Stroke FOUNDATION

Economic Impact of Stroke Report 2024

Executive Summary

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Stroke is a serious medical emergency. It happens when a blood vessel in the brain gets blocked (ischaemic stroke) or bursts (haemorrhagic stroke). This can cause disability and premature death.

If we can prevent strokes, recognise them early, treat them quickly, and support the rehabilitation and recovery process, we can avoid many of the adverse effects of stroke and reduce the cost to the individual and society.

Number of stroke events

In 2023, it was estimated that 45,785 people in Australia experienced a stroke. Of these, 34,793 were a first-ever stroke and 10,992 were a recurrent stroke. Based on the current trends in the incidence of stroke and expected population growth, it is estimated that the number of stroke events in Australia would increase to almost 55,000 first-ever strokes and almost 17,000 recurrent strokes per year (a total of 72,000 strokes) by 2050.

Stroke can occur in people of all ages. It was estimated that 1 in 4 (25%) of those who suffered a first-ever stroke in 2023 were under the age of 65 years, and 1 in 10 (10%) of those who suffered a recurrent stroke in 2023 were under the age of 65 years.

It is estimated that 440,481 people are living with a stroke in Australia in 2023 (244,756 males and 195,725 females), or 2.0% of the population of Australia (2.3% of males and 1.8% of females).[1]

Types of stroke

The majority of strokes are ischaemic strokes. Of the first-ever strokes, 81.2% were ischaemic strokes, 10.2% were intracerebral haemorrhages, 5.3% were subarachnoid haemorrhages, and 3.3% were undetermined strokes. Of the recurrent strokes, 85% were ischaemic strokes.

Over 14% of first-ever strokes, and 16% of recurrent strokes, resulted in a death within 28 days of the stroke event. In general, intracerebral haemorrhage more often resulted in deaths within 28 days of stroke (over 31%) compared to ischaemic stroke (over 11%) and undetermined stroke (over 12%), highlighting the need for further developments in the prevention and treatment of intracerebral haemorrhage.

Risk factors for stroke

Many people in Australia have risk factors for stroke such as high blood pressure (hypertension), diabetes, high cholesterol, smoking, physical inactivity and being overweight. In 2023, almost 7.5 million males (69%) and over 6.5 million females (59%) living in Australia were overweight. High blood pressure was also common, affecting 24% of males and 22% of females.[2] A transient ischaemic attack (a temporary and self-resolving blockage of blood vessel with same signs as stroke, but no lasting impact) is an indication that someone may be at high risk of stroke. The Australian Institute of Health and Welfare estimates there may be 19,700 presentations to public hospital emergency departments for transient ischaemic attack each year, with 13,000 of these resulting in an admission to hospital.[3]

Costs and economic impact of stroke

Immediately after stroke, patients are typically managed through the hospital system. In the first three months after stroke, costs to the health system were estimated to be $1.2 billion for first-ever strokes (over $38,000 per person) and $402 million for recurrent strokes (over $36,000 per person).

Since there are far more ischaemic strokes than intracerebral haemorrhages, total costs related to ischaemic stroke were much greater than for intracerebral haemorrhage over the first three months after stroke. However, average costs over the first three months after stroke for first-ever intracerebral haemorrhages were $43,082, which was approximately one sixth greater than those related to first-ever ischaemic strokes ($36,611).

Due to long-lasting effects of stroke, economic impacts due to stroke are often incurred well into the future. These costs are borne by the person affected, their carers and the government. Over a lifetime after stroke (but excluding the first three months post-stroke), costs associated with stroke were over $300,000 per person; a total cost of over $14 billion to society, including almost $4 billion in costs related to healthcare services, and $10.1 billion in costs related to lost productivity in the workplace and at home, as well as the provision of informal care.

Premature death and disability due to a condition are often expressed in a summary measure of population health called disability adjusted life years (DALYs). Impairments from stroke can often remain in the long-term after a stroke. Over a lifetime, there were 215,251 DALYs associated with strokes occurring in 2023 (47,693 years of life lived with disability and 167,558 years of life lost).

30/60/90 National Stroke Targets

Substantial health and economic benefits are achievable if evidence-based treatments are provided in hospital according to 30/60/90 National Stroke Targets[4], with 4,085 DALYs avoided. The additional costs of providing acute care ($24,274,708) were offset by savings from improving employment; improving household productivity; and reducing informal care, with savings totalling over $26 million. Activities required to support the achievement of National Stroke Targets were estimated to cost almost $4 million. This cost included Stroke Unit Certification and additional employment of Stroke Care Coordinators in hospitals as recommended by the Australian Stroke Coalition.

Reducing high blood pressure

The potential benefits from the prevention of stroke are substantial. High blood pressure (hypertension) is the number one risk factor for stroke. When estimating the effects of reducing uncontrolled blood pressure according to targets for 2030 set by the National Hypertension Taskforce, it was estimated that 838 first-ever strokes and the 4,061 DALYs associated with these strokes would be avoided in 2023. Estimated savings from preventing these strokes were over $315 million. However, the benefits of reducing high blood pressure in Australia are much broader than stroke since it is also a major risk factor for other diseases such as heart disease, kidney disease and dementia.

Benefits from improving the use of medications to lower blood pressure after stroke were estimated. Each year, 130 recurrent stroke events could be prevented, and savings of over $9 million could be achieved from further improving adherence to these medications, with a relatively small additional cost to patients to access these medications.

Costs of recovery and rehabilitation

Supporting recovery and rehabilitation to reduce impairments from stroke were estimated. In a scenario where a greater proportion of patients were able to access community rehabilitation services, it was estimated that 3,296 DALYs could be avoided. The total additional therapist costs of providing rehabilitation (over $4 million), and an additional $13 million in healthcare costs over a lifetime were offset with large savings from improved productivity and reduced care by informal caregivers. An overall saving of over $118 million was estimated.

References

1. Saver JL. Time is brain--quantified. Stroke 2006;37:263-266.
2. O'Donnell MJ, Chin SL, Rangarajan S, et al. Global and regional effects of potentially modifiable risk factors associated with acute stroke in 32 countries (INTERSTROKE): a case-control study. Lancet 2016;388:761-775.
3. GBD 2019 Stroke Collaborators. Global, regional, and national burden of stroke and its risk factors, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet Neurol 2021;20:795-820.
4. Schutte AE, Bennett B, Chow CK, et al. National Hypertension Taskforce of Australia: a roadmap to achieve 70% blood pressure control in Australia by 2030. Med J Aust 2024;221:126-134.

Key insights

In 2023

There were **440,481** Australians living with stroke

1 in **4 strokes** occurred in people **under 65 years**

45,785 Australians experienced a stroke (including **34,793** for the first time)

One stroke occurred every **11 minutes**

Cost of stroke

Lifetime costs associated with strokes that occurred in 2023 exceed

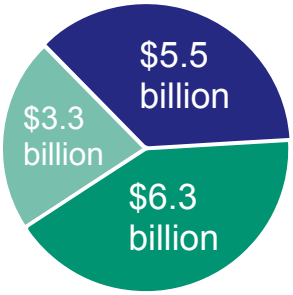
$15 billion

(almost $350,000 per person)

Costs in the first year after stroke were over

$7.7 billion

(almost $176,000 per person)



- Healthcare costs to government
- Costs related to unpaid care
- Lost productivity costs

Cost of stroke to the NDIS is more than

$1.3 billion

($143,000 per survivor of stroke)

annually

Taking into account the cost of stroke in the first year after the event and the total annual NDIS stroke-related expenditure, stroke is estimated to cost the Australian economy $9 billion a year.

Stroke Foundation

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