

World first computer saving lives

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Complex decision-making in the second-by-second handling of trauma patients in hospital emergency rooms is being aided by a world-first computer system at Melbourne's The Alfred Hospital.

Created by software engineers at Swinburne University of Technology, the support tool reduced the number of errors emergency staff make by 21 per cent during a 33 month trial period.

"It's huge - we were hoping for a five per cent change," said Swinburne's Kon Mouzakis who led the software design.

Financed by a \$1.8 million grant from the Transport Accident Commission, the program - the Trauma Reception and Resuscitation System - was created at the request of Professor Mark Fitzgerald, the director of The Alfred's Trauma Centre.

"Keeping a severely injured person alive after an accident can be one of the most stressful circumstances for trauma treatment teams," Professor Fitzgerald said.

"When faced with multiple injuries - fractures, head injuries, extensive bleeding -critical decisions must be made about every 70 seconds. The potential for error - especially an error of omission - is real."

Swinburne's software experts developed a decision support tool to eliminate human error in the critical first 30 minutes of a trauma patient's treatment.

A patient's basic information has to be typed in when they arrive but all other data is entered automatically or by a touch interface.

A large screen displays patient information - vital signs, diagnoses, and all the procedures being performed - and actively prompts the team to take a particular action.

The 18 month trial of the system involved 1171 patients. During the testing phase, the Trauma Reception and Resuscitation System was used in two of The Alfred's four [trauma](#) bays.

Some 2700 errors were documented during the trial with the least number of errors occurring in the bays fitted with the system. The [decision support system](#) has since been extended to all four bays.

Mr Mouzakis said rolling out the system to rural hospitals could lead to better survival rates for regional patients for whom critical time can be taken up in transporting them to major centres such as The Alfred.

Swinburne and The Alfred are working on a military adaptation. A tablet-type device that could use a cut-down version of the system software is being developed.

Provided by Swinburne University of Technology

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