



Will AI Replace Doctors?

Text by Dr Ng Chee Kwan

This issue of *SMA News* places focus on artificial intelligence (AI) in medicine. AI has a great potential to help doctors provide better care for patients. For example, AI may act as a physician assistant in relieving doctors of menial tasks such as documentation of clinic consultations. Rather than the doctor having to trawl through a lengthy algorithm to decide on the appropriate course of patient management, AI could automatically apply the algorithm and come up with treatment recommendations. In fact, AI is already being used for the review of diagnostic scans such as fundus images and chest X-rays, as a backup or fail-safe system to ensure that doctors have not missed important findings.^{1,2}

As a surgeon, I am particularly interested in whether AI would be able to help surgeons operate better. According to a June 2023 article published in the *Bulletin of the American College of Surgeons*,² AI can analyse surgeries as they are being conducted and can provide guidance and additional oversight during the surgery. For example, the AI can point out where it is safe to operate, give warnings if the surgeon is about to cut the wrong structure, or offer suggestions such as to put in drains. AI could potentially perform suturing tasks such as closure of the port site or even bowel anastomosis.

Looking ahead, is it possible that doctors will be replaced by AI? A common view is that AI will not replace doctors because it does not possess real empathy and ethical judgement. A recent study compared the responses from ChatGPT (a popular generative AI chatbot) and a physician to patients' questions asked

publicly on Reddit (a discussion website), and it showed that the chatbot was able to generate quality and seemingly empathetic responses to the questions.³ However, this study was in the context of answering questions submitted online, which is not a comparable situation to actual clinic consultations. Clinicians provide effective medical care in ways that the AI cannot, by empathising with patients in real time. Patients may only reveal important medical information when they sense that their clinicians are attuned to their emotional state. Patients are more likely to adhere to their treatment plans if they trust their clinicians, and are better able to cope with the diagnosis of their serious medical condition when their clinicians empathise with them.⁴

Autonomous surgical robotic systems capable of replacing human surgeons remain in the realm of science fiction. It is quite unlikely that patients will accept being operated upon entirely by robots without human intervention or supervision in the near future. There are also issues of liability which are difficult to overcome. In a survey on autonomous surgical robotic systems and liability, respondents were posed multiple scenarios in which a surgeon referred a patient to an intelligent robot. In one scenario, the robot conducted a complete surgical procedure without human supervision, resulting in a complication and causing harm to the patient.⁵ Interestingly, respondents assigned blame in a relatively equal distribution to the robot manufacturer, the surgeon and the hospital. The fact that the surgeon was ascribed blame even when he/she had no role in decision-making during the surgery would be a

salient concern when deciding whether to adopt such technology.

In summary, AI is likely to play an increasingly prominent role in the practice of medicine. For the foreseeable future, I believe that AI will help doctors rather than replace them. We should not shun or shy away from using AI if it enhances our capabilities and helps us to be more productive and provide better care for our patients. ♦

References

1. Sim JZT, Fong QW, Huang WM, Tan CH. Machine learning in medicine: what clinicians should know. *Singapore Med J* 2023; 64(2):91-7.
2. McCartney J. AI is Poised to "Revolutionize" Surgery. *ACS Bulletin* 2023; 108(6):8-15.
3. Ayers JW, Poliak A, Dredze M, et al. Comparing Physician and Artificial Intelligence Chatbot Responses to Patient Questions Posted to a Public Social Media Forum. *JAMA Intern Med* 2023; 183(6):589-96. *Surgery. ACS Bulletin* 2023; 108(6):8-15.
4. Montemayor C, Halpern J, Fairweather A. In principle obstacles for empathic AI: why we can't replace human empathy in healthcare. *AI Soc* 2022; 37(4):1353-9.
5. Jamjoom AAB, Jamjoom AMA, Thomas JP, et al. Autonomous surgical robotic systems and the liability dilemma. *Front Surg* 2022; 9:1015367.

Dr Ng is a urologist in private practice and current President of the SMA. He has two teenage sons whom he hopes will grow much taller than him. He has probably collected too many watches for his own good.

