

The Intensive Care Unit provides all advanced life-support services for St. Vincent's as well as management of emergency resuscitation on the campus and a range of follow-up programs.

About us

The Intensive Care Unit (ICU) treats between 1,000 and 1,200 patients annually, approximately 450 of whom undergo cardiac surgery. The unit is accredited for advanced training of intensive care specialists.

The ICU's research program has concentrated on three areas during 2008. The first relates to acute lung injury and the role of intravascular thrombosis. The second looks at outcomes of clinical practice while the third is participation in the Australian and New Zealand Intensive Care Society Clinical Trials Group network.

Projects in progress or completed

- CHARLI 2 trial – a phase 2 randomised, blinded trial of nebulised heparin in patients requiring mechanical ventilation for more than 48 hours.
- Investigations into a TNF inhibitor to limit complications following complex surgery.
- Microvascular thrombosis following aprotinin administration in cardiac surgery.
- The impact of heparin on the lung microcirculation in cardiac surgical patients.
- The impact of the intensive care discharge process on patient outcomes.
- The impact of medical emergency team on hospital mortality.
- The impact of a team approach to care of patients with tracheostomy tubes study.
- Normoglycaemia in Intensive Care (NICE) study.
- Randomised Evaluation of Normal versus Augmented Level of renal replacement therapy (RENAL) study.
- The Early Nasojejunal Tube to Meet Energy Requirements in Intensive Care (ENTERIC) study.
- VTE prophylaxis point prevalence audit and VTE prophylaxis sepsis audit.
- Early parenteral nutrition study.

The team

Assoc Prof John D Santamaria, Director, Department Head; Dr Barry Dixon, Intensivist; Jenny Holmes, Research Coordinator; David Reid, Data Manager; Roger Smith, Research Coordinator; Dr Antony Tobin, Intensivist

Highlights

Dr Barry Dixon has continued his studies on lung inflammation with a histological review of lung biopsies taken at the time of cardiac surgery to assess the degree of microvascular thrombosis. The original observations of intravascular thrombosis in lung injury have led to therapeutic trials involving nebulised heparin and intravenous TNF inhibitor.

In the area of outcomes of ICU, the impact of a tracheostomy review service was published and the longer term benefits of a medical emergency team were presented and submitted for publication. Following successful application for funding, a large multi-centre study on patients discharged from ICU will be undertaken during 2009; it is anticipated that nearly 10,000 patients will be recruited for this study.

ICU has been an active member of the ANZICS Clinical Trial Group (CTG), which has been responsible for several large studies in Australasia. Two important studies were completed in 2008 – the Normoglycaemia in Intensive Care (NICE) and Randomised Evaluation of Normal versus Augmented Level of renal replacement therapy (RENAL). Other studies involve the role of early parenteral nutrition, the benefits of nasojejunal feeding and importance of head of bed elevation.

Grants

Dixon B

The contribution of inflammation and anti-fibrinolytic agents to lung injury in cardiac surgery. St. Vincent's Research Endowment Fund (2008-2009) \$21,750

Investigations into a TNF antagonist to limit complications following cardiac surgery. National Heart Foundation, (2008-2010), \$126,000

Publications

Condon EM, Tobin A 2008, 'Haemophilus influenzae associated Guillain Barre Syndrome with thrombocytopenic purpura and hyperthermia', *Anaesth Intensive Care*, 36, 5, 722-5

Deane AM, Reid DA, Tobin AE 2008, 'Predicted body weight during mechanical ventilation: using arm demispan to aid clinical assessment', *Crit Care Resusc*, 10, 1, 14

Dixon B, Santamaria JD, Campbell DJ 2008, 'A phase 1 trial of nebulised heparin in acute lung injury', *Crit Care*, 12, 3, R64

Dixon B, Campbell DJ, Santamaria JD 2008, 'Elevated pulmonary dead space and coagulation abnormalities suggest lung microvascular thrombosis in patients undergoing cardiac surgery', *Intensive Care Med*

Duke GJ, Santamaria J, Shann F, Stow P, Pilcher D, Ernest D, George C 2008, 'Critical care outcome prediction equation (COPE) for adult intensive care', *Crit Care Resusc*, 10, 1, 41

Myburgh JA, Higgins A, Jovanovska A, Lipman J, Ramakrishnan N, Santamaria J 2008, 'A comparison of epinephrine and norepinephrine in critically ill patients', *Intensive Care Med*, 34, 12, 2226-34

Tobin AE, Santamaria JD 2008, 'An intensivist-led tracheostomy review team is associated with shorter decannulation time and length of stay: a prospective cohort study', *Crit Care*, 12, 2, R48