

1.07 High blood pressure

The prevalence of high blood pressure/hypertension among Aboriginal and Torres Strait Islander Australians expressed as a rate by age group, age-standardised rate and ratio

Data sources

Data for this measure come from the National Aboriginal and Torres Strait Islander Health Survey, the Bettering the Evaluation and Care of Health survey and the Australian Institute of Health and Welfare (AIHW) National Hospital Morbidity Database.

National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)

The 2004–05 NATSIHS collected information from 10,439 Indigenous Australians of all ages. This sample was considerably larger than the supplementary Indigenous samples in the 1995 and 2001 National Health Surveys. The survey was conducted in remote and non-remote areas of Australia and collected a range of information from Indigenous Australians. This included issues of health-related actions, health risk factors, health status, socioeconomic circumstances and women's health. The survey provides comparisons over time in the health of Indigenous Australians. It is planned to repeat the NATSIHS at 6-yearly intervals, with the next NATSIHS to be conducted in 2011–12. Selected non-Indigenous comparisons are available through the 2004–05 National Health Survey (NHS).

Bettering the Evaluation and Care of Health (BEACH) survey

Information about encounters in general practice is available from the BEACH survey, which the AIHW Australian General Practice Statistics and Classification Unit conducts.

Information is collected from a random sample of approximately 1,000 general practitioners (GPs) from across Australia each year. A sample of 100 consecutive GP–patient encounters is collected from each GP. A more detailed explanation of the BEACH methods can be found in *General practice activity in Australia 2008–09* (Britt et al. 2009).

The number of Indigenous patients identified in the BEACH survey is likely to be underestimated because some GPs might not ask the question on Indigenous status, or the patient may choose not to identify themselves (AIHW 2002). Further detailed analyses of this issue are covered in *General practice in Australia, health priorities and policies 1998–2008*, (Britt & Miller 2009:101).

'The findings of a BEACH substudy confirmed this suspected under-identification. In the data period reported here, 1.4% of patients encountered identified themselves as Indigenous. In contrast, in a BEACH substudy that asked 9,245 patients a complete set of questions about their cultural background (including Indigenous status) 2.2% (95% CI: 1.6–2.9) of respondents identified themselves as Indigenous (Britt et al. 2007). This rate is similar to the ABS estimates of Indigenous Australians as a proportion of the total population (ABS 2006).

However, the BEACH substudy included Indigenous Australians seen at Community Controlled Health Services funded through Medicare claims, and the estimate of 2.2% could have been an overestimate for the proportion of encounters that are with

Indigenous patients in general practice as a whole. Deeble et al. (2008) conducted further investigations on this data and estimated that the BEACH encounter identification was an underestimate of about 10%, and that a more reliable estimate of the Indigenous population would be about 1.6% of all encounters (Deeble et al. 2008).

The findings of these studies are that some GPs are not routinely asking patients at the encounter about their Indigenous status, even when this is a variable specifically collected for each patient encountered, as it is in BEACH encounter data.'

Before the late inclusion of a 'not stated' category of Indigenous status in 2001–02, 'not stated' responses were included with non-Indigenous encounters. Since then, GP encounters for which Indigenous status was not reported have been included with encounters for non-Indigenous people under the 'other' category.

Data are presented for the 5-year period 2004–05 to 2008–09, during which there were 6,137 GP encounters with Aboriginal and Torres Strait Islander patients recorded in the survey, representing 1.3% of total GP encounters in the survey.

National Hospital Morbidity Database

The National Hospital Morbidity Database is a compilation of episode-level records from admitted patient morbidity data collection systems in Australian hospitals in each state and territory. State and territory health departments provide information annually on the characteristics, diagnoses and care of admitted patients in public and private hospitals to the AIHW.

Data are presented for the six jurisdictions that the AIHW has assessed as having adequate identification of Indigenous hospitalisations in 2006–08 – New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory. These six jurisdictions represent approximately 96% of the Indigenous population of Australia. Data are presented by state/territory of usual residence of the patient.

In the period 2007–08, there were 276,000 hospital separations (episodes of care for admitted patients) for Aboriginal and Torres Strait Islander patients, around 3.5% of all separations. The proportion of separations of Aboriginal and Torres Strait Islander persons was higher in public hospitals (5.4% or 256,425 separations) compared with private hospitals (0.6% or 20,015 separations). Of all Aboriginal and Torres Strait Islander separations, nearly 93% occurred in public hospitals (AIHW 2009).

Hospitalisations for which the Indigenous status of the patient was not reported have been included with hospitalisations data for non-Indigenous people under the 'other' category. This is to enable consistency across jurisdictions, as public hospitals in some states and territories do not have a category for the reporting of 'not stated' or inadequately recorded/reported Indigenous status.

Hospitalisation data are presented for the 2-year period from July 2006 to June 2008. An aggregate of 2 years of data has been used, as the number of hospitalisations for some conditions is likely to be small for a single year.

The principal diagnosis is the diagnosis established to be the problem that was chiefly responsible for the patient's episode of care in hospital. The additional diagnosis is a condition or complaint either coexisting with the principal diagnosis or arising during the episode of care. The term 'hospitalisation' has been used to refer to a separation which is the episode of admitted patient care. This can include a total hospital stay (from admission to

discharge, transfer or death) or a portion of a hospital stay beginning or ending in the change in the type of care (for example, from acute to rehabilitation). 'Separation' also means the process by which an admitted patient completes an episode of care by being discharged, dying, transferring to another hospital or changing type of care.

Analyses

Age-standardised rates and ratios have been used as a measure of morbidity in the Indigenous population relative to other Australians. Ratios of this type illustrate differences between the rates of morbidity among Indigenous people and those of other Australians, taking into account differences in age distributions.

Self-reported prevalence

Self-reported data from the NATSIHS and NATSISS on the prevalence of high blood pressure/ hypertension among Indigenous Australians are presented in tables 1.07.1, 1.07.2, 1.07.3 and 1.07.4.

- In 2004–05, approximately 7% of Indigenous Australians reported high blood pressure/hypertension.
- After adjusting for differences in age structures, approximately 14% of Indigenous males and 16% of Indigenous females reported high blood pressure/ hypertension compared with 10% of both non-Indigenous males and females.
- High blood pressure/ hypertension was most prevalent among those aged 55 years and over for both population groups. Approximately 39% of Indigenous males and 46% of Indigenous females reported high blood pressure/hypertension in this age group compared with 32% and 36% of non-Indigenous males and females respectively (Table 1.07.1).
- In 2004–05, the prevalence of high blood pressure/ hypertension was higher among Indigenous Australians in remote areas (10% for both males and females) than among Indigenous Australians in non-remote areas (6% for males and 7% for females).
- There was no significant change in the prevalence of high blood pressure/hypertension among Indigenous Australians between 2001 and 2004–05 (Table 1.07.2).
- In 2008, 14% of Indigenous children aged 0–3 years had mothers who had high blood pressure during pregnancy. This proportion was lowest in Queensland (8%) and highest in the Australian Capital Territory (21%) (Table 1.07.3).
- In 2008, the proportion of Indigenous children aged 0–3 years with mothers who had high blood pressure during pregnancy was higher in remote areas (16%) than non-remote areas (14%) (Table 1.07.4).

Table 1.07.1: Persons reporting high blood pressure/ hypertension, by Indigenous status, sex and age group, 2004–05^(a)

Age group	Males		Females		Persons		Ratio (persons)
	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	Indigenous	Non-Indigenous	
	Per cent						
0–14	— ^(b)	— ^(b)	— ^(b)	— ^(b)	— ^(c)	— ^(b)	0.8
15–24	1 ^(b)	— ^(b)	1 ^(c)	— ^(b)	1 ^(c)	— ^(c)	2.1
25–34	4	3	5 ^{*(c)}	2 ^{*(c)}	5*	2*	2.3
35–44	14*	6*	11*	4*	12*	4*	2.7
45–54	22	15	24*	13*	22*	14*	1.6
55 years and over	39	32	46*	36*	42*	33*	1.2
Total	7	10	8	12	7	11	0.7
Total standardised^(d)	14*	10*	16*	10*	15*	10*	1.5
Total number	232,632	9,600,405	241,948	9,691,973	474,310	19,292,387	..

* Statistically significant differences in the Indigenous/non-Indigenous comparisons.

(a) Self-reported data from the National Aboriginal and Torres Strait Islander Health Survey 2004–05 and the National Health Survey 2004–05 consisting of persons ever told has condition, still current and long term, and ever told has condition, current and not long term.

(b) Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.

(c) Estimate has a relative standard error of 25% to 50% and should be used with caution.

(d) Age-standardised proportions.

Source: ABS and AIHW analysis of 2004–05 National Aboriginal and Torres Strait Islander Health Survey and 2004–05 National Health Survey.

Table 1.07.2: Indigenous persons reporting high blood pressure/ hypertension, by sex and remoteness, 1995, 2001 and 2004–05

	1995 ^(a)		2001		2004–05	
	Males	Females	Males	Females	Males	Females
	Per cent					
Remote	n.a.	n.a.	7	10	10	10
Non-remote	15	16	5	7	6	7
Total	n.a.	n.a.	6	8	7	8
Total number	131,616	133,800	217,893	225,012	232,362	241,948

(a) Remote data are not available for the 1995 National Health Survey.

Sources: ABS and AIHW analysis of ABS 1995 National Health Survey (Indigenous supplement); 2001 National Health Survey (Indigenous supplement); 2004–05 National Aboriginal and Torres Strait Islander Health Survey.

Table 1.07.3: Number and proportion of Indigenous children aged 0–3 years whose mother had high blood pressure during pregnancy, by state/territory, 2008

	Number	Proportion
NSW	2,702	17.4
Vic	486	14.8
Qld	1,337	8.4
WA	1,268	20.1
SA	425	16.0
Tas	302	16.7
ACT	88*	21.0*
NT	688	13.5
Total	7,295	14.3

* Estimate has a relative standard error between 25% and 50% and should be used with caution.

Note: Proportions exclude not known and not collected responses.

Source: 2008 NATSISS.

Table 1.07.4: Number and proportion of Indigenous children aged 0–3 years whose mother had high blood pressure during pregnancy, by Remoteness Area, 2008

	Number	Proportion
Major cities	1,956	11.7
Inner regional	2,177	17.5
Outer regional	1,459	13.1
<i>Total non-remote</i>	<i>5,593</i>	<i>13.9</i>
Remote	735	17.3
Very remote	968	14.7
<i>Total remote</i>	<i>1,702</i>	<i>15.7</i>
Total	7,295	14.3

Note: Proportions exclude not known and not collected responses.

Source: 2008 NATSISS.

Hospitalisations

- In the 2-year period July 2006 to June 2008 there were 14,434 hospitalisations for hypertensive disease in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined, of which 469 (3.2%) were hospitalisations of Aboriginal and Torres Strait Islander people (Table 1.07.6).
- Hospitalisations for hypertensive disease accounted for 0.2% of total hospitalisations of Aboriginal and Torres Strait Islander people.

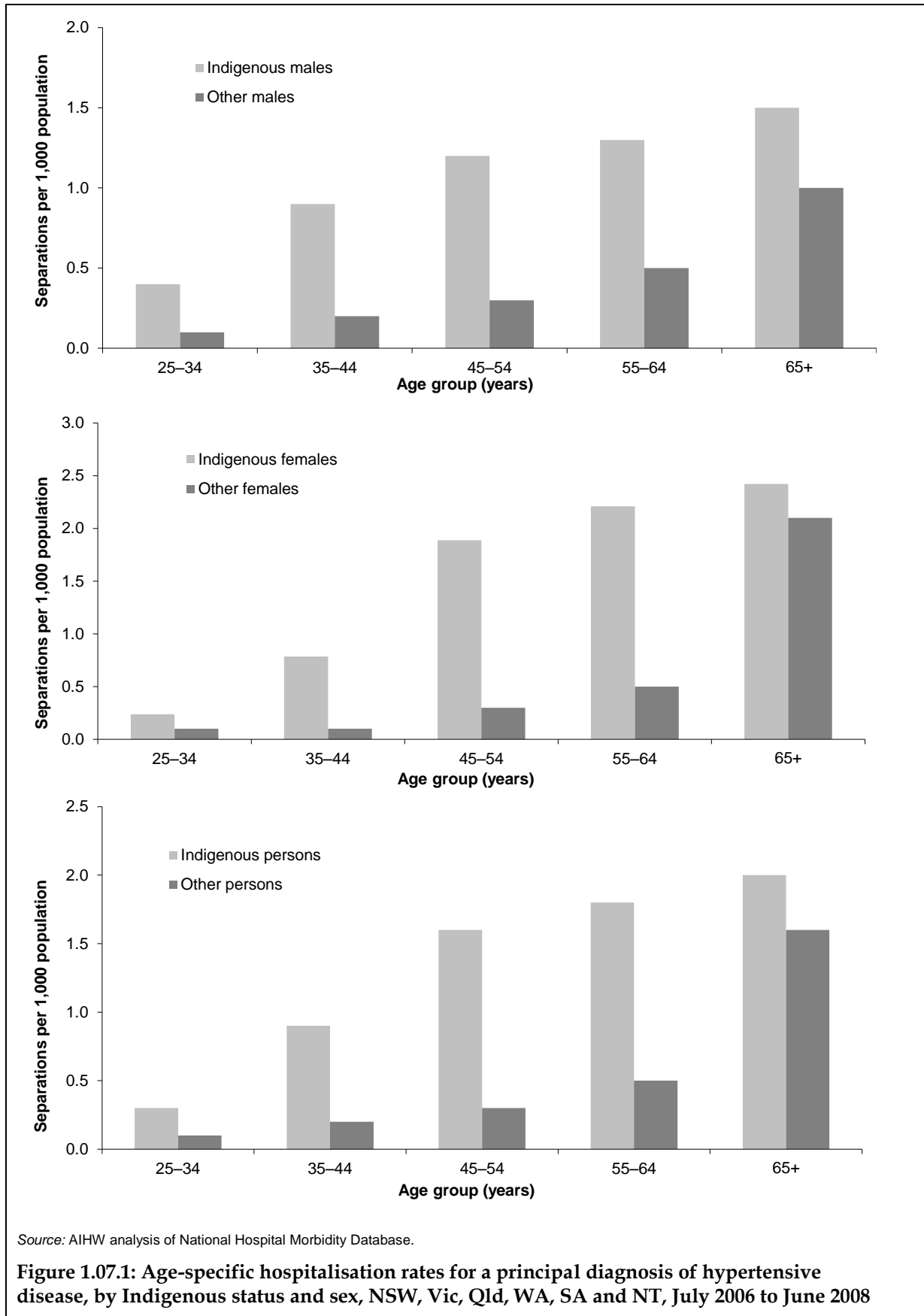
Hospitalisations by age and sex

- For the two-year period July 2006 to June 2008, in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory, Indigenous males and females had higher hospitalisation rates for hypertensive disease than other males and females from age 15-24 years onwards (Table 1.07.5 and Figure 1.07.1).
- The greatest difference in rates for males occurred in the 35-44 and 45-54 year age groups where Indigenous males were hospitalised at between four and five times the rate of other males. For Indigenous females, the greatest difference in hospitalisation rates was among those aged 35-44, 45-54 and 55-64 where Indigenous females were hospitalised at eight, six and four times the rate of other females, respectively (Table 1.07.5).
- For both Indigenous and other Australian males and females, hospitalisation rates for hypertensive disease were highest in the age group 65 years and over.
- Approximately 43% of Indigenous Australians hospitalised for hypertensive disease were males (200) and 57% were females (269) (Table 1.07.6).

Table 1.07.5: Age-specific hospitalisation rates for a principal diagnosis of hypertensive disease, by Indigenous status and sex, NSW, Vic, Qld, WA, SA and NT, July 2006 to June 2008

	Separations per 1,000 population							
	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65+
Males								
Indigenous	—	—	0.1	0.4	0.9	1.2	1.3	1.5
Other	—	—	—	0.1	0.2	0.3	0.5	1.0
Females								
Indigenous	—	—	0.1	0.2	0.8	1.9	2.2	2.4
Other	—	—	—	0.1	0.1	0.3	0.5	2.1
Persons								
Indigenous	—	—	0.1	0.3	0.9	1.6	1.8	2.0
Other	—	—	—	0.1	0.2	0.3	0.5	1.6

Source: AIHW analysis of National Hospital Morbidity Database.



Overall hospitalisation rates

Table 1.07.6 presents hospitalisations for the 2-year period July 2006 to June 2008 for New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined.

- In New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined, there were around 2.6 times as many hospitalisations for hypertensive disease among Indigenous males and females as would be expected, based on the rates for other males and females.

Table 1.07.6: Hospitalisations of Indigenous persons for principal diagnosis of hypertensive disease, by sex, NSW, Vic, Qld, WA, SA and NT, Tas and ACT, July 2006 to June 2008 ^{(a)(b)(c)(d)(e)}

	Indigenous				Other ^(f)				Ratio ^(j)
	Number	No. per 1,000 ^(g)	LCL 95% ^(h)	UCL 95% ⁽ⁱ⁾	Number	No. per 1,000 ^(g)	LCL 95% ^(h)	UCL 95% ⁽ⁱ⁾	
NSW, Vic, Qld, WA, SA & NT^(k)									
Males	200	0.7	0.6	0.8	5,254	0.3	0.3	0.3	2.6 [*]
Females	269	1.0	0.8	1.1	8,710	0.4	0.4	0.4	2.5 [*]
Persons	469	0.8	0.8	0.9	13,965	0.3	0.3	0.3	2.6 [*]
Australia^(l)									
Males	204	0.7	0.6	0.8	5,463	0.3	0.3	0.3	2.6 [*]
Females	274	0.9	0.8	1.1	9,016	0.4	0.4	0.4	2.5 [*]
Persons	478	0.8	0.7	0.9	14,480	0.3	0.3	0.3	2.5 [*]

* Represents results with statistically significant differences in the Indigenous/other comparisons at the $p < 0.05$ level.

- (a) Data are from public and most private hospitals. Jurisdictional data excludes private hospitals in the Northern Territory.
- (b) Categories are based on the ICD-10-AM 5th edition (National Centre for Classification in Health 2006); ICD-10-AM codes I10–I15.
- (c) Financial year reporting.
- (d) Data are reported by state/territory of usual residence of the patient hospitalised.
- (e) Age-standardised rates for New South Wales, Victoria, Queensland, Western Australia, South Australia, the Northern Territory and Australia have been calculated using the direct method, age standardised by 5-year age group to 75+. Age standardised rates for Tasmania and the Australian Capital Territory have been calculated using the direct method, age standardised by 5-year age group to 65+.
- (f) 'Other' includes hospitalisations of non-Indigenous people and those for whom Indigenous status was not stated.
- (g) Directly age-standardised using the Australian 2001 standard population.
- (h) LCL = lower confidence limit.
- (i) UCL = upper confidence limit.
- (j) Rate ratio Indigenous: other.
- (k) New South Wales, Victoria, Western Australia, South Australia, the Northern Territory and Queensland are considered to have adequate levels of Indigenous identification, although the level of accuracy varies by jurisdiction and hospital. Hospitalisation data for these six jurisdictions should not be assumed to represent the hospitalisation experience in the other jurisdictions.
- (l) Includes all separations in all eight states and territories, including the Australian Capital Territory and Tasmania; Other Territories and Residence State not applicable (e.g. overseas, at sea, no fixed address).

Notes:

1. Indigenous rates are calculated using population estimates based on the 2006 Census (SERIES B).
2. Care types 7.3, 9 & 10 (Newborn – unqualified days only; organ procurement; hospital boarder) excluded from analysis.

Source: AIHW analysis of National Hospital Morbidity Database.

Hospitalisations by remoteness

Hospitalisation rates for hypertensive disease in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined are presented by Australian Standard Geographical Classification (ASGC) in Table 1.07.7, covering the period July 2007 to June 2009.

- Indigenous Australians in all ASGC areas except *Very remote* areas were more likely to be hospitalised for hypertensive disease than other Australians. The ratio of hospitalisations of Indigenous people compared to other Australians was higher and the difference was statistically significant for all ASGC areas except *Very remote* areas.
- Rates of hospitalisations per 1,000 people were highest for Indigenous people living in *Remote* areas, at 1.4 per 1,000. The rate was highest for other Australians who lived in *Very remote* areas, at 1.0 per 1,000. The lowest rates were observed in *Major cities* for both Indigenous people (0.4 per 1,000) and other Australians (0.3 per 1,000).
- Indigenous people were hospitalised for these conditions at a rate of 2.1 times that of other Australians in *Remote* areas of Australia. In *Very remote* areas, where the lowest ratio was observed, Indigenous Australians were hospitalised at a rate of 0.8 times that of other Australians. In these states combined, the rate was 2.5 times.

Table 1.07.7: Hospitalisations for hypertensive disease, by Indigenous status and remoteness, NSW, Vic, Qld, WA, SA and NT, July 2007 to June 2009^{(a)(b)(c)(d)(e)(f)}

	Indigenous				Other ^(g)				Ratio ^(k)
	Number	No. per 1,000 ^(h)	LCL 95% ⁽ⁱ⁾	UCL 95% ⁽ⁱ⁾	Number	No. per 1,000 ^(h)	LCL 95% ⁽ⁱ⁾	UCL 95% ⁽ⁱ⁾	
Major cities	70	0.4	0.3	0.5	7,483	0.3	0.3	0.3	1.5*
Inner regional	104	1.0	0.8	1.2	3,359	0.4	0.4	0.4	2.5*
Outer regional ^(l)	136	1.2	0.9	1.4	2,197	0.6	0.5	0.6	2.0*
Remote	78	1.4	1.1	1.8	309	0.7	0.6	0.7	2.1*
Very remote	78	0.8	0.5	1.1	144	1.0	1.0	1.1	0.8
Total^(m)	466	0.8	0.8	0.9	13,500	0.3	0.3	0.3	2.5*

* Represents results with statistically significant differences in the Indigenous/other comparisons at the $p < 0.05$ level.

(a) Data are from public and most private hospitals. Jurisdictional data excludes private hospitals in the Northern Territory.

(b) Categories are based on the ICD-10-AM fifth edition (National Centre for Classification in Health 2006).

(c) Financial year reporting.

(d) Data are reported by state/territory of usual residence of the patient hospitalised.

(e) Age standardised rates for New South Wales, Victoria, Queensland, Western Australia, South Australia, the Northern Territory and Australia have been calculated using the direct method, age standardised by 5 year age group to 65+.

(f) New South Wales, Victoria, Western Australia, South Australia, the Northern Territory and Queensland are considered to have adequate levels of Indigenous identification, although the level of accuracy varies by jurisdiction and hospital. Hospitalisation data for these six jurisdictions should not be assumed to represent the hospitalisation experience in the other jurisdictions.

(g) 'Other' includes hospitalisations of non-Indigenous people and those for whom Indigenous status was not stated.

(h) Directly age-standardised using the Australian 2001 standard population.

(i) LCL = lower confidence limit.

(j) UCL = upper confidence limit.

(k) Rate ratio Indigenous: other.

(l) Outer regional includes remote Victoria.

(m) Total includes hospitalisations where ASGC is missing.

Notes:

1. Rates for Indigenous are calculated using the 2006 population estimates based on the 2006 Census (Series B).

2. Care types 7.3, 9 & 10 (Newborn – unqualified days only; organ procurement; hospital boarder) excluded from analysis.

Source: AIHW analysis of National Hospital Morbidity Database.

General practitioner encounters

Information about general practitioner (GP) encounters is available from the BEACH survey. Data for the 5-year BEACH reporting period April 2004–March 2005 to April 2008–March 2009 are presented in Table 1.07.8. Hypertension is among the top three most common individual problems managed at GP encounters with Aboriginal and Torres Strait Islander patients.

- In the BEACH period April 2004–March 2005 to April 2008–March 2009 there were a total of 6,137 GP encounters with Aboriginal and Torres Strait Islander patients recorded in the survey, at which 9,305 problems were managed. Of these, 405 (4.4% of all problems managed) were for hypertension.
- Hypertension was managed at GP encounters with Indigenous patients at a rate of 6.6 per 100 encounters.
- After adjusting for differences in age distribution, hypertension was managed at GP encounters at similar rates with both Indigenous and other patients.

Table 1.07.8: Hypertension^(a) managed by general practitioners, by Indigenous status, BEACH years April 2004–March 2005 to April 2008–March 2009^{(b)(c)}

	Number		Crude rate (no. per 100 encounters)						Age-standardised rate (no. per 100 encounters) ^(e)		
	Indigenous	Other ^(f)	Indigenous	95% LCL ^(g)	95% UCL ^(h)	Other ^(f)	95% LCL ^(g)	95% UCL ^(h)	Indigenous	Other ^(f)	Ratio ⁽ⁱ⁾
Males	178	19,566	2.9	2.4	3.4	4.1	4.0	4.2	6.8	7.0	1.0
Females	223	26,075	3.7	3.0	4.3	5.5	5.3	5.6	16.1	13.0	1.2
Persons	401⁽ⁱ⁾	45,641⁽ⁱ⁾	6.6	5.7	7.5	9.6	9.4	9.8	10.6	9.5	1.1

(a) ICD-10 codes: K86, K87.

(b) Data from five combined BEACH years April 2004–March 2005 to April 2008–March 2009 inclusive.

(c) Data for Indigenous and other Australians have not been weighted.

(d) Directly age-standardised rate (no. per 100 encounters). Figures do not add to 100 as more than one problem can be managed at each encounter.

(e) 'Other' includes non-Indigenous patients and patients for whom Indigenous status was not stated.

(f) LCL = lower confidence interval.

(g) UCL = upper confidence interval.

(h) Rate ratio Indigenous: other.

(i) Total excludes four cases where sex was not recorded.

(j) Total excludes 384 cases where sex was not recorded.

Source: AIHW analysis of BEACH survey of general practice, AGPSCC.

Data quality issues

National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)

The NATSIHS uses the standard Indigenous status question. The NATSIHS sample was specifically designed to select a representative sample of Aboriginal and Torres Strait Islander Australians. It therefore overcomes the problem inherent in most national surveys with small and unrepresentative Indigenous samples. As with other surveys, the NATSIHS is subject to sampling and non-sampling errors. Calculations of standard errors and significance testing help to identify the accuracy of the estimates and differences.

Information recorded in this survey is essentially 'as reported' by respondents. The ABS makes every effort to collect accurate information from respondents, particularly through careful questionnaire design, pre-testing of questionnaires, use of trained interviewers and assistance from Indigenous facilitators. Imperfect recall or individual interpretation of survey questions may nevertheless affect some responses.

Non-Indigenous comparisons are available through the National Health Survey (NHS). The NHS was conducted in major cities and regional and remote areas, but very remote areas were excluded from the sample. Time series comparisons are available through the 1995 and 2001 National Health Survey.

In remote communities there were some modifications to the NATSIHS content in order to accommodate language and cultural appropriateness in traditional communities and help respondents understand the concepts. Some questions were excluded and some reworded. Also, paper forms were used in communities in remote areas and computer-assisted interview (CAI) instruments were used in non-remote areas. The CAI process included built-in edit checks and sequencing.

Further information on NATSIHS data quality issues can be found in the NATSIHS 2004-05 publication (ABS 2006).

National Hospital Morbidity Database

Hospital separations data

Separations

Differing admission practices among the jurisdictions and from year to year, and differing levels and patterns of service delivery can affect the number and pattern of hospitalisations.

The proportion of Aboriginal and Torres Strait Islander separations in public hospitals increased over the 11-year period 1996-97 to 2007-08, from 3.7% to 5.4%. In private hospitals, it stayed around 0.2% to 0.3% until 2003-04, when there was a modest increase to 0.5%.

Indigenous status question

Some jurisdictions have slightly different approaches to the collection and storage of the standard Indigenous status question and categories in their hospital collections. The 'not stated' category is missing from several collections. It is recommended that the standard wording and categories be used in all jurisdictions (AIHW 2005).

'Not stated' responses to the Indigenous status question were around 1% in public hospitals and 4% in private hospitals in 2007-08. This is a reduction from 1998-99 when 2% of responses in public hospitals and 8% of responses in private hospitals had a 'not stated' Indigenous status (AIHW 2009).

Under-identification

The incompleteness of Indigenous identification means the number of hospital separations recorded as Indigenous is an underestimate of hospitalisations involving Aboriginal and Torres Strait Islander people. An estimated 89% of Indigenous patients were correctly

identified in Australian public hospital admission records in 2007–08. In other words, 11% of Indigenous patients were not identified, and the ‘true’ number of hospital admissions for Indigenous persons was about 12% higher than reported.

For several years, Queensland, South Australia, Western Australia and the Northern Territory reported that Indigenous status in their hospital separations data was of acceptable quality (AIHW 2007). The AIHW, however, has recently completed an assessment of the level of Indigenous under-identification in hospital data in all states and territories. Results from this assessment indicate that New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory have adequate Indigenous identification (80% or higher overall levels of Indigenous identification in public hospitals only) in their hospital separations data. For Tasmania and the Australian Capital Territory, the levels of Indigenous identification were not considered acceptable for analysis purposes. It has therefore been recommended that reporting of Indigenous hospital separations data be limited to information from New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory, individually or in aggregate. The proportion of the Indigenous population that these six jurisdictions cover is 96%.

The following caveats have also been recommended for analysis of hospitalisation data from selected jurisdictions (AIHW 2010):

- Interpretation of results should take into account the relative quality of the data from the jurisdictions included (currently a small degree of Indigenous under-identification in data from New South Wales and South Australia, and relatively marked Indigenous under-identification in data from Queensland and Victoria).
- Interpretation of time series analysis should take into account the possible contribution of changes over time in ascertainment of Indigenous status. This will be reflected in Indigenous patient changes in hospitalisation rates for Indigenous people.
- Data for these six jurisdictions over-represent Indigenous populations in less urbanised and more remote locations.
- Hospitalisation data for these six jurisdictions are not necessarily representative of the jurisdictions not included.

From the AIHW study it was possible to produce correction factors for the level of Indigenous under-identification in hospital data for each jurisdiction and at the national level.

Remoteness areas

There were acceptable levels of Indigenous identification for all remoteness areas, ranging from 80% in *Major cities* to 97% in *Remote* and *Very remote* areas. The quality of data supports analyses by remoteness areas, in aggregate, across states and territories. However, the sample size was insufficient to allow assessment of the quality of Indigenous identification by remoteness area within jurisdictions.

Numerator and denominator

Rate and ratio calculations rely on good numerator and denominator data. There are changes in the completeness of identification of Indigenous people in hospital records. These may take place at different rates from changes in the identification of Indigenous people in other administrative collections and population censuses. Denominators used in this analysis are sourced from *Experimental estimates and projections: Aboriginal and Torres Strait Islander Australians 1991 to 2021* (ABS 2009).

Bettering the Evaluation and Care of Health (BEACH) Survey

General Practitioner Data (BEACH)

Information about general practitioner (GP) encounters is available from the Bettering the Evaluation and Care of Health (BEACH) survey. The BEACH data on Indigenous Australians should be treated with care. First, the sample frame has not been designed to produce statistically significant results for population subgroups such as Indigenous Australians. Second, the identification of Indigenous Australians is not complete. In the BEACH survey, 'not stated' responses to the Indigenous identification question are often higher than the 'yes' responses. It can be assumed, therefore, that the survey consistently under-counts the number of Indigenous Australians visiting GPs, but the extent of this under-count is not measurable.

List of symbols used in tables

- n.a. not available
- rounded to zero (including null cells)
- 0 zero
- .. not applicable
- n.e.c. not elsewhere classified
- n.f.d. not further defined
- n.p. not available for publication but included in totals where applicable, unless otherwise indicated

References

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List of tables

Table 1.07.1: Persons reporting high blood pressure/ hypertension, by Indigenous status, sex and age group, 2004–05.....	183
Table 1.07.2: Indigenous persons reporting high blood pressure/ hypertension, by sex and remoteness, 1995, 2001 and 2004–05.....	183
Table 1.07.3: Number and proportion of Indigenous children aged 0–3 years whose mother who had high blood pressure during pregnancy, by state/territory, 2008.....	184
Table 1.07.4: Number and proportion of Indigenous children aged 0–3 years whose mother who had high blood pressure during pregnancy, by Remoteness Area, 2008.....	184
Table 1.07.5: Age-specific hospitalisation rates for a principal diagnosis of hypertensive disease, by Indigenous status and sex, NSW, Vic, Qld, WA, SA and NT, July 2006 to June 2008.....	185
Table 1.07.6: Hospitalisations of Indigenous persons for principal diagnosis of hypertensive disease, by sex, NSW, Vic, Qld, WA, SA and NT, Tas and ACT, July 2006 to June 2008.....	187
Table 1.07.7: Hospitalisations for hypertensive disease, by Indigenous status and remoteness, NSW, Vic, Qld, WA, SA and NT, July 2007 to June 2009.....	189
Table 1.07.8: Hypertension managed by general practitioners, by Indigenous status, 2004–05 to 2008–09.....	191

List of figures

Figure 1.07.1: Age-specific hospitalisation rates for a principal diagnosis of hypertensive disease, by Indigenous status and sex, NSW, Vic, Qld, WA, SA and NT, July 2006 to June 2008.....	186
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