customized to each patient¹². Such remarkable achievements raise concerns in physicians' minds over their professional fate.

However, while AI excels at recognizing patterns and

data handling, it fundamentally misses an essential ingredient: human touch. The physician-patient bond is built on communication, empathy, and trust, and includes knowledge of the patient's condition, values, and life situation—dimensions that no program can truly grasp^{13, 14}. Clinical judgments usually involve managing vague indications, incomplete patient histories, and complex psychosocial dynamics. Such dilemmas require physicians to resort to moral reasoning, draw on clinical experience, and take ethical and contextual considerations into play—dimensions beyond artificial intelligence, thus underscoring the critical role of physician judgment^{15,16}.

AI can alleviate time spent by physicians doing non-clinically related work by reducing the burden of workload, improving diagnostics, and enabling evidence-based practice, enabling physicians to concentrate more on patient-centered practice¹. For instance, AI-based tools can help with real-time transcription, clinical documentation, and disease progression prediction². These tools alleviate mental fatigue and help clinicians work more efficiently and effectively. Therefore, we should welcome AI not as a rival but as a mighty companion^{17, 18}. This enhances rather than diminishes the role of the physician. The best contenders to take the next leap in patient care will be physicians with dual expertise in both technology and medicine^{19, 20}.

In order to make advancements, education in medicine should include AI literacy and equip the next physicians with the faculty to use new technologies judiciously. Physicians need to know all about AI and critically evaluate its output to provide safe and ethical care²¹. The aim is to enable physicians to function efficiently with machines rather than to make robots physicians^{18, 21}.

Ultimately, physicians will not be replaced by AI, but physicians who use AI wisely may replace physicians who do not. The future of medicine lies in filling the gap between humans and machines, not in choosing one over the other.

Keywords: AI in Healthcare, Physician-AI Collaboration, Ethical Clinical Judgment, AI Diagnostics & Imaging, Patient-Centered Care, Future of Medicine

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