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## **Golden hours after surgery the key to new model of patient care**

A new model of patient care could potentially transform how some patients are monitored and treated in the 'golden hours' (the first 12-24 hours) after surgery.

An Australian study of advanced recovery room care found that extending the level of monitoring and support into the immediate postoperative period promises to significantly reduce complications after surgery, cut the time a patient spends in hospital and reduce mortality rates.

The research findings of the trial of 200 patients at the Royal Adelaide Hospital, the Peter MacCallum Cancer Centre in Melbourne and the Lismore Base Hospital in regional NSW have just been published in the international journal *Anaesthesia* by a group that includes leading Australian anaesthetists. Funding for the project was provided by the Australian and New Zealand College of Anaesthetists (ANZCA) Research Foundation, the Royal Adelaide Hospital and the Peter MacCallum Cancer Centre.

“The trial results are pretty clear – the patients with intermediate risk factors who were nursed in the advanced recovery setting had fewer subsequent problems after surgery whilst in hospital, and then later when at home, than those who were placed in a surgical ward after their operation,” research leader and Professor of Anaesthesia at the University of Adelaide Guy Ludbrook explained.

“As a result, it reduces the likelihood of a patient being admitted to the intensive care unit (ICU) if further complications arise, and so reducing the pressure on ICU resources already stretched by other illnesses, including COVID-19. Further, the reduction in re-admissions frees up hospital resources for other patients.”

The advanced recovery room care model was implemented at the Peter MacCallum Cancer Centre under the leadership of Professor Bernhard Riedel, Director of the Department of Anaesthesia, Perioperative and Pain Medicine, and one of the co-authors of the *Anaesthesia* paper.

“Surgeons at the Peter MacCallum Cancer Centre have expressed overwhelming support for this model because they can see how much the care provided has benefitted their patients,” Professor Riedel said.

Patients who had surgery for conditions such as bowel disease, joint replacement and vascular surgery were included in the trial, but heart patients were excluded. Professor Ludbrook said an estimated one in four patients experience significant complications after surgery.

“However, from this trial we now know that moderate-risk patients may actually be at much higher risk of serious adverse events in the early hours after surgery, and that this can frequently lead to delayed events such as re-admission to hospital,” Professor Ludbrook said.

“The nature of these events, such as sustained hypotension, respiratory problems and pain management issues, suggests that standard ward-level care may not be adequate for early

detection and management of these issues.

“While this is a small trial, the data suggests that extended care in the first day after surgery may have clinical benefit and should be explored further to determine the impact of this intervention on the incidence on postoperative outcomes and establish whether it is cost effective.”

Research co-author Professor David Story, Chair of Anaesthesia and Deputy Director, Centre for Integrated Critical Care, University of Melbourne said: “It’s often in the hours after surgery when the patient has been moved to a ward that serious complications such as low blood pressure and pain management issues can arise, culminating in postoperative complications. If these patients were instead moved to an advanced recovery setting their care would be individually tailored and monitored and appropriate early intervention treatment provided.”

Professor Ludbrook said an earlier study found that patients had high complication rates, remained in hospital for an extra three days after surgery and often required delayed intensive care admissions if they were treated in a ward rather than in a setting similar to that of the advanced recovery room setting.

He said the trial showed that an advanced recovery model of care could be considered at hospitals with sufficient numbers of relevant patients and an adequate pool of staff.

“This preliminary work sets the stage for a definitive trial of the clinical and cost benefits of advanced recovery room care across Australia and New Zealand.”

The Central Adelaide Local Health Service in South Australia has provided a research grant to commence a larger trial at Royal Adelaide Hospital, in partnership with clinicians from surgical specialties, pain medicine and intensive care, and the University of Southampton. It is designed so that other hospitals can participate as further funding for a multi-centre trial becomes available.

The study noted that the rising global volume of surgery and ageing populations combined with underlying chronic health conditions suggested that postoperative complications will increase substantially in the future, resulting in higher healthcare costs and a diminished quality of life for some patients. The advanced recovery room model may be one solution to helping to reduce healthcare costs.

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