



A better plan for stroke for all Western Australians

Pre-Budget Submission 2023–24

*Beth Browning (centre), Western Australian
survivor of stroke with her family.*

About Stroke Foundation

The Stroke Foundation is a national charity that partners with the community to prevent, treat and beat stroke. We stand alongside survivors of stroke and their families, healthcare professionals and researchers. We build community awareness and foster new thinking and innovative treatments. We support survivors on their journey to live the best possible life after stroke. We are the trusted voice of stroke in Australia, and we work to:

- Raise awareness of the risk factors and signs of stroke, and promote healthy lifestyles.
- Improve treatment for stroke to save lives and reduce disability.
- Improve life after stroke for survivors.
- Encourage and facilitate stroke research.
- Advocate for initiatives to prevent, treat and beat stroke.
- Raise funds from the community, corporate sector and government to continue our mission.

Our work aligns with three key pillars, Prevention, Treatment and Recovery, as outlined in our strategic plan, [Stroke Strategy 2024](#).

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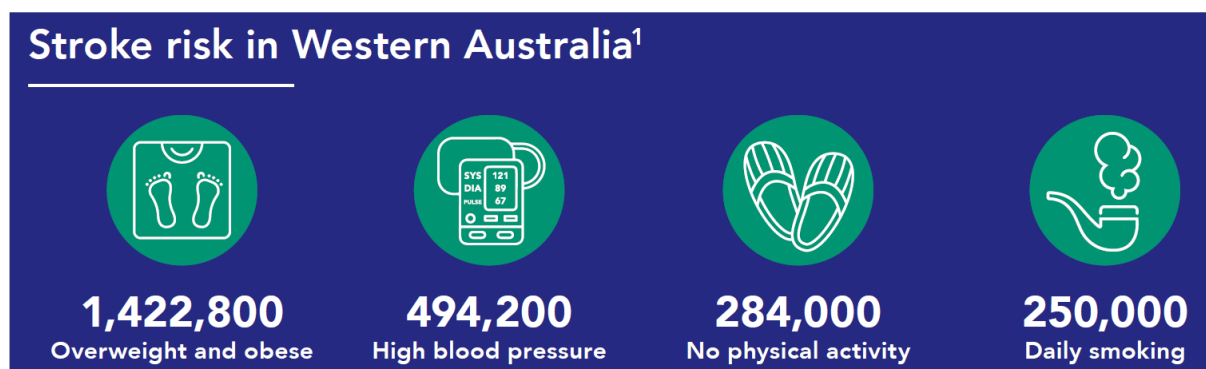
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Introduction

In 2020, more than 2,700 Western Australians experienced stroke for the first time, and there were more than 43,000 survivors of stroke living in our community - many with an ongoing disability.¹ Unless action is taken, it is estimated by 2050, Western Australians will experience an additional 2,700 new strokes annually, and there will be an additional 45,000 survivors of stroke living in the community.¹

One of the key modifiable risk factors for stroke is high blood pressure. Importantly, 494,200 Western Australians are living with high blood pressure¹, and many don't know it. In addition, 250,000 Western Australians are daily smokers, 182,800 have high cholesterol, 284,000 are physically inactive, and 1,422,800 are overweight or obese¹ – putting them at an increased risk of stroke.

Stroke Foundation is proud to be partnering with the Western Australian Government to deliver the F.A.S.T. Community Education Program, and applauds its significant investment in Phase Two of the world-leading Living Evidence initiative. This submission outlines a number of proposals that provide further opportunities for Stroke Foundation to work with the State Government to strengthen stroke prevention, treatment and recovery, so more Western Australians are able to avoid, survive, and recover from stroke.



Summary of key budget proposals

Proposal	Investment	Page
Pillar 1 Prevention: Fewer preventable strokes in Western Australia		
<p><i>Continue and expand the F.A.S.T. (Face, Arms, Speech, Time) Community Education Program and implement a F.A.S.T. Multimedia Campaign.</i></p> <p>Ensure more Western Australians know how to reduce their stroke risk, and recognise the signs of stroke.</p>	\$150,000 p.a. (over four years)	7
<p><i>Living Well After Stroke Program.</i></p> <p>Reduce the risk of recurrent stroke through effective secondary prevention.</p>	\$120,000 p.a. (over four years)	11
Pillar 2 Treatment: Ensure all Western Australians have access to evidence-based stroke treatment		
<p><i>Targeted StrokeLink Program.</i></p> <p>Utilise national, state-wide, and local data, and expertise and training, to empower Western Australian health professionals to deliver evidence-based, best-practice stroke care.</p>	\$120,000 p.a. (over four years)	16
<p><i>Tailored Health Professional Education Program.</i></p> <p>Deliver tailored, web-based educational resources for Western Australian health professionals, which address their specific needs and identified practice gaps.</p>	\$35,000 p.a. (over four years)	19
Pillar 3 Recovery: Enhance recovery to help Western Australians live well after stroke		
<p><i>StrokeConnect Navigator Program.</i></p> <p>Facilitate improved continuity of care, and ensure Western Australian survivors of stroke are connected to the services, supports, and information they need to achieve their best possible recovery and avoid hospital readmission.</p>	\$153,000 p.a. (over four years)	23

Fewer preventable strokes in Western Australia

Eighty percent of strokes can be prevented², and stroke prevention remains the most effective means of reducing the burden of stroke in Western Australia.

Importantly, we know that many preventive health interventions are cost-effective, and for every dollar invested in prevention there is a \$14 return.³

As such, Stroke Foundation applauds the Western Australian Government's commitment to increase investment in prevention to at least five percent of total health expenditure by July 2029.

Stroke Foundation is committed to reducing the number of preventable strokes in our community, by empowering more Western Australians to recognise the risk factors for stroke that can be changed, and in doing so increase their chances of preventing stroke.

Specifically, our goal is to ensure that by 2024, 65 percent of adult Western Australians will know the stroke risks they can change.

Stroke Foundation delivers campaigns and programs to raise awareness of important modifiable risk factors for stroke such as high blood pressure. Stroke Foundation's annual 'Australia's Biggest Blood Pressure Check (ABBPC)' campaign raises public awareness of the link between high blood pressure and stroke, and empowers Australians to know their stroke risk and understand how to manage it by getting a free health check at a pharmacy or their general practice. Since the beginning of ABBPC in 2014, over one million Australians have received a free health check.

Stroke Foundation is proud to be partnering with the Western Australian Government to deliver the F.A.S.T Community Education Program in our state. Thousands of Western Australians have received life-saving messages about stroke, how to reduce stroke risk, and how to recognise the signs of stroke (using the F.A.S.T. test), as a result of this successful program.

Stroke Foundation has also developed a behaviour modification program aimed at secondary stroke prevention, called *Living Well After Stroke*. This program is currently being piloted in Queensland with funding from the Federal Government, and in Tasmania with funding from the State Government.

We are calling on the Western Australian Government to continue and expand its investment in the successful F.A.S.T. (Face, Arms, Speech, Time) Community Education Program, as well as invest in Stroke Foundation's Living Well After Stroke Program, to reduce the number of preventable strokes in our community, and ensure more Western Australians know the life-saving F.A.S.T. signs of stroke.

Continued and expanded investment in the F.A.S.T. Community Education Program will enable the recruitment and training of more volunteers from regional areas in our state. This will provide support for the Western Australian Statewide Telestroke Service, targeting regional communities covered by the Service, and ensuring residents know the signs of stroke and the importance of calling triple zero (000) immediately.

In addition, both of these programs will deliver on key recommendations of the Western Australian Government's *Sustainable Health Review*, including:

- ***Enduring Strategy 1*** Commit and collaborate to address major public health issues: Recommendations 1, 2, 3, and 4.
- ***Enduring Strategy 4*** Person-centred, equitable, seamless access: Recommendations 11 and 12.

Continue and expand the F.A.S.T. (Face, Arms, Speech, Time) Community Education Program and implement a F.A.S.T. Multimedia Campaign.

Investment: \$150,000 per annum over four years.



Stroke is a time-critical illness, and faster diagnosis and treatment saves lives and results in improved quality of life. When someone suffers a stroke, every minute counts. F.A.S.T. access to treatment means a greater chance of recovery and decreased costs for our health system.

It is critical Western Australians understand that if they or someone they know experience the signs of stroke, including facial drooping, arm weakness, or speech changes, they must call triple zero (000) immediately.

Stroke Foundation is proud to be partnering with the Western Australian Government to deliver the F.A.S.T. (Face, Arms, Speech, and Time) Community Education Program. This Program recruits, trains, and provides support to local volunteers to raise awareness in the community about stroke, including the signs of stroke, and chronic disease prevention, through the delivery of StrokeSafe presentations. Through the compelling voice of those impacted by stroke, we increase knowledge and help to ensure patients get to hospital in the critical time window for life-saving stroke treatment.

In addition to delivering StrokeSafe presentations, volunteers set up displays and activities at community events and in health settings, distribute F.A.S.T. resources, and gain local workplace support, which facilitates improved awareness about the signs of stroke and dispatches of ambulances.

Key achievements of the program to date

In the four years since the program has been rolled out, it has delivered:

- 16 StrokeSafe speakers, 11 in the greater Perth area and five in the South-West.
- 262 StrokeSafe community education sessions, reaching approximately 9,400 people.
- Stroke prevention displays and activities at 34 community events, engaging with over 4,900 people.
- Seven online StrokeSafe community education sessions, including to regional areas such as Coolgardie, where there was no speaker located close enough to deliver the session in person.
- 64 percent of events and StrokeSafe community education sessions which have reached vulnerable populations at higher risk of stroke.
- Significant local media coverage.
- Partnerships with local community centres, universities, Rotary Clubs, Bunnings stores, St John Ambulance, the Neurological Council of Western Australia, and Synapse (an Australian brain injury organisation).

The F.A.S.T. Community Education Program is delivering results; however, there is still more to be done to increase awareness of the signs of stroke, so more Western Australians are able to receive life-saving treatment sooner.

Importantly, only 35 percent of Western Australian stroke patients arrive at hospital within the 4.5 hour window for clot-dissolving treatment (thrombolysis).⁴

Moreover, the unique geographical challenges of delivering healthcare in Western Australia contribute to one of the longest median times from stroke onset to arrival in an emergency department in Australia (5.3 hours in versus 4.3 hours nationally).⁴

The results of the 2022 Stroke Foundation F.A.S.T. Signs and Stroke Awareness Survey reported on the unprompted awareness of the F.A.S.T. signs of stroke in the Western Australian community⁵:

- 40 percent knew none of the common signs of stroke.
- Only 9 percent knew an inability to lift both arms was a sign of stroke. This is despite the fact that difficulty moving arms was the most common impairment for stroke patients on admission to hospital.⁴

Continue and expand the Program

Stroke Foundation is calling on the Western Australian Government to continue and expand its investment in the F.A.S.T. Community Education Program. To date, program activities have focused largely on metropolitan areas. Continued and expanded investment in the program will enable the current pool of volunteers to be increased, and more volunteers from the south-west, great southern and wheat-belt areas of the state to be recruited and trained. A greater number of volunteers in the regions will facilitate support for the Western Australian Statewide Telestroke Service, targeting those regional communities covered by

the Service, and ensuring residents know the signs of stroke, and the importance of calling triple zero (000) immediately.

Expanded funding of the program will also enable a *F.A.S.T. Multimedia Campaign* to be rolled out across the state, which will support and strengthen the work of the F.A.S.T. Community Education Program, and ensure even more Western Australians understand how to recognise a stroke when it occurs, and what to do. The F.A.S.T. Multimedia Campaign will include:

- An *integrated, multi-channel advertising campaign* to promote the F.A.S.T. message in Western Australia. This may include high reach, high impact broadcast channels, Outdoor (OOH) or transit media, supported by digital advertising using a screens-based approach such as digital video on YouTube or catch-up TV.

Key performance indicators will be determined with the media agency, and will be dependent on the target audience, objectives and media channels selected.

- A *mainstream media campaign* in metropolitan news outlets emphasising the F.A.S.T. message through stories told by survivors of stroke. News stories will include a call to action for all residents and workplaces to get behind the campaign, as well as announcements of annual F.A.S.T. awareness levels.

Key performance indicators will include the number of news stories promoting the F.A.S.T. message published or broadcast in metropolitan news outlets.

Continued and expanded Western Australian Government investment in Stroke Foundation's F.A.S.T. Community Education Program, and a F.A.S.T. Multimedia Campaign, will increase awareness of what stroke is, how to reduce stroke risk, and how to recognise the F.A.S.T. signs of stroke, in the Western Australian community. It will also strengthen and maximise existing State Government investments in stroke infrastructure, including the Western Australian Statewide Telestroke Service, targeting those regional communities covered by the Service, and ensuring residents know the signs of stroke, and the importance of calling triple zero (000) immediately.

Jake's Story

Jake Vincent was just 22 when he suffered a stroke in March 2020.

"It had been a great night. I'd been to a concert and then hung out with my mates in town afterwards. It was late, so I decided to call it a night and head back to my girlfriend Sidney's house with her," said Jake.

As Jake was getting ready for bed, he experienced a sudden, throbbing headache. Thinking little of it, he got up to get some paracetamol from the other side of the room, and fell over. Jake picked himself up, thinking he'd had a little too much to drink, but fell over again, this time onto the bed.

Sidney woke, and saw that Jake had a facial droop, was unable to move the left-side of his body, and was slurring his words. She remembered the F.A.S.T. signs of stroke that her Grandma Dot had taught her as a child, and called an ambulance immediately.

The paramedics arrived within 10 minutes. Jake was seen immediately upon arrival at hospital, where a brain scan confirmed he had suffered a stroke, and he was given a blood clot busting drug.

Jake spent two days in hospital, including one day in the Intensive Care Unit, before being discharged.

"Jake still has issues with fatigue and anxiety, but we know the outcome could have been far worse if we delayed seeking medical treatment," said Sidney.

Jake is now back at work full-time.

"Stroke doesn't discriminate. It doesn't matter what age you are. I'm grateful beyond words to Sidney, and I urge everyone to know the F.A.S.T. (Face, Arms, Speech, Time) signs of stroke, as the knowledge could save someone's life one day."



**Survivor of stroke
Jake Vincent and his girlfriend
Sidney.**

Living Well After Stroke Program - Reducing the risk of recurrent stroke through effective secondary prevention.

Investment: \$120,000 per annum over four years.

Background

In 2020, there were 2,706 first-time strokes in Western Australia, and there were more than 43,000 survivors of stroke living in our community¹; however, more than 80 percent of strokes can be prevented², providing a unique opportunity to support health behaviour change and prevent subsequent stroke.

People are at higher risk after their first stroke, and the Clinical Guidelines for Stroke Management state that stroke patients should be assessed and informed of their risk factors for recurrent stroke and educated about strategies to reduce their risk.⁶ Despite this, once in the community, many survivors of stroke find appropriate evidence-informed health behaviour change interventions unavailable or difficult to access.

In Western Australia, there is a clear need for services that address behaviour modification for the reduction of stroke risk factors, to reduce

For those with mild stroke, and no inpatient rehabilitation admission, short lengths of stay in hospital reduce opportunities for health behaviour education and intervention. After discharge, there is no clear pathway for effective, evidence-based education and intervention to support health behaviour change. This underserved group is at risk of falling through the cracks after experiencing a first stroke.

The Program

Stroke Foundation's Living Well After Stroke Program will focus on Western Australian survivors of stroke who have experienced a mild stroke, with no referral for ongoing inpatient rehabilitation, and an identified need to change health behaviours to reduce their risk of future stroke.

The program will target health behaviours related to reducing risk of stroke recurrence, including physical activity, healthy eating, smoking cessation, consuming alcohol within safe limits, and medication adherence. This will be done through an evidence-based, person-centred, Health Action Process Approach (HAPA), that supports people to build motivation, set goals, plan, and implement and track health behaviour change. HAPA has been shown to be an effective model for people with chronic illness and disability.⁷ Stroke Foundation has expertise in the delivery of health behaviour change interventions based on the HAPA model.

Potential participants will be identified in Western Australian hospital or rehabilitation settings and referred to the program by relevant health professionals (stroke co-ordinators, doctors, nurses, or allied health professionals). The Living Well After Stroke team will contact those referred by phone to confirm their eligibility and schedule an initial consultation (Session 1) with a program facilitator via Zoom (Figure 1). Eligible participants will be sent program materials and a baseline survey for completion. Those deemed ineligible will be referred to alternative Stroke Foundation services.

Figure 1 Overview of sessions delivered as part of the Living Well After Stroke Program



Participation in the program will involve attending five behaviour change sessions with a trained facilitator over an 8-week period. The sessions will run for up to 2 hours each and will involve a mix of individual and group-based assessments and interventions delivered online or in-person. Participants will be offered the choice to attend the group sessions in-person or via Zoom.

Education and interventions will be tailored to each individual, in line with their needs and preferences. Participants will be asked to select one stroke secondary prevention behaviour (e.g. increase physical activity) to focus on changing for the duration of the program. They will be taught how to apply a set of behaviour change skills, or toolkit, to their chosen secondary prevention behaviour. At the end of the program, they will apply this toolkit to

make changes to another chosen behaviour, to demonstrate how transferrable this set of behaviour change strategies is.

Participants will be asked to complete a brief survey measuring the key study variables on three occasions throughout the program, and 8 weeks after the final session (Week 16).

Existing Stroke Foundation products and services will deliver ongoing information and support to participants after they complete the program.

Stroke Foundation is well placed to lead the translation of an evidence-based, person-centred approach into practice in Western Australia. We have existing, effective relationships with acute and rehabilitation stroke services that are delivering our products and referring to our services such as StrokeLine.

Evaluation

A formal evaluation plan will be developed, and the program will be monitored throughout for continuous improvement. Specific outcome measures will be determined at the commencement of the program, and could include, but not be limited to:

- Impact on performance of health behaviour, evaluated based on participants' performance of chosen secondary prevention behaviour over time.
- Impact of intervention strategies on motivational and volitional beliefs towards changing behaviour, evaluated based on participants' adoption of the theory – and evidence-based behaviour change strategies – reflected by measures of the individual HAPA variables over time.
- Determination of whether skills were transferable, evaluated based on participants' application of behaviour change strategies to a new behaviour, reflected by performance of an additional target behaviour between Session 5 and the final follow-up at 16 weeks.
- Participant wellbeing, assessed by a validated tool for measuring physical and emotional wellbeing (e.g. World Health Organization 5-item measure of subjective wellbeing, WHO-5).
- An evaluation of the process will be undertaken, including program uptake and retention rates, stakeholder acceptability assessments, and qualitative interviews with a sub-sample of participants.

State Government investment in Stroke Foundation's Living Well After Stroke Program will provide Western Australian survivors of stroke who have not been referred to inpatient rehabilitation with a clear pathway to lifestyle risk management after discharge from hospital. The program will equip survivors with a toolkit of transferrable behaviour change skills and strategies to support long-term self-management, and reduce their risk of future stroke, reducing the burden of stroke in our community, and ensuring a more sustainable health system.

Ensure all Western Australians have access to evidence-based stroke treatment

Stroke is a medical emergency, requiring urgent medical attention; however, with the right treatment at the right time, many people can recover from stroke. 'Time is brain' stroke treatments, including thrombolysis (clot-dissolving treatment) and endovascular thrombectomy (blood clot removal treatment), are saving lives and reducing disability in survivors of stroke.

Modelling commissioned by Stroke Foundation, and undertaken by Deloitte Access Economics, has shown that if the endovascular thrombectomy rate in the Australian population was increased from its current rate of 3 percent to a target rate of 10 percent, the potential savings from meeting this benchmark in 2020 were estimated to be \$455 million over five years (in net present value terms).⁸

An increase in the endovascular thrombectomy rate would mean more patients who might otherwise require a lifetime of disability support being able to live independently, return to work, and resume social and community participation. These benefits and the accompanying cost savings would accrue to individual survivors of stroke and their families and carers, as well as federal and state and territory governments, employers, and society more broadly.⁸

Endovascular thrombectomy is a highly effective treatment with evidence of benefit in selected patients with large vessel occlusion⁶, but it requires highly specialised teams, and is restricted to comprehensive stroke centres. In Western Australia, life-saving endovascular thrombectomy treatment is provided to 13 percent of all reported ischaemic stroke patients⁴. However, more needs to be done to increase access to timely thrombolysis treatment, which is provided to only 4 percent of all reported ischaemic stroke patients, well below the national average, and the lowest in the country.⁴ We hope that the move to a 24/7 Western Australian Statewide Telestroke Service will help with this; however, other work in metropolitan Perth is also warranted.

Building on time-critical treatment, access to stroke unit care, characterised by provision of care in one location by a multidisciplinary team including medical, nursing and allied health professionals with expertise in stroke, is proven to make the biggest difference to patient outcomes following stroke, both in hospital and after.^{9, 10} Importantly, only 60 percent of Western Australian stroke patients are able to access stroke unit care, which is well below the national average.⁴ More work needs to be done to improve access to stroke unit care in our state.

Improving the quality of stroke treatment and care provided in Western Australian hospitals is critical to reducing the burden of stroke on survivors, their families and carers, and our community and health system. Stroke Foundation is committed to supporting hospitals and health professionals across Western Australia to strengthen their capabilities in the delivery of best-practice, evidence-based stroke treatment and care.

Western Australian stroke clinicians benefit from a variety of Stroke Foundation resources and initiatives which are designed to support them to improve the quality of stroke treatment and care, and are provided thanks largely to the generous support of Stroke Foundation donors and partners. These include:

- The *National Stroke Audit*, which commenced in 2007, and provides longitudinal data on the clinical performance of Australian hospitals. Data is provided in an accessible format to help hospitals identify where improvements are required, lobby for change and celebrate success.
- *Clinical Guidelines for Stroke Management*, which provide recommendations for best-practice stroke treatment and care, based on the latest research. Technology and processes developed and piloted during a Federal Government funded research project (Phase One) have enabled the Guidelines to evolve into a 'living' model, where individual recommendations are updated as soon as new relevant evidence becomes available.
- *InformMe*, Stroke Foundation's dedicated website for health professionals working in stroke treatment and care, which in addition to housing the Clinical Guidelines for Stroke Management and National Stroke Audit data, includes over 50 e-Learning professional development modules covering a wide variety of topics.
- The *National Webinar Series*, which provides web-based education on a range of topics for health professionals working in stroke treatment and care across Australia, including in regional and remote areas. Over 90 percent of clinicians who participated in the webinars reported feeling more confident in identifying their current practice gaps after the sessions.

Stroke Foundation has also developed *StrokeLink*, a stroke quality improvement program focused on closing the gap between guidelines and practice. This program has been supporting hospitals across Queensland since 2007, with funding from the Queensland Government, and has contributed to substantial improvements in the delivery of best-practice stroke treatment and care.^{11, 12}

State Government investment in the successful *StrokeLink* Program, and a Tailored Health Professional Education Program, will ensure Western Australian stroke clinicians have the knowledge and tools they need to drive quality improvement in treatment and care.

Funding of these programs will strengthen and maximise existing Western Australian Government investments in stroke guidelines, data collection and analysis activities, and infrastructure, including the Western Australian Statewide Telestroke Service. These programs will also deliver on key recommendations of the Western Australian Government's *Sustainable Health Review*, including:

- ***Enduring Strategy 5* Drive safety, quality and value through transparency, funding and planning: Recommendations 16, 17 and 20.**
- ***Enduring Strategy 6* Invest in digital healthcare and use data wisely: Recommendation 21.**
- ***Enduring Strategy 7* Culture and workforce to support new models of care: Recommendation 24.**

Targeted *StrokeLink* Program and Tailored Health Professional Education Program for Western Australian stroke clinicians.

Investment: \$120,000 per annum over four years for the *StrokeLink* Program.

\$35,000 per annum over four years for the Health Professional Education Program.

Background

Stroke Foundation applauds the Western Australian Government's significant investment in Phase Two of the world-leading Living Evidence initiative, which will enable the living approach for clinical guidelines to continue to evolve, ensuring Western Australian health professionals have access to reliable, accessible, and up-to-date clinical recommendations.

State Government investment in the Statewide Telestroke Service is ensuring more Western Australians in regional, remote and rural areas are able to access time-critical stroke treatments, and our state has one of the highest rates of endovascular thrombectomy treatment for patients with ischaemic stroke.⁴

Importantly however, Western Australians are still dying, or being left disabled unnecessarily from stroke, because the care they receive is not in line with best-practice guidelines. In addition to suboptimal access to thrombolysis treatment and stroke unit care, one third of Western Australian stroke patients do not receive a discharge care plan when they leave hospital, which is important for minimising the risk of another stroke.⁴

Western Australian Government investment is needed in initiatives that improve access to best-practice stroke treatment and care across the state, and contribute to the delivery of value-based healthcare, by facilitating clinical engagement, providing health professionals with up-to-date and clinically relevant information and education, and supporting localised and system-wide quality improvement.

Targeted *StrokeLink* Program

Research has shown that strategies to improve the delivery of evidence-based care require a multifaceted approach.¹³ Firstly, the best-practice care that should be delivered needs to be clearly defined.¹³ Secondly, the rate at which best-practice care is delivered must be measured.¹³ Thirdly, systems that improve adherence to best-practice care, and are proven to improve outcomes, need to be developed.¹³

Stroke Foundation has developed the *StrokeLink* Program, a cost-effective, continuous quality improvement model that utilises national, state-wide, and local data, and expertise and training, to empower health professionals to deliver evidence-based stroke care. In Queensland, where Stroke Foundation has been delivering the program since 2007, in

partnership with the State Government, great gains have been made in closing the gap between guidelines and practice.^{11, 12}

This comprehensive, targeted quality improvement program utilises Living Clinical Guidelines for Stroke Management, the Australian Commission on Safety and Quality in Health Care Acute Clinical Care Standards, as well as National Acute and Rehabilitation Stroke Services Frameworks, to define appropriate care indicators for people who have suffered a stroke, guide benchmarking, and enhance awareness of gaps in care services. *StrokeLink* works with hospital teams to assist them to better understand their stroke performance data, including from the Stroke Foundation National Audit of Stroke Services and Australian Stroke Clinical Registry, and supports them through the provision of expert facilitation, knowledge, coaching, and best-practice examples, to translate these data into safer, more effective stroke treatment and care.

A Learning Health System, involving ongoing cyclical processes, where practice is turned into data, which is then analysed to generate new knowledge, which in turn is implemented into practice, has been identified as an important element in improving the quality, safety and efficiency of care.¹⁴ The multifaceted *StrokeLink* quality improvement program will support a stroke Learning Health System in Western Australia, which will improve the quality, safety, effectiveness and accessibility of stroke care provided, leading to better health outcomes for patients, and a subsequent reduction in the burden of stroke on our health system and community. The program will have a particular focus on those hospitals that are consistently underperforming with regard to national stroke quality standards.

Proven success

A formal evaluation of the Queensland *StrokeLink* Program has demonstrated that it has contributed to substantial, and clinically relevant, improvements in targeted stroke processes of care, including an increased percentage of patients^{11, 12}:

- who received stroke unit care
- who received clot-dissolving (thrombolysis) treatment (if an ischaemic stroke)
- discharged on antihypertensive and antithrombotic (if an ischaemic stroke) medications
- discharged to the community with a care plan.

The program is also very well regarded by participants. Clinicians who participated in the 2021 Queensland *StrokeLink* Program completed a survey to evaluate its effectiveness, and agreed or strongly agreed that the program:

- enabled delivery of better quality stroke care (86 percent)
- informed them of valuable information and updates, including on clinical care guidelines (95 percent)
- enabled better collaboration across the Queensland Hospital Stroke Services Network (81 percent)
- included workshops that were informative and relevant to clinical practice (100 percent)
- focused on action plans, developed as part of the workshops, that enabled positive change at a local level (80 percent)

- included webinars that facilitated the identification of transferable strategies that could be implemented locally, and empowered participants to lead change to improve the quality of local stroke care (86 percent).

Key deliverables

- Facilitated quality improvement workshops
 - ◆ The main feature of the program is facilitated workshops conducted onsite at hospitals. During these workshops, the *StrokeLink* team, often together with local clinical champions, presents the hospital's stroke performance data, supports health professionals in the interpretation of this local data against national benchmarks, and then works with them to identify current practice gaps and develop action plans to address these gaps. Hospitals are then provided with follow-up support over the next six to 12 months.
- Provision of specialist educational resources
 - ◆ Online learning modules on InformMe, Stroke Foundation's dedicated online resource for health professionals working in stroke treatment and care.
 - ◆ Webinars and presentations.
 - ◆ Dissemination of research, including updates to Clinical Guidelines.
- Networking and peer to peer interaction, sharing and support
 - ◆ Networking and peer to peer interaction, sharing and support will be fostered through the development of a national Online Community of Practice, where health professionals can meet, discuss quality improvement ideas, share resources, and mentor others or receive mentoring.

The number and type of *StrokeLink* activities delivered, and the specific clinical areas covered, will vary from hospital to hospital, depending on a number of factors including individual site circumstances and needs, and identified gaps in treatment and care at these sites.

Evaluation

A formal evaluation plan will be developed, and the program will be monitored throughout for continuous improvement. Specific outcome measures will be determined at the commencement of the program, and could include, but not be limited to:

- The number of Western Australian hospitals and health professionals who participate in targeted *StrokeLink* quality improvement activities.
- Changes in key stroke processes of care at both the hospital and state level, including the percentage of patients:
 - ◆ who received stroke unit care
 - ◆ who received clot-dissolving (thrombolysis) treatment (if an ischaemic stroke)
 - ◆ provided with education on how to avoid another stroke (behaviour change for modifiable risk factors)
 - ◆ discharged on statin, antihypertensive, and antithrombotic (if an ischaemic stroke) medications

- ◆ discharged to the community with a care plan.
- Quantitative and qualitative participant feedback on the effectiveness of targeted *StrokeLink* quality improvement activities, including whether the program:
 - ◆ provided participants with valuable resources, information, and updates on key areas relevant to clinical practice, such as clinical care guidelines
 - ◆ facilitated the identification of current practice gaps, and strategies to address these gaps at a local level
 - ◆ facilitated the delivery of better quality stroke care at a local level
 - ◆ facilitated better collaboration across the network of Western Australian hospitals delivering stroke services.
- Changes in health system outcomes in Western Australia, such as length of hospital stay and hospital readmission rates.
- Changes in the health outcomes of Western Australian stroke patients, including patient reported outcome measures.

Tailored Health Professional Education Program

We understand that Australian health professionals involved in the delivery of stroke treatment and care, including those in Western Australia, receive stroke-specific professional education through a number of channels. This includes informal channels such as colleagues at their hospital, as well as formal channels such as InformMe e-Learning modules, hospital-level training programs, and annual forums or workshops delivered at national conferences, or by local health districts or networks, state stroke networks or communities of practice. Importantly however, there is little data on the number and type of stroke-specific professional education activities individual health professionals access and complete.

Stroke Foundation has a number of education resources which have been developed with subject matter experts. We are also in the process of developing a suite of new generation education resources that cater to the needs of today's busy stroke care teams, which will facilitate on-demand:

- tailored, individualised, learning paths
- training packages accredited by Stroke Foundation
- monitoring of staff training progress
- mobile-friendly learning modules.

The content will be customisable and intuitive, enabling adaptation to health professionals' changing needs for on-the-job expertise that seamlessly translates in real time to improved stroke patient care outcomes. This solution supports the growing shift in the health sector towards a greater emphasis on patient-centred care, and will pave the way for real-time translation of health professional education into practice.

Importantly, the program will also support country clinicians in our state, increasing their confidence and improving their decision-making when dealing with complex neurological

conditions such as stroke, maximising the State Government's investment in Western Australian Statewide Telestroke Service.

Key deliverables

The tailored educational resources developed for, and delivered through this program could include, but not be limited to:

- Online learning modules on InformMe.
- Webinars.
- Podcasts.
- Videos.

The number and type of educational resources delivered, and the specific clinical areas covered in these resources, will vary from hospital to hospital, depending on a number of factors including individual site circumstances and needs, and identified gaps in treatment and care at these sites.

Evaluation

A formal evaluation plan will be developed, and the program will be monitored throughout for continuous improvement. Specific outcome measures will be determined at the commencement of the program, and could include, but not be limited to:

- The number of health professionals who engage in, and successfully complete, tailored educational activities.
- Quantitative and qualitative participant feedback on the quality and utility of tailored educational activities, including:
 - ◆ whether the information provided was relevant to their hospital
 - ◆ changes in their confidence in identifying current practice gaps
 - ◆ changes in their knowledge of, and confidence in managing, specific aspects of stroke treatment and care.
- Quantitative and qualitative feedback from Western Australian country clinicians regarding changes in their confidence and decision-making ability when dealing with complex neurological conditions such as stroke.

Western Australian Government investment in the Targeted *StrokeLink* and Tailored Health Professional Education programs will help close the gap between guidelines and practice, and empower Western Australian health professionals to deliver evidence-based, best-practice stroke treatment and care across the state.

Enhance recovery to help Western Australians live well after stroke

The impact of stroke is far reaching, and well beyond discharge from hospital a significant proportion of survivors of stroke have yet to make a full recovery. Many survivors speak of falling into a 'black hole' once they are discharged from hospital. The often profound and prolonged brain injury resulting from stroke can severely impact a survivor's ability to navigate an often-complex health and welfare system. This can add time and frustration to their recovery, and lead to poorer health outcomes, and hospital readmissions.

Continuity of care is an issue for survivors of stroke once discharged from hospital, and one of the major challenges to improving continuity of care is inconsistent discharge planning from the hospital system.

Importantly, 32 percent of Western Australian survivors of stroke are discharged from hospital without a discharge care plan.⁴ As a result, they and their families and carers often do not receive critical information on secondary prevention, follow-up, rehabilitation, and relevant supports and services which exist in the community.

Stroke Foundation is committed to reaching out to those impacted by stroke to ensure more Western Australians can connect with and access trustworthy information, resources, and post-stroke support. **Specifically, our goal is to ensure that by 2024, 85 percent of Western Australians will be connected to Stroke Foundation and enabled to navigate the ongoing support they need to live well after stroke.**

Thousands of Western Australians benefit from Stroke Foundation's suite of resources and services which are designed to support survivors of stroke, their families and carers following discharge from hospital, and are provided thanks to the generous support of Stroke Foundation donors and partners. These include:

- *EnableMe*, Stroke Foundation's recovery website with over 11,000 registered users. This online resource, co-designed with survivors of stroke and carers, provides videos, podcasts and fact sheets on a wide range of topics impacting daily life after stroke, a community forum to ask questions and share experiences, a tool to set and track personal goals for recovery, and an online helpdesk to ask questions of Stroke Foundation health professionals.
- *My Stroke Journey*, a resource delivered by our hospital partners in the first few days after a person's stroke, which is used throughout their admission in education and care planning. This free resource also supports the transition from hospital to the community, and includes information on preparing for discharge and available supports and services. In 2021, 147 hospitals delivered this resource to more than 23,000 Australians. *My Stroke Journey* is now a suite of resources, with versions available in both standard and easy English, and for Aboriginal and Torres Strait Islander peoples, and parents and carers of children who have had a stroke.
- *StrokeLine*, a service that provides free expert information, advice, support and referral on stroke prevention, treatment and recovery to the general public and to survivors of stroke, their families, and carers. *StrokeLine* delivers services via telephone, email, social media and *EnableMe*, and aims to equip people to take

action as required; however, if the individual contacting the service is vulnerable or at risk, StrokeLine's health professionals coordinate their care and follow-up as needed.

Stroke Foundation is expanding its inbound StrokeLine service, building on existing capabilities to deliver a digitally enabled and enhanced, equitable, and accessible StrokeConnect Navigator Program with outreach capabilities. State Government investment in this program will mean more Western Australian survivors of stroke, their families, and carers will be able to access the information, advice, support, referral, and care coordination they need to achieve their best possible recovery.

The StrokeConnect Navigator Program will deliver on key recommendations of the Western Australian Government's *Sustainable Health Review*, including:

- ***Enduring Strategy 1* Commit and collaborate to address major public health issues: Recommendation 4.**
- ***Enduring Strategy 4* Person-centred, equitable, seamless access: Recommendations 10 and 13.**

StrokeConnect Navigator Program.

Investment: \$153,000 per annum over four years.

Background

Navigating the complex health system after leaving hospital is often one of the greatest barriers to success that Western Australian survivors of stroke face in their recovery journey.

We know that 32 percent of Western Australian survivors of stroke leave hospital without a discharge care plan, and 10 percent leave hospital without education on how to avoid another stroke through behaviour change for modifiable risk factors.⁴

This leaves many Western Australians unable to achieve their best possible recovery, manage their health, and live well after stroke.

Stroke Foundation delivers a variety of products and services for survivors of stroke, their families and carers, including the *My Stroke Journey* suite of resources, *EnableMe*, and *StrokeLine* service; however, based on our own existing services' data, we know there is unfulfilled demand for services from survivors of stroke who cannot easily navigate the health system after leaving hospital. For example, since January 2022, only 623 survivors of stroke have received an outreach service (outbound), and 2,457 self-referred to the *StrokeLine* (inbound) service. This is only a small percentage of the nearly 450,000 Australians living with stroke, and the more than 27,000 having a stroke for the first time this year, suggesting that a significant number of survivors are not accessing the support services available that could assist in their recovery after stroke.

This highlights a clear need for State Government investment in a program that reaches out to all Western Australians impacted by stroke, and their families and carers, after their return home from hospital, and ensures survivors of stroke have a smooth transition from hospital into the community. This program should facilitate improved continuity of care, and ensure survivors are connected to the appropriate services and supports, and have the information they need to achieve their best possible recovery and avoid hospital readmission due to complications or recurrent stroke. This is particularly important for vulnerable survivors, and those with poor outcomes following their stroke.

The Program

Western Australian Government investment will enable us to extend our flagship *StrokeLine* inbound information and support service, and implement our new outbound, continuity of care service, under the StrokeConnect Navigator Program. This will include technological upgrades, increased digital health capabilities, and additional health professional 'Stroke Navigators', who will:

- Ensure the inbound service manages all enquiries in a timely and appropriate way, increasing the capacity of hospital teams as they prepare survivors for discharge.
- Deliver an equitable, proactive outreach service to provide continuity of care and connection.

The development of this program has been informed by learnings gained from evaluations of current state-based outreach services delivered by Stroke Foundation in Tasmania and the Australian Capital Territory. The program will facilitate care coordination, including referrals to other service providers and outpatient appointments, as well as improved survivor knowledge, self-efficacy, health literacy and social connection. The StrokeConnect Navigator Program will also be focused on reducing the burden on family members and carers of survivors of stroke and improving their quality of life and wellbeing.

Stroke Foundation has allocated internal funding to enable a limited roll-out of this program, but is seeking support from the State Government to enable it to be scaled-up, and therefore reach more of the estimated 3,000 stroke patients admitted to Western Australian hospitals each year, as well as their families and carers.

Referrals

Currently, Stroke Foundation's state-based outreach programs in Tasmania and the Australian Capital Territory rely on referrals from hospital-based stroke nurses. Stroke Foundation *StrokeLink* Hospital Engagement Coordinators have strong, long-standing relationships with hospitals and stroke units across the country, including in Western Australia; however, the current approach relies on hospital teams providing the right information to every survivor of stroke, and puts the responsibility on survivors, their family members and carers, to make contact with the programs.

The goal of Stroke Foundation's StrokeConnect Navigator Program will be to ensure every Western Australian survivor of stroke is contacted following their discharge from hospital, and provided with the appropriate level of information and support. Therefore, in order to make certain no survivor falls through the cracks, we propose to work with the Western Australian Department of Health to ensure that the appropriate notification systems are in place, and Stroke Foundation is automatically notified each time a survivor of stroke is discharged from hospital. Survivors will be able to opt out of referral to the program if they so choose. In addition, Stroke Foundation will continue to promote the *StrokeLine* inbound service through Western Australian hospitals and stroke units, community partners, and social media.

Staffing and delivery

Patients with chronic and complex conditions such as stroke are likely to require treatment and care from several different health professionals. The skills and knowledge of multidisciplinary health professional teams are critical in helping survivors of stroke manage their condition and maximise their level of functioning. Therefore, the 'Stroke Navigators' who will be responsible for delivering the program day-to-day will be a mix of nurses and allied health professionals such as occupational therapists, social workers, physiotherapists, and speech pathologists. As we have learned through the many years of delivering the *StrokeLine* service, it is critical for all 'Stroke Navigators' to understand stroke and the stroke support service network, in order to be able to connect survivors with the supports they need.

Western Australian Government funding is critical to enabling Stroke Foundation to recruit, train, and retain health professionals to deliver the program who have the appropriate knowledge and experience in stroke, in what is an extremely competitive employment market.

The StrokeConnect Navigator Program will offer a personalised, two-tier service, depending on the participant's level of need:

- For those at low risk of hospital readmission and poor physical, social, and mental health outcomes, there will be two 'lighter touch' options:
 - ◆ A tailored, self-directed digital solution.
 - ◆ A peer support solution, where survivors of stroke are matched in a structured, supportive relationship with a trained, more experienced survivor of stroke peer mentor. Interactions will be either face-to-face, online, and/or by phone, depending on individual preferences.
- For those at medium to high risk of hospital readmission and poor physical, social, and mental health outcomes, there will be an intensive, health professional-led solution.

While some participants may only require one consultation with the program, others may require one or more follow-up consultations, depending on the complexity of their needs.

Evaluation

A formal evaluation plan will be developed, and the program will be monitored throughout for continuous improvement. Specific outcomes to be measured will be determined at the commencement of the program, and could include, but not be limited to:

- Number of outbound client referrals made and actioned.
- Number of inbound client contacts made and actioned.
- Client satisfaction with the service.
- Number and type of supports provided by the service (e.g. referrals to other service providers, or provision of information on secondary stroke prevention).
- Knowledge, self-efficacy, and health literacy, of survivors of stroke using the service.
- Health-related quality of life, emotional wellbeing, levels of distress, and rates of anxiety and depression, of survivors of stroke using the service.
- Social connection and return to work, of survivors of stroke using the service.
- Quality of life, physical and emotional wellbeing, and involvement in recovery and rehabilitation, for family members or carers using the service.
- Rates of secondary stroke and hospital readmission, in survivors of stroke using the service.

Western Australian Government investment in the StrokeConnect Navigator Program will ensure more Western Australians, regardless of where they live, are supported to manage their stroke recovery, live well, return to work (where possible), and resume social and community participation. This will have benefits for survivors of stroke, their families and carers, and our community, as well as our state's health system and economy.

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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.