

Pre-hospital Extracorporeal Cardiopulmonary Resuscitation (ECPR) for Refractory Cardiac Arrest patients (PRE-CARE Study)

ACTRN12625000318482

Status	RECRUITING
Sponsor	NSW Ambulance
Enrollment	50 participants

Plain Language Summary

Cardiac arrest outside hospital is a medical emergency where the heart suddenly stops. Even with CPR, the chances of survival fall rapidly — and after 15 minutes without a heartbeat, meaningful recovery is very unlikely with standard treatment alone. This study is testing whether bringing a powerful heart-lung bypass machine (ECMO) directly to the scene of a cardiac arrest — rather than only having it available at hospitals — can save more lives and reduce brain injury.

This pre-hospital ECPR (Extracorporeal Cardiopulmonary Resuscitation) approach already exists in Paris, London, and other cities. The NSW Ambulance study will compare outcomes for patients who receive this scene-based treatment against those transported to a hospital for ECMO.

This study enrolls patients during a cardiac arrest emergency — participants must be adults aged 18 to 65, with a witnessed cardiac arrest where CPR was started quickly, the arrest has been ongoing for at least 15 minutes without a return of pulse, and there is still evidence of heart activity. Patients with asystole, traumatic cardiac arrest, or significant other illnesses affecting prognosis are not eligible.

Key Eligibility Criteria

Inclusion (9)

- Adults over 18 years of age and under 65 years of age
- Witnessed cardiac arrest where no flow times can be reliably ascertained and bystander CPR (no flow time < 5 min)
- Refractory cardiac arrest: the failure of medical professionals to obtain sustained return of spontaneous circulation at the 15th minute of cardiac arrest with a minimum of 3 external defibrillator if indicated
- Shockable initial rhythm, with End-Tidal CO₂ (ETCO₂) > 10 mmHg at the time of inclusion
- PEA initial rhythm, if: signs of life during resuscitation (spontaneous movement, absence of mydriasis and/or pupillary response, spontaneous breathing movements) and: End-Tidal CO₂ (ETCO₂) >10 mmHg at the time of inclusion
- ... and 4 more (see full listing online)

Exclusion (5)

- Initial rhythm asystole
- End-Tidal CO₂ < 10 mmHg at the time of inclusion
- Pregnancy
- Duration > 5 minutes without cardiac massage after collapsing
- Co-morbidities that compromise the prognosis for short or medium-term survival.

Locations (3 total)

Westmead Hospital - Westmead, NSW, Australia
Royal Prince Alfred Hospital - Camperdown, NSW, Australia
St Vincent's Hospital (Darlinghurst) - Darlinghurst, NSW, Australia

<https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?ACTRN=ACTRN12625000318482>

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