

## Chapter 8

# The Integration of an Extra-Corporal Life Support (ECLS) Service at Austin Health

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### **ABSTRACT**

*Extra-corporal membrane oxygenation (ECMO), also known as extracorporeal life support (ECLS), is a globally established treatment option in modern intensive care medicine for patients suffering from severe but reversible respiratory and/or cardiac failure. If refractory to other advanced treatment options, early instatement of ECLS therapy is closely associated with reduced mortality and improved long-term patient outcome. ECLS, in many ways, has replaced other, less effective treatments and future modelling predicts increased demand. ECLS has routinely and successfully been applied to neonates and pediatrics for many years. This field study however will exhibit focus only on the viability of the introduction of ECLS therapy in the Victorian adult population at Austin Health.*

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## **INTRODUCTION**

Austin Health is ready for the introduction of a fully integrated Extra Corporal Life Support (ECLS) service, adding value to our patients, strengthening the Austin Brand and keeping us in vogue with global and local industry standards.

ECLS is a highly invasive life support mechanism for critically ill patients suffering from severe but reversible cardiac and/or respiratory failure. ECLS maximises gas exchange (CO<sub>2</sub> & O<sub>2</sub>) and supports cardiac function, allowing time for organ (heart or lung) recovery.

Globally, ECLS therapy itself is survived by 54% of the effected adult population (66% in neonates / paediatrics), resulting in an average alive discharge or transfer rate of 43% (51% respectively).

Extra Corporal Membrane Oxygenation (ECMO) devices are operated by an advanced clinical skilled workforce of clinical perfusionists & medical and nursing teams within tertiary critical care settings.

Since 2009, 47 patients have received ECLS treatment at Austin Health. Each of these patients was overseen by the critical care medical teams and cared for by critical trained nursing staff in the Intensive Care Unit. The ECMO device for its duration however, was operated by the clinical perfusionist team, impacting adversely on operational flow within the cardiac operating theatres.

Some of the 47 episodes Austin Health incurred unnecessary marginal costs due to the requirements for locum clinical perfusionist services and overtime paid to medical consultants. In some instances, cardiac cancellations due to the lack of clinical perfusionist services led to loss of opportunity costs. Notably, particularly over the past 24 months, each ECLS episode induced high stress levels for all treating teams involved.

The following proposal investigates and reports on the financial viability and value-add of a fully integrated ECLS service at Austin Health, where each episode is initiated and supervised by the treating medical teams and the ECMO device is operated by fully trained and accredited critical care nursing staff, gradually increasing the degree of independence from the clinical perfusionist services.

The fully integrated ECLS service will:

- Positively impact on patient outcome and patient experience
- Promote Austin's Brand and re-strengthening its competitive advantage
- Create marginal benefits (small revenue)
- Meet demand for future growth
- Support specific related research activities
- Fulfil Austin's Strategic Priority of being a: Global Leader in Specialised Care and Research

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