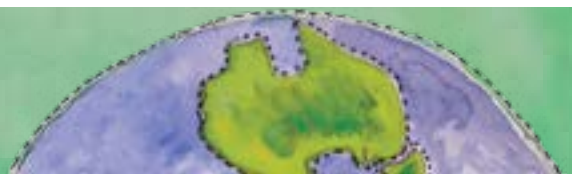


7.7 Remoteness and the health of Indigenous Australians



Numerous studies have demonstrated that Australians living in remote or very remote areas have, on average, higher rates of risky health behaviours such as smoking, poorer access to health services, and worse health than people living in regional or metropolitan areas (AIHW 2012).

Poorer health with increasing remoteness may be influenced by environmental or geographical factors such as long distances to access services (which can also be an issue for urban fringes), communities being cut off on occasion because of flooding, or poorer access to healthy food sources (Harrison et al. 2010; Humphreys & Wakeman 2008) (see Chapter 5 'Health in regional and remote areas'). Evidence also shows higher rates of poor housing and overcrowding in remote areas, which have a negative impact on health (AIHW 2011).

These differences in health may also be due to the characteristics of the populations in more remote areas. For example, there is a strong association between socioeconomic status and health—the lower someone's socioeconomic status, the worse their health is likely to be. Given that a higher proportion of remote residents are disadvantaged compared with those who live in metropolitan or regional areas, their health may be worse as a result of socioeconomic disadvantage rather than just environmental or geographical factors related to remoteness.

The relationship of remoteness to health is particularly important for Indigenous Australians, as they are more likely to live outside metropolitan areas than non-Indigenous Australians. In 2011, just over one-third of Indigenous Australians lived in *Major cities* (34.8%), compared with over 70% of non-Indigenous Australians. Only 1.7% of non-Indigenous Australians lived in *Remote* or *Very remote* areas, compared with about one-fifth of Indigenous Australians (7.7% in *Remote* and 13.7% in *Very remote* areas). Indigenous Australians represent 16% and 45% of all people living in *Remote* and *Very remote* areas respectively.

Indigenous Australians have lower life expectancies, higher rates of chronic and preventable illnesses, poorer self-reported health, and a higher likelihood of being hospitalised than non-Indigenous Australians (AIHW 2013; Bramley et al. 2004; Freemantle et al. 2007). Therefore, differences in health with increasing remoteness could also be explained by the poorer health of the Indigenous population living in these areas.

To summarise the discussion so far, differences in health by remoteness could be due to remoteness factors such as distance or access to services, or the lower socioeconomic status of people who live in remote areas (Indigenous and non-Indigenous), or the higher proportions of Indigenous people who live in remote areas—or a combination of all 3.

This article presents available data on how health conditions and risk factors differ by remoteness and Indigenous status, using both self-reported survey data as well as data on hospitalisations. We also focus on access to general practitioner services by remoteness and Indigenous status, and highlight the AIHW's work in developing an area-based index of access to services relative to the health needs of the Indigenous and non-Indigenous populations in those areas.

How do health conditions and risk factors differ by remoteness and Indigenous status?

The most recent data on self-reported health-related behaviours and conditions for Indigenous Australians were collected in the 2012–13 Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) (ABS 2013a), which is part of the larger 2011–13 Australian Health Survey (AHS) which collected data on all Australians, except those living in *Very remote* areas. Tables 7.1 and 7.2 present data from these surveys by remoteness for all Australians and Indigenous Australians. At this point, the AHS data by remoteness have only been reported for *all* Australians, not for *non-Indigenous* Australians.

Table 7.2 highlights 2 key findings:

1. Across almost every indicator, Indigenous Australians are disadvantaged compared with all Australians. The largest differences are in smoking status, psychological distress, and cardiac/circulatory diseases. The 1 indicator in which the rates are lower for Indigenous Australians is for overweight/obesity in regional and remote areas.
2. While there are differences by remoteness in the indicators for both populations, the impact of remoteness is relatively low. For all Australians, the largest difference between those living in *Outer regional* and *Remote* areas and those in *Major cities* is for smoking, with a ratio of 1.5. For Indigenous Australians, the largest difference between those in *Outer regional* and *Remote* areas and those in *Major cities* is 1.3 for diabetes.

However, while Tables 7.1 and 7.2 allow comparisons across similarly defined outcomes and geographic areas, the aggregation of *Outer regional* with *Remote* areas may mask important differences. The picture is also incomplete because it leaves out those living in *Very remote* areas, since those data were not collected in the AHS.

Table 7.1. Health-related characteristics by remoteness for all Australians (excluding those living in Very remote areas), 2011–13

| Characteristic | % of all Australians (2011–13 AHS) | | | |
|--|------------------------------------|----------------|-------------------------|-------------|
| | Major cities | Inner regional | Outer regional & Remote | Total |
| Risk factors | | | | |
| Overweight/obese ^(a) | 60.2 | 68.7 | 69.5 | 62.8 |
| Current daily smoker ^(a) | 14.7 | 18.4 | 22.4 | 16.1 |
| Health conditions | | | | |
| High/very high psychological distress (K-10) ^{(a)(b)} | 10.6 | 11.4 | 10.8 | 10.8 |
| Diabetes mellitus | 4.5 | 5.1 | 4.9 | 4.6 |
| Heart, stroke and vascular disease | 4.6 | 5.6 | 5.9 | 5.0 |
| Health service use | | | | |
| Consulted GP in last 2 weeks | 20.8 | 19.7 | 19.5 | 20.4 |
| Admitted to hospital in last 12 months | 11.3 | 13.2 | 11.7 | 11.8 |

(a) Aged 18 and over.

(b) From COAG Reform Council 2013.

Source: ABS 2011–13 AHS.

Table 7.2. Health related characteristics by remoteness for Indigenous Australians (excluding those living in Very remote areas), 2012–13

| Characteristic | % of Indigenous Australians (2012–13 AATSIHS) | | | Total |
|--|---|----------------|-------------------------|-------------|
| | Major cities | Inner regional | Outer regional & Remote | |
| Risk factors | | | | |
| Overweight/obese ^(a) | 65.4 | 70.1 | 66.0 | 65.6 |
| Current daily smoker ^(a) | 36.2 | 40.9 | 41.9 | 41.0 |
| Health conditions | | | | |
| High/very high psychological distress (K-10) ^{(b)(c)} | 32.1 | 30.4 | 30.8 | 30.1 |
| Diabetes mellitus ^(d) | 6.9 | 6.5 | 9.1 | 8.2 |
| Heart, stroke and vascular disease ^(e) | 10.6 | 11.7 | 12.4 | 12.0 |
| Health service use | | | | |
| Consulted GP in last 2 weeks ^(f) | 24.4 | 21.4 | 20.8 | 21.9 |
| Admitted to hospital in last 12 months | 18.3 | 17.2 | 16.6 | 18.0 |

(a) Aged 15 and over.

(b) Aged 18 and over.

(c) From COAG Reform Council (2013).

(d) The AATSIHS refers to diabetes/high sugar levels.

(e) The AATSIHS refers to heart and circulatory problems.

(f) The AATSIHS includes specialists along with GPs.

Source: ABS 2013a.

Table 7.3 presents more detailed data for Indigenous Australians by remoteness and includes those living in *Very remote* areas.

This shows that smoking rates and the prevalence of diabetes and heart conditions are highest among those living in *Remote* or *Very remote* areas. There is no clear gradient of use of health services across the 5 remoteness categories.

In contrast, the lowest rates of overweight and obesity for Indigenous Australians were found among those living in *Very remote* areas. Levels of high or very high psychological distress and the proportion of Indigenous Australians reporting asthma were also lowest for those living in *Remote* or *Very remote* areas.

Table 7.3. Health-related characteristics by remoteness, Indigenous Australians (2012–13 AATSIHS)

| Characteristic | % of Indigenous Australians | | | | | Total |
|---|-----------------------------|----------------|----------------|--------|-------------|-------------|
| | Major cities | Inner regional | Outer regional | Remote | Very Remote | |
| Risk factors | | | | | | |
| Overweight/obese | 65.4 | 70.1 | 66.2 | 65.6 | 58.8 | 65.6 |
| Current daily smoker | 36.2 | 40.9 | 39.8 | 47.4 | 51.1 | 41.0 |
| Health conditions | | | | | | |
| High/very high psychological distress (K-10) | 32.1 | 30.4 | 33.3 | 24.8 | 23.0 | 30.1 |
| Asthma | 21.1 | 20.8 | 15.8 | 13.7 | 7.8 | 17.5 |
| Diabetes/high sugar levels | 6.9 | 6.5 | 8.9 | 9.7 | 12.1 | 8.2 |
| Heart and circulatory problems | 10.6 | 11.7 | 10.0 | 19.1 | 15.7 | 12.0 |
| Health service use | | | | | | |
| Consulted GP/specialist in last 2 weeks | 24.4 | 21.4 | 19.9 | 23.6 | 18.5 | 21.9 |
| Consulted other health professional in last 2 weeks | 20.2 | 16.5 | 16.0 | 14.8 | 23.7 | 18.5 |
| Admitted to hospital in last 12 months | 18.3 | 17.2 | 16.6 | 16.6 | 21.5 | 18.0 |

Source: ABS 2013a.

How does access to, and use of, health services vary by remoteness and Indigenous status?

Information on service access and use gleaned from survey data can be limited due to the infrequency in which the surveys are conducted, their sample size, and individuals' imperfect recall and interpretation of survey questions. Another potential source of information is data collected by health service providers. Data sets collected in the course of health service delivery can facilitate comparisons of patterns by remoteness and Indigenous status. Depending upon the data set, the benefits of this type of data are consistency in the measurement of the outcome of interest and large enough numbers to disaggregate the Indigenous and non-Indigenous populations.

An important contributor to population health is the availability and accessibility of health services. For example, high quality primary health care services (see Chapter 8 'Primary health care in Australia') are essential for preventive care and screening, managing acute and chronic illnesses, and providing a link to specialist services. These services are delivered by a range of practitioners (for example, general practitioners, dentists, nurses, Aboriginal Health Workers) across a variety of locations (for example, community health centres, general practices, and allied health practices). A lack of access to primary health care services in areas with geographically dispersed populations (such as *Remote* and *Very remote* areas) may therefore affect the overall health and wellbeing of the populations living in those areas.

General practitioner services

General practitioners (GPs) play an important role in the delivery and coordination of health care in Australia. In 2012–13, 84% of Australians had consulted a GP at least once in the previous year (ABS 2013a). This section presents information on access to general practitioners by Indigenous status and remoteness. It is important to note, however, that there are other types of primary health care services delivered by health professionals other than GPs, particularly in remote Australia, which both Indigenous and non-Indigenous Australians use. Examples include some services delivered by Aboriginal Community Controlled Health Services, and Aboriginal Medical Services.

Recent data show that the proportion of Australians who reported being able to access an 'urgent' appointment with a GP within 4 hours was higher in *Major cities* (66.5%) than in other areas (57.3%). The proportion of Australians who delayed or did not see a general practitioner due to cost was 5.4% in 2012–13, with the lowest rates being in *Major cities* (5.1%) and higher rates of approximately 6.2% across regional and remote areas (ABS 2013b).

Directly comparable results are not available for Indigenous Australians. However, AATSIHS data indicate that 12.3% of Indigenous Australians living in remote areas reported that they have difficulty accessing doctors, compared with 8.6% of Indigenous Australians in non-remote areas (ABS 2013a). In a reverse of the situation for all Australians, cost of health services was more likely to be cited as a problem for Indigenous Australians in non-remote areas (37.5%) compared with those in remote areas (16.5%).

Area-based index of access to GPs relative to needs

The AIHW is developing an index that captures the extent to which the Indigenous, non-Indigenous and total populations of small geographic areas have access to health care relative to their health needs. (The areas are known as Statistical Area Level 1, or SA1s.)

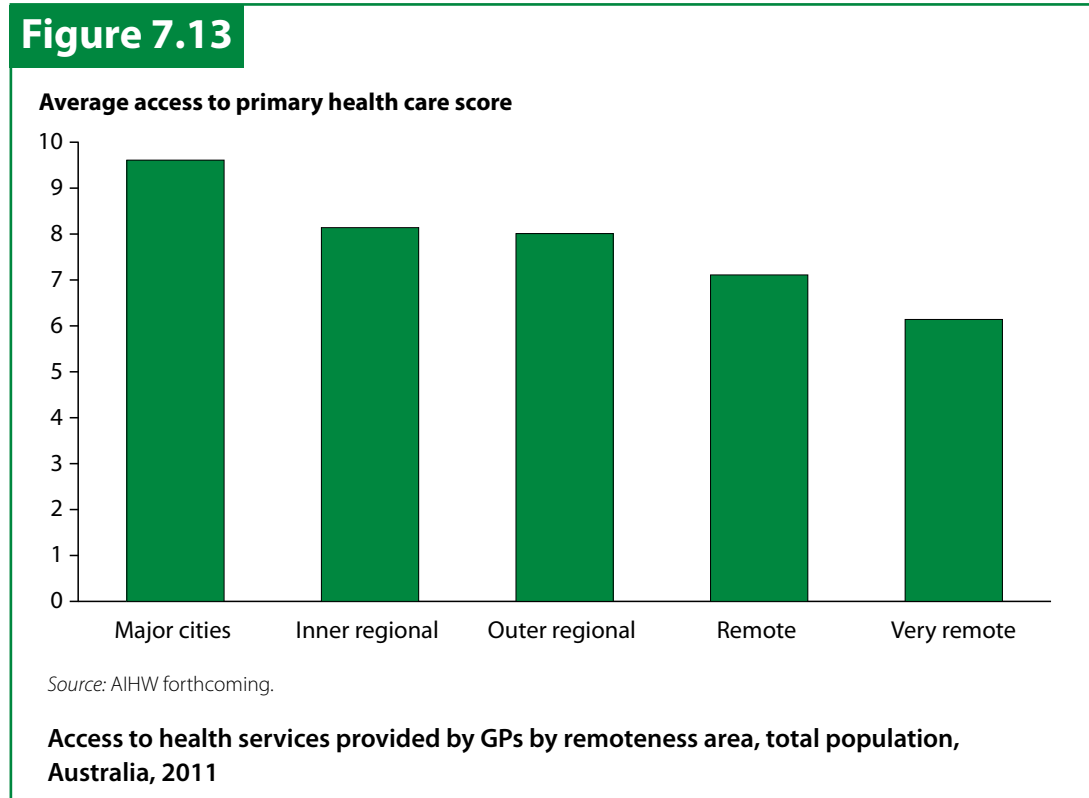
This index applies to access to GP services only at this stage (as noted earlier, there are other types of providers delivering primary health care services, especially in remote areas). The index is based on methodology developed by McGrail and Humphreys (2009), and uses the physical (geospatial) locations of health services and the populations they serve, the number of GPs working at each service location, and the size and specific health needs of the 3 population groups in each SA1 (AIHW 2014).

Access is determined by considering estimated drive times between GP service locations and SA1 centroids (centre points), as well as the number of GPs working at each service location. Access is considered 'unhindered' by distance for travel times up to 10 minutes, gradually declining to 'no access' for travel times greater than 60 minutes.

The estimated demand for primary health care in each SA1 population is based on the size of the population and its per capita health needs, the latter determined by known associated demographic and socioeconomic predictors.

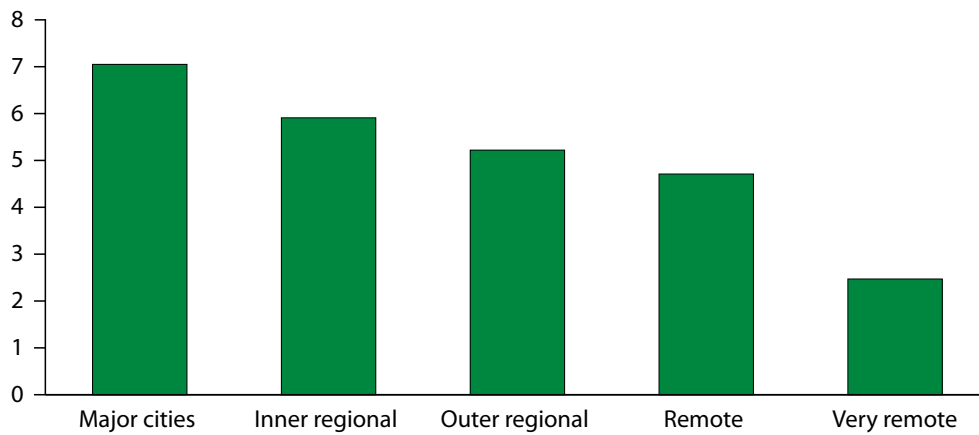
It is important to note that service availability is only 1 aspect, albeit a major aspect, of accessibility—the extent to which available services are used is also important, and whether this varies by remoteness and Indigenous status. This in turn can depend on potential barriers to access such as the cultural competence of services or variations in individual access to public transport—which the index does not take into account.

Figure 7.13 presents average scores for access to health-care services provided by GPs for all SA1s in each remoteness area. Higher values represent better access to GP services taking both travel time and competition from other populations using the same GPs into account. The results show that, as expected, the best access is in the *Major cities* and the worst access is in *Very remote* areas.



The access relative to needs index, which incorporates information on need as well as access, as described earlier, can be calculated separately for Indigenous and non-Indigenous populations. Again, higher values represent better access to services relative to health needs.

The average access relative to health needs index scores for Indigenous Australians (see Figure 7.14) are highest in *Major cities* and lowest (by a pronounced margin) in *Very remote* areas. A similar pattern was found for the non-Indigenous population, except for a less pronounced decline in access relative to needs in *Very remote* areas, due to the relatively lower health needs of the non-Indigenous population in these areas.

Figure 7.14**Average access relative to need index score**

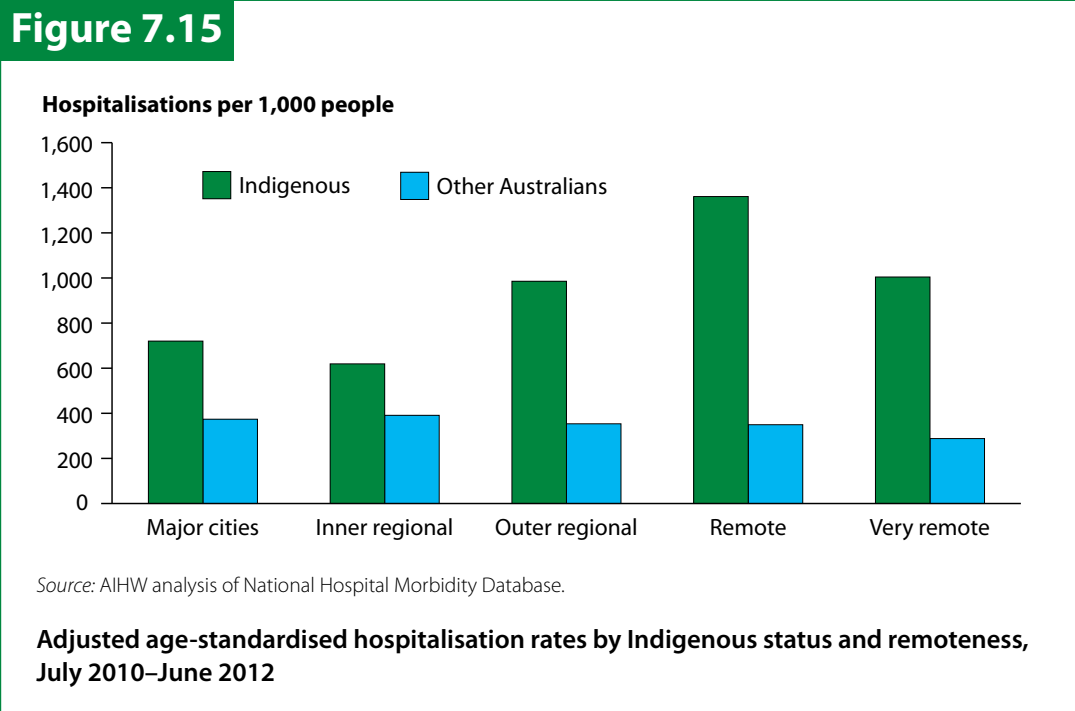
Source: AIHW forthcoming.

Index of access to GPs relative to need, Indigenous Australians, 2011**Hospitalisations**

The most recent data from the AIHW National Hospital Morbidity Database (see Chapter 8 'Overview of public and private hospitals') show that there is great variation in total hospitalisation rates (including dialysis) by remoteness for the Indigenous population. Between July 2010 and June 2012, after adjusting for differences in Indigenous under-identification in hospital separations data (AIHW 2013), the highest hospitalisation rates for Indigenous Australians were for those living in *Remote* areas, followed by those living in *Very remote* areas and *Outer regional* areas (they may have been hospitalised in *Major cities*, but live in these areas) (Figure 7.15). The rates of hospitalisation for Indigenous Australians living in *Remote* areas were 1.9 as high as for Indigenous Australians living in *Major cities*.

There is much less variation by remoteness for hospitalisation rates for non-Indigenous Australians, and the pattern is different with the lowest rates recorded in *Very remote* and *Remote* areas.

Analyses of hospitalisation rates by principal diagnoses suggest that there are regional differences in the most common conditions for which Indigenous Australians are hospitalised. For example, Indigenous Australians in *Remote* and *Very remote* areas have higher rates of hospitalisation for injuries, infectious diseases, dialysis, respiratory illnesses, circulatory conditions, and skin-related conditions compared with Indigenous Australians living in *Major cities*. Hospitalisation rates are lower for Indigenous Australians in *Remote* and *Very remote* areas for mental and behavioural disorders, cancer, diseases of the nervous system, and congenital anomalies, compared with Indigenous Australians living in *Major cities*.



Hospitalisations for potentially preventable conditions

While total hospitalisation rates provide information on service use and are thus a measure of met need for services, a subset of hospitalisations provide an indirect indicator of the lack of access to, or use of, primary care services. Admissions for potentially preventable conditions reflect hospitalisations that might have been prevented through the timely and appropriate provision and use of primary care or other non-hospital services (Li et al. 2009). It is important to note that hospitalisations for potentially preventable conditions are not a direct measure of the effectiveness of primary health care; however, comparisons of this indicator between population groups and geographic areas provide useful information for improvements in factors such as prevention or treatment of conditions.

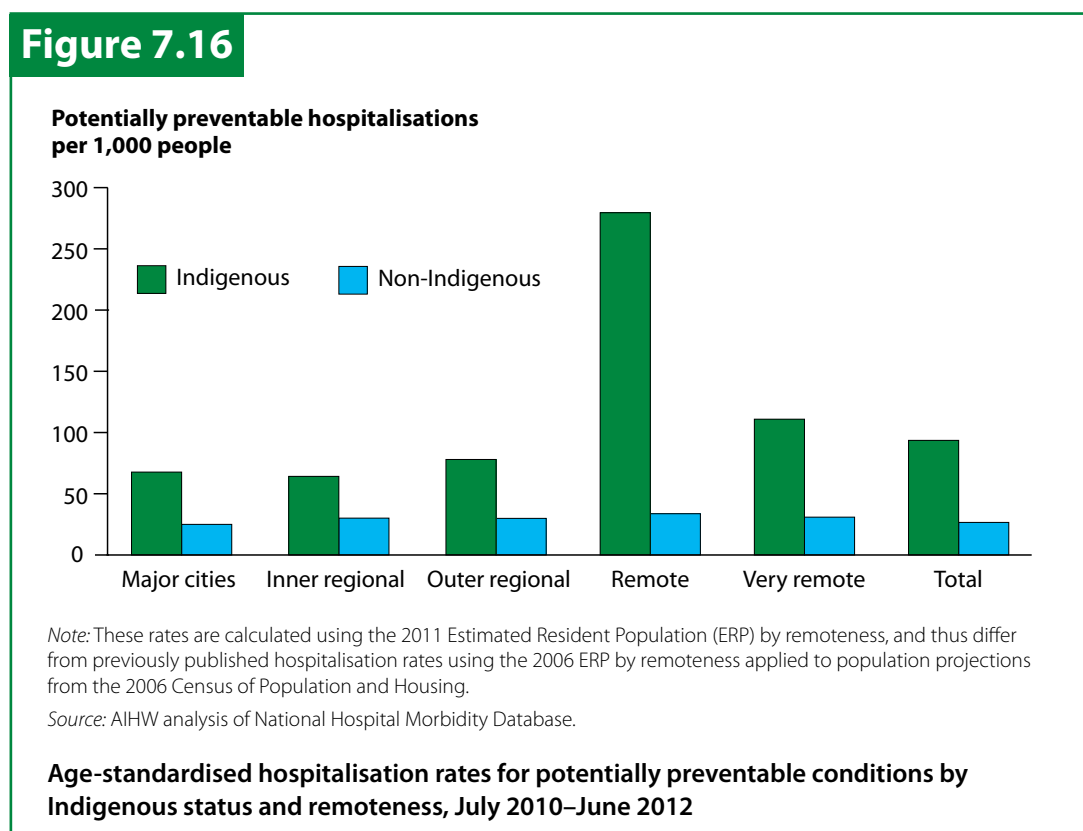
Hospitalisations for potentially preventable conditions include hospitalisations for vaccine-preventable diseases (such as influenza and pneumonia), those for chronic conditions (such as asthma, congestive heart failure and diabetes), and those for acute conditions (such as dehydration and gastroenteritis).

Data from the AIHW National Hospital Morbidity Database show that between July 2010 and June 2012 there were 81,516 hospitalisations for potentially preventable conditions for Indigenous Australians, which equates to 11.7% of all Indigenous hospitalisations. This percentage is 1.6 times that of non-Indigenous Australians (7.2%).


The highest proportion of hospitalisations for potentially preventable conditions for Indigenous Australians was in *Major cities* (23.9%), followed by *Remote* areas (22.6%). The highest proportion of hospitalisations for potentially preventable conditions was also in *Major cities* for non-Indigenous Australians, although the proportion was much higher (65.3%).

Figure 7.16 demonstrates that, overall, the age-standardised hospitalisation rate for potentially preventable conditions is 3.5 times as high for Indigenous Australians as non-Indigenous Australians. The rates vary considerably for the Indigenous population by remoteness, with much higher rates for *Remote* and *Very remote* areas. There is less variation for the non-Indigenous population, but the highest rates are still found in *Remote* areas.

Figure 7.16



For the Indigenous population, the likelihood of a potentially preventable hospitalisation is 4.3 times as high for those in *Remote* areas compared with those in *Major cities*. For the non-Indigenous population, the highest rate is only 1.4 times as high (for those in *Remote* areas compared with those in *Major cities*). Therefore, it appears that remoteness has a stronger impact for the Indigenous population than for the non-Indigenous population, although some of the effect may be due to under-identification of Indigenous status in hospitalisation data in *Major cities*.



The results of an additional statistical analysis by AIHW showed that the odds that a hospitalisation was potentially preventable was 1.5 times as high for Indigenous Australians compared with non-Indigenous Australians (even after controlling for the age, sex, and remoteness of the person who was hospitalised). Indigenous status therefore appears to have a larger effect than remoteness on whether a hospitalisation was for a potentially preventable condition.

What's missing from the picture?

One of the difficulties in examining whether the patterns of Indigenous and non-Indigenous Australians' health behaviours/outcomes by remoteness status are similar is a lack of comparable data. Data on health-related behaviours/risk factors and the prevalence of particular conditions are collected through national surveys, but some questions differ for the populations, the data are not reported by detailed remoteness categories, or results are reported for different age groups.

The AIHW is working on comprehensive analyses to estimate the impact of remoteness on gaps between the Indigenous and non-Indigenous populations in terms of disability prevalence, disability service use, and reasons for hospitalisation. We will also be examining differences within remoteness categories, as not all *Remote* or *Very remote* areas are the same.


Where do I go for more information?

More information on the gap in health status between Indigenous and non-Indigenous Australians is available at www.aihw.gov.au/indigenous-observatory where recent publications are available for free download.

Information on the quality of Indigenous identification in hospitalisation data can be found in the following AIHW report: [Indigenous identification in hospital separations data: quality report](#).

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