2.1 Chronic obstructive pulmonary disease (COPD)

Why is this important?

Chronic obstructive pulmonary disease (COPD) is a serious, chronic lung disease that impairs quality of life and shortens lives. Approximately 8% of people in Australia aged 40 years and over and 29% of those aged 75 years and over have at least moderate symptoms of COPD.[1] COPD accounts for a substantial number of hospital bed days every year in Australia – for example, 392,434 bed days in 2017–18. Better health care can sometimes keep people with COPD well enough to reduce their need for hospitalisation.

What did we find?

Between 2014–15 and 2017–18, the rate of COPD hospitalisations per 100,000 people nationally increased by 8%. In 2017–18, the rate of hospitalisations for COPD was **18.1 times as high** in the area with the highest rate compared with the area with the lowest rate.

In 2017–18, the rate for Aboriginal and Torres Strait Islander people was 4.8 times as high as the rate for other Australians. Rates were also higher in remote areas and in socioeconomically disadvantaged areas than elsewhere.

What can be done?

The high rate of hospitalisations for COPD reported in this chapter is unacceptable, and we must implement the strategies we know can improve the health of people with this condition. This is particularly important for the groups with higher rates of hospitalisation for COPD: Aboriginal and Torres Strait Islander peoples, and those living outside metropolitan areas or in socioeconomically disadvantage areas.

Pulmonary rehabilitation – that is, health professional–led programs of exercises and education strategies to improve breathing and function – can reduce hospitalisations among people with COPD by 36–56%.[2,3] Priority should be given to improving access to culturally safe pulmonary rehabilitation programs for Aboriginal and Torres Strait Islander people with COPD, and people living in remote areas of Australia. There should also be a focus on improving data collection and reporting for pulmonary rehabilitation programs to help health services and general practices monitor their effectiveness in improving patient outcomes. Pharmacist interventions, including providing education about medicines and lifestyle, and influenza vaccination are other interventions that can reduce hospitalisations for people with COPD.[4]

Smoking cessation can improve lung function in people with COPD.[5] Reducing smoking rates is key to reducing hospitalisations for COPD.

Chronic obstructive pulmonary disease (COPD)

Context

COPD is a chronic lung disease that often impairs quality of life and reduces life expectancy.[6,7] The term COPD encompasses chronic bronchitis and emphysema. Symptoms of COPD include shortness of breath with little or no exertion, as well as coughing, sputum production and wheezing. Patients with COPD may require hospitalisation for severe exacerbations, which are often caused by infections of the respiratory tract.

Evidence-based care for people with COPD may reduce the need for hospitalisation by reducing exacerbations.[4]

In 2017–18, COPD accounted for 392,434 hospital bed days in Australia, second only to heart failure for potentially preventable hospitalisations due to chronic diseases (412,693 bed days).[8] Approximately 7% of Australians aged 65 years and over have COPD.[9] It is more common in older people: approximately 8% of people in Australia aged 40 years and over and 29% of those aged 75 years and over have at least moderate symptoms of COPD.[1] The rate of hospitalisations for COPD was 235 per 100,000 in Canada, compared to 332 per 100,000 in Australia, for people aged 15 years and over in 2016.[10]

Smoking is the most common cause of COPD. There is typically a lag of decades between starting regular smoking and the appearance of symptoms.[4] Genetic factors, chronic asthma, environmental exposures (for example, to occupational fumes and dust, indoor and outdoor air pollution), pulmonary tuberculosis and failure to achieve maximal lung growth during development are also associated with an increased risk of COPD.[6] These additional risk factors may contribute to the markedly different rates of decline in lung function in people with COPD, despite similar smoking exposure.[11] Approximately 30–40% of people with COPD continue to smoke, and people with COPD often find it more difficult to quit than other smokers.[12] People with COPD also have a higher risk of lung cancer.[13]

Interventions to reduce exacerbations of COPD and hospitalisations include inhaled medicines.[4] Vaccination against influenza has been estimated to reduce, by approximately 37%, the risk of exacerbations, hospitalisations and death in people with COPD.[14] Pulmonary rehabilitation is recommended to improve exercise capacity and quality of life, and reduce hospitalisations and length of hospital stay for COPD.[3,15-18] Further details of recommended management are in the COPD-X guidelines.[4]

Who is at greater risk?

Rates of smoking, or a history of smoking, are high in regional and remote areas, and among people with socioeconomic disadvantage. Higher smoking rates among disadvantaged groups are associated with a complex interaction between social, economic, physiological, commercial and cultural factors.[19] Many of these factors originate in childhood and accumulate through an individual's lifetime.[19]

COPD and Aboriginal and Torres Strait Islander people

Aboriginal and Torres Strait Islander people have approximately 2.5 times the prevalence of COPD as other Australians.[20] COPD was the most common cause of potentially preventable hospitalisations among Aboriginal and Torres Strait Islander people in 2017–18, and the second most common cause among other Australians.[8]

A lack of culturally safe services for Aboriginal and Torres Strait Islander people may be a barrier to accessing health care effectively.[21] This may contribute to poorer medication management, continued smoking and lower influenza vaccination rates, with resulting higher hospitalisation rates. Smoking rates among Aboriginal and Torres Strait Islander people have fallen in the past decade, but remain higher than in the Australian population as a whole.[9,22]

About the data

Data are sourced from the National Hospital Morbidity Database, and include admitted patients in both public and private hospitals, as well as hospital care in the home.

Rates are based on the number of hospitalisations for COPD per 100,000 people of all ages in 2017–18.

Because a record is included for each hospitalisation for the condition, rather than for each patient, patients hospitalised more than once in the financial year will be counted more than once.

The analysis and maps are based on the usual residential address of the patient and not the location of the hospital.

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

Data quality issues – for example, the extent of identification of Aboriginal and Torres Strait Islander status in datasets – could influence variations seen.

What do the data show?

Magnitude of variation

In 2017–18, there were 77,754 hospitalisations for COPD, representing 260 hospitalisations per 100,000 people of all ages (the Australian rate).

The number of hospitalisations for COPD across 328* local areas (Statistical Area Level 3 – SA3) ranged from 56 to 1,013 per 100,000 people. The rate was **18.1 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of hospitalisations varied across states and territories, from 218 per 100,000 people in the Australian Capital Territory to 693 in the Northern Territory (Figures 2.2–2.5).

After the highest and lowest 10% of results were excluded and 264 SA3s remained, the number of hospitalisations per 100,000 people was 3.3 times as high in the area with the highest rate compared with the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates of hospitalisation for COPD were substantially higher in remote areas than in other areas. Hospitalisation rates also increased with socioeconomic disadvantage, regardless of remoteness category (Figure 2.6).

* There are 340 SA3s. For this item, data were suppressed for 12 SA3s due to a small number of hospitalisations and/or population in an area.

Notes:

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

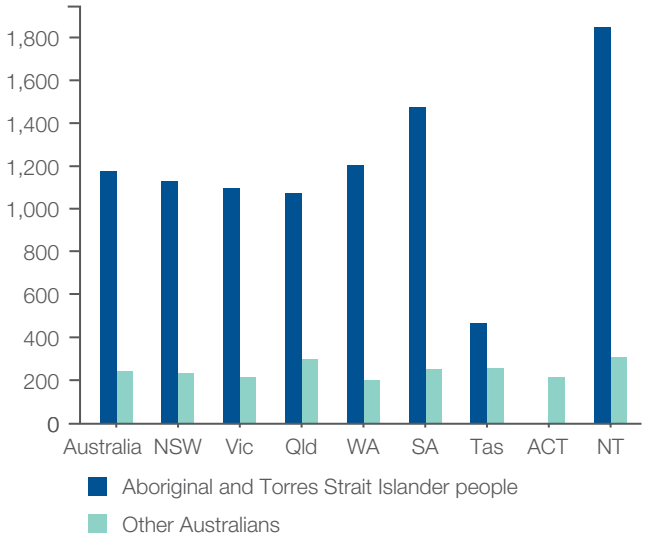
For further detail about the methods used, please refer to the Technical Supplement.

Chronic obstructive pulmonary disease (COPD)

Analysis by Aboriginal and Torres Strait Islander status

The rate of hospitalisations for Aboriginal and Torres Strait Islander people (1,178 per 100,000 people) was 4.8 times as high as the rate for other Australians (243 per 100,000 people) (Figure 2.1).

Figure 2.1: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2017–18



The data for Figure 2.1, and the data and graphs for Analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Trends over time

Between 2014–15 and 2017–18, the rate of COPD hospitalisations per 100,000 people nationally increased by 8% (Figure 2.7).

For Aboriginal and Torres Strait Islander people, the rate of COPD hospitalisations per 100,000 people nationally increased by 16% between 2014–15 and 2017–18 (Figure 2.8).

Interpretation

Potential reasons for the variation include differences in:

- Demographic and consumer factors
  - prevalence of COPD and comorbidities
  - rates of smoking, which are influenced by socioeconomic disadvantage, psychological distress, Aboriginal and Torres Strait Islander status, and remoteness
  - rates of respiratory infections
  - patients' health literacy and ability to self-manage exacerbations
  - patients' ability to afford medicines
  - patients' social supports, frailty and comorbidities
  - air quality and occupational exposures (for example, to fumes and dust)
  - the proportion of people from non-English speaking backgrounds – the risk of hospitalisations for COPD is higher in these groups[6]
- Clinician factors
  - concordance with evidence-based guidelines by clinicians and service providers[23-25]
  - clinician focus on smoking cessation
  - diagnostic error

Notes:
Data for ACT (Aboriginal and Torres Strait Islander people) have been suppressed. Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander patients are under-enumerated, with variation among states and territories.
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

- Health system factors
  - access to community pulmonary rehabilitation and multidisciplinary care
  - access to secondary prevention programs
  - rates of influenza and pneumococcal vaccination
  - primary care services that are affordable, culturally appropriate and accessible
  - emergency department admission policies (that is, admitting all COPD patients, or discharging some patients where there are sufficient community resources).

Variations between areas may not directly reflect the practices of the clinicians who are based in those areas. Area boundaries reflect where people live rather than where they obtain their health care. Patients who live in metropolitan, regional and rural areas may all travel outside their local area to receive care.

Smoking rates

The pattern of COPD hospitalisations mirrors the pattern of smoking in different population groups. The rate of smoking among Aboriginal and Torres Strait Islander people is 41%, which is approximately triple the rate for the Australian population as a whole.[26] Rates of smoking are higher among people living in outer remote and remote areas of Australia (19%) than among those living in inner regional areas (15%) or major cities (13%).[9]

Rates of smoking are higher in areas of greatest socioeconomic disadvantage. In areas of most disadvantage (first quintile), 22% of adults are current daily smokers, compared with 7% in the least disadvantaged areas (fifth quintile).[9]

System factors

System factors likely to influence hospitalisation rates for COPD include access to multidisciplinary respiratory specialty care (which is particularly lacking in regional and remote areas), integrated care and telehealth. Hospital management of common comorbidities in people with COPD also plays an important role, as does good discharge planning to reduce readmissions.

Primary care

Lack of concordance with best practice in primary care can contribute to variation in hospitalisation through differences in advice to patients on how to manage exacerbations, education on inhaler technique, rates of influenza and pneumonia vaccination, and recommendations for pulmonary rehabilitation.[23,25,27]

Reducing COPD hospitalisations

The high rate of hospitalisations for COPD reported in this chapter is unacceptable, and we must implement the strategies we know can improve the health of people with this condition. This is particularly important for the groups with higher rates of hospitalisation for COPD: Aboriginal and Torres Strait Islander peoples, and those living outside metropolitan areas or in socioeconomically disadvantage areas.

Reducing smoking rates is also key to reducing COPD rates and hospitalisations. This is particularly true for groups with high smoking rates, such as Aboriginal and Torres Strait Islander people, people at socioeconomic disadvantage, and people living in regional or remote areas.[9] Increasing influenza vaccination rates could also reduce hospitalisations among people with COPD.[14]

Systems to support early diagnosis and management of COPD, and integrated services, could reduce the need for some COPD hospitalisations.[28] Increases in access to spirometry, smoking cessation supports and education on appropriate inhaler use have also been identified as priorities for supporting people with COPD.[28] Pharmacist interventions, pulmonary rehabilitation and telehealth (including remote monitoring) may reduce hospitalisations among people with COPD.

Chronic obstructive pulmonary disease (COPD)

Pulmonary rehabilitation

Pulmonary rehabilitation is a program of exercises and education strategies delivered by health professionals to improve breathing and function. A review of randomised controlled trials of pulmonary rehabilitation found that COPD-related hospitalisations were reduced by 36% in patients undertaking pulmonary rehabilitation.[2] Another review found that, among patients undertaking pulmonary rehabilitation after being hospitalised for an exacerbation of symptoms, the risk of readmission for any reason was reduced by 56%.[3]

Estimates of the use of pulmonary rehabilitation by people with COPD in Australia have ranged from less than 5% to 10%.[29] Uptake of pulmonary rehabilitation by Aboriginal and Torres Strait Islander people with COPD is lower than for other Australians.[30] One reason for the low uptake by Australian COPD patients is difficulty in accessing services.[17,18,31] For example, access has been limited by the small number of services, restriction of services to hospital settings in many cases, and difficulties with transport and comorbidities.[32,33] Depression and a lack of perceived benefit also prevent some people with COPD from attending pulmonary rehabilitation.[33] Access to pulmonary rehabilitation in rural and remote areas is particularly challenging.

Providing pulmonary rehabilitation in community settings with easy access to transport has shown positive results in improving attendance and reducing hospitalisations.[17,18] A training program for health professionals in rural and remote areas in providing pulmonary rehabilitation has been trialled successfully and improved access in these areas.[17] Access to culturally sensitive pulmonary rehabilitation programs will be important if these programs are to benefit Aboriginal and Torres Strait Islander people with COPD (see 'Case study: Pulmonary rehabilitation for Aboriginal and Torres Strait Islander people' on this page). Improving health literacy and self-management is particularly important for people with COPD who do not have access to pulmonary rehabilitation.

Home-based pulmonary rehabilitation may be useful for engaging people with COPD who are unable to access traditional models. A home-based pulmonary rehabilitation program, which included one home visit and seven once-weekly phone calls from a physiotherapist, was shown to have outcomes at least as beneficial as traditional centre-based programs.[34]

Case study: Pulmonary rehabilitation for Aboriginal and Torres Strait Islander people

Aboriginal and Torres Strait Islander people with COPD have lower rates of participation in pulmonary rehabilitation than the Australian population as a whole, but a program in Hobart and Launceston, Tasmania, has succeeded in engaging patients and improving outcomes. The program combined cardiac and pulmonary rehabilitation and prevention. It was open to Aboriginal and Torres Strait Islander people with COPD, heart failure, ischaemic heart disease or at least two cardiovascular risk factors (for example, smoking, obesity, hypertension).[30]

Dyspnoea, fatigue and mental health scores improved significantly after the eight-week program, which comprised two exercise sessions and one self-management education session per week in 2013.[30] The program encouraged participation by providing a variety of exercise types and transport, if required; 79% of the 92 participants attended at least half of the sessions. Aboriginal health workers recruited and supported participants, and liaised between the Aboriginal health service and external clinicians. Co-location with the Aboriginal health service and leadership by Aboriginal and Torres Strait Islander health workers were thought to be key factors in the program's success.[30]

Reducing COPD hospitalisations among Aboriginal and Torres Strait Islander people

Complex social determinants underlie the disparities in health, and in risk factors such as smoking rates, between Aboriginal and Torres Strait Islander people and other Australians.[35,36] Impacts of colonisation, including racism and intergenerational trauma, contribute to these determinants. To address health inequities, improvements in social factors are required – for example, in education, employment and living conditions.[35] In addition, the logistical and financial barriers to accessing timely and effective health care for Aboriginal and Torres Strait Islander people who live in remote areas need to be addressed.[35]

Smoking rates among Aboriginal and Torres Strait Islander people aged 15 years and over fell from 45% in 2008 to 37% in 2018–19, although there was no significant change in remote areas.[22] Further reductions in smoking and COPD rates are most likely to be achieved with multifaceted interventions that incorporate Aboriginal and Torres Strait Islander leadership, partnership and engagement.[37]

Cultural safety and culturally appropriate care

Barriers to Aboriginal and Torres Strait Islander people accessing chronic disease care include cost, lack of transport, fear and distrust of services, and lack of culturally safe services.[38] Cultural safety means that health consumers are safest when health professionals have considered power relations, cultural differences and consumers' rights.[21]

Expanding use of spirometry

Early diagnosis may prevent progressive functional deterioration in COPD.[4] Spirometry is essential for the diagnosis of COPD, and opportunistic screening of symptomatic smokers and ex-smokers in general practice could facilitate early diagnosis and management.[4] Barriers to providing spirometry include equipment costs and insufficient remuneration, according to a survey of Australian general practitioners (GPs).[39]

Primary Health Network support

Primary Health Networks (PHNs) support general practices managing people with COPD by providing education for clinicians and consumers, quality improvement support, data extraction and analysis, and resources such as cycle-of-care plans. In some areas, PHNs support integrated care models for chronic diseases, including COPD – for example, nurse-led respiratory disease management clinics and integrated care programs for chronic diseases.[40,41]

Integrated care

An integrated care model for people with chronic diseases, such as COPD and diabetes, in Western Sydney included:

- Care facilitators – nurses who linked hospital, GP and allied health care; supported self-management and smoking cessation; and oversaw annual cycles of care and vaccinations
- Specialist rapid access and stabilisation services – pathways other than the emergency department to fast access to specialist care, and better transition back to primary care
- GP support line – answered by specialists to provide immediate advice on management of patients
- IT systems – including a web-based portal for healthcare provider information.[41]

Preliminary analysis showed that potentially preventable hospitalisations were reduced by 37% among chronic disease patients who were enrolled in, or who had attended, the rapid access and stabilisation service.[41]

Chronic obstructive pulmonary disease (COPD)

Pharmacist interventions

Interventions by pharmacists, either alone or as part of a multidisciplinary team, can reduce hospital admissions by 50% among people with COPD.[42] Interventions, conducted in outpatient clinics and/or community pharmacies, include:

- Education and counselling about medicines and lifestyle
- Assessment of medicines adherence, or medicines review
- Reminder systems, through either phone contact or home visits
- Smoking cessation programs
- Feedback to healthcare professionals.

Nutrition

Dietitians and nutritionists have a central role in managing excess weight, as well as unwanted weight loss, in people with COPD.[4] Obesity in people with COPD is associated with carbon dioxide retention, sleep apnoea and other health problems.[4] Excessive weight loss is a common problem in people with end-stage COPD. Nutritional supplementation can promote significant weight gain in people with COPD, improving respiratory muscle strength, walking ability and quality of life, especially in people who are malnourished.[43]

Telehealth

Telehealth for people with COPD includes a wide range of interventions, from simple telephone support to remote monitoring of symptoms. Some meta-analyses have shown significant reductions in hospitalisations (for example, a reduction of 54% over 12 months, compared with usual care).[44] The effectiveness of different models varies widely, and identifying the common components of successful programs would help guide the future use of telehealth.

Palliative care

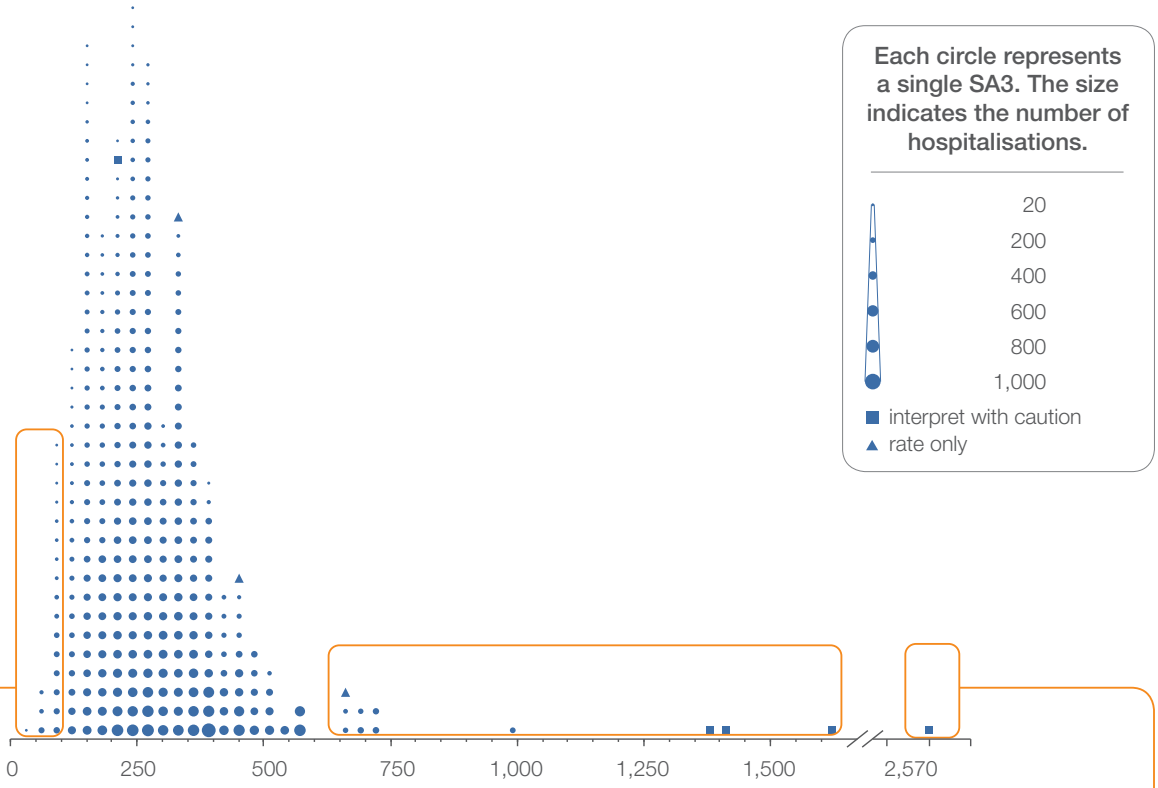
People with COPD experience distressing symptoms, such as breathlessness, anxiety and insomnia, which are often poorly controlled and under-treated in advanced disease.[4] Early access to palliative care is recommended for people with persisting symptoms of COPD. Symptom palliation should be implemented early, and concurrently with active treatment.[4]

To avoid under-treatment of distressing symptoms of COPD, referral to palliative care should not rely on clinicians' estimates of prognosis but rather on the person's symptoms.[45] Management of distressing symptoms may be improved by introducing new models of integrated respiratory and palliative care that routinely offer all people with advanced COPD both disease-directed treatment and palliative care, as well as access to specialist palliative care.[45]

A recent Australian study reported that only 5% of people who died in hospital from COPD had a written advance care directive before the admission.[45] Discussion of advance care directives may be useful for ensuring that the person's wishes regarding active treatment are considered early and documented.

Rates by local area

Figure 2.2: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Lowest rate areas

SA3	State	Rate	Hospitalisations
Pennant Hills - Epping	NSW	56	35
Boroondara	Vic	82	192
North Sydney - Mosman	NSW	85	112
Cottesloe - Claremont	WA	86	93
Burnside	SA	92	77
Hobart - South and West	Tas	94	44
Stonnington - East	Vic	95	51
Manningham - West	Vic	101	186
Hobart Inner	Tas	101	69
Manningham - East	Vic	101	41
Ku-ring-gai	NSW	105	217
Eastern Suburbs - North	NSW	105	178
Nillumbik - Kinglake	Vic	105	70
Canada Bay	NSW	109	123
Dural - Wisemans Ferry	NSW	109	41
Pittwater	NSW	110	113
Whitehorse - West	Vic	112	163
Baulkham Hills	NSW	114	197
Melville	WA	114	182
Unley	SA	119	70

Highest rate areas

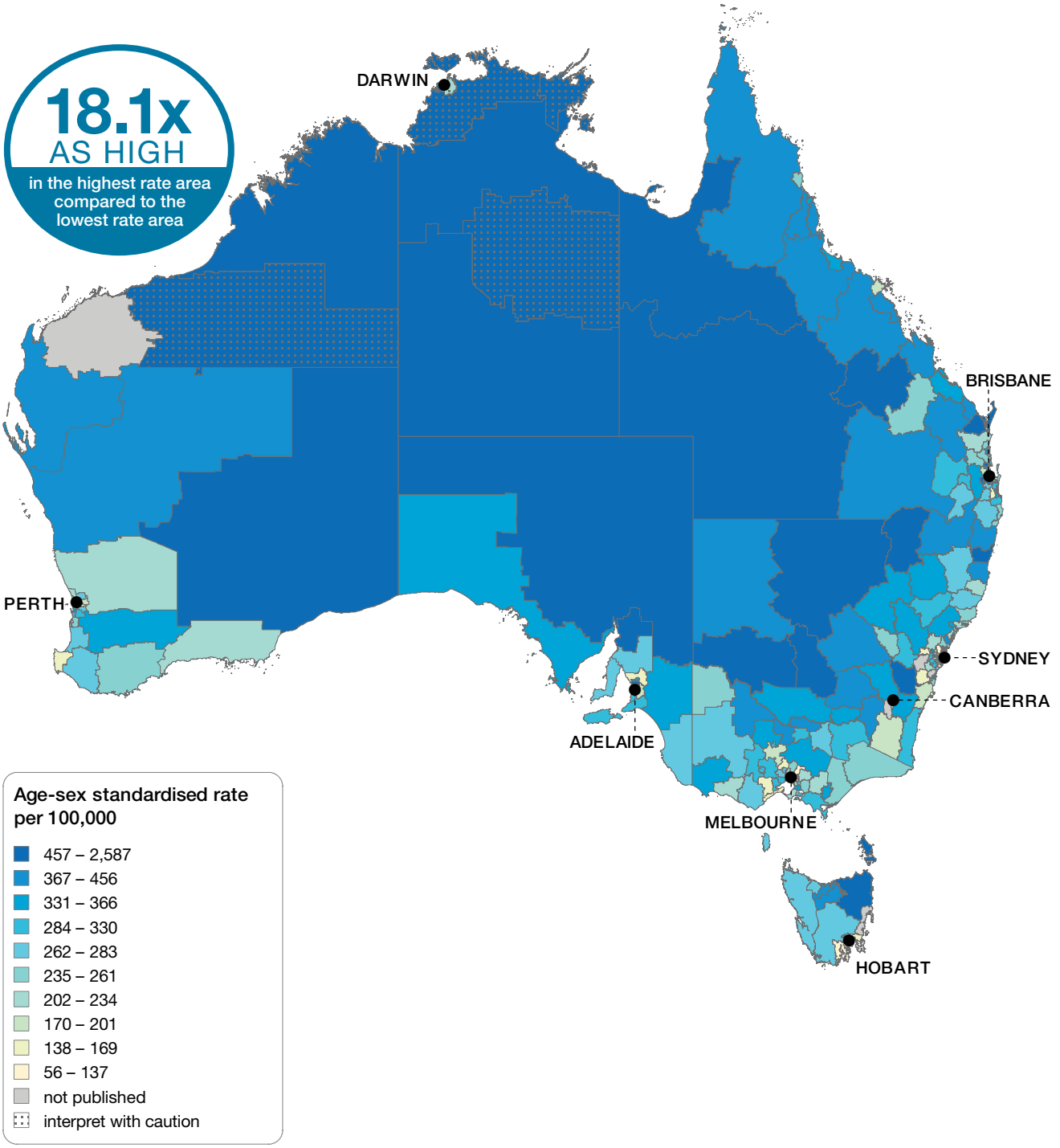
SA3	State	Rate	Hospitalisations
East Arnhem	NT	2,587*	201
Barkly	NT	1,631*	40
Daly - Tiwi - West Arnhem	NT	1,423*	214
East Pilbara	WA	1,386*	125
Katherine	NT	1,013	172
Alice Springs	NT	744	210
Bourke - Cobar - Coonamble	NSW	728	224
Outback - North and East	SA	696	214
Outback - North	Qld	693	153
Kimberley	WA	684	n.p.
Palmerston	NT	682	120
Outback - South	Qld	667	155

Notes:
Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution.
Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published (n.p.) for confidentiality reasons.
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Chronic obstructive pulmonary disease (COPD)

Rates across Australia

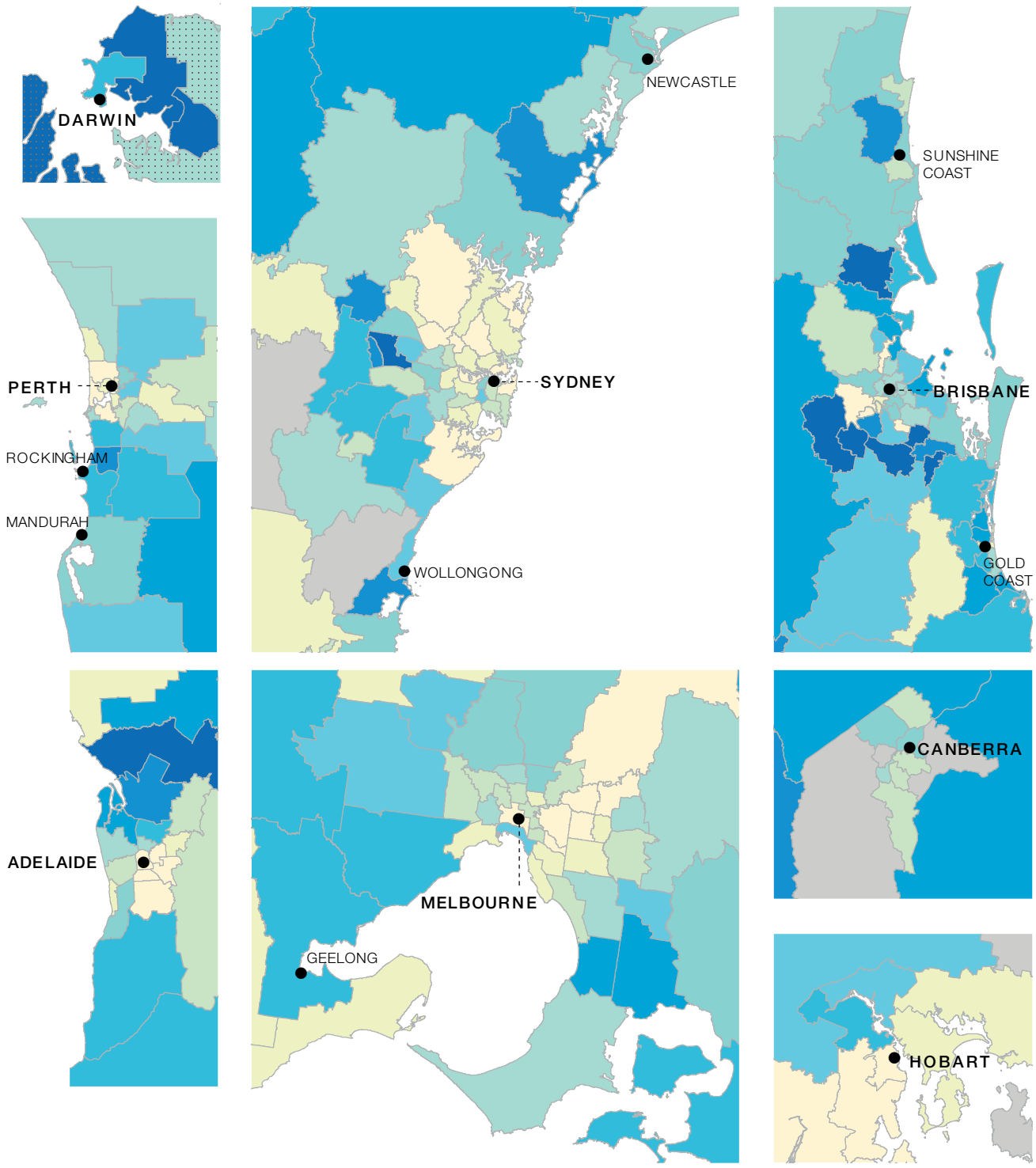
Figure 2.3: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



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.
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates across capital city areas

Figure 2.4: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



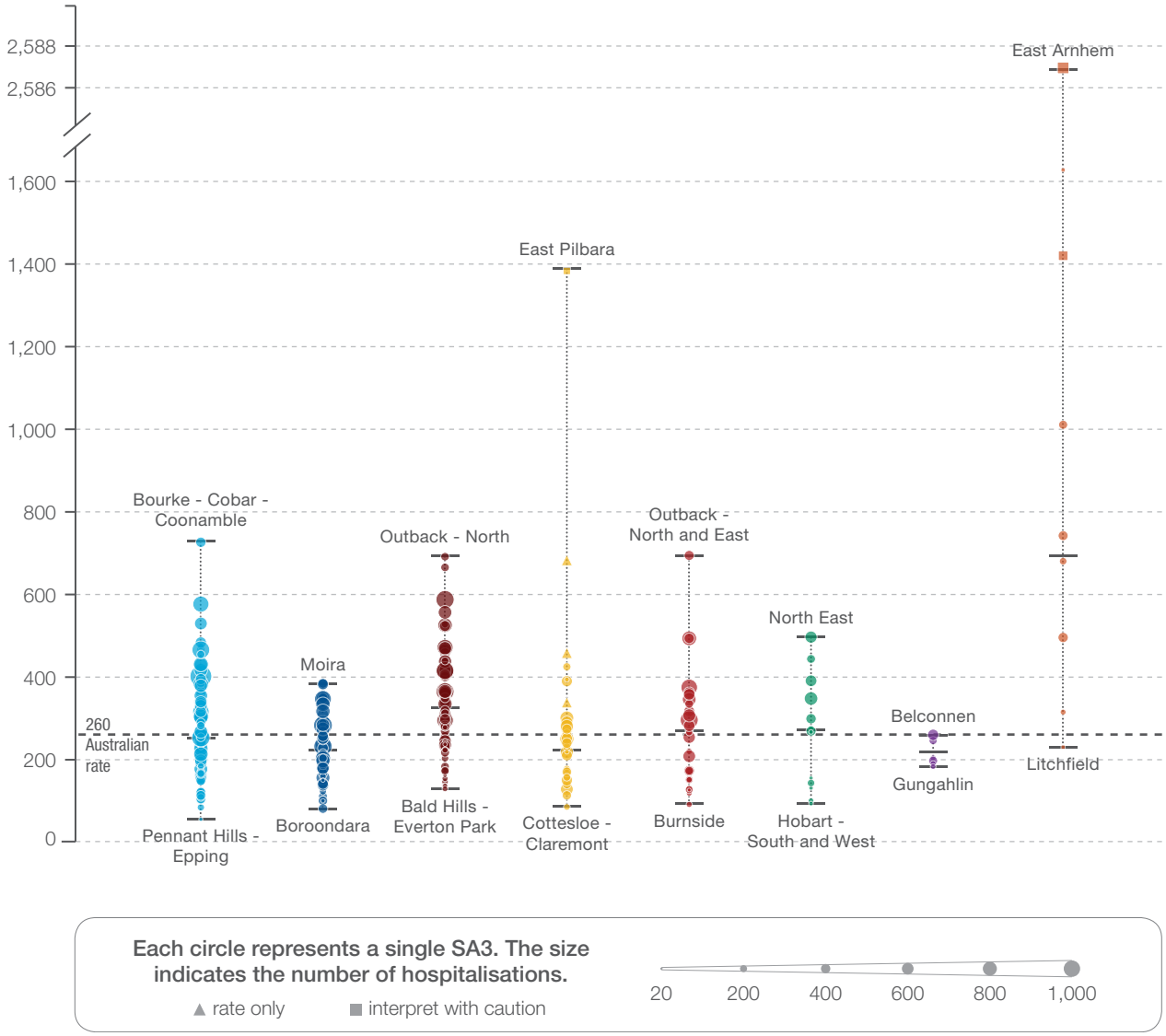
Notes:
Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution.
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Chronic obstructive pulmonary disease (COPD)

Rates by state and territory

Figure 2.5: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18

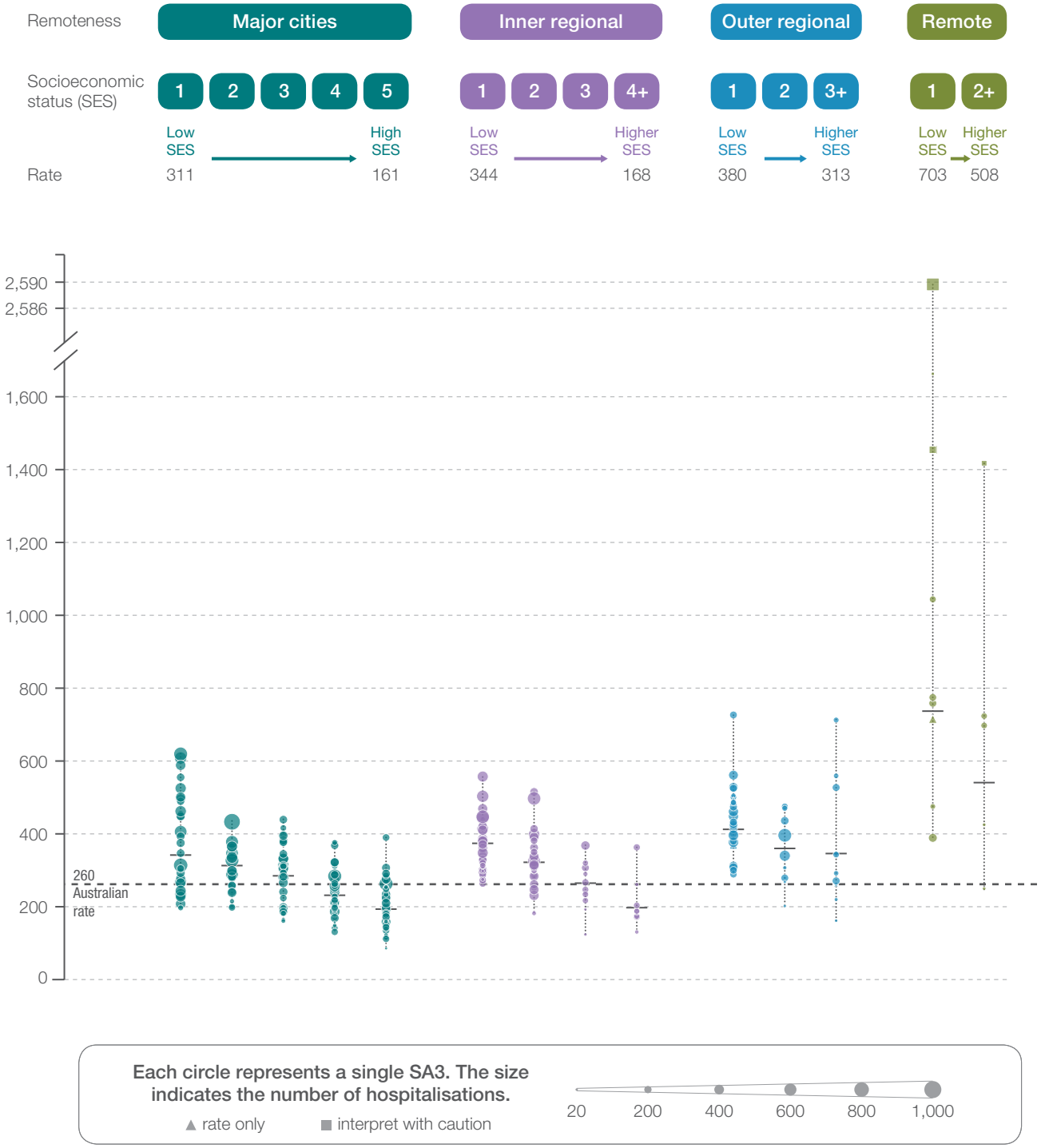
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	728	386	693	1,386*	696	498	261	2,587*
State/territory	250	223	323	225	268	270	218	693
Lowest rate	56	82	130	86	92	94	184	231*
No. hospitalisations	24,509	17,041	18,869	6,499	6,384	2,065	916	1,299



Notes:
Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution.
Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons.
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates by remoteness and socioeconomic status

Figure 2.6: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



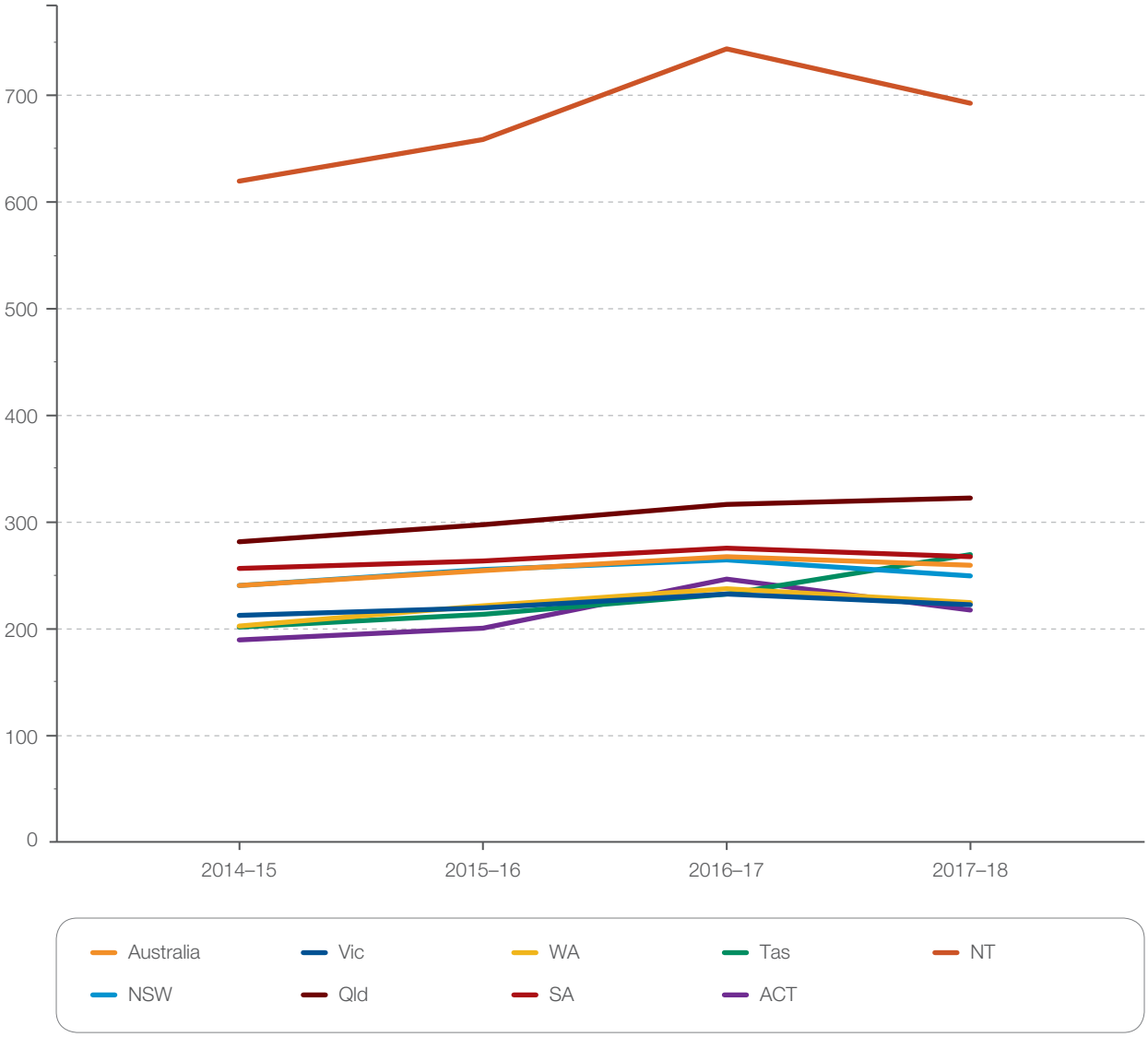
Notes:
Squares (■) indicate rates that are more volatile than other rates and should be interpreted with caution.
Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons.
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.
For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Chronic obstructive pulmonary disease (COPD)

Rates across years

Figure 2.7: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, 2014–15 to 2017–18

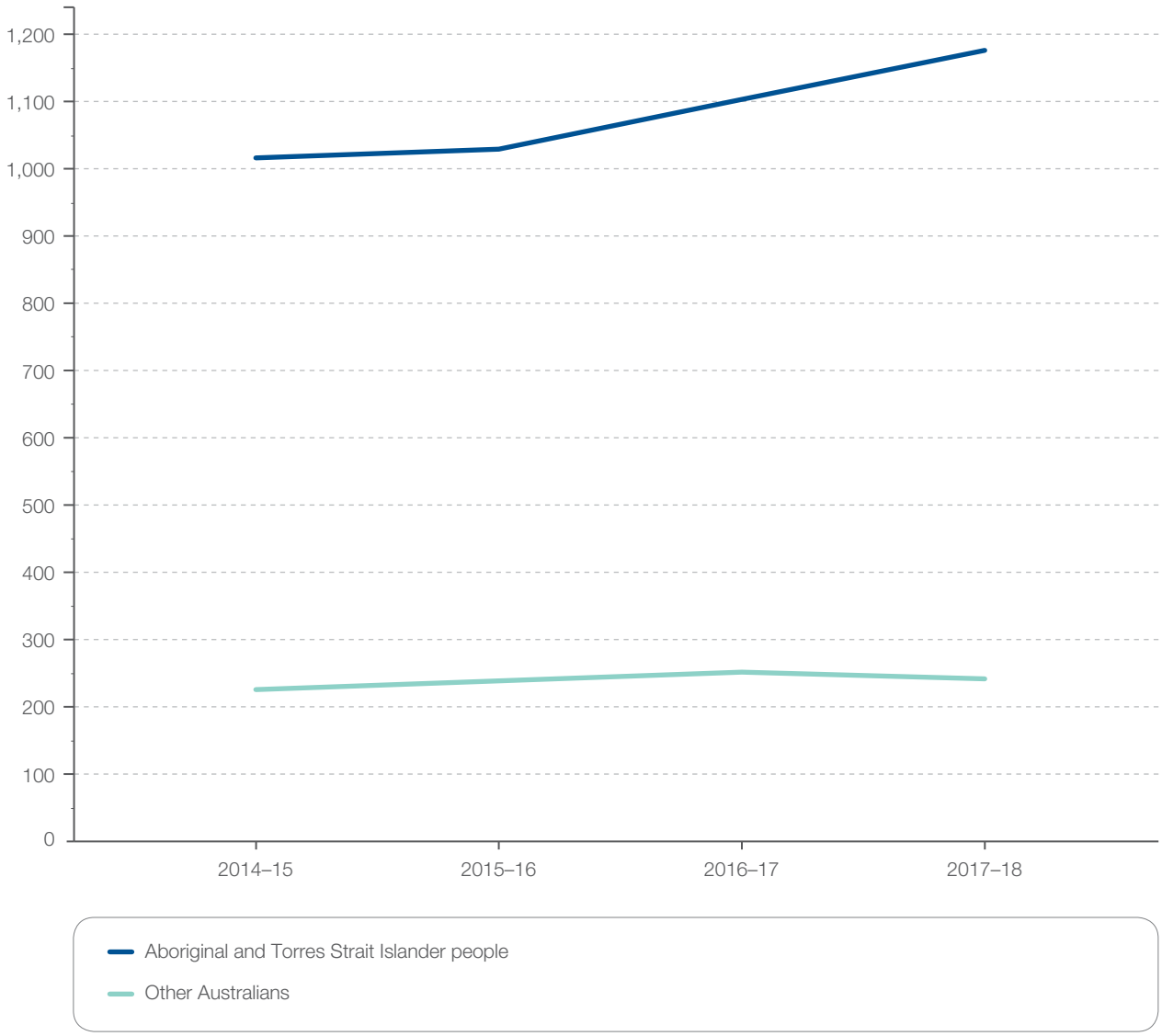
	2014–15	2015–16	2016–17	2017–18
Highest SA3 rate	2,080*	2,556*	3,289*	2,587*
Australian rate	**241**	**255**	**268**	**260**
Lowest SA3 rate	64	77	75	56
Magnitude of variation	15.7	11.7	12.8	18.1
Magnitude of variation without top & bottom 10% SA3	3.3	3.0	3.6	3.3



Notes:
The asterisks (*) indicate rates that are considered more volatile than others, 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.
Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Rates for Aboriginal and Torres Strait Islander people across years

Figure 2.8: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Aboriginal and Torres Strait Islander status, 2014–15 to 2017–18



Notes:
Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander people are under-enumerated, with variation among states and territories.
Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Chronic obstructive pulmonary disease (COPD)

Resources

- *The COPD-X Plan: Australian and New Zealand guidelines for the management of chronic obstructive pulmonary disease*[4]
- Pulmonary Rehabilitation Toolkit, Australian Lung Foundation and Australian Physiotherapy Association, pulmonaryrehab.com.au
- *Therapeutic Guidelines: Respiratory*, Chronic obstructive pulmonary disease (COPD) exacerbations (in eTG complete)
- Pharmacological therapies for chronic obstructive pulmonary disease in Australia, NPS MedicineWise, nps.org.au/radar/articles/pharmacological-therapies-for-chronic-obstructive-pulmonary-disease-in-australia
- Information and assistance for smokers to quit, quitnow.gov.au
- COPD flipchart and action plan for Aboriginal and Torres Strait Islander people, Queensland Health, Indigenous Respiratory Outreach Care program, Menzies School of Health and Lung Foundation

Australian initiatives

The information in this chapter will complement work already underway to prevent COPD and improve its management in Australia. At a national level, this work includes:

- National Tobacco Campaign
- National Strategic Action Plan for Lung Conditions
- Tackling Indigenous Smoking program
- Lung Foundation Australia education and support programs
- Lung Foundation Australia's Breathe Easy, Walk Easy training program for rural and remote healthcare providers.

Many state and territory initiatives are also in place, including:

- State- and territory-based tobacco control strategies
- Quitline, including Aboriginal and Torres Strait Islander counsellors
- Leading Better Value Care COPD program, New South Wales (NSW)
- Smoking Cessation Framework, NSW
- A Strategic Framework for Aboriginal Tobacco Resistance and Control in NSW
- Reports on hospital readmission rates for COPD, NSW Bureau of Health Information
- Delivering Connected Care for Complex Patients with Multiple Chronic Needs, Tasmania
- Hospital Admissions Risk Program, Victoria
- Improving Care for Aboriginal and Torres Strait Islander Patients program, Victoria
- Quit Victoria
- Aboriginal Tobacco Control Project, Western Australia
- *Respiratory Health Policy Position for the Procurement of Community Based Services*, Western Australia.[28]

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