

## AuSCR Research Task Group approved projects

<b>Title</b>	<b>Investigation of the pre-hospital clinical and system factors that impact the initiation of reperfusion therapies in acute stroke</b>
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<b>AuSCR role</b>	Data Provision
<b>Approved</b>	21 August 2018
<b>Status</b>	In progress
<b>Summary</b>	<p>Stroke is the second greatest killer of Australians, totalling 18% of all cardiovascular disease deaths and is also the most frequent cause of permanent disability worldwide. An Acute Ischaemic Stroke (AIS) occurs as a result of a blockage to blood supply caused by a blood clot (embolic) or a narrowing of the artery (thrombus) and is the most common type of stroke in Australia. A subset of AIS patients have a large vessel occlusion (LVO) which is defined as an occlusion of the greater intracranial vessels including the Basilar artery, Internal Carotid Artery (ICA) and Middle Cerebral Artery (MCA). Occlusions of the large vessels results in patients suffering significantly greater mortality and morbidity. Even with the use of intravenous thrombolysis 60% to 80% of patients suffering an anterior circulation stroke (which includes the ICA and MCA) die or do not regain functional independence at 90 days.</p> <p>Initial interventions to remove the obstruction are targeted at either thrombolysis, which uses a medication to break down the clot or endovascular clot retrieval to remove the clot using interventional radiology. The benefits of rt-PA (thrombolysis) are restricted by time to administration after the onset of acute ischemic stroke. In 2015 several studies showed clear evidence there were benefits in the use of Endovascular Clot Retrieval (ECR) for acute stroke patients harbouring a large vessel occlusion. It is estimated that this subgroup accounts for approximately 20-40% of acute stroke patients.</p> <p>The studies have clearly established that earlier treatment after onset of acute stroke results in improved outcomes, however patients are required to undergo a computer topography (CT) scan prior to thrombolysis and a CT Angiogram prior to ECR.</p> <p>It has been standard practice for Emergency Medical Services (EMS) to pre-notify receiving hospitals of suspected stroke patients to reduce time to CT however with the emergence of ECR it would be warranted to investigate factors that may improve the selection of thrombolysis eligible patients, to reduce false activations, as well as factors that may identify potential ECR eligible patients who could benefit from early prehospital facility bypass in favour of a tertiary level, ECR capable, hospital. Given the significant distances and the location of ECR facilities in Queensland, early and accurate identification could greatly improve the patient eligibility for intervention.</p> <p><u>Primary Aims</u></p> <ul style="list-style-type: none"><li>• To map the epidemiological profile of acute stroke presenting to the prehospital emergency ambulance service (Queensland Ambulance Service [QAS]).</li><li>• Identify clinical, non-clinical and system factors that predict patients, presenting to the prehospital emergency ambulance, who are eligible for thrombolysis.</li><li>• Identify clinical, non-clinical and system factors that predict patients, presenting to the prehospital emergency ambulance, who are eligible for ECR.</li><li>• Identify the relative impact of each factor on determining eligibility for each reperfusion therapy.</li></ul> <p><u>Secondary Aim</u></p> <ul style="list-style-type: none"><li>• To identify prehospital system improvements that may enhance access to reperfusion therapies in eligible patients.</li></ul>