

## Simulation-led learning drives faster stroke response times

Clinical Care Standards Excellence Award Recipient  
University Hospital Geelong  
Barwon Health

A real-time simulation exercise helped a regional hospital see its stroke care pathway through new eyes. Today, the Stroke Services team is delivering faster, more coordinated care – and seeing real results for patients.

### When minutes matter

At University Hospital Geelong in Victoria's regional south-west, the Stroke Services team knows that time is everything.

'When a patient comes in, you can't necessarily see what's going on inside their brain,' says Stroke Coordinator Michelle Clarke. 'And yet that first "golden hour" is going to have a long-term impact on their outcomes.'

In 2022, data from the Australian Stroke Clinical Registry (AuSCR) revealed the median time between stroke patients arriving at the hospital and receiving potentially life-saving thrombolysis, a clot-busting treatment, was 71 minutes – significantly outside the recommended 60-minute 'door to-needle' window. Just 19% of patients were treated within the recommended timeframe, down from 26% the year before and far below the AuSCR benchmark for 2022. For a department that cares for more than 500 patients a year, it was a wake-up call.

'It was important for us to shift attitudes around acute stroke care, educating teams to recognise that stroke is a medical emergency and they need to act promptly.'

### Improving speed and coordination

Prompted by these results, the stroke team committed to an overhaul of the stroke pathway. Their focus was on rapid delivery of time-critical therapy and stronger alignment with the [Acute Stroke Clinical Care Standard](#) (the Standard). Key priorities included:

- improving pre-hospital notifications to allow staff to prepare for incoming stroke patients
- streamlining triage for rapid identification and escalation



- refining CT imaging workflows to reduce delays
- strengthening staff capability, culture and coordination.

### Pinpointing the pressure points

Reforming stroke care meant confronting some persistent barriers. The biggest issues included:

- **competing pressures** between ambulance services and the Emergency Department (ED)
- **delays in CT imaging** that slowed the pace of diagnostic workflows
- **workload stresses**, hampered by lack of clarity around prioritisation and delegation
- **lack of urgency**, particularly in teams that did not specialise in stroke care
- **staff turnover** requiring regular onboarding and training.

## The simulation that changed everything

The team's first step was to form a multidisciplinary team (MDT) representing all those involved, including ambulance, triage, ED, radiology and neurointervention services.

'We pride ourselves on our collaboration with stakeholders,' says Michelle. 'In those MDT meetings, we build relationships, we build trust and respect, and we utilise expertise from every discipline to improve the care we provide.'

The turning point came when the team staged a full simulation of the hospital's acute stroke response with support from the Angels Initiative, an international program aimed at improving care for stroke patients.

'It's basically a mock case that lets us run through our processes for a Code Stroke emergency response. At the end, we get together for a debrief which is really valuable – much more effective than an email or a slideshow.'

Insights from that process, and follow-up MDT meetings, led to the development of new protocols for cross-department communications, direct-to-CT transfers, and rapid delivery of images to clinicians to support timely decision-making.

## Faster treatment, better outcomes

Improvements were swift and substantial.

From a high of 71 minutes in 2022, the **median time** from hospital arrival to life-saving thrombolysis was down to 60 minutes in 2023, and just 46 minutes in 2024.

And from a low of 19% in 2022, the proportion of stroke patients treated within the **recommended 60-minute timeframe** jumped to 53% in 2023, and 75% in 2024.

'Stroke can have devastating outcomes for patients and their families,' Michelle says. 'I love my role because we can have such a positive impact – by making the right decisions and making sure patients have access to rapid treatment.'

## What sustains the gains?

Sustaining progress means staying proactive. Today, stroke care at Barwon Health is supported by:

- **daily MDT huddles** sharing patient treatment and discharge plans
- **real-time dashboards and AuSCR monitoring** to track and benchmark performance
- **quarterly MDT reviews** to spot and respond to emerging issues

- **ongoing simulation-based training** for onboarding and continuous learning
- **knowledge-sharing** with peer teams through groups including the Australian Stroke Nurses Education Network (ASNEN).

## Good guidance drives good care

The [Acute Stroke Clinical Care Standard](#) provides evidence-based guidance on the essential components of care for patients who are having, or are suspected of having, a stroke.

'We've been able to implement a lot of quality improvement projects based on the Clinical Care Standard, and we refer back to it regularly when we're reviewing gaps in our practice or looking at ways to support implementation,' says Michelle.

'Everything comes back to the Standard. It helps us make decisions, identify gaps, and stay focused on what matters most. It is our guide for what good care looks like, and a strong driver for much of what we do.'

A revised edition is scheduled for release in 2026.



### LESSONS LEARNED

#### Prioritise relationship-building

Regular cross-department meetings build connections, respect and trust – laying the groundwork for shared goals and collective accountability.

#### Run simulations to embed new ideas

Simulated stroke scenarios create a safe space to practise new protocols, test assumptions, and reflect meaningfully in debriefs.

#### Celebrate the wins and keep going!

Every improvement – no matter how small – helps build momentum. Recognising progress keeps teams energised and focused on patient outcomes.