

Victorian Public Healthcare Awards

Showcase

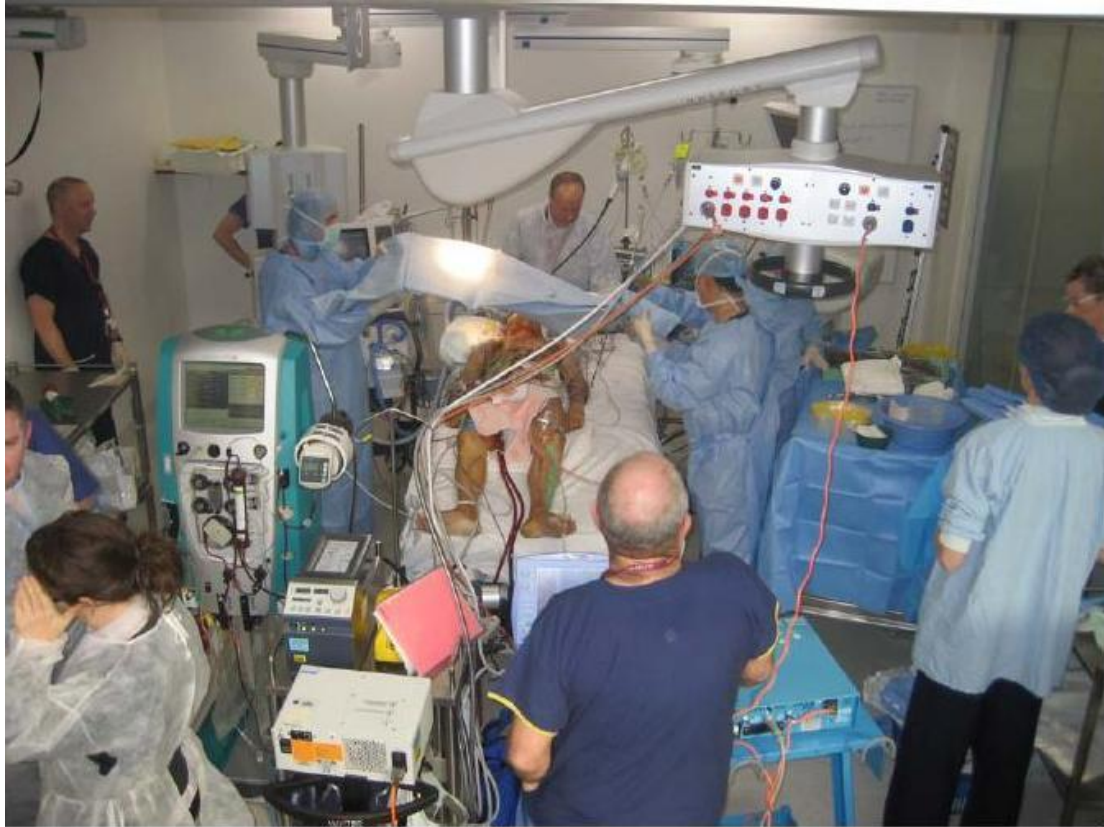


Figure 1. Patient on central ECMO having emergency thoracotomy in the ward for tamponade

Excellence in
healthcare outcomes

GOLD WINNER

Alfred Health

Developing a new model of care that
includes retrievals for Victorians requiring
extra corporeal membrane oxygenation (ECMO)

Gold winner

Alfred Health

Developing a new model of care that includes retrievals for Victorians requiring ECMO

Extra Corporeal Membrane Oxygenation (ECMO) is a technique in which blood is removed from the body, passed through an oxygenator and is then pumped back into the body. The process supports failing lungs or a failing heart, depending on which veins and arteries are used to place the tubes to connect to the ECMO machine (cannulation). These patients would be expected to die without ECMO.

The Alfred's intensive care unit (ICU) has performed ECMO in 278 patients since 1990. A new model of care was required to address a number of key limitations. These included: an increased ECMO workload particularly as a result of H1N1 infection, a limited number of perfusionists available to support the ECMO program, increasing heart and lung transplants requiring perfusion services, and a need for retrieval of Victorian patients with failing lungs or hearts requiring ECMO support to be safely transported to the Alfred.

The new model of care for ECMO services incorporated significant changes to ward management of ECMO patients and the establishment of a retrieval service for the benefit of all Victorians.

The project aimed to develop a new model of care for ECMO at the ICU bedside to cope with increasing workload without impacting on perfusionists' workload. This required improving the ICU staff skill-base to become independent of external experts (the perfusionists). It also sought to develop a retrieval model to service the needs of Victoria, thus enabling patients otherwise too unstable to be transported to be retrieved to a centre of expertise.

As a result of these processes, during the 2009–10 winter influenza epidemic, we managed a peak of eight patients on ECMO simultaneously, and in 2010–11, The Alfred was able to perform ECMO on 46 patients, our highest number to date. Thirty patients received cardiac support and 16 were given lung support.

In addition, 16 patients, who otherwise would not have been able to be moved from the referring centres, were retrieved on ECMO, eleven with respiratory support and five with cardiac support.

Worldwide, this is the most efficient and cost-effective model of care for ECMO patients and for the retrieval of patients requiring ECMO prior to safe transfer.

The outcomes far exceed international benchmark data with an overall survival of 74 per cent (94 per cent for those requiring respiratory support) and a 100 per cent successful retrieval service implemented 16 times in the last year, with a subsequent 88 per cent hospital survival.

Our ECMO service is recognised as best practice by the rest of Australia, and an increasing numbers of clinicians from overseas are coming to the Alfred to learn and replicate our model.

The Alfred has made Victoria a world-leading centre for ECMO.

Contact

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