

Australia's potential as a global leader for surgical AI

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Australia and New Zealand could become international leaders in the safe use of artificial intelligence (AI) in surgery, but first, there need to be guidelines in place to safeguard patients, according to University of

Adelaide experts.

Published in the *Medical Journal of Australia*, the [research perspective](#), which embodied South Australian collaboration, was also authored by researchers from Flinders University. The study defined current views and issues surrounding the use of AI in surgery, ranging from ethical dangers to the opportunities it provides to improve services and patient outcomes in the future.

"There is no doubt that AI has the potential to change [surgical services](#) for the better, improving [diagnostic accuracy](#) and efficiency," said first author of the study and University of Adelaide researcher Dr. Joshua Kovoor from the Adelaide Medical School.

"The Adelaide Score algorithm is the perfect example of this as we have shown that it can successfully predict discharge within a 12–24 hour period, potentially helping to improve patient management in hospitals."

"However, there are also some limitations with this new technology and it should in no way replace [hospital staff](#). It should always be used as an assistive tool, and its implementation needs to be carefully regulated."

The analysis highlights significant concerns around [ethical issues](#) and risk, including potential liability implications from automation bias and patient safety concerns.

"AI also presents many challenges. Surgeons may have difficulty having confidence in AI assisted recommendations due to the lack of reasoning behind the decisions," said senior author Professor Guy Maddern, the R.P Jepson Professor of Surgery at the University of Adelaide, and a Hepatobiliary Surgeon at the Queen Elizabeth Hospital.

"Current malpractice guidelines will also need to be revised to reflect the

use of AI, along with policies around the handling of sensitive patient data."

Despite these challenges, the researchers agree that Australia has the chance to be a leader in the safe, reliable, and effective use of AI in medicine if it can get ahead of the game and develop specific guidelines relating to its use in surgical settings.

"Australia has the opportunity to become a global leader in adopting this technology but there needs to be a strict evidence-based approach which reflects international frameworks as well as local factors," said Professor Maddern.

"We recommend the development of infrastructure to monitor and audit AI tools so we can make sure they are benefiting both patients and the system. Patients and surgical staff also need to be educated on the benefits and limitations of this technology."

More information: Joshua G Koo et al, Artificial intelligence for surgical services in Australia and New Zealand: opportunities, challenges and recommendations, *Medical Journal of Australia* (2024). [DOI: 10.5694/mja2.52225](https://doi.org/10.5694/mja2.52225)

Provided by University of Adelaide

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