

4.2 Stress echocardiography, 18 years and over

What did we find?

Rates of stress echocardiography vary up to about 50-fold across local areas, and are higher in major cities and inner regional areas than in outer regional and remote areas.

Context

A stress echocardiogram is an ultrasound of the heart that shows how it responds to stress with either exercise (treadmill or bicycle) or specific medicines.¹ This test is used to investigate new or worsening symptoms in patients with known or suspected coronary heart disease.^{1,2} Other indications include pulmonary hypertension and heart valve disease.¹ It is rarely appropriate for investigating asymptomatic patients. See Section 4.1 'Cardiac stress tests and imaging, 18 years and over (page 183) for a discussion of the role of stress echocardiography compared with other cardiac tests.

In Australia, growth in the use of stress echocardiograms averaged 14% per year between 2005–06 and 2014–15.³ Increases have also been seen in other countries.⁴ Differences in data collection methods make international comparisons of rates of use difficult, but, in 2014, the rate of stress echocardiography in Ontario, Canada, was 730 per 100,000 people, compared with 1,049 per 100,000 people in Australia in 2014–15.^{5,6}

Stress echocardiography, 18 years and over

About the data

Data are sourced from the Medicare Benefits Schedule (MBS) dataset. This dataset includes information on MBS claims processed by the Australian Government Department of Human Services. It covers a wide range of services (attendances, procedures, tests) provided across primary care and hospital settings.

The dataset does not include:

- Services for publicly funded patients in hospitals
- Services for patients in hospital outpatient clinics where claims are not made to the MBS
- Services covered under Department of Veterans' Affairs arrangements.

Rates are based on the number of MBS-subsidised services for stress echocardiograms per 100,000 people aged 18 years and over in 2016–17.

Because an MBS claim is included for each service rather than for each patient, patients who receive any of the services listed in this data item more than once in the financial year will have more than one MBS claim counted.

The analysis and maps are based on the residential address of the patient recorded in the MBS claim and not the location of the service.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

This analysis was not undertaken by Aboriginal and Torres Strait Islander status because this information was not available for the MBS data at the time of publication.

What do the data show?

Magnitude of variation

In 2016–17, there were 303,525 MBS-subsidised services for stress echocardiography, representing 1,491 services per 100,000 people aged 18 years and over (the Australian rate).

The number of MBS-subsidised services for stress echocardiography across 325* local areas (Statistical Area Level 3 – SA3) ranged from 104 to 4,894 per 100,000 people aged 18 years and over. The rate was **47.1 times as high** in the area with the highest rate compared to the area with the lowest rate. The number of services varied across states and territories, from 698 per 100,000 people aged 18 years and over in the Northern Territory to 2,265 in New South Wales (Figures 4.9–4.12).

After the highest and lowest 10% of results were excluded and 260 SA3s remained, the number of services per 100,000 people aged 18 years and over was 5.8 times as high in the area with the highest rate compared to the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates of stress echocardiography were higher in major cities and inner regional areas than in outer regional and remote areas. There was no clear pattern according to socioeconomic status (Figure 4.13).

* There are 340 SA3s. For this item, data were suppressed for 15 SA3s due to one or more of a small number of services or population in an area, or potential identification of individual patients, practitioners or business entities.

Notes:

Some of the published SA3 rates were considered more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Interpretation

Variation in rates of MBS-subsidised stress echocardiography is likely to be due to geographical differences in the factors discussed under 'Cardiac stress tests and imaging, 18 years and over' on page 188.

Addressing variation

Strategies for addressing variation in the use of stress echocardiography are discussed under 'Cardiac stress tests and imaging, 18 years and over' on page 189.

Resources

See 'Cardiac stress tests and imaging, 18 years and over' on page 198.

Australian initiatives

See 'Cardiac stress tests and imaging, 18 years and over' on page 198.

Notes:

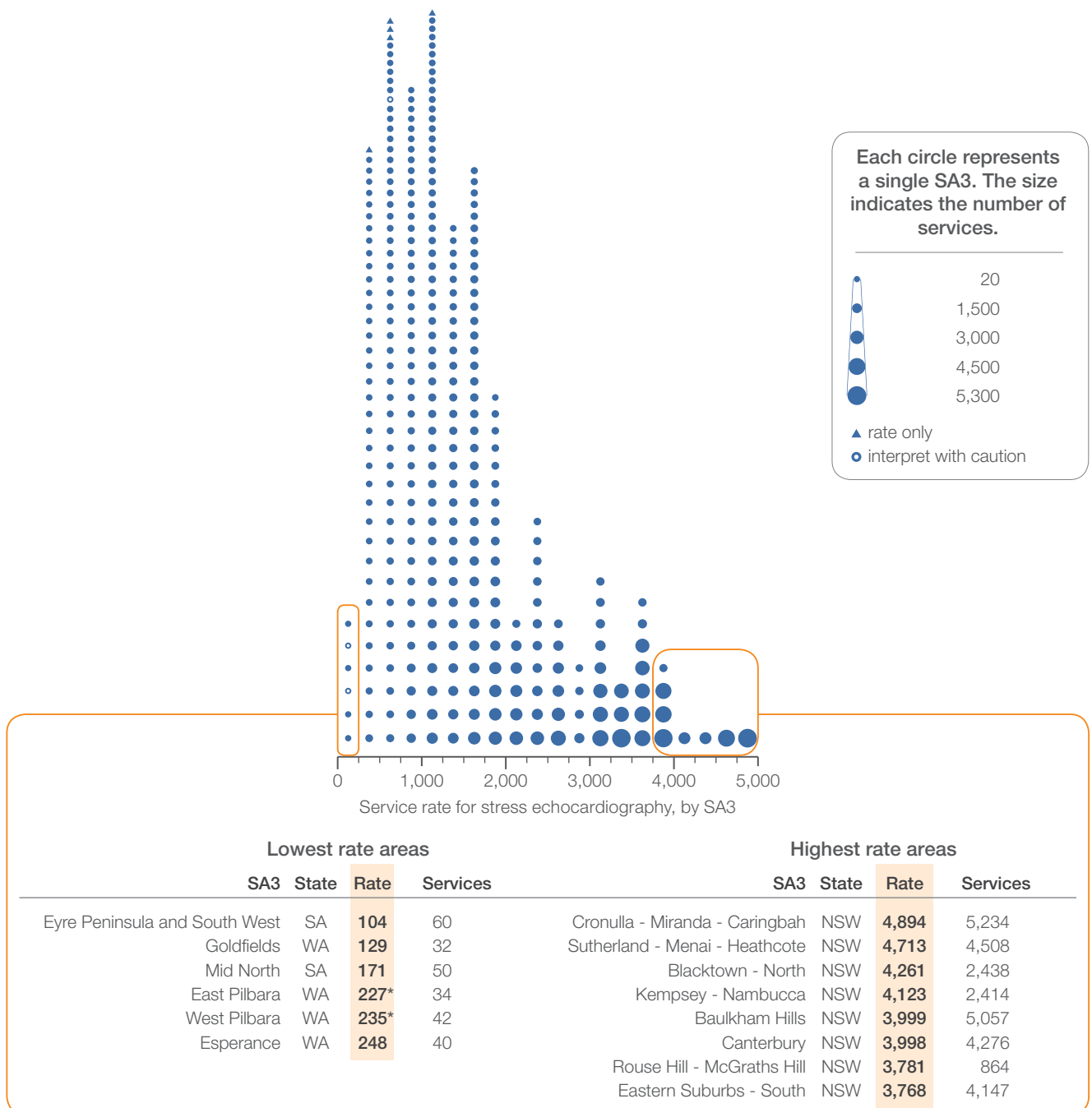
For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2016.

Stress echocardiography, 18 years and over

Rates by local area

Figure 4.9: Number of MBS-subsidised services for stress echocardiography per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2016–17



Notes:

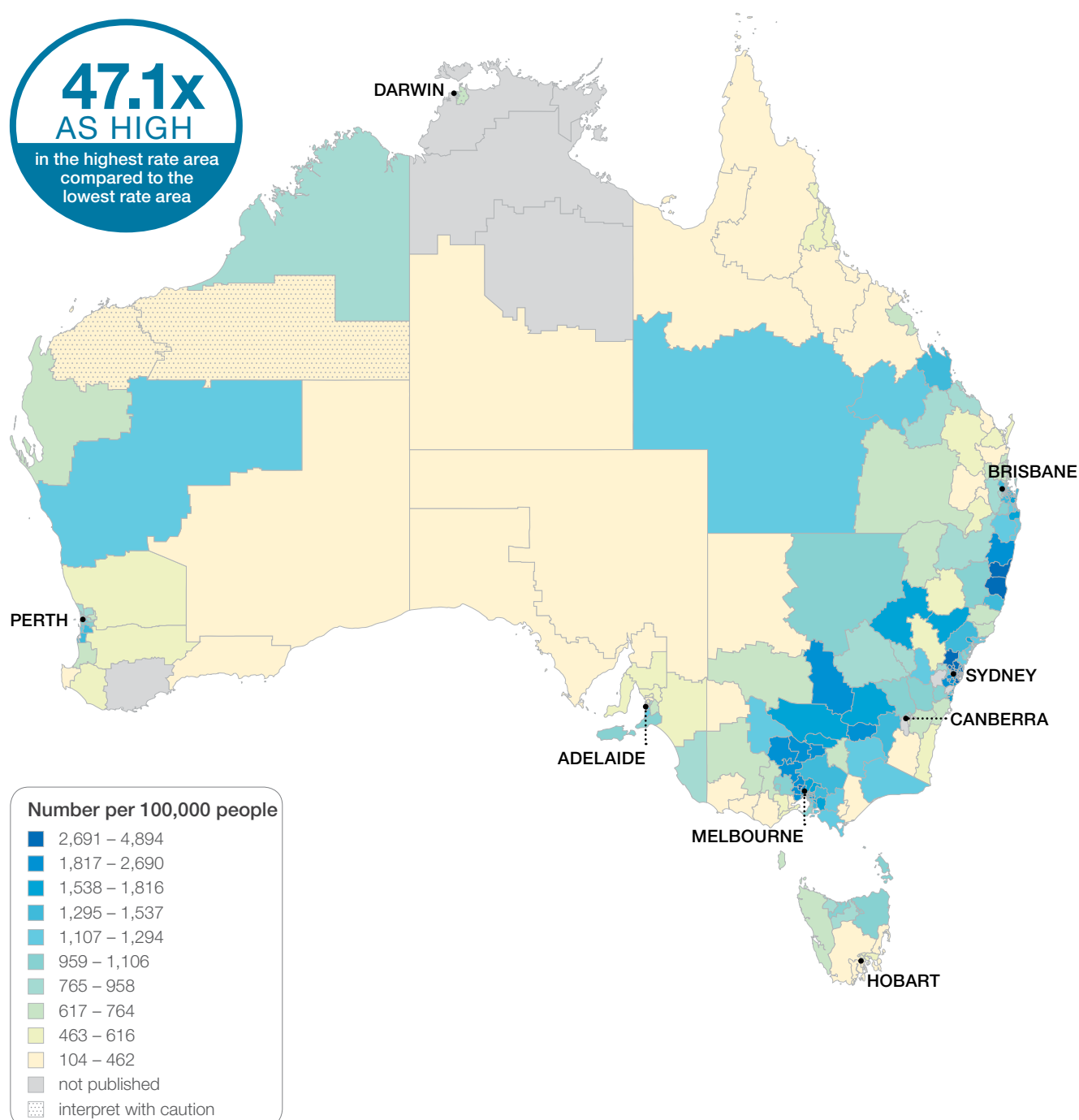
Hollow circles (○) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2016.

Stress echocardiography, 18 years and over

Rates across Australia

Figure 4.10: Number of MBS-subsidised services for stress echocardiography per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2016–17



Notes:

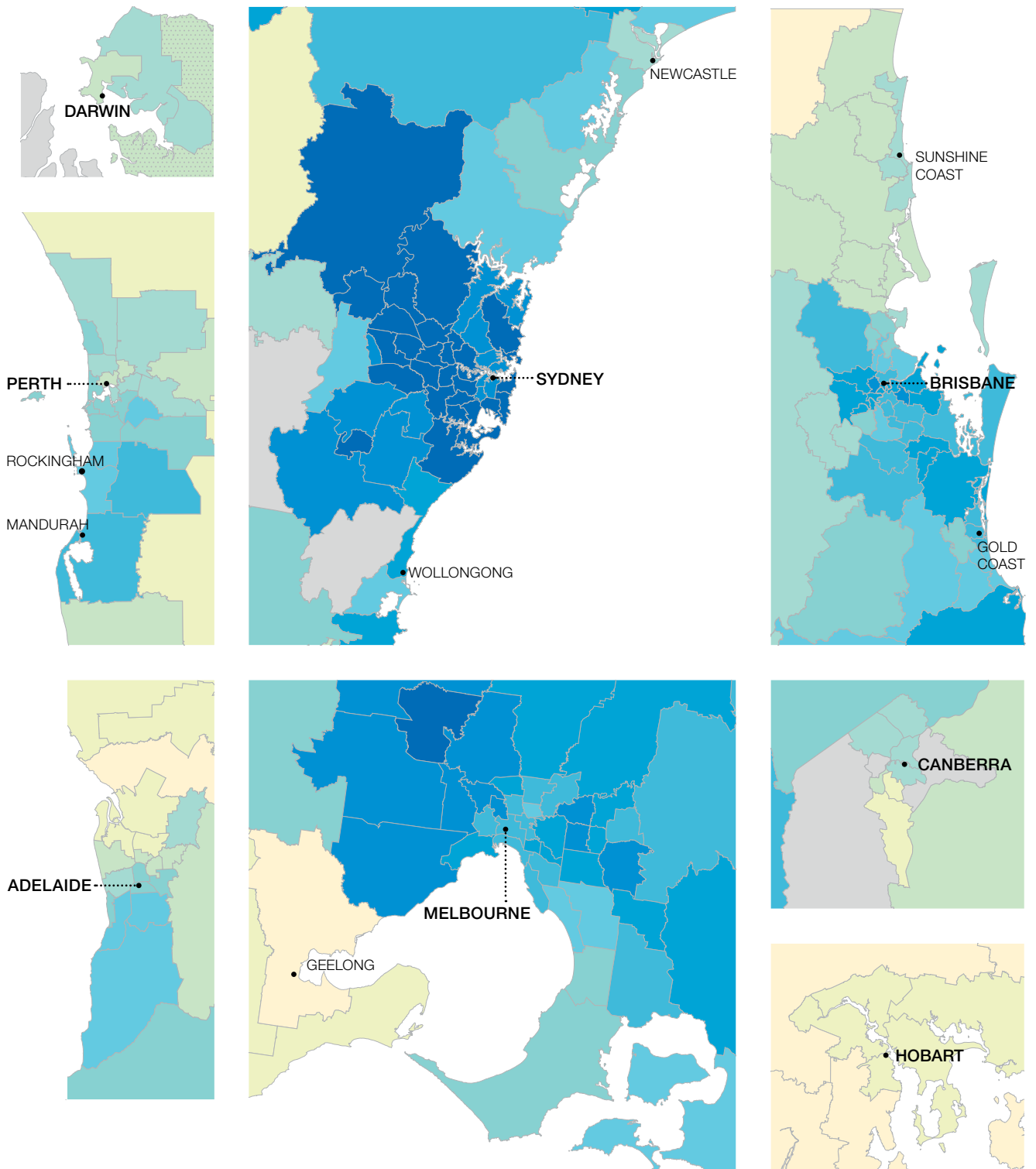
Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2016.

Rates across capital city areas

Figure 4.11: Number of MBS-subsidised services for stress echocardiography per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2016–17



Notes:

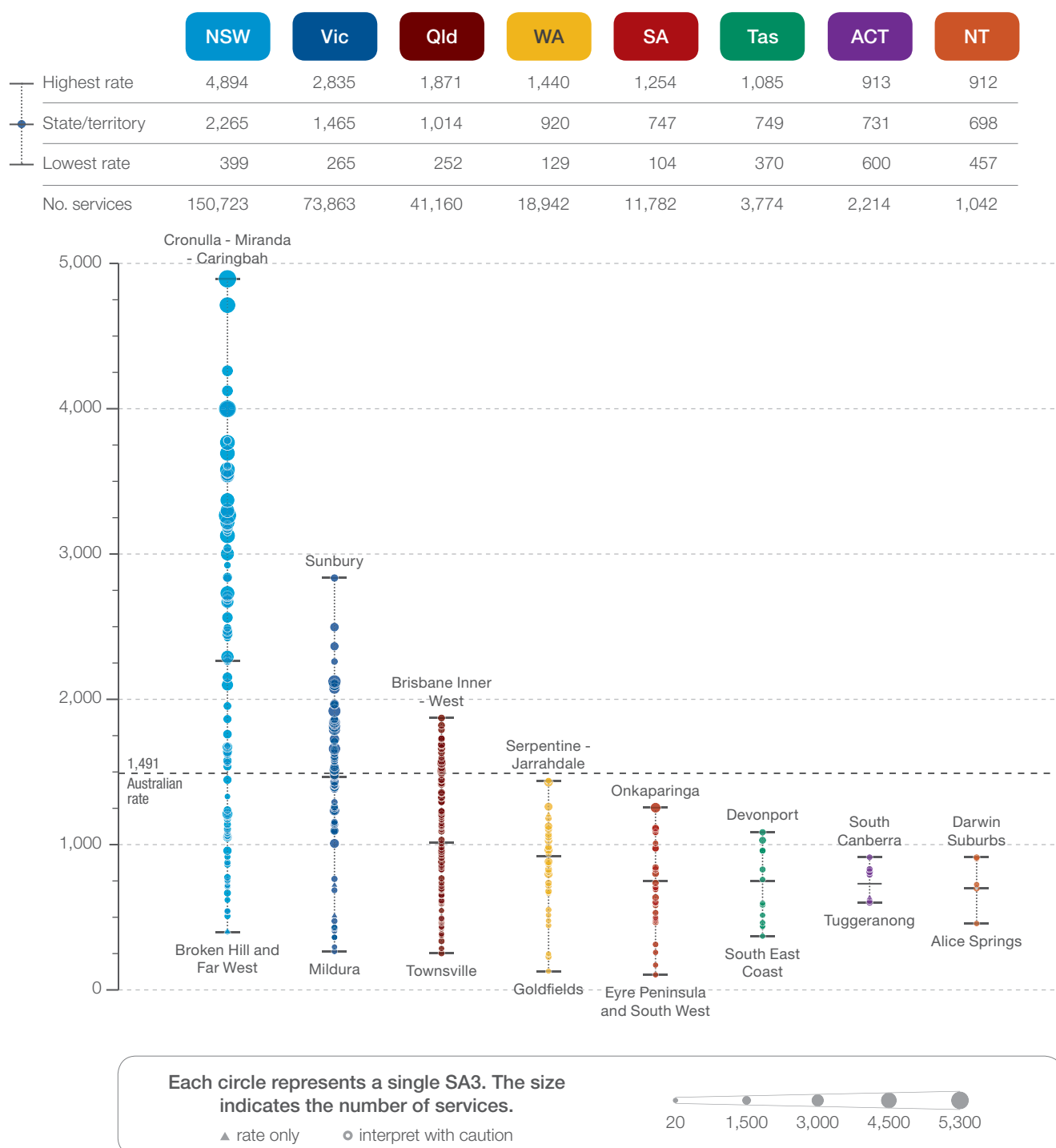
Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2016.

Stress echocardiography, 18 years and over

Rates by state and territory

Figure 4.12: Number of MBS-subsidised services for stress echocardiography per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2016–17



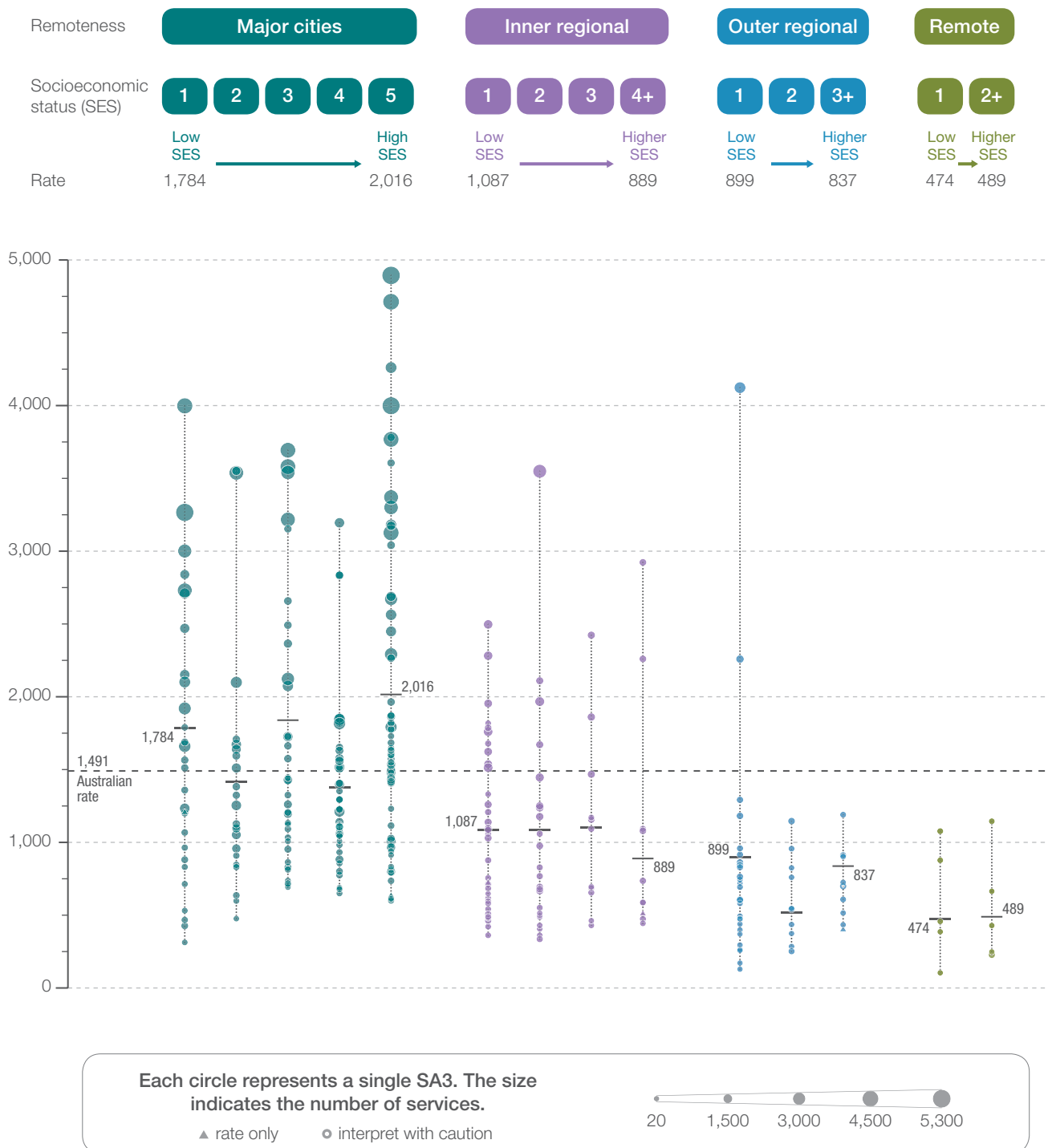
Notes:

Hollow circles (○) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2016.

Rates by remoteness and socioeconomic status

Figure 4.13: Number of MBS-subsidised services for stress echocardiography per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2016–17



Notes:

Hollow circles (○) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2016.

Stress echocardiography, 18 years and over

References

1. Askew JW, Chareonthaitawee P, Arruda-Olson AM. Selecting the optimal cardiac stress test [Internet]. UpToDate; 2017 [updated 2017 Oct 4; cited 2018 Jan 18]. Available from: www.uptodate.com/contents/selecting-the-optimal-cardiac-stress-test
2. Wolk MJ, Bailey SR, Doherty JU, Douglas PS, Hendel RC, Kramer CM, et al. ACCF/AHA/ASE/ASNC/HFSA/HRS/SCAI/SCCT/SCMR/STS 2013 multimodality appropriate use criteria for the detection and risk assessment of stable ischemic heart disease: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, American Heart Association, American Society of Echocardiography, American Society of Nuclear Cardiology, Heart Failure Society of America, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Cardiovascular Computed Tomography, Society for Cardiovascular Magnetic Resonance, and Society of Thoracic Surgeons. *J Am Coll Cardiol* 2014;63(4):380–406.
3. Medicare Benefits Schedule Review Taskforce. Report from the Cardiac Services Clinical Committee. Canberra: Australian Government Department of Health; 2017.
4. Roifman I, Wijeyesundera HC, Austin PC, MacLagan LC, Rezai MR, Wright GA, et al. Temporal trends in the utilization of noninvasive diagnostic tests for coronary artery disease in Ontario between 2008 and 2014: a population-based study. *Can J Cardiol* 2017;33(2):279–82.
5. Roifman I, Rezai MR, Wijeyesundera HC, Chow BJ, Wright GA, Tu JV. Utilization of cardiac computed tomography angiography and outpatient invasive coronary angiography in Ontario, Canada. *J Cardiovasc Comput Tomogr* 2015;9(6):567–71.
6. Medicare Australia Statistics. Medicare items 55116, 55117, 55122, 55123 processed from July 2016 to June 2017 [Internet]. Canberra: Australian Government Department of Human Services; 2018 [updated 2018 Sept 6; cited 2018 Jan 19]. Available from: http://medicarestatistics.humanservices.gov.au/statistics/mbs_item.jsp