



1 February 2024

AI tool to predict patient risk for developing complications after major cancer surgery

An anaesthetist at Melbourne's Peter MacCallum Centre is spearheading the development of an artificial intelligence (AI) created tool to predict the risk for cancer patients of developing complications after their surgery.

Dr Hilmy Ismail is developing the Australian Cancer Surgical Risk Calculator which, in the future, patients will be able to use as a mobile app. The ANCHOR Project (Artificial Intelligence based Surgical Risk Calculator for Cancer Surgery) focuses on predicting and preventing post-surgical complications in cancer patients.

"Fortunately most complications are preventable if predicted and acted on early by modifying risk factors," Dr Ismail explains.

"But with one in three Australians facing a cancer diagnosis in their lifetime, and two thirds of them requiring surgery as part of their treatment, minimising the possibility of surgical complications is crucial.

"Complications can lead to longer hospital stays and increases the risk of patients needing to be readmitted following surgery."

Dr Ismail received a \$90,000 project grant through the Australian and New Zealand College of Anaesthetists' Research Foundation to develop the calculator which will help guide doctors, nurses and allied health practitioners including physiotherapists, exercise physiologists, psychologists and dieticians to help prevent risks in patients.

The cancer surgical risk calculator will use de-identified patient data to help specialists and medical staff predict surgical complications through AI models.

Dr Ismail says the calculator can help identify risk factors for a patient so their pre and post-surgery care can be better targeted.

In phase 1 of the project Dr Ismail and his team developed an AI-based "baseline prediction model" based on the outcomes of more than 750,000 US patients. The next stage of the project involves adapting the US patient model for Australian patients.

Long term, Dr Ismail aims to use the risk calculator to steer clinicians away from unnecessary treatments for some patients and better personalise patient care.

"We're excited about the potential impact of this initiative on patient outcomes, healthcare efficiency and the broader medical community," he says.

For more information or to request interviews please contact ANZCA Media Manager Carolyn Jones on +61 408 259 369 or cjones@anzca.edu.au.

