



## 5.2 Rural and remote populations

Around 7 million people—about 29% of the population—live in rural and remote areas (ABS 2017e). These Australians face unique challenges due to their geographic isolation, and they often have poorer health and welfare outcomes than people living in major cities. The proportion of adults engaging in behaviours associated with poorer health—such as tobacco smoking and excessive alcohol consumption—is higher in rural and remote areas than in metropolitan areas, as is (generally) the prevalence of chronic conditions. These poorer health outcomes may be due to factors such as disadvantage in education, employment opportunities, income and access to services.

Despite poorer health outcomes for some, the Household, Income and Labour Dynamics in Australia Survey found that Australians living in small towns (of fewer than 1,000 people) and in non-urban areas generally experienced higher levels of life satisfaction than those living in major cities (Wilkins 2015).

This article presents information to help assess the health of rural and remote populations. The term 'rural and remote' covers all areas outside Australia's major cities, classified by the Australian Statistical Geography Standard as *Inner regional*, *Outer regional*, *Remote* or *Very remote* (ABS 2014). Due to small population sizes, data for *Outer regional*, *Remote* and *Very remote* areas are sometimes combined for reporting purposes.

### Profile of rural and remote Australians

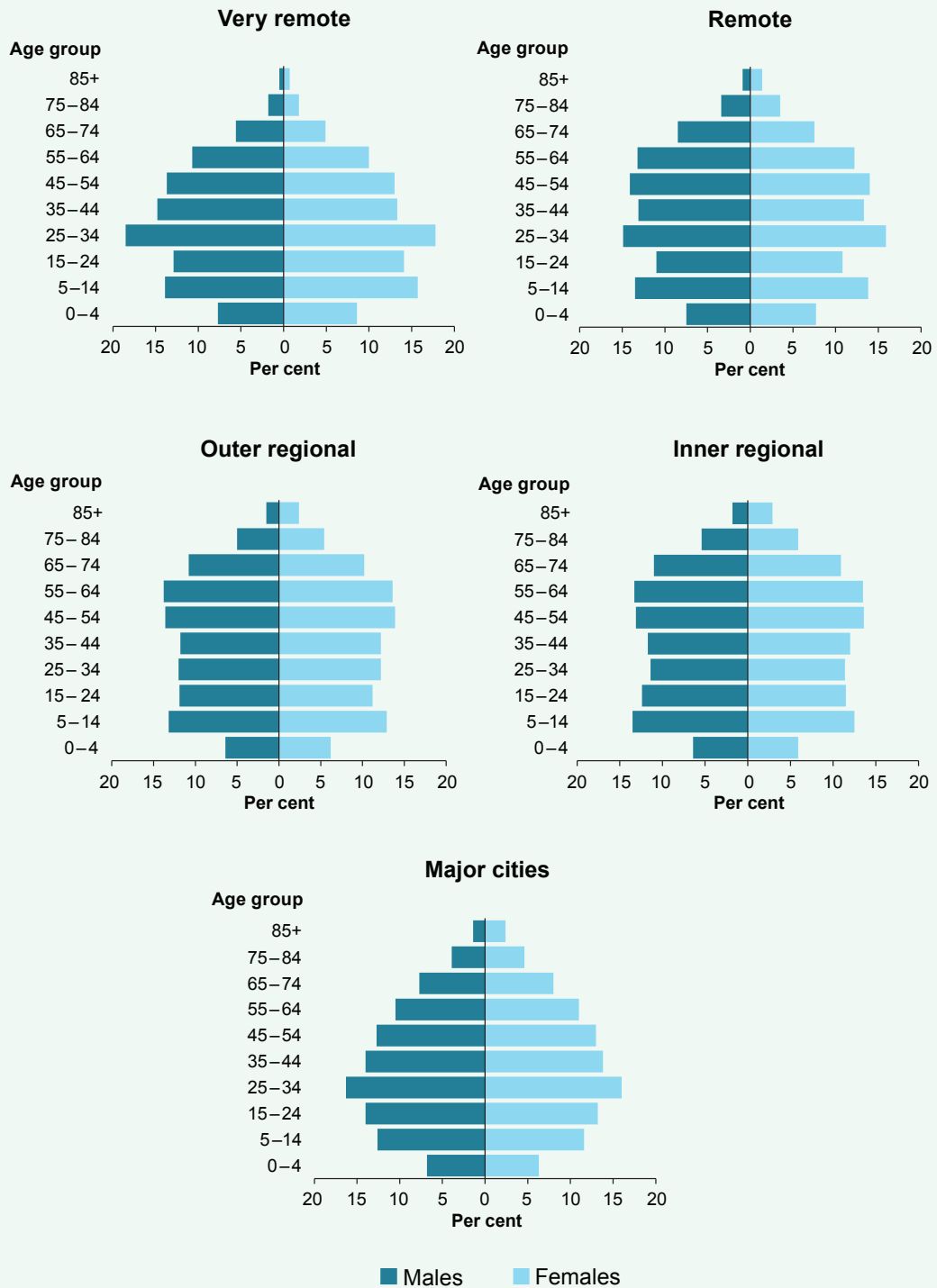
In 2016, the age and sex distribution of Australians varied with remoteness. More than half (51%) of the population in *Major cities* were female compared with 46% in *Very remote* areas. People living in *Remote* and *Very remote* areas were relatively younger than people living in more populated areas. The proportion of males aged 14 and under was 19% in *Major cities* and 22% in *Very remote* areas. The proportion of females aged 14 and under was 18% in *Major cities* and 24% in *Very remote* areas (Figure 5.2.1).

Comparatively, 13% of males in *Major cities* were aged 65 and over, compared with 18% in *Inner regional* areas and 17% in *Outer regional* areas. The proportion of females aged 65 and over was 15% in *Major cities*, compared with 20% in *Inner regional* areas and 18% in *Outer regional* areas.





Figure 5.2.1: Australian population, by age group, sex and remoteness area, 2016








Source: ABS 2017d; Table S5.2.1.





The geographical distribution of Aboriginal and Torres Strait Islander people and non-Indigenous Australians also varied by remoteness area. In 2011, a greater proportion of the Indigenous population lived in rural and remote areas compared with non-Indigenous Australians:

	 Major cities	 Inner regional	 Outer regional	 Remote	 Very remote
Indigenous	35%	22%	22%	7.7%	14%
Non-Indigenous	71%	18%	8.7%	1.2%	0.5%

Source: ABS 2013.

See Chapter 6 for information on Indigenous health by remoteness area.

In 2017, the proportion of people with a Bachelor degree or above also varied by remoteness area:

- 36% in *Major cities*
- 19% in *Inner regional* areas
- 18% in *Outer regional* areas
- 18% in *Remote* and *Very remote* areas (ABS 2017a).

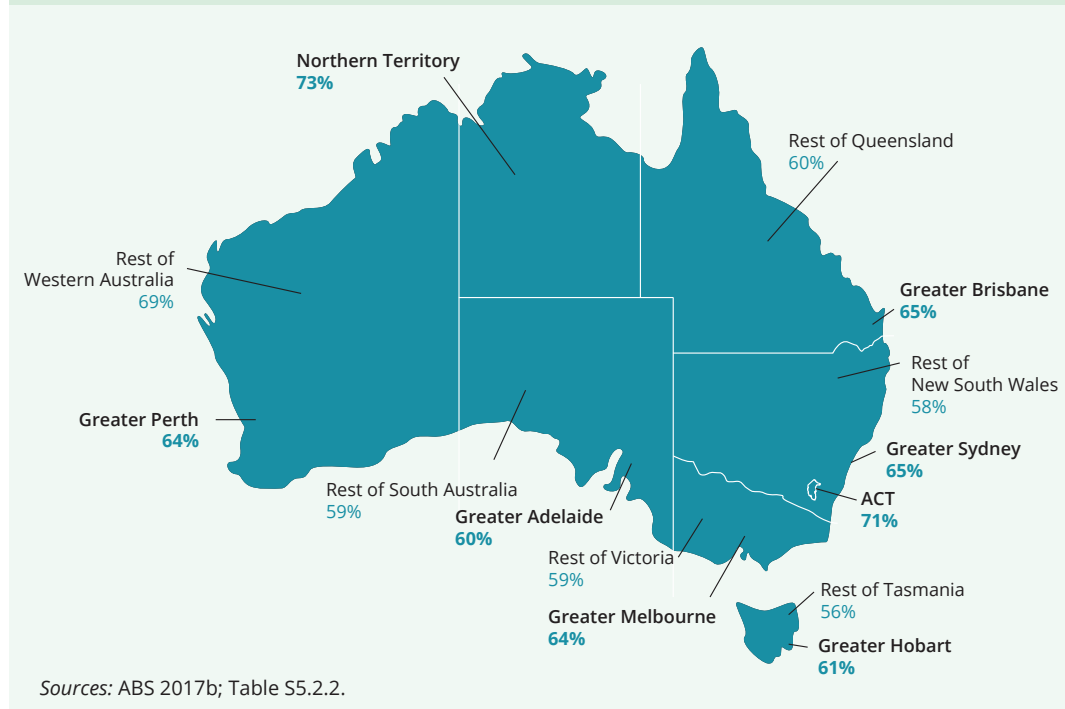
As at December 2017, the employment-to-population ratio across Australia was 63%. Except for Greater Perth, greater metropolitan areas had a higher proportion of employed people than did the rest of their respective state or territory (Figure 5.2.2). This may be due to lower levels of access to work outside *Major cities* and to the higher number of retired older people living in these areas (ABS 2008; NRHA 2013).

See Chapter 4 for more information on the social determinants of health.





Figure 5.2.2: Employment-to-population ratio, by greater metropolitan areas and the rest of states and territories, 2017



## Health status

Behaviours associated with poorer health, the rate of chronic conditions as well as disease burden can be assessed across remoteness areas.

### Risk factors

Taking into account the different age structure of people living in the different remoteness areas, people living in rural and remote areas are more likely to have higher rates of health risk factors. Compared with people in *Major cities*, people in *Outer regional/Remote* areas had higher rates of daily smoking, risky alcohol consumption, physical inactivity and overweight and obesity in 2014–15:





	 Major cities	 Inner regional	 Outer regional/ Remote
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Current daily smoker	13%	18%	22%
Overweight or obese	61%	67%	68%
No/low exercise level	64%	69%	72%
Exceeded lifetime alcohol risk guideline	16%	18%	24%
High blood pressure	22%	24%	22%

Notes

1. The symbol '%' represents the prevalence of the risk factor in each region (excluding *Very remote* areas of Australia).
2. Proportions were age standardised to the 2001 Australian Standard Population.

Source: ABS 2016; Table S5.2.3.

## Chronic conditions

Taking into account the different age structure of people living in the different remoteness areas, self-reported rates of selected chronic conditions were similar for people living in *Major cities*, *Inner regional* and *Outer regional/Remote* areas in 2014–15, with the exception of heart, stroke and vascular disease rates being higher in *Inner regional* areas compared to *Major cities*:

	 Major cities	 Inner regional	 Outer regional/ Remote
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Asthma	10%	12%	12%
Osteoarthritis	7.7%	9.1%	9.3%
Back pain and problems	16%	16%	16%
Diabetes	5.8%	6.6%	7.3%
Heart, stroke and vascular disease	21%	25%	22%

Notes

1. The symbol '%' represents the prevalence of chronic conditions in each region (excluding *Very remote* areas of Australia).
2. Proportions were age standardised to the 2001 Australian Standard Population.

Source: ABS 2016; Table S5.2.4.



## Disease burden

Burden of disease analyses reveal health inequalities between rural and remote communities and *Major cities*. Burden of disease—expressed as disability-adjusted life years (DALYs)—is a measure of the health impact of disease on a population in a given year: both from dying, and living with, disease and injury (AIHW 2016a).

People living in *Very remote* areas experienced the highest total burden per population (301 DALY per 1,000 population), and people in *Major cities* the lowest (181). The rate for *Very remote* areas was 1.7 times the rate for *Major cities* (Table 5.2.1).

Table 5.2.1: DALY rate and rate ratio, by remoteness area, 2011

	Major cities	Inner regional	Outer regional	Remote	Very remote
Age-standardised rate (number per 1,000 population)	181.4	205.3	206.8	242.0	300.8
Rate ratio	1.0	1.1	1.1	1.3	1.7

Notes

1. Rates were age standardised to the 2001 Australian Standard Population.
2. Rate ratios compare the rate of burden for remoteness areas with that for *Major cities*.

Source: AIHW 2016a.

For most disease groups, age-standardised rates of disease burden increased with remoteness and were highest in *Very remote* areas. The greatest absolute difference in DALY rates of burden between *Major cities* and *Very remote* areas was for injuries (15 and 44 DALY per 1,000 population, respectively). The greatest relative difference in DALY rates of burden was for kidney and urinary diseases, with *Very remote* areas having more than 6.0 times the rate of *Major cities*; this was followed by endocrine disorders (3.2 times) and injuries (3.0 times). For a full breakdown of DALY rates of disease groups, see AIHW 2016a and Supplementary Table S5.2.5.

See Chapter 3.1 'Burden of disease across the life stages' for more information on burden of disease.

## Deaths

In 2015, age-standardised overall mortality rates increased as remoteness increased, with people living in *Very remote* areas having a mortality rate almost 1.4 times as high as people living in *Major cities* (759 per 100,000 population compared with 524 per 100,000 population) (Table 5.2.2). Mortality data for 2016 by remoteness area were not available at the time of writing.





Table 5.2.2: Median age at death, mortality rate and rate ratio, by remoteness area, 2015

	Major cities	Inner regional	Outer regional	Remote	Very remote
Median age at death (years)	82.0	81.0	79.0	76.0	67.0
Age-standardised rate (number per 100,000 population)	524.3	593.0	611.4	657.4	759.3
Rate ratio	1.0	1.1	1.2	1.3	1.4

Notes

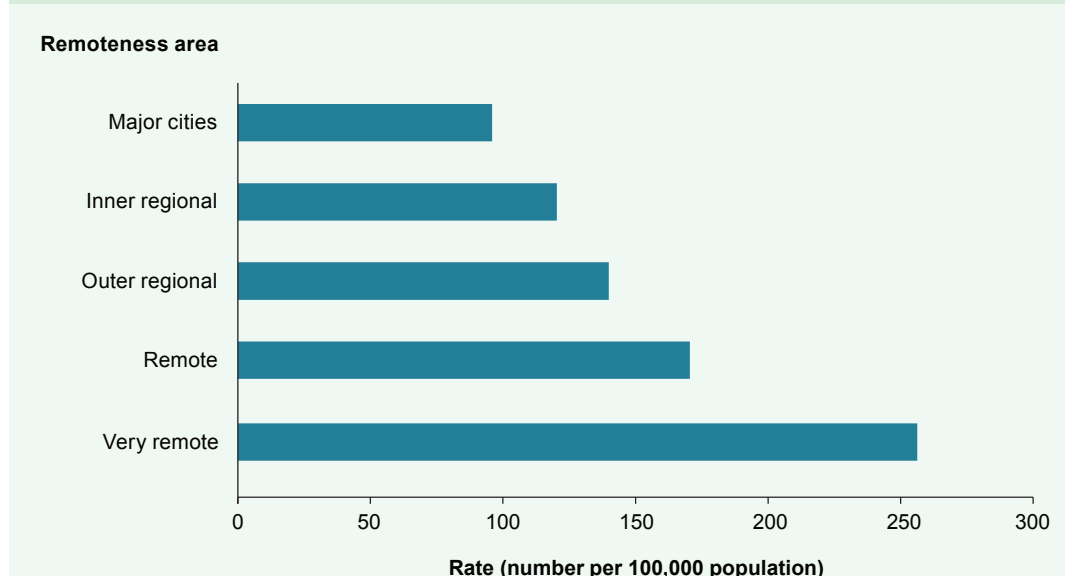
1. Rates were age standardised to the 2001 Australian Standard Population.
2. Rate ratios compare the remoteness area rate with the *Major cities* rate.

Source: AIHW 2017b.

## Potentially avoidable deaths

Potentially avoidable deaths are deaths among people aged under 75 that are considered potentially preventable either by having individualised care or by being treated through existing primary or hospital care. In 2015, age-standardised potentially avoidable death rates increased as remoteness increased, with people living in *Very remote* areas having a death rate over 2.5 times as high as people living in *Major cities* (256 per 100,000 population compared with 96 per 100,000 population) (Figure 5.2.3).

Figure 5.2.3: Age-standardised potentially avoidable death rate, by remoteness area, 2015



Source: AIHW 2017b; Table S5.2.6.





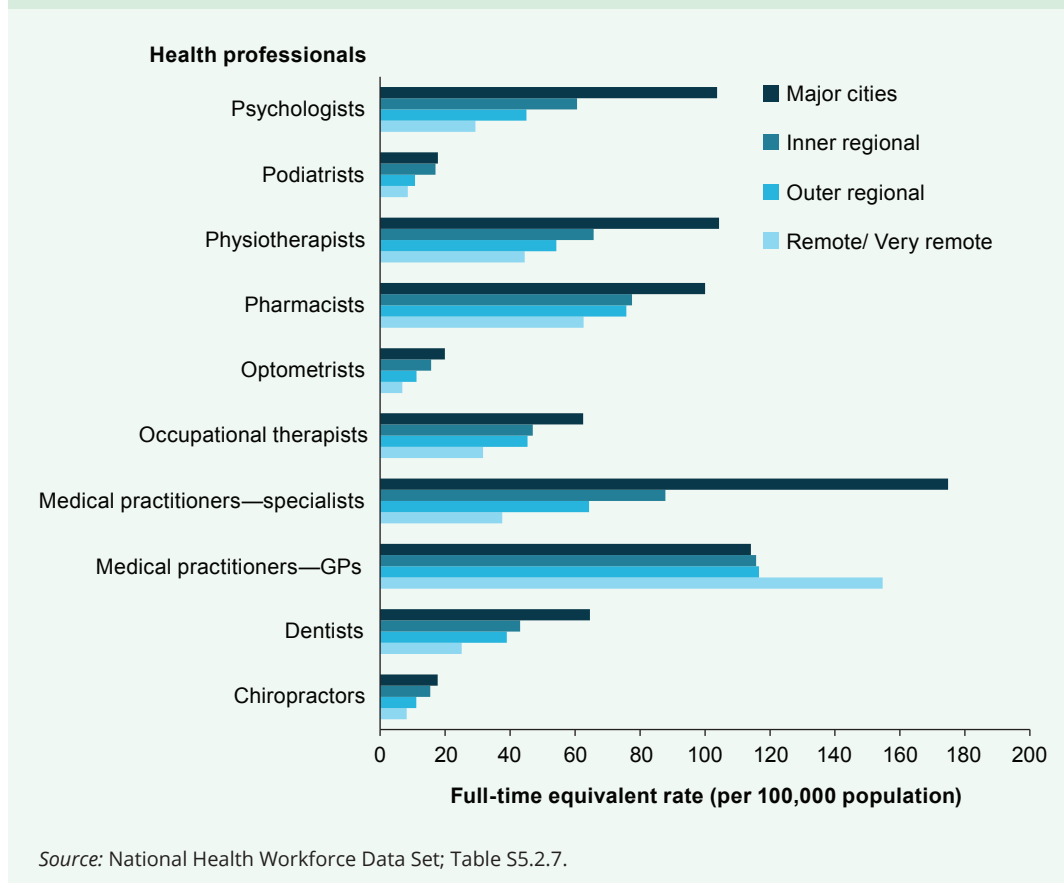
## Access to health care

The challenges of geographic spread, low population density, limited infrastructure, as well as the higher costs of delivering rural and remote health care, can affect access to health care.

## Health workforce

Except for general practitioners (GPs), there is a marked decline in the full-time equivalent rate (based on total weekly hours worked) of most types of health care professionals per 100,000 population as remoteness increases (Figure 5.2.4). The higher rate of GPs in *Remote/Very remote* areas may be due to them having a broader scope of practice, given lower levels of supply for almost all other health professionals.

Figure 5.2.4: Employed health professionals, full-time equivalent rate, by remoteness area, 2016



See Chapter 2.3 'Who is in the health workforce?' for more information on health workforce supply.







## Primary health care

Primary health care covers a large range of providers and services across health care sectors. Primary health care is the entry level to the health system and, as such, is usually a person's first encounter with the system (AIHW 2016b).

Based on self-reported data, there was little variation in the proportion of people visiting a GP across remoteness areas (Table 5.2.3). However, people living outside *Major cities* were less likely to have visited a dental professional or an after-hours GP.

The relative lack outside *Major cities* of specialists and primary care professionals who were not GPs may help to explain why people living in these areas were more likely to have visited a hospital emergency department in the last 12 months (18% in *Outer regional/Remote/Very remote* areas, 16% in *Inner regional* areas, and 13% in *Major cities*).

**Table 5.2.3: Experience of health services in the last 12 months (per cent), by remoteness area, people aged 15 and over, 2016–17**

Health care service	Major cities	Inner regional	Outer regional/Remote/Very remote
Saw a GP	82.4	83.8	81.5
Saw a GP for urgent medical attention	8.9	9.8	10.8
Saw an after-hours GP	9.3	6.6	5.8
Received a prescription for medication from a GP	67.4	71.3	69.5
Saw a dental professional	50.0	44.6	41.3
Saw a medical specialist	36.3	36.4	33.6
Visited a hospital emergency department	12.7	15.8	17.9

Source: ABS 2017c; Table S5.2.8.

See Chapter 7 for more information on health service statistics.

### Experiences with GP care vary by remoteness. In 2016–17:



**21%** of people in *Outer regional/Remote/Very Remote* areas waited longer than they felt was acceptable to get an appointment with a GP (compared with 19% in *Inner regional* areas and 18% in *Major cities*)



**33%** of people in *Outer regional/Remote/Very Remote* areas reported they could not see their preferred GP on one or more occasions (compared with 28% in *Inner regional* areas and 25% in *Major cities*)



**11%** of people in *Outer regional/Remote/Very Remote* areas reported their GP sometimes, rarely or never spent enough time with them (compared with 8.9% in *Inner regional* areas and 9.3% in *Major cities*)



**4.8%** of people in *Inner regional* areas reported that they at least once delayed seeing, or did not see, a GP when they needed to because of cost (compared with 4.6% in *Outer regional/Remote/Very Remote* areas and 3.9% in *Major cities*) (ABS 2017c).



In a study of rural and remote health conducted by the Royal Flying Doctor Service of Australia (RFDS), survey respondents in rural and remote areas reported spending an average of 1 hour travelling to see a doctor for a non-emergency reason: some travelled as long as 5 or more hours. For urgent medical care, the majority of survey respondents were able to access a doctor within 4 hours, although some waited up to 6 days or longer (Bishop et al. 2017). See Chapter 7.5 'Primary health care' for more information on primary health care.

### Potentially preventable hospitalisations

A potentially preventable hospitalisation (PPH) is an admission to hospital that could potentially have been prevented had there been appropriate individualised preventative health care or early disease management—usually delivered in primary care and community-based care settings (AIHW 2017a).

In 2015–16, the overall rate of PPHs was highest for residents of *Remote* and *Very remote* areas (40 and 61 per 1,000 population, respectively), and lowest for residents of *Major cities* (25 per 1,000 population). Residents of *Remote* and *Very remote* areas had the highest rates of PPHs across all PPH categories (vaccine preventable conditions, acute conditions, and total chronic conditions) (Table 5.2.4). However, there is variation from community to community, both inside and outside *Major cities* (NHPA 2015).

Table 5.2.4: PPH rate (hospitalisations per 1,000 population), by selected PPH and remoteness area<sup>(a)(b)(c)</sup>, 2015–16

Type of PPH	Major cities	Inner regional	Outer regional	Remote	Very remote
Vaccine preventable conditions	2.1	1.4	1.5	3.1	9.0
Acute conditions	11.7	13.3	15.1	20.4	30.1
<i>Total chronic conditions</i> <sup>(d)</sup>	11.4	12.5	13.4	16.6	23.7
Diabetes complications	1.7	2.0	2.2	2.8	4.6
Chronic conditions (excluding diabetes)	9.7	10.5	11.3	13.9	19.1
<b>Total</b>	<b>25.0</b>	<b>27.0</b>	<b>29.9</b>	<b>39.5</b>	<b>60.9</b>

(a) Data are presented by the remoteness area in which the patient usually lives, rather than the hospital.

(b) Includes public and private hospitals.

(c) PPH rates are directly age standardised using populations by remoteness areas, which do not include persons with unknown or migratory area of usual residence.

(d) As more than one chronic condition may be reported for a separation, the sum of Diabetes complications and Chronic conditions (excluding diabetes) does not necessarily equal the total number of separations for Chronic conditions.

Source: AIHW 2017a.



## Hospitalisations

Low levels of access to primary health care can mean that people from rural and remote areas present to a hospital with conditions that could have been treated by a primary health care practitioner and, instead, seek help later in the course of a disease (Duckett et al. 2013).

In 2015–16, the total number of hospitalisations per 1,000 population varied by remoteness area. Rates were highest for people living in *Very remote* areas (746 per 1,000 population) (Table 5.2.5). This was 1.8 times the rate of *Major cities*.

Table 5.2.5: Hospitalisation rate, by remoteness area<sup>(a)(b)</sup>, 2015–16

Hospitalisations	Major cities	Inner regional	Outer regional	Remote	Very remote
Hospitalisations per 1,000 population <sup>(c)</sup>	409.6	415.5	415.4	479.4	745.8
Hospitalisation rate ratio <sup>(d)</sup>	1.0	1.0	1.0	1.2	1.8

(a) Data are presented by the remoteness area in which the patient usually lives, rather than the hospital.

(b) Includes public and private hospitals.

(c) Hospitalisation rates are directly age standardised using populations by remoteness areas, which do not include persons with unknown or migratory area of usual residence.

(d) The hospitalisation rate ratio is equal to the hospitalisation rate for regional/remote areas divided by the hospitalisation rate for *Major cities*.

Source: AIHW 2017a.

See Chapter 7 for more information on hospital care.

## Targeted health care

Specialist outreach in rural and remote areas can improve early intervention and the coordination of care, as well as reducing the rate of hospitalisations.

The RFDS provides 24-hour emergency care to people in rural and remote Australia. Health care professionals, including doctors, nurses, mental health workers and dentists, deliver care. In 2016–17, the RFDS made around 336,000 total patient contacts, transported around 107,000 patients, conducted around 88,500 telehealth consultations and provided around 10,800 episodes of dental care (RFDS 2017).

### What is missing from the picture?

It can be difficult to assess the implications of remoteness to health due to gaps in the availability and coverage of health data in rural and remote areas—and in information available at the local area level. For example, the Australian Bureau of Statistics National Health Survey does not include *Very remote* areas of Australia.

### Where do I go for more information?

More information on rural and remote health is available on the AIHW website <[www.aihw.gov.au/reports/rural-health/rural-remote-health/contents/rural-health](http://www.aihw.gov.au/reports/rural-health/rural-remote-health/contents/rural-health)>. This web report and other recent releases are available for free download.





## References

- ABS (Australian Bureau of Statistics) 2008. Australian social trends, 2008. ABS cat. no. 4102.0. Canberra: ABS.
- ABS 2013. Estimates of Aboriginal and Torres Strait Islander Australians, June 2011. ABS cat. no. 3238.0.55.001. Canberra: ABS.
- ABS 2014. Remoteness structure. Canberra: ABS. Viewed 22 January 2018, <<http://www.abs.gov.au/websitedbs/D3310114.nsf/home/remoteness+structure>>.
- ABS 2016. Microdata: National Health Survey, 2014–15. ABS cat. no. 4324.0.55.001. Canberra: ABS. AIHW analysis of Expanded Confidentialised Unit Record File.
- ABS 2017a. Education and work, Australia, May 2017. ABS cat. no. 6227.0. Canberra: ABS.
- ABS 2017b. Labour force, Australia, detailed—electronic delivery, Dec. 2017. ABS cat. no. 6291.0.55.001. Canberra: ABS.
- ABS 2017c. Patient experiences in Australia: summary of findings, 2016–17. ABS cat. no. 4839.0. Canberra: ABS.
- ABS 2017d. Population by age and sex, regions of Australia, 2016. ABS cat. no. 3235.0. Canberra: ABS. Derived by AIHW from SA1 estimated resident populations.
- ABS 2017e. Regional population growth, Australia, 2016. ABS cat. no. 3218.0. Canberra: ABS.
- AIHW (Australian Institute of Health and Welfare) 2016a. Australian Burden of Disease Study: impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. Canberra: AIHW.
- AIHW 2016b. Primary health care in Australia. Canberra: AIHW. Viewed 11 December 2017, <<https://www.aihw.gov.au/reports/primary-health-care/primary-health-care-in-australia/contents/about-primary-health-care>>.
- AIHW 2017a. Admitted patient care 2015–16: Australian hospital statistics. Health services series no. 75. Cat. no. HSE 185. Canberra: AIHW.
- AIHW 2017b. MORT (Mortality Over Regions and Time) books: remoteness area, 2011–2015. Canberra: AIHW.
- Bishop L, Ransom A & Laverty M 2017. Health care access, mental health, and preventive health: health priority survey findings for people in the bush. Canberra: Royal Flying Doctor Service of Australia.
- Duckett S, Breadon P & Ginnivan L 2013. Access all areas: new solutions for GP shortages in rural Australia. Melbourne: Grattan Institute.
- NHPA (National Health Performance Authority) 2015. Healthy communities: potentially preventable hospitalisations in 2013–14. Sydney: Australia.
- NRHA (National Rural Health Alliance) 2013. A snapshot of poverty in rural and regional Australia. Canberra: NRHA.
- RFDS (Royal Flying Doctor Service) 2017. Annual national report 2016/17. Canberra: RFDS.
- Wilkins R 2015. The Household, Income and Labour Dynamics in Australia Survey: selected findings from waves 1 to 12. Melbourne: Melbourne Institute of Applied Economic and Social Research.

