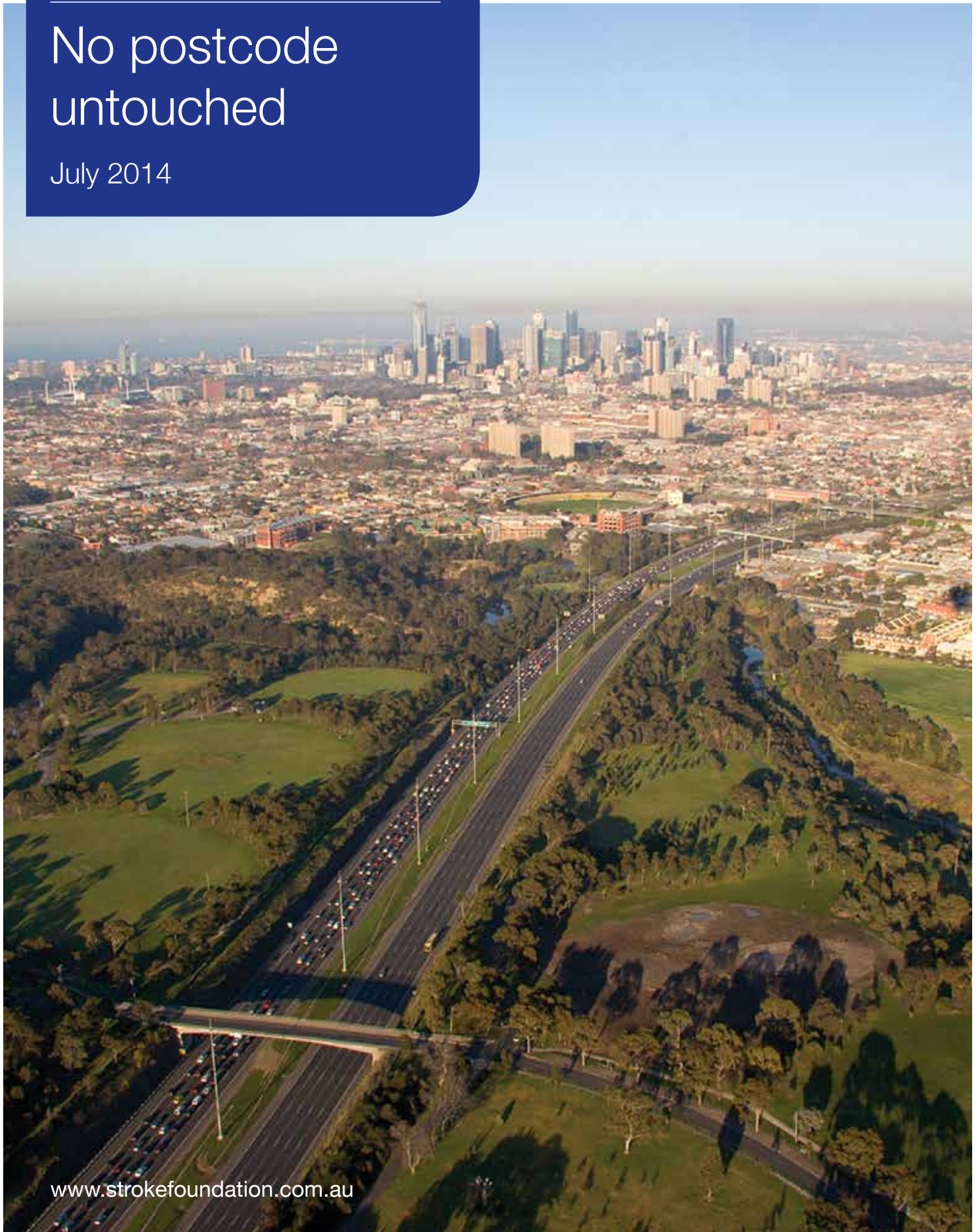# Stroke in Australia

# No postcode untouched

July 2014

**stroke**foundation

# Stroke impact by federal electorate

In 2012, the National Stroke Foundation commissioned Deloitte Access Economics to estimate the national economic and social impact of stroke in Australia. Along with estimates of the number of strokes and number of survivors, the report also found stroke costs the Australian economy $5 billion per year including $3 billion in lost productivity.

In 2014 the same firm was commissioned to produce a follow up report that zeroed in on the impact of stroke in Australian cities and towns.

The data shows how widespread the impact of stroke is in Australia and with this report we can see where the challenge to our health system is the greatest.

We know what stroke looks like in each Australian federal electorate with estimates of the number of strokes, the death rate as well as the number of stroke survivors. The data also shows us where the greatest numbers of Australians live with stroke risk factors such as high blood pressure, high cholesterol, atrial fibrillation (irregular heartbeat, also known as AF) and physical inactivity.

This new data is a rich source for targeted public policy development. The data offers a clear view of the cities and towns where stroke is having its biggest impact, where the need for stroke survivor support is most acute and where the future stroke hotspots are located.

Even in the least impacted areas stroke is taking a toll with significant proportions of the population needing financial, emotional and physical support.

Stroke has been a national health priority since 1996 but in that time no national funded strategy to tackle it has ever been produced. As a result, Australia lacks a nationally consistent stroke care service to address widespread need.

Previous estimates show stroke survivor numbers will surge past 700,000 by 2032 if nothing is done to halt the growth. A $5 billion price tag today will pale in comparison to the future cost burden, and this is not to mention the personal toll we know is so great.

# Introduction

**Every ten minutes someone in Australia suffers a stroke.**

**In one week – almost one thousand cases.**

**In 2014 alone – over 51,000.**

**All told nearly 12,000 people will die this year from stroke and two-thirds of those who survive will be disabled.**

**Almost 440,000 Australians currently live as a survivor of stroke and the number grows every day.**

**This is the story of stroke in Australia. It touches millions of lives in cities and towns from the country to the coast. The fact is stroke leaves no postcode untouched.**

# The national picture of stroke impact

51,000 strokes each year cost the Australian economy around $5 billion including $3 billion in lost productivity and $1 billion in lost wages[1].

Almost 440,000 Australians now live with the effects of stroke and this number is predicted to rise rapidly[2]. By 2032 it will reach over 700,000.[1]

Two-thirds of stroke survivors require care each day[1] and the vast majority live with needs that are not being fully met[3].

South Australia and Tasmania are the states with the highest stroke burden per head of population. In 2014 there will be 256 strokes in South Australia for every 100,000 residents - in Tasmania it will be 246. This compares with a national rate of 217.

These states also have the highest rates of stroke survivors per 100,000 people. In South Australia there are nearly 37,000 stroke survivors at a rate of 2,109 per 100,000 while Tasmania has 11,400 (2,110 per 100,000). Nationally there are 1,864 stroke survivors for every 100,000 – nearly 2% of the Australian population.

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[1] Deloitte Access Economics 2013, The economic impact of stroke in Australia.
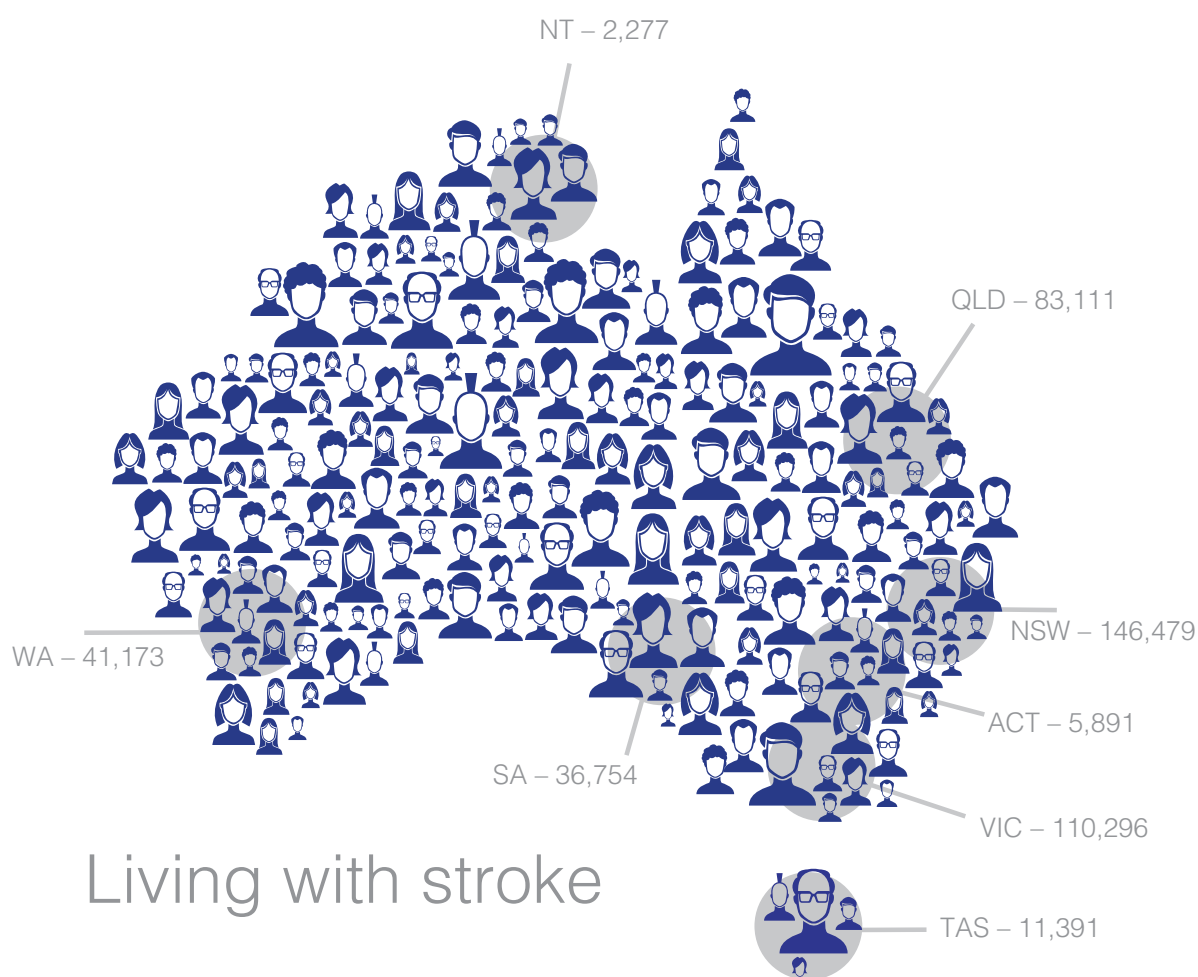
[2] Deloitte Access Economics 2014, Impact of stroke across Australia.

[3] Andrew N, Kilkenny M, Purvis T, Naylor R, Cadilhac D. The Stroke Survivor and Carer Needs Assessment Survey. Melbourne: National Stroke Foundation, June 2013. (Unpublished)

# The number of people living with stroke in Australia

| State | Total Aus* | NSW | VIC | QLD | WA | SA | TAS | ACT | NT |
|---|---|---|---|---|---|---|---|---|---|
| **Population** | 23,466,656 | 7,552,306 | 5,849,277 | 4,722,125 | 2,440,135 | 1,742,990 | 539,973 | 390,435 | 229,415 |
| **Number of strokes in 2014 (number per 100k people)** | 51,031 (217 ) | 17,273 (229) | 13,017 (223) | 9,443 (200) | 4,652 (191) | 4,461 (256) | 1,329 (246) | 655 (168) | 201 (88) |
| **Number of stroke survivors in 2014 (number per 100k people)** | 437,372 (1,864) | 146,479 (1,940) | 110,296 (1,886) | 83,111 (1,760) | 41,173 (1,687) | 36,754 (2109) | 11,391 (2,110) | 5,891 (1,509) | 2,277 (993) |
| **Number of deaths from stroke in 2014 (deaths per 100k people)** | 11,418 (49) | 3,938 (52) | 2,954 (51) | 2,015 (43) | 999 (41) | 1,054 (60) | 292 (54) | 138 (35) | 28 (12) |

*Please note this is a sum of all federal electorate divisions and does not include estimates for 'migratory/offshore/shipping' and 'no usual abodes'. With these estimates included the total number of strokes in Australia is 51,199, estimated number of survivors in the community is 438,216 and total number of deaths from stroke is 11,673.



NT – 2,277
QLD – 83,111
WA – 41,173
NSW – 146,479
ACT – 5,891
SA – 36,754
VIC – 110,296
TAS – 11,391

Living with stroke

# The national picture of stroke risk

High blood pressure, atrial fibrillation (irregular heartbeat), high cholesterol and lack of physical activity are all risk factors for stroke.

4.1 million Australians have high blood pressure and it affects people more as they age. More than 40% of Australians over 65 are hypertensive and the Australian Health Survey revealed more than half of these people did not self-report their condition.

Around 434,000 Australians have an irregular heartbeat or atrial fibrillation (AF) that greatly increases their risk of stroke. Like high blood pressure, many people are unaware they suffer from AF and how serious this condition is. As a result too few people access lifesaving treatment.

6.1 million Australians live with high cholesterol. While increasing numbers are being treated for the condition there are still many people unaware of their elevated risk.

Residents of South Australia and Tasmania again share in the greatest risk for stroke across all indicators. This includes 19% of residents with high blood pressure, 27% with high cholesterol and 46% physically inactive. The numbers in other states are similarly high with blood pressure rates of 18% in NSW and VIC, and 17% in QLD and WA. Physical inactivity is also a nationwide issue with all states bar NT running between 45–46%.

Together these numbers show a significant proportion of the Australian population is living at risk of stroke and other chronic diseases. Many of these people live without awareness of their risk and are therefore powerless to take control.

In response, governments must do more to support the community to identify and manage their health risks. This includes raising personal awareness about dangerous risk factors and ensuring our primary care system is geared to provide the right expert advice and management support.

| State | Total Aus | NSW | VIC | QLD | WA | SA | TAS | ACT | NT |
|---|---|---|---|---|---|---|---|---|---|
| Population | 23,466,656 | 7,552,306 | 5,849,277 | 4,722,125 | 2,440,135 | 1,742,990 | 539,973 | 390,435 | 229,415 |
| High blood pressure (% of population) | 4,092,898 (17%) | 1,338,239 (18%) | 1,023,965 (18%) | 802,200 (17%) | 409,618 (17%) | 323,625 (19%) | 101,312 (19%) | 62,590 (16%) | 31,350 (14%) |
| Atrial fibrillation (% of population) | 433,940 (2%) | 145,987 (2%) | 109,468 (2%) | 81,991 (2%) | 40,367 (2%) | 36,934 (2%) | 11,515 (2%) | 5,660 (1%) | 2,019 (1%) |
| High cholesterol | 6,081,876 (26%) | 1,965,337 (26%) | 1,519,515 (26%) | 1,209,283 (26%) | 625,937 (26%) | 463,397 (27%) | 144,642 (27%) | 99,079 (25%) | 54,686 (24%) |
| Physical inactivity | 10,617,164 (45%) | 3,428,981 (45%) | 2,666,866 (46%) | 2,103,709 (45%) | 1,090,820 (45%) | 808,453 (46%) | 248,135 (46%) | 175,081 (45%) | 95,118 (41%) |

# Stroke hot spots

National and state data is helpful, however we now have the ability to identify stroke hot spots at a local level. The number of strokes and the number of stroke survivors has been estimated by federal electorate area and we can see clearly stroke is having an impact right across the nation. By ranking electorates we can understand where the impact is greatest and whilst this can help with service planning and coordination so as to ensure all Australians are able to access quality stroke care, this analysis demonstrates the burden of stroke is significant in all parts of the country.

NSW is home to five of the country's top ten hot spots for numbers of stroke survivors and six of the top ten areas for number of strokes. The state is also ranked third in terms of state wide stroke burden. Almost the entire NSW coast features in the top quarter of electorates for stroke burden with a stroke belt running from the Byron Bay electorate of Richmond through to the doorstep of inner Sydney electorates North Sydney and Warringah. The stroke belt picks up again on the other side of Sydney in the electorate of Throsby and runs south to the Victorian border.

State borders are no barrier with vast tracts of regional Victoria represented in the top quarter of Australian electorates for stroke burden. The Mornington Peninsula electorate of Flinders ranks in the top five for number of strokes and number of stroke survivors.

The other significant hot spot is in South Australia where six of the state's eleven electorates feature in the top quarter for stroke burden. The electorates of Sturt, Boothby and Hindmarsh are in the top five for stroke burden nationally.

## 10 federal electorates with the highest number of stroke survivors living in the area

| Rank | Electorate | Number of stroke survivors | Number of stroke survivors per 100,000 people | Location |
|------|------------|----------------------------|----------------------------------------------|----------|
| 1. | Hindmarsh, SA | 3,944 | 2,486 | Inner western Adelaide, SA |
| 2. | Lyne, NSW | 3,873 | 2,833 | Mid-north coast of NSW including Port Macquarie |
| 3. | Flinders, VIC | 3,810 | 2,491 | Southern Victoria, east of Melbourne, including Mornington Peninsula, the Bass Coast region and Phillip Island |
| 4. | Sturt, SA | 3,761 | 2,388 | Eastern Adelaide, SA |
| 5. | Gilmore, NSW | 3,718 | 2,591 | South eastern NSW including Berry, Bomaderry, Gerringong, Kangaroo Valley, Kiama, Milton, Minnamurra, Nowra, Shellharbour, Shell Cove, Sussex Inlet, Ulladulla and Warilla |
| 6. | Boothby, SA | 3,707 | 2,413 | Southern Adelaide, SA |
| 7. | Hinkler, QLD | 3,655 | 2,539 | Southern central QLD coast including the centres of Bundaberg, Bargara, Burrum Heads, Childers and Hervey Bay |
| 8. | Richmond, NSW | 3,599 | 2,464 | North coast of NSW including Bangalow, Brunswick Heads, Byron Bay, Kingscliff, Lennox Head, Mullumbimby, Murwillumbah, Nimbin, Ocean Shores, Pottsville, Suffolk Park and Tweed Heads |
| 9. | Cowper, NSW | 3,584 | 2,493 | North coast of NSW including Bellingen, Bowraville, Coffs Harbour, Dorrigo, Kempsey, Maclean, Macksville, Nambucca Heads, Sawtell, South West Rocks, Urunga and Woolgoolga |
| 10. | Robertson, NSW | 3,570 | 2,482 | NSW Central coast to north of Sydney including Erina, Gosford, Terrigal and Woy Woy |

# IN AUSTRALIA
# A STROKE
# HAPPENS EVERY
# 10
## MINUTES
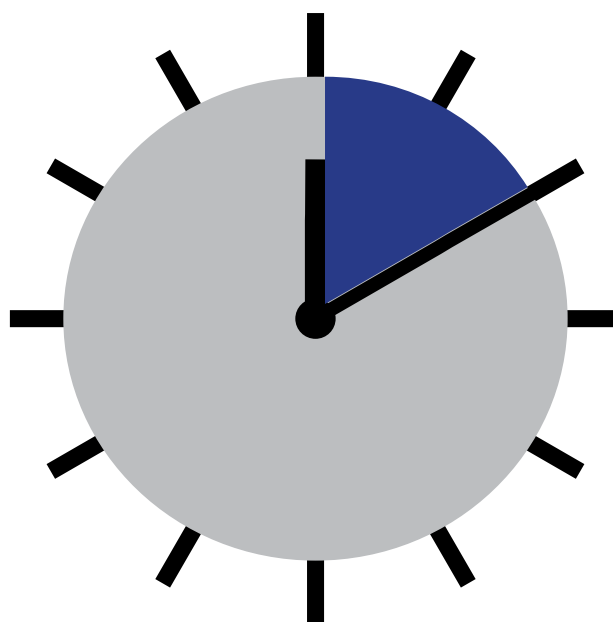
10 federal electorates with the highest number of strokes estimated to occur in 2014.

| Rank | Electorate | Number of strokes | Number of strokes per 100,000 people | Location |
|------|-----------|------------------|-------------------------------------|----------|
| 1. | Hindmarsh, SA | 519 | 327 | Inner western Adelaide, SA |
| 2. | Lyne, NSW | 479 | 350 | Mid-north coast of NSW including Port Macquarie |
| 3. | Sturt, SA | 477 | 303 | Eastern Adelaide, SA |
| 4. | Boothby, SA | 476 | 310 | Southern Adelaide, SA |
| 5. | Flinders, VIC | 462 | 302 | Southern Victoria, east of Melbourne including Mornington Peninsula, the Bass Coast region and Phillip Island |
| 6. | Robertson, NSW | 449 | 312 | NSW Central coast to the north of Sydney including Erina, Gosford, Terrigal and Woy Woy |
| 7. | Gilmore, NSW | 446 | 311 | South East NSW including Berry, Bomaderry, Gerringong, Kangaroo Valley, Kiama, Milton, Minnamurra, Nowra, Shellharbour, Shell Cove, Sussex Inlet, Ulladulla and Warilla |
| 8. | Bradfield, NSW | 440 | 280 | North Sydney |
| 9. | Page, NSW | 439 | 313 | North coast of NSW including Alstonville, Ballina, Casino, Evans Head, Grafton, Iluka, Kyogle, Lismore and Yamba |
| 10. | Richmond, NSW | 438 | 300 | North coast of NSW including Bangalow, Brunswick Heads, Byron Bay, Kingscliff, Lennox Head, Mullumbimby, Murwillumbah, Nimbin, Ocean Shores, Pottsville, Suffolk Park and Tweed Heads |

> ## All told nearly 12,000 people will die this year from stroke and two-thirds of those who survive will be disabled.

10 federal electorates with the highest number of deaths from stroke estimated to occur in 2014.

| Rank | Electorate | Number of deaths from stroke | Deaths from stroke per 100,000 people | Location |
|---|---|---|---|---|
| 1. | Hindmarsh, SA | 136 | 86 | Inner western Adelaide, SA |
| 2. | Boothby, SA | 123 | 80 | Southern Adelaide, SA |
| 3. | Sturt, SA | 118 | 75 | Eastern Adelaide, SA |
| 4. | Bradfield, NSW | 114 | 73 | North Sydney, NSW |
| 5. | Lyne, NSW | 113 | 83 | Mid-north coast of NSW including Port Macquarie |
| 6. | Robertson, NSW | 111 | 77 | NSW Central coast to the north of Sydney including Erina, Gosford, Terrigal and Woy Woy |
| 7. | Chisholm, VIC | 111 | 67 | Eastern Melbourne, VIC |
| 8. | Goldstein, VIC | 110 | 72 | South eastern Melbourne, VIC |
| 9. | Flinders, VIC | 108 | 71 | Southern Victoria, east of Melbourne including Mornington Peninsula, the Bass Coast region and Phillip Island |
| 10. | Wills, VIC | 106 | 63 | Inner-north Melbourne, VIC |

# Stroke risk hot spots

The local hotspots for stroke risk are in very similar locations to those for stroke numbers. The New South Wales coast again features heavily with seven of the top ten locations for atrial fibrillation and six of the top ten for high blood pressure and high cholesterol.

The coastal Queensland electorates of Hinkler (Bundaberg/Hervey Bay) and Wide Bay (Maryborough to Noosa) are also risk hotspots. Both electorates feature in the top ten for blood pressure, Hinkler is a top ten hotspot for irregular heartbeat and Wide Bay residents have high levels of cholesterol. Of concern, the Victorian electorate of Flinders on the Mornington Peninsula and

Hindmarsh in central Adelaide are both significant hot spots for all risk factors.

Physical inactivity is also an important risk factor for stroke. Both Adelaide and Port Macquarie feature in the top ten hotspots for physical inactivity while electorates in Sydney, Melbourne, Melbourne Ports and Wentworth have the most physically inactive residents in Australia.

This result may reflect a high proportion of inner city office workers living sedentary lifestyles – a risk factor for chronic disease in older age.

## Federal electorates with highest numbers of residents with high blood pressure

| Rank | Electorate | Number of people with high blood pressure. | % of population with high blood pressure | Location |
|---|---|---|---|---|
| 1. | Lyne, NSW | 29,582 | 22 | Mid-north coast of New South Wales including Port Macquarie |
| 2. | Gilmore, NSW | 29,602 | 21 | SE NSW including Berry, Bomaderry, Gerringong, Kangaroo Valley, Kiama, Milton, Minnamurra, Nowra, Shellharbour, Shell Cove, Sussex Inlet, Ulladulla and Warilla |
| 3. | Paterson, NSW | 28,522 | 20 | Mid-north coast of New South Wales including Anna Bay, Bulahdelah, Clarence Town, Dungog, Forster, Hawks Nest, Lemon Tree Passage, Medowie, Morpeth, Nelson Bay, Paterson, Raymond Terrace, Stroud, Tuncurry and parts of Nabiac, Thornton and East Maitland |
| 4. | Cowper, NSW | 29,258 | 20 | NSW north coast; it includes the centres of Bellingen, Bowraville, Coffs Harbour, Dorrigo, Kempsey, Maclean, Macksville, Nambucca Heads, Sawtell, South West Rocks, Urunga and Woolgoolga. |
| 5. | Page, NSW | 28,575 | 20 | NSW north coast; it includes the centres of Alstonville, Ballina, Casino, Evans Head, Grafton, Iluka, Kyogle, Lismore and Yamba. |
| 6. | Hinkler, QLD | 29,259 | 20 | Southern central QLD coast; it includes the centres of Bundaberg, Bargara, Burrum Heads, Childers and Hervey Bay |
| 7. | Richmond, NSW | 29,678 | 20 | NSW north coast; it includes the towns of Bangalow, Brunswick Heads, Byron Bay, Kingscliff, Lennox Head, Mullumbimby, Murwillumbah, Nimbin, Ocean Shores, Pottsville, Suffolk Park and Tweed Heads. |
| 8. | Flinders, VIC | 30,865 | 20 | Southern Victoria, east of Melbourne, based on Mornington Peninsula and Bass Coast region including Phillip Island. |
| 9. | Wide Bay, QLD | 29,105 | 20 | Southern eastern Queensland coast and hinterland; it includes the centres of Gympie, Maryborough, Murgon and Noosa Heads. |
| 10. | Hindmarsh, SA | 31,616 | 20 | Inner western Adelaide, SA |

# Federal electorates with highest numbers of residents with high cholesterol

| Rank | Electorate | Number of people with high cholesterol | % of population with high cholesterol | Location |
|---|---|---|---|---|
| 1. | Lyne, NSW | 38,199 | 28 | Mid-north coast of New South Wales including Port Macquarie |
| 2. | Richmond, NSW | 40,593 | 28 | NSW north coast; it includes the towns of Bangalow, Brunswick Heads, Byron Bay, Kingscliff, Lennox Head, Mullumbimby, Murwillumbah, Nimbin, Ocean Shores, Pottsville, Suffolk Park and Tweed Heads. |
| 3. | Wide Bay, QLD | 40,270 | 28 | Southern eastern Queensland coast and hinterland; it includes the centres of Gympie, Maryborough, Murgon and Noosa Heads. |
| 4. | Eden-Monaro, NSW | 40,399 | 28 | New South Wales far south coast, the Snowy Mountains and tablelands; it includes the centres of Adaminaby, Batemans Bay, Bega, Berridale, Bodalla, Bombala, Braidwood, Bungendore, Captains Flat, Cooma, Dalmeny, Delegate, Eden, Jindabyne, Merimbula, Moruya, Narooma, Queanbeyan, Sutton and Tathra. |
| 5. | Lyons, TAS | 30,236 | 28 | The greater part of rural Tasmania; it includes the towns of Beaconsfield, Bothwell, Bridgewater, Brighton, Campbell Town, Deloraine, Dodges Ferry, Evandale, Exeter, Gagebrook, Longford, Midway Point, New Norfolk, Perth, Port Sorell, St Helens, Sheffield, Sorell and Westbury. |
| 6. | Mayo, SA | 39,945 | 28 | Adelaide Hills and the Fleurieu Peninsula; it includes the centres of Bridgewater, Crafers, Echunga, Gumeracha, Hahndorf, Langhorne Creek, Lobethal, Macclesfield, Mt Barker, Myponga, Oakbank, Stirling, Strathalbyn, Victor Harbor, Woodside and Yankalilla, and parts of Birdwood. It also includes Kangaroo Island. |
| 7. | Cowper, NSW | 39,550 | 28 | NSW north coast; it includes the centres of Bellingen, Bowraville, Coffs Harbour, Dorrigo, Kempsey, Maclean, Macksville, Nambucca Heads, Sawtell, South West Rocks, Urunga and Woolgoolga. |
| 8. | Gilmore, NSW | 39,350 | 27 | SE NSW including Berry, Bomaderry, Gerringong, Kangaroo Valley, Kiama, Milton, Minnamurra, Nowra, Shellharbour, Shell Cove, Sussex Inlet, Ulladulla and Warilla |
| 9. | Hindmarsh, SA | 43,303 | 27 | Inner western Adelaide, SA |
| 10. | Flinders, VIC | 41,726 | 27 | Southern Victoria, east of Melbourne, based on Mornington Peninsula and Bass Coast region including Phillip Island. |

## Federal electorates with highest numbers of residents with atrial fibrillation (irregular heartbeat)

| Rank | Electorate | Number of people with atrial fibrillation | % of population with atrial fibrillation | Location |
|---|---|---|---|---|
| 1. | Lyne, NSW | 4,038 | 3 | Mid-north coast of New South Wales including Port Macquarie |
| 2. | Gilmore, NSW | 3,857 | 3 | SE NSW including Berry, Bomaderry, Gerringong, Kangaroo Valley, Kiama, Milton, Minnamurra, Nowra, Shellharbour, Shell Cove, Sussex Inlet, Ulladulla and Warilla |
| 3. | Hinkler, QLD | 3,807 | 3 | Southern central QLD coast; it includes the centres of Bundaberg, Bargara, Burrum Heads, Childers and Hervey Bay. |
| 4. | Paterson, NSW | 3,695 | 3 | Mid-north coast of New South Wales; it includes the towns include Anna Bay, Bulahdelah, Clarence Town, Dungog, Forster, Hawks Nest, Lemon Tree Passage, Medowie, Morpeth, Nelson Bay, Paterson, Raymond Terrace, Stroud, Tuncurry and parts of Nabiac, Thornton and East Maitland. |
| 5. | Page, NSW | 3,660 | 3 | NSW north coast; it includes the centres of Alstonville, Ballina, Casino, Evans Head, Grafton, Iluka, Kyogle, Lismore and Yamba. |
| 6. | Cowper, NSW | 3,693 | 3 | NSW north coast; it includes the centres of Bellingen, Bowraville, Coffs Harbour, Dorrigo, Kempsey, Maclean, Macksville, Nambucca Heads, Sawtell, South West Rocks, Urunga and Woolgoolga. |
| 7. | Flinders, VIC | 3,912 | 3 | Southern Victoria, east of Melbourne, based on Mornington Peninsula and Bass Coast region including Phillip Island. |
| 8. | Robertson, NSW | 3,641 | 3 | New South Wales coast, to the north of Sydney; it includes the centres of Erina, Gosford, Terrigal and Woy Woy. |
| 9. | Hindmarsh, SA | 3,999 | 3 | Inner western Adelaide, SA |
| 10. | Richmond, NSW | 3,675 | 3 | North coast of NSW including Bangalow, Brunswick Heads, Byron Bay, Kingscliff, Lennox Head, Mullumbimby, Murwillumbah, Nimbin, Ocean Shores, Pottsville, Suffolk Park and Tweed Heads |

## Federal electorates with highest numbers of physically inactive residents

| Rank | Electorate | Number of people physically inactive | %of population physically inactive | Location |
|------|-----------|------|------|----------|
| 1. | Sydney, NSW | 96,895 | 49 | City of Sydney and inner western suburbs |
| 2. | Hindmarsh, SA | 77,398 | 49 | Inner western Adelaide, SA |
| 3. | Melbourne Ports, VIC | 79,064 | 48 | Inner Melbourne, VIC |
| 4. | Wentworth, NSW | 84,745 | 48 | Eastern Sydney, NSW |
| 5. | Lyne, NSW | 65,483 | 48 | Mid-north coast of New South Wales including Port Macquarie |
| 6. | Moncrieff, QLD | 77,002 | 48 | South-east Queensland, northern part of the Gold Coast and hinterland |
| 7. | Melbourne, VIC | 92,921 | 48 | Inner Melbourne, Victoria |
| 8. | Sturt, SA | 75,075 | 48 | Eastern Adelaide, SA |
| 9. | Boothby, SA | 73,184 | 48 | Southern Adelaide, SA |
| 10. | Perth, WA | 75,649 | 47 | North central and north-eastern Perth |

# Managing the challenge of stroke in Australia

On average almost 3,000 stroke survivors live within each of the 150 Australian federal electorates. Two-thirds of these 440,000 Australians have a disability resulting from their stroke and we know from previous work the vast majority have high levels of unmet need that delays and sometimes denies a good recovery[4].

Similarly the 51,000 strokes that occur this year will impact cities and towns across Australia and data from the National Stroke Audit[5] shows many of our hospitals do not have the resources or the systems to adequately cater for this demand.

On top of this the population risk profile suggests stroke will continue to be a problem unless more people are able to better manage their health.

Collectively this poses a significant challenge and when you consider the impact an ageing population will bring to bear it is clear the challenge must be tackled now.

Our nation agreed in 1996 stroke was a national health priority however coordinated and funded action has never been realised.

It is possible to prevent stroke and reduce the burden it causes on Australian families, on our health system and on our economy.

It is possible to improve the quality of care provided in our hospitals and in doing so reduce the death and disability stroke currently causes.

It is possible for us to vastly improve the way we care for survivors of stroke so they can recover more quickly and resume productive lives.

All of these things are possible with modest investment and the human and economic benefits that result will be immense.

The time to tackle stroke is now.

[4]Andrew N, Kilkenny M, Purvis T, Naylor R, Cadilhac D. The Stroke Survivor and Carer Needs Assessment Survey. Melbourne: National Stroke Foundation, June 2013. (Unpublished)

[5]National Stroke Foundation. National Stroke Audit – Acute Services Organisational Survey Report 2013. Melbourne, Australia.

# About the report

Deloitte Access Economics was commissioned by the National Stroke Foundation to undertake analysis of stroke statistics and provide estimations, by federal electorate division, of the incidence, prevalence and mortality of stroke in 2014.

The analysis is presented in a report called *Impact of stroke across Australia* and it follows the firm's 2013 paper, *The economic impact of stroke in Australia.*

In the new report, incidence reflects the new cases of stroke in a given year whereas prevalence refers to the number of people living after a stroke (survivors) in a given year.

The rates (or proportions) for incidence, prevalence and mortality used in Deloitte Access Economics (2013) have been used again in this report to ensure consistency. Namely, incidence rates were taken from Thrift et al (2012) which was based on the North East Melbourne Stroke Incidence Study (NEMESIS). Prevalence rates were taken from the fourth Survey of Disability Ageing and Carers conducted by the Australian Bureau of Statistics (ABS). The Survey provides detailed information on the self-reported prevalence of stroke, by age and gender. Mortality rates were derived from Begg et al (2007) and ABS (2012a), whereby for each age-gender cohort, the percentage of the population who had stroke and died from it was compared to the percentage of the population who did not have stroke but died from other causes. The difference between the two percentages is the relative risk of death from stroke and was again used in this report.

It has been assumed there have been no significant changes to stroke incidence, prevalence and mortality rates since these studies.

The number of people with common stroke risk factors was also considered; high blood pressure, atrial fibrillation, high blood cholesterol and physical inactivity. Prevalence rates for stroke risk factors were taken from the 2011–12 Australian Health Survey (ABS 2013) except atrial fibrillation, which referenced Deloitte Access Economics (2011). The prevalence rates were applied to ABS population projections for 2014 based on the 2011 Census.

Federal electorate stroke and stroke risk numbers are detailed in full on the National Stroke Foundation website **www.strokefoundation.com.au/research/no-postcode-untouched** and paint the clearest picture yet of the impact of stroke in Australian cities and towns. Please don't hesitate to contact National Stroke Foundation Director of Policy and Advocacy Rebecca Smith **rsmith@strokefoundation.com.au** with any queries about this report.

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