



A fair go for stroke

Delivering better health services to all the people of New South Wales

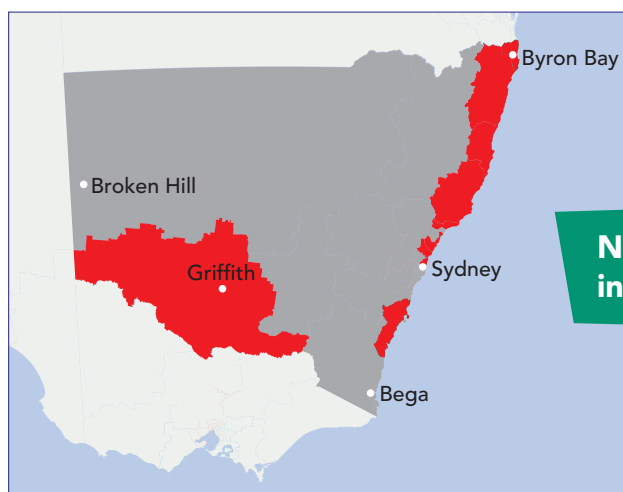
New South Wales stroke survivor
Stephen Ward and wife Tracy.

January 2019.

Why it is so important to the people of NSW

Stroke in regional New South Wales (NSW)¹

- > Almost **2.5 million** people live **outside** the main population areas of **Greater Sydney, Newcastle** and the **Illawarra**.
- > **NSW is home to 12 of the country's top 20 hotspots for stroke incidence**, 10 are located in regional and rural areas of the state.
- > Regional Australians are **19 percent** more likely to have a stroke than their city counterparts.
- > Regional Australians are more likely to die or be left with a serious disability as a result of stroke because they do not have access to time-critical stroke treatment and specialist care.



New South Wales stroke incidence hotspots

NSW emergency response²

- > **65 percent** of patients arrive at hospital **outside of the 4.5 hour window** for time-critical clot-dissolving (thrombolysis) stroke treatment.
- > **11 percent** of eligible patients **receive clot-dissolving treatment**. The best performing states deliver thrombolysis to around 20 percent of patients.
- > **Limited access to clot retrieval treatment**, with six sites delivering treatment, two delivering treatment 24/7 – all services are located in **Sydney or the Hunter**.

Today

Number of strokes: 18,922 per annum

Number of stroke survivors: 159,169

Number of stroke survivors of working-age (under 65): 47,751

2050

Number of strokes: 45,124

Number of stroke survivors: 330,250

At a glance

Stroke Foundation is calling on the next State Government to invest \$5.58 million (over four years) in a fairer health system, delivering equity for all the people of NSW, and the opportunity for those affected by stroke to survive and live well.

1.

F.A.S.T. community education to reduce stroke and speed up treatment

Engaging with communities and volunteers across NSW to deliver and promote the StrokeSafe and F.A.S.T messages.

Investment: \$300,000 over four years.

Result: Greater awareness of the risks and signs of stroke amongst the community will ensure the people of NSW have timely access to emergency stroke treatments. This will lead to improved health outcomes for patients as well as reduced costs to the health system and community.

2.

State-wide stroke telehealth network and treatment pathway

Transform emergency stroke care in regional NSW by harnessing digital technology to ensure equitable and fair access to stroke specialists and emergency treatment for all local communities.

Investment: \$1.28 million establishment (\$2.9 million ongoing operational costs per annum).

Result: The people of regional NSW will have access to better health services and a fair go at surviving stroke and living well.

3.

Stroke Ambulance

A future-focused innovation to speed up diagnosis, deliver world-class stroke treatment and generate powerful new research insights into stroke.

Investment: \$2 million (capital) plus operational costs.

Result: A big picture project that has the potential to benefit the people of NSW today and transform stroke treatment for generations to come.

4.

Stroke Outreach Program (StOP): empowering survivors to act to prevent further stroke and live well

A dedicated telephone service reaching out to stroke survivors and their carers on their return home, to provide much needed education, support and links to local health services.

Investment: \$2 million over four years.

Result: A reduction in repeat hospitalisations from stroke by ensuring NSW stroke survivors, their carers and families have access to secondary prevention information, resources, and are linked to the services they need to recover and live well after stroke.

A call to action

The next NSW Government can deliver a fairer health system providing all the people of our state the opportunity to survive and live well after stroke.

A fair go for stroke will ensure more timely access to better stroke treatment leading to improved health outcomes for patients, as well as reduced hospital stays and avoided hospital admissions. It will ensure a better health system that is more equitable and sustainable.

Most importantly, *A fair go for stroke* will save lives.

Stroke can be prevented, it can be treated, and it can be beaten, but only if patients are able to access high quality stroke treatment fast.

This year the people of NSW will experience almost 19,000 strokes¹. Many of these will be experienced by people living outside of Sydney. Currently, there is no guarantee that all patients will have access to the high quality, evidence-based care we know saves lives and reduces disability. In fact, we know most will not.

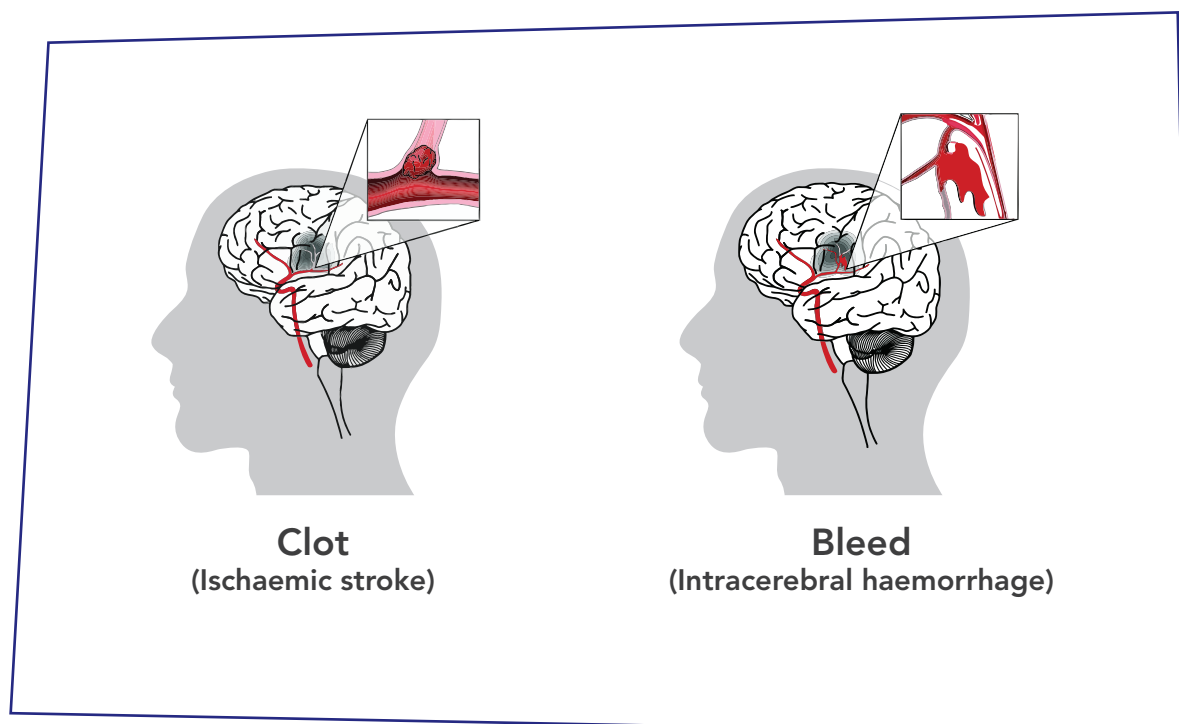
The stroke challenge looms large in our state. We are home to 12 of the nation's top 20 hotspots for stroke incidence and 10 of these are located in regional areas¹. Building on this, stroke's impact on our state is only set to increase.

What is stroke?

Stroke attacks the brain – our most vital organ. A stroke occurs when blood supply to the brain is cut off because of a clot blocking an artery (ischaemic stroke) or due to a burst artery (haemorrhagic stroke).

When blood supply to the brain is blocked, cells begin to die at a rate of up to 1.9 million each minute³.

Every stroke is different depending on where in the brain it strikes and how severe it is. What is common is the devastation it causes to the survivor, their carer and family. Stroke is the leading cause of acquired disability for adults⁴.



1.

F.A.S.T. community education to reduce stroke and speed up treatment

Objective: Ensure every NSW household has someone who knows the signs of stroke.

Investment required: \$300,000 over four years.

When someone suffers a stroke every minute counts. F.A.S.T. access to emergency stroke treatment leads to improved health outcomes for patients as well as reduced costs to the health system and community. When a stroke does occur, the best outcomes are achieved when treatment is received quickly. Too often treatment is delayed due to a lack of awareness about the signs and symptoms of stroke. Effective public education campaigns need to be a continuous activity to maximise their potential.

Stroke Foundation's F.A.S.T. (Face, Arms, Speech and Time) community education campaign will raise vital awareness of stroke risk factors and the signs of stroke in local communities across NSW. We have a pool of volunteers and existing stroke resources and materials meaning the program is ready for roll out immediately.



Recognise
STROKE
Think **F.A.S.T.**

Stroke
FOUNDATION

F
Has their
FACE
drooped?

A
Can they lift both
ARMS?

S
Is their
SPEECH
slurred and do they
understand you?

T
Call **000**,
TIME
is critical

If you see any of these symptoms
Act FAST call 000

- › 65 percent of NSW stroke patients arrive at hospital **outside** of the **4.5 hour window** for time-critical **clot-dissolving treatment**.
- › This globally adopted message has proven results locally and internationally with a **return on marketing investment as high as 28:1 (UK data)**.



"At the age of 24, my life was upended when I suffered a major stroke. I was very lucky to get to the hospital quickly and given clot dissolving treatment, however not everyone is this lucky. I am acutely aware of how important fast treatment is for stroke. Time saved is brain saved. I was fortunate that I was able to recover well and eventually return to work."

– Priya, NSW stroke survivor.

2.

State-wide stroke telehealth network and treatment pathway

Objective: Transform emergency stroke care in regional NSW by harnessing digital technology to ensure equitable and fair access to stroke specialists and emergency stroke treatment for all local communities.

Investment required: \$1.28 million set-up (\$2.9 million ongoing operational costs per annum).

Many strokes can be prevented, can be treated and can be beaten. Advancements in stroke treatment, many led by NSW researchers, mean stroke is no longer a death sentence. Now, we must utilise digital innovations to ensure the people of regional NSW have access to the stroke treatments we know save lives and reduce disability caused by stroke.

A state-wide stroke telehealth network and treatment pathway will build on the success of the NSW Northern Sector Telestroke Proof of Concept currently underway. It will also benefit from the learnings of other programs and projects of this type being delivered in Victoria, Western Australia and South Australia.

Almost 2.5 million people live outside of the main population areas in NSW. The people of regional NSW are more likely to have a stroke. Currently, the people of regional NSW are also more likely to die or be left with significant disability from stroke simply because they don't have access to metropolitan-based stroke specialists and care.

There is a solution:

- › **NSW state-wide stroke telehealth service** – Telehealth enables fast assessment of suspected stroke patients in regional areas by metropolitan-based stroke specialists. Regionally-based clinicians are supported in administering clot-dissolving treatment and/or arranging patient transfer to a comprehensive stroke centre for clot removal treatment if required.
- › **Stroke treatment pathway** – Endovascular thrombectomy or clot removal was proven as a highly effective treatment in 2015. It is technically challenging and should only be performed by highly trained specialists. This treatment is currently delivered in Sydney and the Hunter but access outside of these areas is virtually non-existent. A state-wide treatment pathway would put in place systems and protocols to ensure all the people of NSW have equal access to this world-class treatment.



Stroke care is not equal

“Life saving treatments exist for stroke, but the reality is access to these treatments and public awareness of stroke remains inadequate.

Unfortunately access and awareness varies by postcode such that outside of major cities the outcomes in stroke will be poorer, causing death or life threatening disability.”

Dr Claire Muller
Neurologist

Stephen and Tracy's story

Stephen and Tracy Ward, regional New South Wales residents

Stephen Ward is well-regarded in the Muswellbrook community. He sits on the local Shire Council and is a husband and father of two. Stephen is also a stroke survivor. Stephen suffered a stroke when he was 48. Fortunately, his wife Tracy knew the signs of stroke. Stephen had lost his speech and could not lift his right arm. Tracy dialled triple zero (000) immediately. The paramedics thought Stephen was too young to have a stroke and took him to Muswellbrook Hospital, which at the time did not have a CT brain scanner. Normally, patients utilised a private provider locally, but as it was the weekend the provider was closed. The team at Muswellbrook Hospital immediately knew Stephen had suffered a stroke, but they could not confirm the type of stroke or provide subsequent treatment.

Time was ticking and Stephen's brain cells were dying.

By the time Stephen arrived at John Hunter Hospital in the rescue helicopter, it was too late for emergency clot-dissolving treatment.

In the days after the stroke Stephen suffered multiple life-threatening complications, spending four weeks in intensive care, six weeks on the stroke ward and another six months in rehabilitation. All of this happened many miles from his home and family in Muswellbrook.

Stephen has been left with physical, communication and some cognitive deficits. Stephen is in a wheelchair, however he can walk with a cane for short distances. Prior to his stroke, Stephen was a civil engineer. Today, he is learning to read and write again by sharing books with his young son Patrick, now aged six.

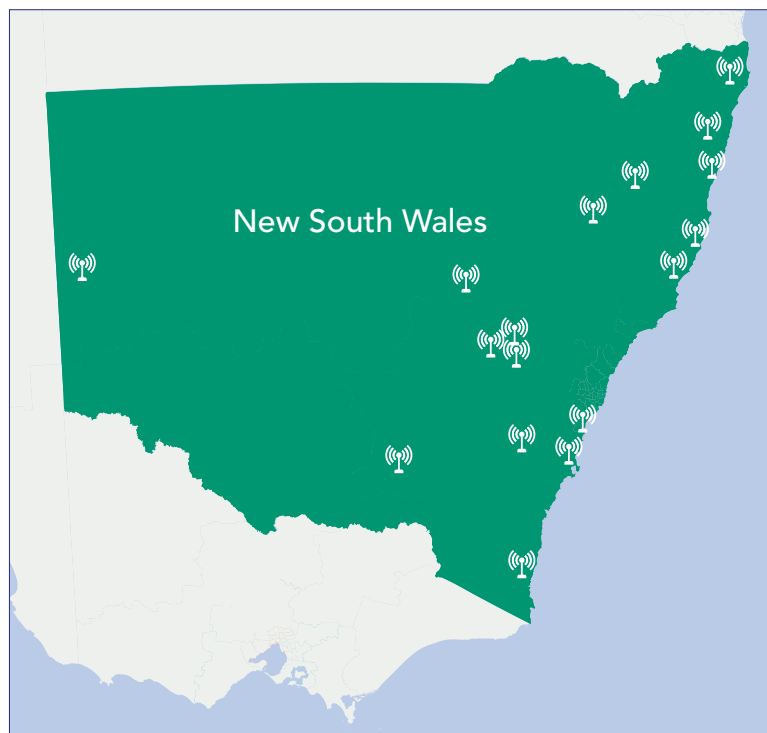
"The one thing I always remember is the doctor in charge in ICU saying it took us too long to get to the stroke unit," Tracy said. "I remember asking how rural patients were supposed to get to hospital in time."

"We need to make it better for regional and rural people because we deserve the same treatment as those in the city."

Tracy Ward, wife and carer to stroke survivor Stephen and regional Australian.



Proposed Telestroke sites in NSW



Proposed telestroke sites across New South Wales

- › Coffs Harbour
- › Armidale
- › Bega
- › Tamworth
- › Manning
- › Port Macquarie
- › Dubbo
- › Taree
- › Bathurst
- › Lismore
- › Grafton
- › Goulburn
- › Wagga Wagga
- › Nowra
- › Orange
- › Broken Hill

Regional New South Wales resident and stroke survivor Mavis Abbis is living proof the New South Wales Northern Sector Telestroke Proof of Concept works. Mavis was transported to the Port Macquarie Base Hospital with a suspected stroke, where she underwent a brain scan, the results of which were immediately relayed through to the TeleStroke specialist on-call in Sydney.

Mavis was then airlifted to Sydney for treatment, and was back in the Base Hospital two days later to recuperate. That rapid response and timely access to treatment was vital in Mavis's recovery.

Mavis Abbis,
regional New South Wales
resident and stroke survivor.



3.

Stroke Ambulance

Objective: A big picture project that has the potential to benefit the people of NSW today, and transform emergency stroke treatment for generations to come, by speeding up diagnosis, delivering world-class stroke treatment, and generating powerful new research insights into stroke.

Investment: \$2 million (establishment) plus operational costs.

What is a Stroke Ambulance?

It is comprised of:

- **CT scanner** – A device that scans a stroke patient’s brain to determine what kind of stroke they are having and guide the decisions about administering the most effective treatment.
- **Telehealth technology on board** – A state of the art, two-way audio-visual communication system that connects stroke specialists at the hospital with trained staff on board the ambulance to help examine, diagnose and recommend the best possible treatment.
- **Clot-dissolving power** – The Stroke Ambulance is equipped to deliver thrombolysis, a drug treatment that dissolves blood clots. The faster an appropriate stroke patient receives this medication, the better the opportunity for a good recovery with less rehabilitation services required.
- **Specialist stroke team** – Trained paramedics are joined on the ambulance by a stroke nurse and radiographer, allowing this specialist stroke team to quickly evaluate a patient with a stroke specialist via telehealth, so they can immediately start the best possible treatment.
- **Research lab** – The data collected by the Stroke Ambulance team will provide powerful new insights that will help to shape the future of emergency stroke treatment and care in Australia.

Stroke Foundation is a proud partner in Australia’s first Stroke Ambulance pilot currently underway in Melbourne. We would be honoured to partner with the next NSW Government to build on the learnings from this project and deliver a Stroke Ambulance in NSW.



Results of the current Stroke Ambulance research pilot⁵:

The Stroke Ambulance has:

- Delivered therapy almost 60 minutes earlier (97 minutes vs. 156 minutes).
- Reduced the time to clot removal (endovascular thrombectomy) (162 minutes vs. 234 minutes).
- Treated more patients within the first hour after symptom onset compared to hospital (3 percent vs. 12 percent).
- Reached a previously untreated group of patients – 10 percent of all treated patients would not have qualified for thrombolysis at all if not for the Stroke Ambulance reaching them so early.

Please note above is reflective of hospital treatment times nationally.

4.

Stroke Outreach Program (StOP): empowering survivors to act to prevent further stroke and live well

Objective: Reduce avoidable hospitalisation from stroke by ensuring all NSW stroke survivors and carers are connected with, and supported to access the information and resources they need to recover and live well after stroke.

Investment required: \$2 million over four years.

Four in 10 stroke survivors will go on to have another stroke within a decade⁶, yet many recurrent strokes can be prevented.

Stroke survivors and their families are leaving hospital without vital knowledge to reduce their risk of experiencing another stroke, including information on lifestyle changes and the importance of secondary prevention medications.

These gaps have significant and at times devastating implications for patients, their families and the health system.

StOP will close these gaps and reduce the risk of recurrent strokes by delivering:

- › **Education and support for hospital clinicians.** This support will enable health professionals to deliver targeted secondary prevention education and recovery planning for every patient with stroke, every time.
- › **Telephone-based support from a Stroke Foundation health professional to stroke survivors** within 21 days of leaving hospital to:
 - o Provide education on stroke and reduce the risk of subsequent stroke.
 - o Deliver resources and strategies to reduce a survivor's risk of subsequent stroke.
 - o Promote connection with a general practitioner, attendance at outpatient appointments and medication compliance.
 - o Check that required appointments and services are in place.
 - o Screen for risk and vulnerability, with a focus on depression and anxiety.

StOP builds on Stroke Foundation's extensive experience partnering with health services to provide survivors with much needed education and support to reduce their risk of having another stroke, manage their health and wellbeing, and get their life back on track.

Research has shown that:

- › Eliminating high blood pressure in patients could reduce stroke incidence by an estimated 48 percent.⁷
- › For every dollar invested in preventive health programs, there is a return on investment of \$14.⁸

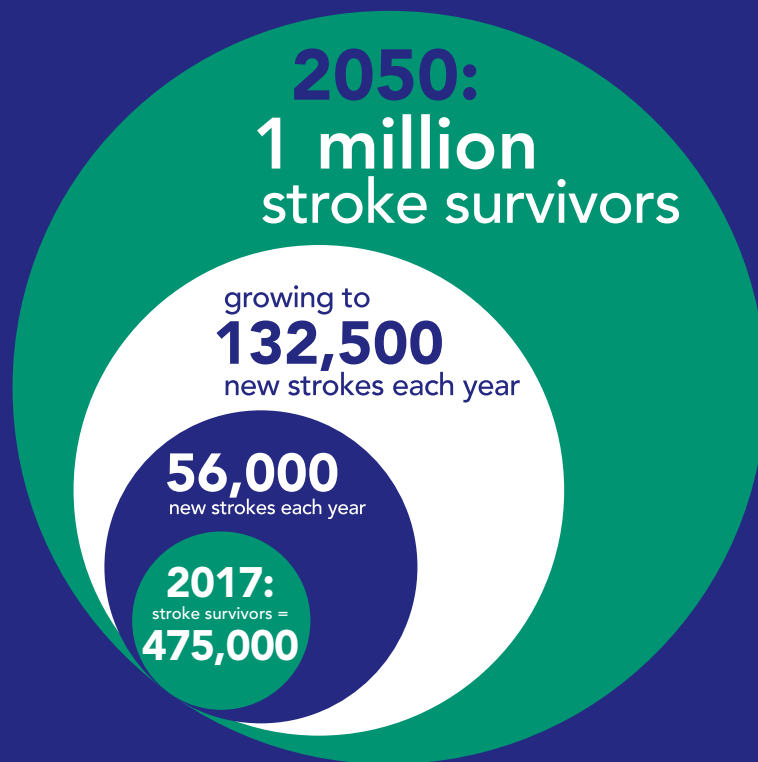


Melita Guy from Stroke Foundation and Indigenous Elder Aunty Pam Smith at a Stroke Week 2018 event in Tamworth.

References

1. Deloitte Access Economics. (2017). Stroke in Australia – No postcode untouched.
2. Stroke Foundation. (2017). National Stroke Audit Acute Services Report 2017. Melbourne, Australia.
3. Saver JL. (2006). Time is brain – quantified. *Stroke*. 37(1): 263-66.
4. Deloitte Access Economics. (2013). The economic impact of stroke in Australia.
5. Royal Melbourne Hospital. (2018). Mobile Stroke Unit Activity and Impact Summary, 20 November 2017 – 24 September 2018.
6. Hardie K et al. (2004). Ten-year risk of first recurrent stroke and disability after first-ever stroke in the Perth Community Stroke Study. *Stroke*. 35(3): 731-35.
7. O'Donnell MJ et al (2016). Global and regional effects of potentially modifiable risk factors associated with acute stroke in 32 countries (INTERSTROKE): a case-control study. *The Lancet*. 288: 761-75.
8. Masters R, Anwar E, Collins B, Cookson R. (2017). Return on investment of public health interventions: a systematic review. *Journal of Epidemiology and Community Health*. 71: 827-34.

Stroke in Australia



Five stroke facts

- › Stroke kills more women than breast cancer and more men than prostate cancer.
- › One in six people will have a stroke in their lifetime.
- › In 2017 an estimated 56,000 strokes occurred – one every nine minutes.
- › One in three stroke survivors are of working age.
- › Sixty-five percent of those living with stroke also suffer a disability that impedes their ability to carry out daily living activities unassisted.

About the Stroke Foundation

The Stroke Foundation is a national charity that partners with the community to prevent stroke, save lives and enhance recovery. We stand alongside stroke survivors and their families, healthcare professionals and researchers. We build community awareness and foster new thinking. We support survivors on their journey to live the best possible life after stroke.



How to get more involved

- Give time** – become a volunteer.
- Raise funds** – donate or hold a fundraising event.
- Speak up** – join our advocacy team.
- Leave a lasting legacy** – include a gift in your Will.
- Know your numbers** – check your health regularly.
- Stay informed** – keep up-to-date and share our message.

Contact us

- 03 9670 1000
- strokefoundation.org.au
- [/strokefoundation](https://www.facebook.com/strokefoundation)
- [@strokefdn](https://twitter.com/strokefdn)
- [@strokefdn](https://www.instagram.com/strokefdn)