

3.05 Differential access to key hospital procedures

The key hospital procedure differentials between Aboriginal and Torres Strait Islander people and other Australians as measured through standardised rates, ratios and rate differences in hospital separations with the same principal diagnosis

Data sources

Data for this measure come from the AIHW's National Hospital Morbidity Database.

The 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. Information on the characteristics, diagnoses and care of admitted patients in public and private hospitals is provided annually to the AIHW by state and territory health departments.

Data are presented for the six jurisdictions that have been assessed by the AIHW as having adequate identification of Indigenous hospitalisations in 2006–08: New South Wales (NSW), Victoria (Vic), Queensland (Qld), Western Australia (WA), South Australia (SA) and the Northern Territory (NT). 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, because 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 because 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 that 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 for this indicator as a measure of hospitalisations in the Indigenous population relative to other Australians. Ratios of this type illustrate differences between the rates of hospital admissions among Indigenous people and those of other Australians, taking into account differences in age distributions.

Hospitalisations with a procedure recorded

Table 3.05.1 presents the proportion of hospitalisations with a procedure recorded in public hospitals between July 2006 and June 2008 by a number of demographic variables. This table includes six jurisdictions (NSW, Vic, Qld, WA, SA and the NT), because the proportions are of those in hospital, and not population rates and, as such, data are not affected by Indigenous under-identification issues as are other data on hospital admissions.

- Between July 2006 and June 2008, there were around 13 million hospitalisations with a procedure reported in Australia, 3.1% (389,972) of which were hospitalisations recorded for Indigenous patients. Excluding hospitalisations for care involving dialysis, there were around 11 million hospitalisations with a procedure reported, 1.6% (167,223) of which were hospitalisations recorded for Indigenous patients. Over one-third (37%) of all hospitalisations of Indigenous Australians had more than one procedure performed.
- Although Indigenous Australians were more likely to be hospitalised than other Australians, they were less likely to undergo a procedure once admitted to hospital. Between July 2006 and June 2008, excluding hospitalisations for care involving dialysis, 59% of Indigenous hospitalisations had a procedure recorded, compared with 81% of other hospitalisations (Table 3.05.1).
- The proportion of hospitalisations with a procedure recorded was highest for Indigenous patients aged 55–64 years and 65 years and over (both 64%).
- Patients who were hospitalised in *Remote* or *Very remote* areas were less likely to undergo a procedure (49% of Indigenous patients and 68% and 63% of other patients) compared with those hospitalised in *Major cities* (72% and 83% for Indigenous and other patients, respectively).
- Both Indigenous and other patients hospitalised in private hospitals were much more likely to undergo a procedure (90% and 93%, respectively) than Indigenous and other patients hospitalised in public hospitals (56% and 72%, respectively).
- Indigenous patients hospitalised in Qld and SA were least likely to receive a procedure (54% and 57%) and Indigenous patients hospitalised in Vic were most likely to receive a procedure (69%).
- For Indigenous Australians, 6% of hospitalisations with a procedure recorded occurred in private hospitals, compared with 50% for other Australians.

Table 3.05.1: Number and proportion of hospitalisations with a procedure recorded^{(a)(b)}, by Indigenous status, NSW, Vic, Qld, WA, SA and NT, July 2006 to June 2008

	Indigenous		Other ^(c)		Ratio
	Number	Per cent	Number	Per cent	
Overall	167,223	58.7	10,605,058	80.9	0.73
Sex					
Males	70,439	58.7	4,836,126	80.9	0.73
Females	96,784	58.7	5,768,791	80.8	0.73
Age group (years)					
Under 1	8,111	43.6	139,365	50.8	0.86
1–14	21,991	49.7	490,174	64.7	0.77
15–34	55,092	52.1	1,806,178	74.3	0.70
35–54	48,746	54.3	2,579,895	82.5	0.66
55–64	17,331	63.6	1,757,295	86.6	0.73
65+	15,952	64.3	3,832,149	84.1	0.76
State/territory of residence					
NSW	42,223	56.5	3,249,271	81.4	0.72
Vic	9,942	66.7	2,913,873	79.9	0.86
Qld	41,765	53.0	2,122,320	79.8	0.68
WA	31,174	59.8	1,068,103	85.5	0.71
SA	11,149	54.8	839,605	79.8	0.71
NT	26,218	58.0	61,212	76.3	0.78
Remoteness of residence					
Major cities	47,255	72.4	7,412,145	82.9	0.87
Inner regional	32,842	63.0	2,140,043	78.7	0.80
Outer regional	37,017	55.2	911,302	73.2	0.75
Remote	21,598	48.8	103,838	67.8	0.72
Very remote	28,190	49.1	32,643	62.9	0.78
Sector					
Public	157,439	56.7	5,287,151	72.3	0.78
Private	9,784	89.5	5,317,907	92.5	0.97
Same-day admission					
Yes	48,740	62.8	5,661,722	85.2	0.74
No	118,483	56.9	4,943,336	76.2	0.75
Patient accommodation					
Public	152,606	56.4	4,488,711	71.7	0.79
Private	14,547	82.2	6,095,518	90.0	0.91

(a) Hospitalisations with a principal diagnosis of care involving dialysis (Z49) have been excluded.

(b) Excludes private hospitals in the Northern Territory.

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

Note: Proportions are age-standardised using the age-specific rates of other Australians.

Source: AIHW analysis of National Hospital Morbidity Database.

Figure 3.05.1 and Table 3.05.02 show that between July 2006 and June 2008 in Australia, the proportion of separations with a procedure reported by principal diagnosis was lower for Indigenous patients than for other patients for all but one of the diagnosis chapters. For example, for 'diseases of the nervous system', 52% of separations for Indigenous patients had a procedure reported, compared with 82% of separations for other patients. 'Certain conditions originating in the perinatal period' was the only chapter for which the proportions of separations were higher for Indigenous patients.

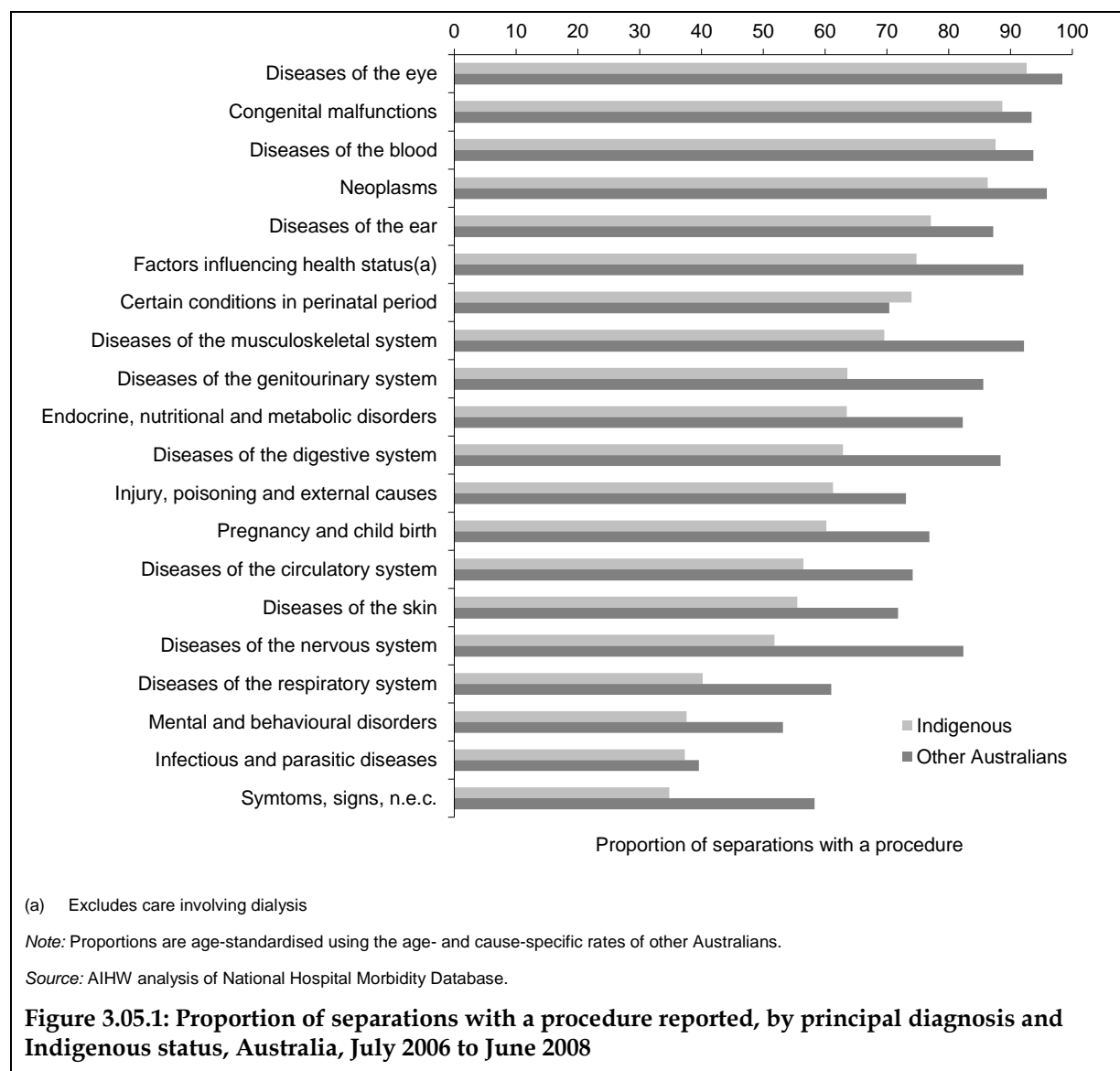


Table 3.05.2: Proportion of separations with a procedure reported, by principal diagnosis and Indigenous status, Australia, July 2006 to June 2008

Principal diagnosis chapter (excluding dialysis)	Indigenous	Other
	Per cent	
Diseases of the eye	92.6	98.4
Congenital malfunctions	88.7	93.4
Diseases of the blood	87.6	93.7
Neoplasms	86.3	95.9
Diseases of the ear	77.1	87.2
Factors influencing health status	74.8	92.1
Certain conditions in perinatal period	74.0	70.4
Diseases of the musculoskeletal system	69.6	92.2
Diseases of the genitourinary system	63.6	85.6
Endocrine, nutritional and metabolic disorders	63.5	82.3
Diseases of the digestive system	62.9	88.4
Injury, poisoning and external causes	61.3	73.1
Pregnancy and child birth	60.2	76.9
Diseases of the circulatory system	56.5	74.2
Diseases of the skin	55.5	71.8
Diseases of the nervous system	51.8	82.4
Diseases of the respiratory system	40.2	61.0
Mental and behavioural disorders	37.6	53.2
Infectious and parasitic diseases	37.3	39.6
Symptoms, signs, n.e.c.	34.8	58.3
Any principle diagnosis^(a)	58.3	80.6

(a) Excludes care involving dialysis.

Note: Proportions are age-standardised using the age-specific rates of other Australians.

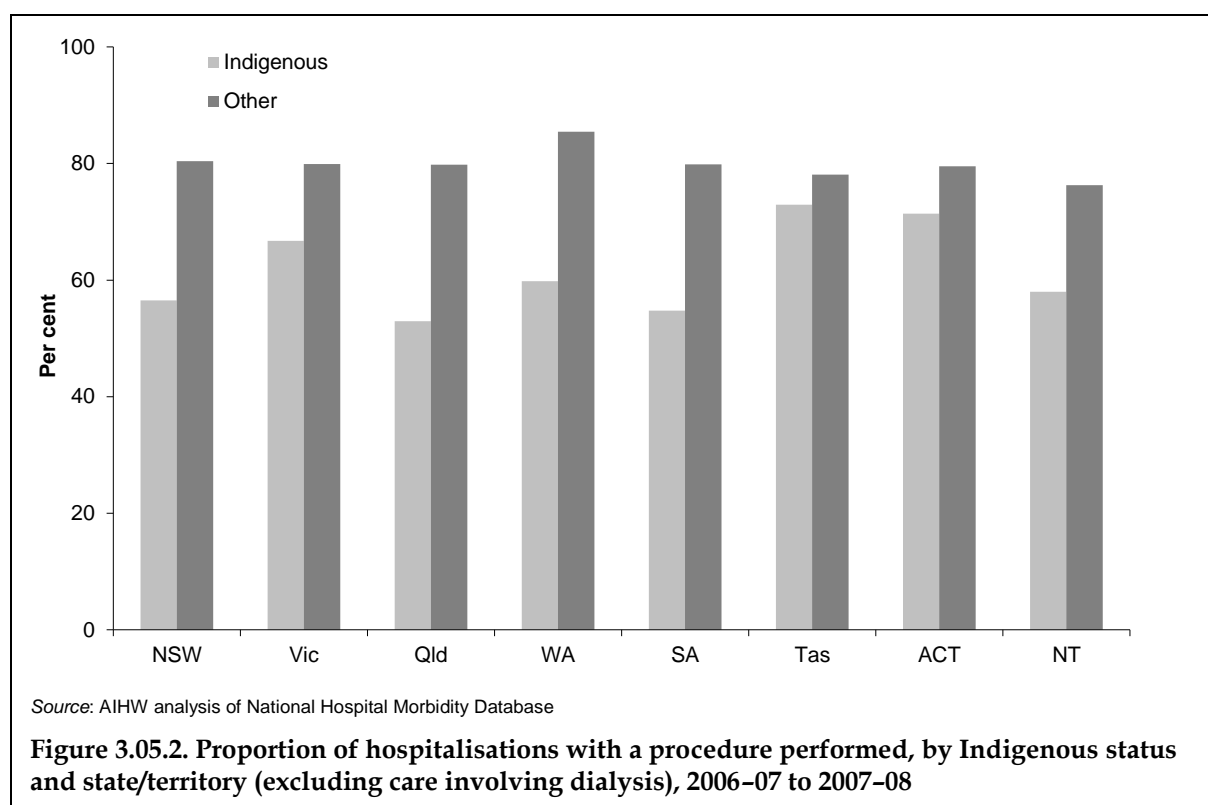
Source: AIHW analysis of National Hospital Morbidity Database

Detailed analyses (univariate and multivariate regression) of hospitalisations with a procedure reported

In 2010, the AIHW undertook a series of univariate and multivariate regression analyses to examine the relative importance of selected variables, including Indigenous status, in affecting the outcome of whether a patient hospitalised underwent a procedure for the period 2006–07 to 2007–08 in Australia.

Likelihood of receiving a procedure by jurisdiction and diagnosis

The first series of univariate analyses revealed that there were variations in the likelihood of receiving a procedure by state/territory and principal diagnosis chapter. As shown in Figure 3.05.2, in all states and territories, Indigenous Australians were less likely to receive a procedure than other Australians. For Indigenous Australians, the lowest proportions were in Qld and SA, with the highest proportions in Tas, the ACT, and Vic. The greatest disparities were observed in NSW, Qld, WA and SA – all with a ratio of 0.7. There was no disparity between Indigenous patients and other patients in Tas, with a ratio of 1.0, and little disparity between Indigenous patients and other patients in Vic and the ACT – both with a ratio of 0.9.



The univariate analyses found that the principal diagnoses that had the lowest proportions of procedures reported for Indigenous patients were 'symptoms, signs, n.e.c.' (35%), 'infectious and parasitic diseases' (37%), 'mental and behavioural disorders' (38%), and 'diseases of the respiratory system' (40%). The highest proportions of procedures reported for Indigenous patients were 'diseases of the eye' (93%), 'congenital malformations' (89%), 'diseases of the blood' (88%) and 'neoplasms' (86%).

The disease categories with the greatest levels of inequality in procedures reported between Indigenous Australians and other Australians were 'diseases of the nervous system', and 'signs, symptoms, n.e.c.' (ICD-10-AM chapter R) – both with a ratio of 0.6.

Further analyses by state/territory found that, across all states and territories, the proportion of separations for 'factors influencing health status' with a procedure recorded was higher for Indigenous patients or similar to the proportions for other Australians.

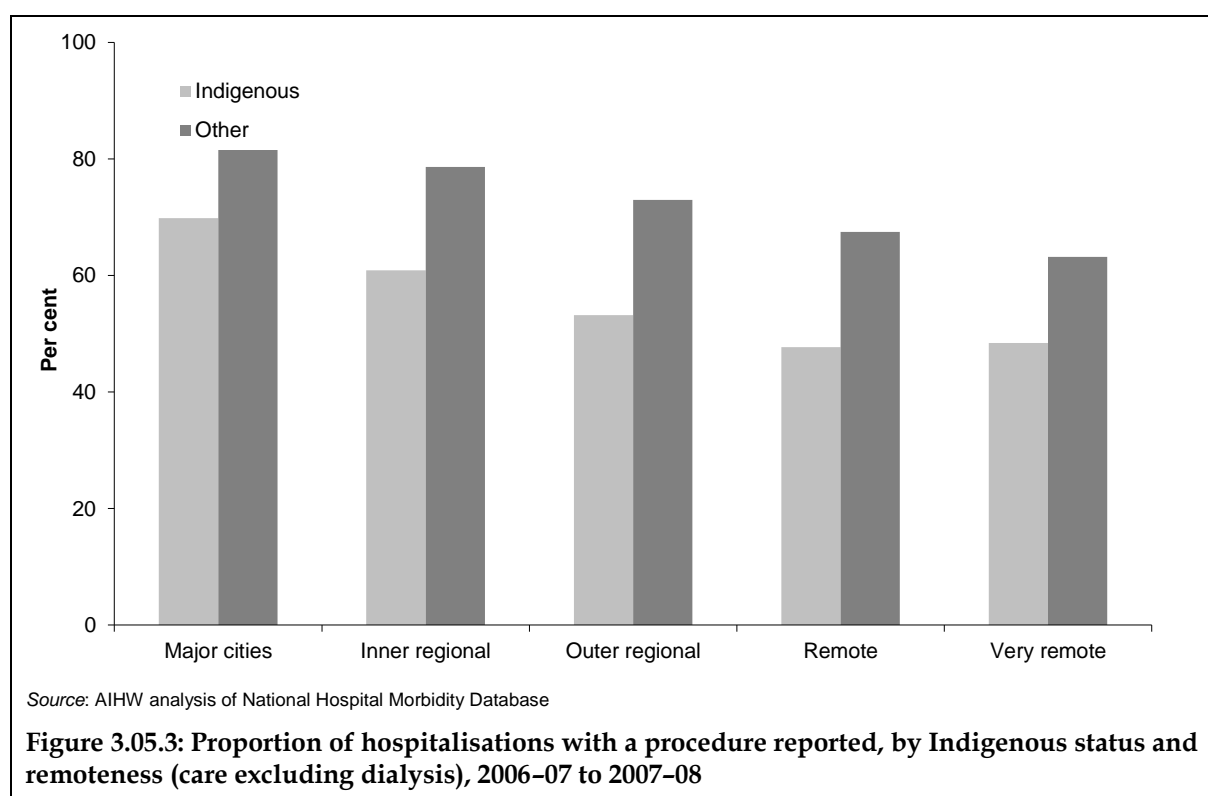
In Vic, Tas and the ACT, separations for 'infectious and parasitic diseases' and 'conditions originating in the perinatal period' also had higher procedure rates for Indigenous patients than for other patients.

Tas and the ACT had higher proportions of separations with a procedure reported for Indigenous patients than for other patients for numerous disease categories, including 'infectious and parasitic diseases', 'neoplasms', and 'diseases of the blood'.

In the ACT, several diagnosis chapters had a higher proportion of separations with a procedure reported for Indigenous patients, including 'diseases of the ear', 'congenital malformations', 'endocrine, nutritional and metabolic disorders', 'injury, poisoning and external causes'.

Differences by jurisdiction, diagnosis and remoteness

A second series of univariate analyses focused on differences by state/territory, diagnosis chapter, and remoteness category. Figure 3.05.3 demonstrates that the proportion of separations with a procedure reported is lower for Indigenous patients in all remoteness categories.

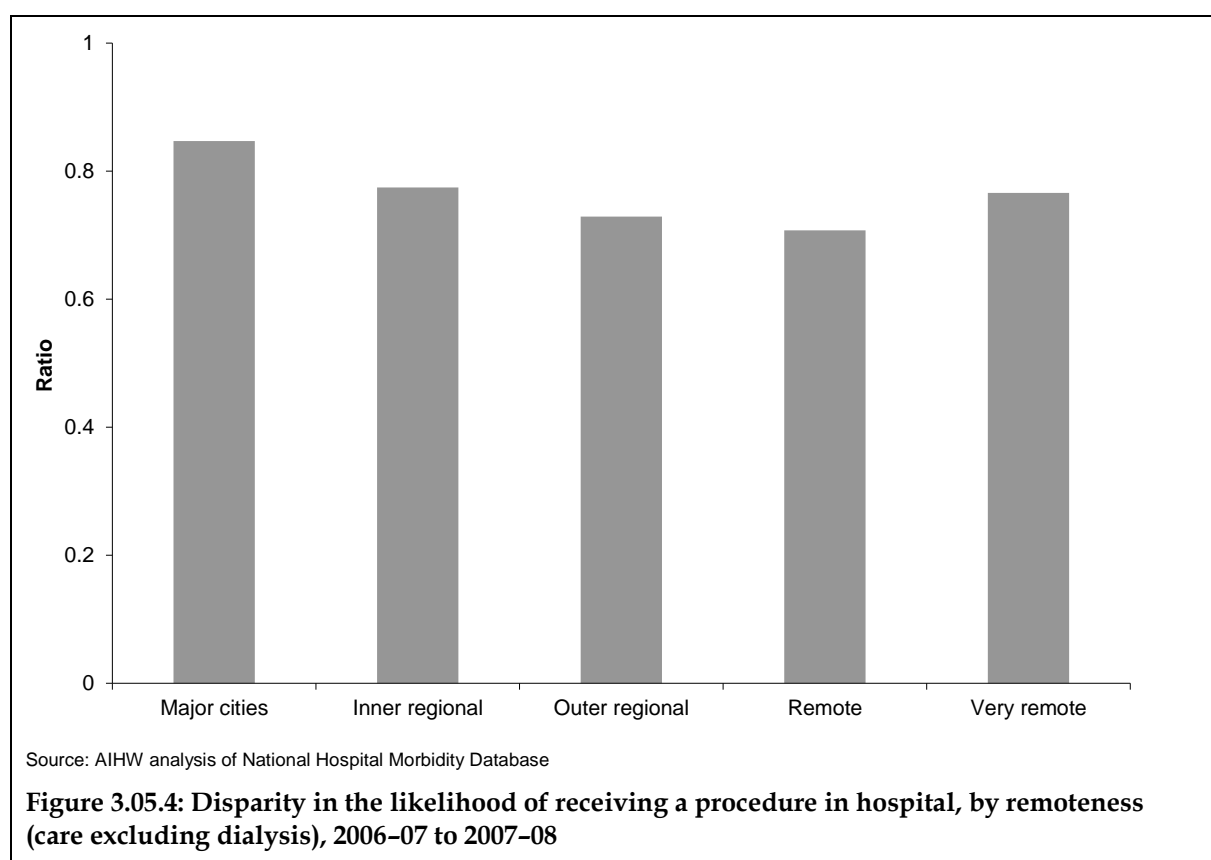


The lowest proportion of hospitalisations with procedures reported for Indigenous patients was in *Remote* areas, although for other patients the lowest proportion was in *Very Remote* areas.

The breakdown by state/territory shows that in NSW and Vic, the overall proportions of separations with a procedure reported were lowest in *Remote* areas. In Qld and SA, the lowest proportions were in *Remote* and *Very remote* areas. In WA, Tas and NT, the lowest proportions was in *Very remote* areas.

In all states and territories, Indigenous patients were less likely to undergo a procedure across all remoteness categories, with the exception of Tasmania where proportions were higher for *Remote* areas and similar for *Very Remote* areas.

As shown in Figure 3.05.4, the greatest disparities between Indigenous Australians and other Australians were found in *Outer regional* and *Remote* areas, with Indigenous Australians being about 25% less likely to receive a procedure while in hospital.



In Qld, SA and NSW, disparities were greatest in *Outer regional*, *Remote*, and *Very remote* areas (ratios of 0.5 to 0.7). In the NT, disparities were greatest in *Remote* and *Very remote* areas (both 0.8) and in Vic, the ratio of Indigenous to other Australian separations with a procedure reported was similar in *Major Cities*, *Inner Regional* (both with a ratio of 0.9), and *Outer regional* and *Remote* areas (both with a ratio of 0.8).

The data were further broken down by remoteness category and principal diagnosis. The proportions of separations for which Indigenous patients received procedures were lowest in *Remote* and *Very remote* areas for most principal diagnoses.

The diagnostic chapters with the lowest proportions of Indigenous separations receiving a procedure were fairly consistent across remoteness categories. The same four principal

diagnoses ('symptoms, signs, n.e.c.', 'mental and behavioural disorders', 'infectious and parasitic diseases', and 'diseases of the respiratory system') had the lowest proportion of Indigenous separations receiving a procedure in each remoteness category. *Within* each of the categories, the likelihood of receiving a procedure decreased with remoteness (Table 3.05.3).

Table 3.05.3: Diagnosis chapters with the lowest proportions of Indigenous separations receiving a procedure, Australia, 2006–07 to 2007–08

Remoteness category	Lowest proportion	Second lowest proportion	Third lowest proportion
Major cities	Infectious and parasitic diseases (47.5%)	Mental and behavioural disorders (48.7%)	Symptoms and signs and n.e.c. (49.6%)
Inner regional	Infectious and parasitic diseases (35.2%)	Symptoms and signs and n.e.c. (36.8%)	Mental and behavioural disorders (42.1%)
Outer regional	Symptoms and signs and n.e.c. (28.9%)	Mental and behavioural disorders (32.7%)	Infectious and parasitic diseases (34.5%)
Remote	Mental and behavioural disorders (23.7%)	Symptoms and signs and n.e.c. (25.5%)	Diseases of the respiratory system (34.4%)
Very remote	Mental and behavioural disorders (22.4%)	Symptoms and signs and n.e.c. (28.4%)	Diseases of the respiratory system (30.7%)

Source: AIHW analysis of National Hospital Morbidity Database

Influence of other variables on likelihood of receiving a procedure

A third series of more-detailed univariate analysis looked at the association between receiving a procedure once hospitalised and other variables aside from state or territory, remoteness and principal diagnosis, such as age, sex, same day admission, sector of hospital, volume of procedures, diagnosis subcategory and procedure block.

This analysis showed that the proportion of Indigenous males and females who received a procedure once in hospital was the same (59%). The disparity between Indigenous males and other males and Indigenous females and other females in the proportion who received a procedure once in hospital was similar (ratios of 0.9 including separations for dialysis, and ratios of 0.7 excluding separations for dialysis).

Half of all Indigenous patients who received a procedure once in hospital were aged 15–44 years (49%). In comparison, only 28% of other patients aged 15–44 years received a procedure once in hospital. The majority of other patients who received a procedure once in hospital were aged 55 years and over (53%). Within each age group, the highest proportion of hospitalisations of Indigenous and other patients for which a procedure was reported were for those aged 55–64 and 65–74 years (64% to 65% for Indigenous and 87% for other patients) (Figure 3.05.5 and Table 3.05.05). Indigenous patients were less likely to receive a procedure once in hospital than other patients across all age groups. The greatest disparity was observed for those aged 35–44 (ratio of 0.7).

Rates of hospitalisations with a procedure recorded in NSW, Vic, Qld, WA, SA and the NT are presented by Australian Standard Geographical Classification (ASGC) in Table 3.05.4, covering the period July 2007 to June 2009.

- Rates of hospitalisations with a procedure recorded were higher for Indigenous Australians hospitalised in *Outer regional*, *Remote* and *Very remote* areas. Rates for these hospitalisations were lower for Indigenous Australians in *Major cities* and *Inner regional* areas. The differences were statistically significant for all ASGC.

- Rates of these hospitalisations per 1,000 head of population were highest for Indigenous people in *Remote* areas, at 314 per 1,000. The rate was highest for other Australians who lived in *Major cities*, at 273 per 1,000. The lowest rates were observed in *Major cities* areas for Indigenous people (230 per 1,000) and *Very remote* areas for other Australians (210 per 1,000).
- Hospitalisations with a procedure recorded for Indigenous people were observed at a rate of 1.4 times that of other Australians in *Remote* areas of Australia. In *Major cities*, where the lowest ratio was observed, Indigenous people were hospitalised with a procedure recorded at 0.8 times the rate of other Australians. Nationally, the rate was significantly lower, at 0.9 times.

Table 3.05.4: Hospitalisations with a procedure recorded, 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% ^(j)	Number	No. per 1,000 ^(h)	LCL 95% ⁽ⁱ⁾	UCL 95% ^(j)	
Major cities	50,024	230.2	227.6	232.7	7,583,523	272.6	272.4	272.7	0.8*
Inner regional	33,253	246.2	242.9	249.5	2,078,543	262.4	262.0	262.7	0.9*
Outer regional ^(l)	37,892	255.7	252.6	258.8	871,161	242.6	242.1	243.1	1.1*
Remote	22,816	313.7	308.8	318.6	107,383	216.5	215.2	217.8	1.4*
Very remote	29,740	233.9	228.6	239.2	33,558	209.5	208.8	210.2	1.1*
Total^(m)	174,108	247.4	246.0	248.9	10,680,491	266.4	266.3	266.6	0.9*

* 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. Population estimates based on the 2006 Census.

2. Care types 7.3, 9 and 10 (newborn – unqualified days only; organ procurement; hospital boarder) are excluded from the analysis.

Source: AIHW analysis of National Hospital Morbidity Database.

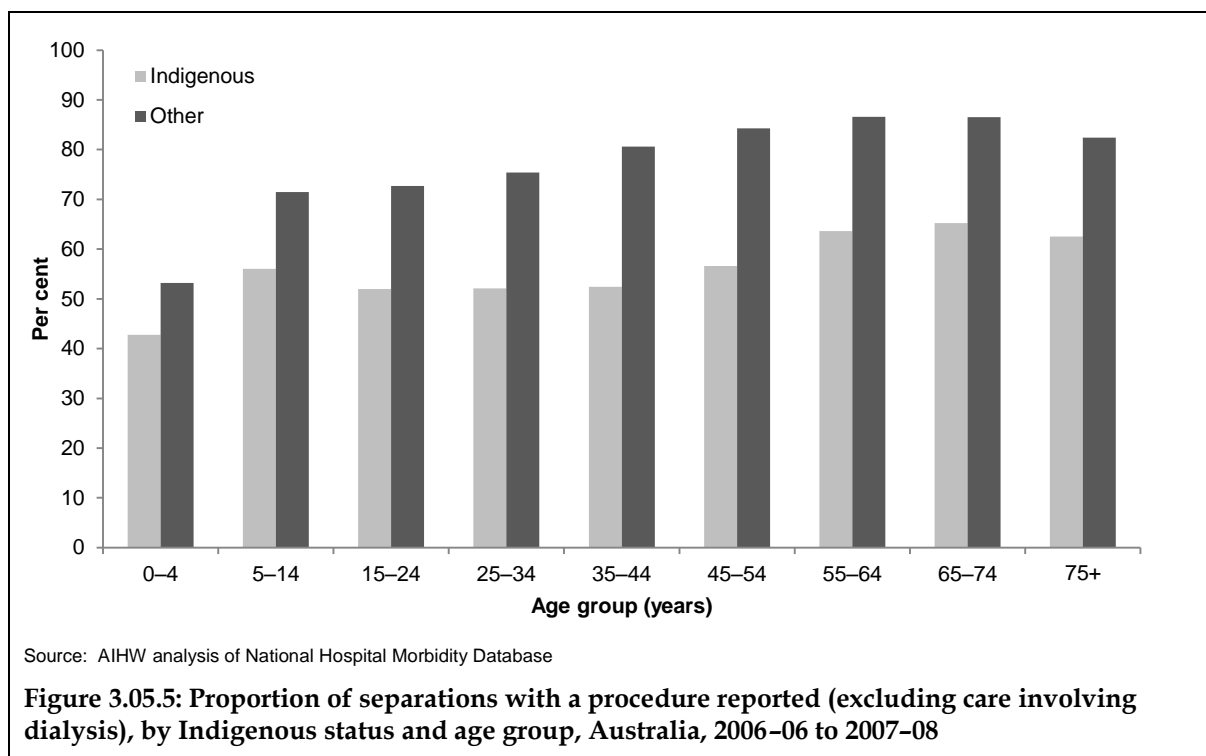


Table 3.05.5: Proportion of separations with a procedure reported (excluding care involving dialysis), by Indigenous status and age group, Australia, 2006-06 to 2007-08

Age groups (years)	Indigenous	Other
	Per cent	
0-4	42.8	53.2
5-14	56.0	71.5
15-24	52.0	72.7
25-34	52.1	75.4
35-44	52.4	80.6
45-54	56.6	84.3
55-64	63.6	86.6
65-74	65.2	86.5
75+	62.5	82.4

Source: AIHW analysis of National Hospital Morbidity Database

The proportion of separations with a procedure reported was slightly higher for Indigenous patients who were admitted to hospital for one day only (63%) compared with Indigenous patients who remained in hospital for more than one day (57%). The disparity between Indigenous and other Australians in the proportion of separations with a procedure reported was similar for those who had a same-day admission and those who were in hospital for more than one day (both with a ratio of 0.9).

The proportion of separations with a procedure reported was much higher for Indigenous patients admitted to private hospitals than for Indigenous patients admitted to public hospitals (excluding psychiatric hospitals) (87% compared with 52%). The proportion of separations of Indigenous patients with a procedure reported was higher for public

psychiatric hospitals than other public hospitals (70% compared with 52%). Indigenous patients admitted to public hospitals, excluding psychiatric hospitals, were less likely to receive a procedure than other patients admitted to public hospitals (ratio of 0.7) (Figure 3.05.6 and Table 3.05.06).

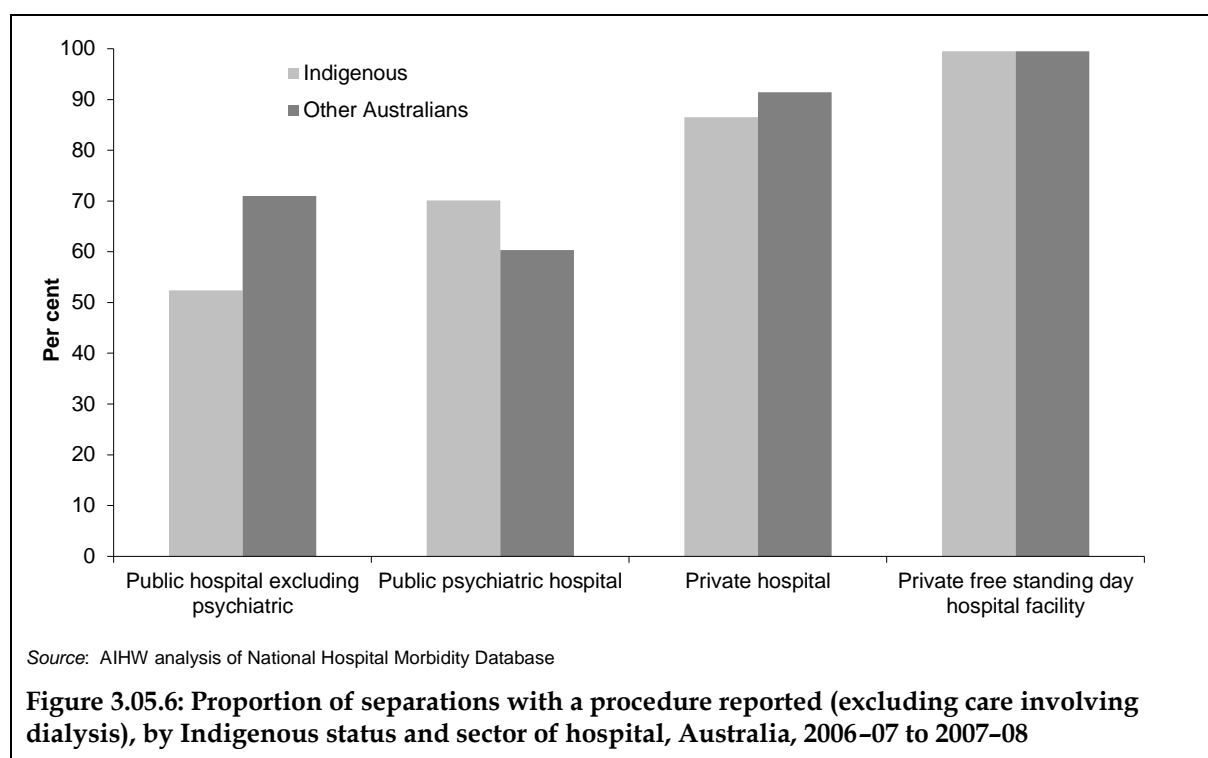


Table 3.05.6: Proportion of separations with a procedure reported (excluding care involving dialysis), by Indigenous status and sector of hospital, Australia, 2006-07 to 2007-08

Sector	Indigenous	Other Australians
	Per cent	
Public hospital excluding psychiatric	52.4	71.0
Public psychiatric hospital	70.1	60.3
Private hospital	86.5	91.4
Private free standing day hospital facility	99.5	99.5

Source: AIHW analysis of National Hospital Morbidity Database

Around 42% of all hospitalisations of Indigenous Australians did not have a procedure reported. Around 19% of Indigenous hospitalisations had one procedure reported, 17% had two procedures reported, 10% had three procedures reported and 13% had four or more procedures reported. Indigenous Australians were twice as likely as other Australians to have no procedures reported and less likely than other Australians to have one to nine procedures reported. They were, however, more likely to have 10 or more procedures reported (Figure 3.05.7 and Table 3.05.07).

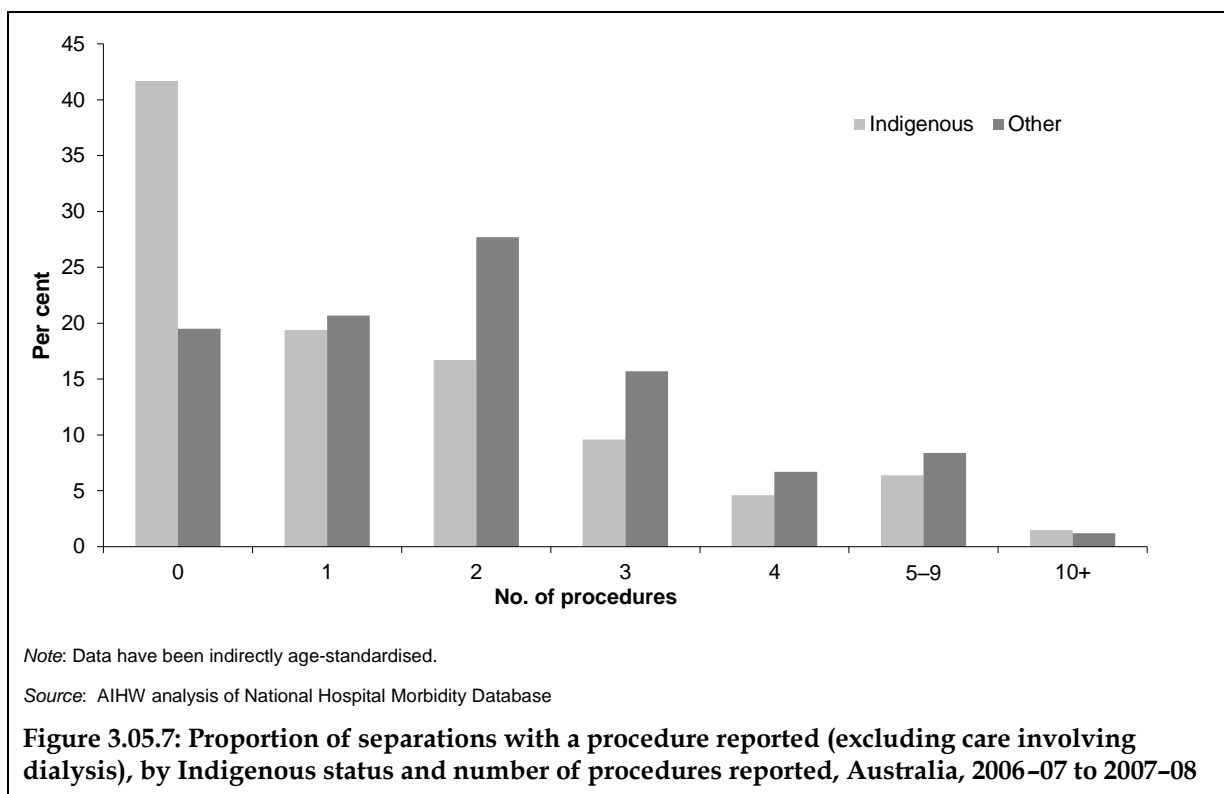


Table 3.05.7: Proportion of separations with a procedure reported (excluding care involving dialysis), by Indigenous status and number of procedures reported, Australia, 2006-07 to 2007-08

No. of procedures	Indigenous	Other
	Per cent	
0	41.7	19.5
1	19.4	20.7
2	16.7	27.7
3	9.6	15.7
4	4.6	6.7
5-9	6.4	8.4
10+	1.5	1.2

Source: AIHW analysis of National Hospital Morbidity Database

Indigenous males and females were equally or less likely to receive a procedure than other Australians if they were hospitalised for any of the top 20 most common disease categories. The greatest disparities in the proportion of separations with a procedure reported between Indigenous and other males among the top 20 most common diagnosis subcategories were for 'episodic and paroxysmal disorders' (ratio of 0.5), 'symptoms and signs involving the circulatory and respiratory systems' (ratio of 0.6), 'mental and behavioural disorders due to psychoactive substance use' (ratio of 0.6), and 'symptoms and signs involving the digestive system and abdomen' (ratio of 0.6). The greatest disparities in the proportion of separations with a procedure reported between Indigenous and other females among the top 20 most common diagnosis subcategories were for 'mental and behavioural disorders due to psychoactive substance use' (ratio of 0.6), 'symptoms and signs involving the digestive

system and abdomen' (ratio of 0.6), 'episodic and paroxysmal disorders' (ratio of 0.6), and 'symptoms and signs involving the circulatory and respiratory systems' (ratio of 0.6).

Whether a person hospitalised for each principal diagnosis chapter received a procedure corresponding to that principal diagnosis (based on related procedure block chapters) was also examined. For all of the 13 principal diagnosis chapters that had a corresponding procedure block chapter ('neoplasms'; 'diseases of the blood'; 'endocrine', 'metabolic and nutritional disorders'; 'diseases of the nervous system'; 'diseases of the eye and adnexa'; 'diseases of the ear and mastoid process'; 'diseases of the circulatory system'; 'diseases of the respiratory system'; 'diseases of the digestive system'; 'diseases of the skin and subcutaneous tissue'; 'diseases of the musculoskeletal system'; 'diseases of the genitourinary system'; and 'pregnancy, childbirth and the puerperium'), Indigenous males and females were less likely overall to receive a relevant procedure than other males and females, except for 'neoplasms'. Indigenous males and females were more likely to receive a radiation oncology procedure than other males and females (ratios of 1.7 for both males and females). For both males and females, the greatest discrepancy in the proportions of receiving a relevant procedure between Indigenous and other Australians was for 'endocrine, metabolic and nutritional disorders' (ratios of 0.1 and 0.2 for males and females, respectively). For 'diseases of the genitourinary system', the proportion of receiving a relevant procedure between Indigenous and other males were the same, while that proportion between Indigenous and other females was only 0.7.

In order to test whether compositional differences between Indigenous Australians and other Australians were driving the differences in the likelihood of having a procedure reported, a series of multivariate analyses were run, which included sociodemographic characteristics, state and territory variables, remoteness, hospital sector (public or private), principal diagnosis and total number of additional diagnoses.

After controlling for these other variables, Indigenous status was the 13th most significant variable (third if the principal diagnosis chapters were not included) contributing to whether a patient would receive a procedure once in hospital. The odds of receiving a procedure for Indigenous Australians was about 40% less than the odds for other Australians.

The most significant variable contributing to whether a patient would receive a procedure once in hospital was hospital sector. The odds of a person in a private hospital receiving a procedure was almost five times the odds for a patient in a public hospital.

The second most significant variable was the number of additional diagnoses. Patients hospitalised with additional diagnoses recorded were more likely to receive a procedure than those without additional diagnoses recorded.

Of the diagnostic categories, 'neoplasms' was the most significant in increasing the likelihood of receiving a procedure, followed by 'diseases of the digestive system', 'diseases of the musculoskeletal system', 'diseases of the eye and adnexa', 'diseases of the genitourinary system', 'diseases of the blood', 'pregnancy and childbirth', and 'diseases of the ear and mastoid process'.

Remoteness of usual residence ranked after Indigenous status in terms of importance, and was more significant than state/territory of usual residence. The odds of receiving a procedure for patients residing in *Remote* and *Very remote* areas were around half as great as the odds for patients residing in *Major cities*.

Age group and sex were also significant variables in predicting whether a person would receive a procedure once in hospital.

A series of multivariate analyses also examined whether a person hospitalised for each principal diagnosis chapter underwent a procedure corresponding to that principal diagnosis. The results showed that, after controlling for age, sex, sector, state/territory of usual residence, remoteness of usual residence, and number of additional diagnoses, Indigenous status was still significant, except for 'diseases of the blood', and 'diseases of the ear and mastoid process', 'diseases of the skin and subcutaneous tissue', and 'diseases of the genitourinary system'.

For most principal diagnosis chapters, Indigenous status ranked after sector of hospital, number of additional diagnoses, sex, age group, and state/territory of usual residence. For eight of the 13 principal diagnosis chapters, Indigenous status ranked above remoteness of usual residence of the patient in terms of importance.

Given that the control variables did have a significant impact on the outcome variable, separate multivariate regressions were run for Indigenous and other Australians to test whether the impact of these variables was similar for both groups, such as whether living in a remote area has the same effect for other Australians that it does for Indigenous Australians.

Results from the overall analysis showed that, after adjusting for age, sex, sector, state/territory of usual residence of patient, remoteness of usual residence of patient, principal diagnosis and number of additional diagnoses, for both Indigenous and other Australians, the four most significant variables contributing to whether a patient would receive a procedure once in hospital were the number of additional diagnoses, the hospital sector, a principal diagnosis of neoplasms, and a principal diagnosis of diseases of the digestive system. The sector was the most significant variable for other Australians (it was the second most significant variable for Indigenous Australians).

Remoteness of usual residence of the patient was more significant in contributing to the outcome of whether a patient would receive a procedure than state/territory of usual residence of the patient for both Indigenous and other Australians. The likelihood of receiving a procedure for patients residing in *Remote* and *Very remote* areas was around half the likelihood for patients residing in *Major cities*. Remoteness of usual residence of the patient ranked higher in terms of importance for Indigenous Australians than for other Australians (7th compared with 13th).

Age group and sex were both significant variables in affecting whether a patient would receive a procedure once in hospital for Indigenous and other Australians.

Results from the set of analyses that examined the outcome of whether a person hospitalised for each principal diagnosis chapter underwent a procedure corresponding to that principal diagnosis chapter showed that, for Indigenous Australians, no listing factors were significant in affecting the outcome of whether a person underwent a procedure for 'diseases of the blood', possibly due to the small number of separations with a procedure corresponding to 'diseases of the blood'. Age was significant for other principal diagnosis chapters, remoteness of usual residence was significant, except for 'neoplasms'; and number of additional diagnoses was significant except for 'diseases of the nervous system', and 'diseases of the skin and subcutaneous tissue'. For most principal diagnosis chapters, the variables sex and state/territory of usual residence were less significant than the variables age, sector, remoteness of usual residence.

Given the statistical and theoretical importance of principal diagnosis chapters on the likelihood of receiving a procedure once in hospital, a further set of analyses were conducted

with the principal diagnosis chapters recoded as categorical variables in order to test their relative importance against the category of 'diseases of the skin'. The models – run separately for Indigenous Australians and other Australians – included the same set of variables (age group, sector of hospital, remoteness of usual residence, state/territory of usual residence, total number of additional diagnoses, and sex) as the previous analyses.

Results showed that, after adjusting for these variables, principal diagnosis and number of additional diagnoses, the four most significant variables contributing to whether a patient would receive a procedure once in hospital were the number of additional diagnoses, hospital sector, remoteness of usual residence of the patient and principal diagnosis for both Indigenous and other Australians. The number of additional diagnoses was the most significant variable for Indigenous Australians and sector was the most significant variable for other Australians. Remoteness of usual residence of the patient was more significant in affecting the outcome of whether a patient would receive a procedure once in hospital than state/territory of usual residence for both Indigenous and other Australians.

Figure 3.05.8 and Table 3.05.08 show the impact of the individual principal diagnosis categories on the likelihood of receiving a procedure in hospital for both Indigenous Australians and other Australians. All the results that are less than one indicate that patients with that principal diagnosis were less likely than those with 'diseases of the skin' to receive a procedure. Figure 3.05.8 shows that, for Indigenous Australians, patients with 'diseases of the respiratory system', 'diseases of the nervous system', and 'diseases of the circulatory system' were the least likely to receive a procedure. Two of these chapters – 'diseases of the respiratory system' and 'diseases of the circulatory system' – were also among the lowest for other Australians, along with 'pregnancy and childbirth'. For Indigenous Australians and other Australians, patients with 'neoplasms' and those with 'diseases of the eye and adnexa' were the most likely to receive procedures.

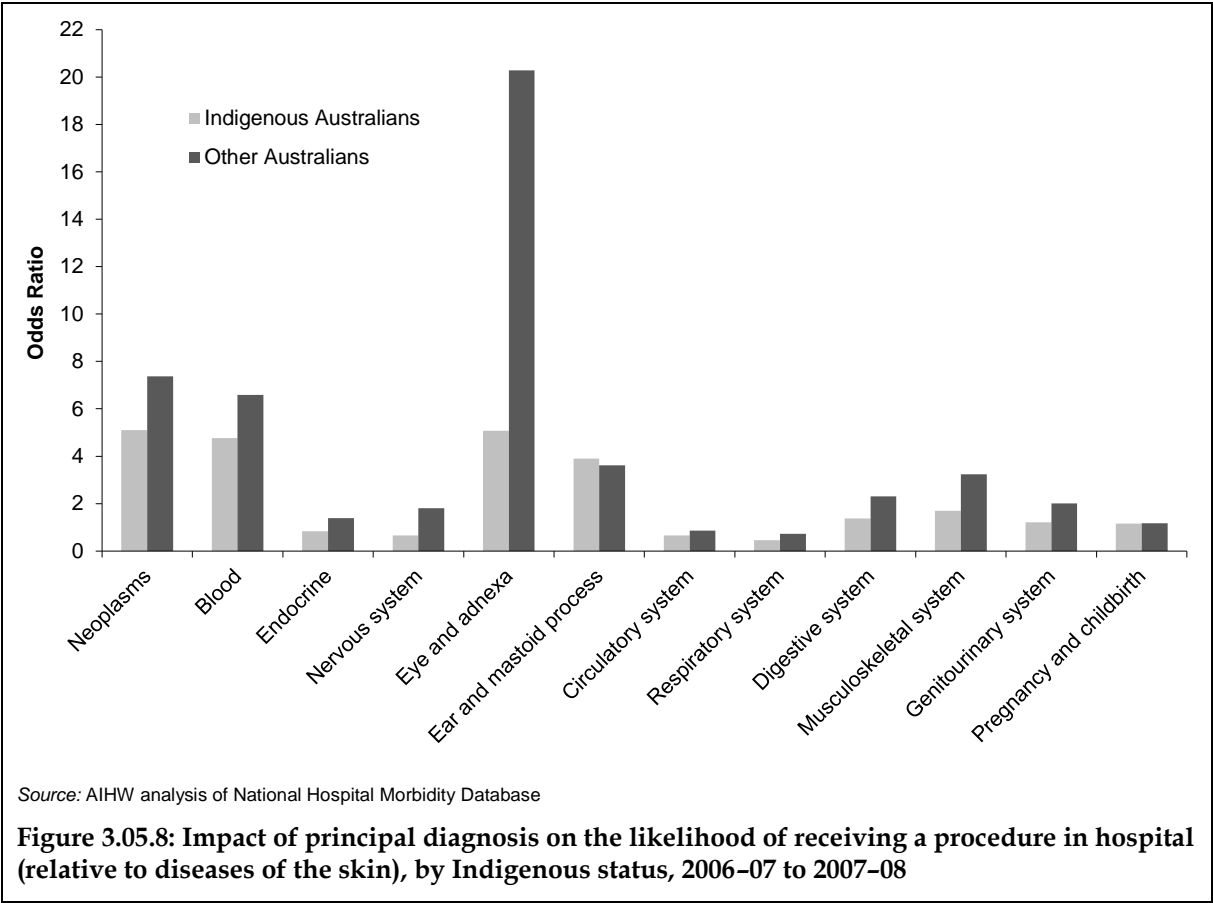


Table 3.05.8: Impact of principal diagnosis on the likelihood of receiving a procedure in hospital (relative to diseases of the skin), by Indigenous status, 2006–07 to 2007–08

	Indigenous	Other
	Per cent	
Neoplasms	5.10	7.38
Diseases of the blood	4.76	6.58
Endocrine, metabolic and nutritional disorders	0.83	1.38
Diseases of the nervous system	0.66	1.81
Diseases of the eye and adnexa	5.07	20.28
Diseases of the ear and mastoid process	3.89	3.61
Diseases of the circulatory system	0.66	0.86
Diseases of the respiratory system	0.45	0.73
Diseases of the digestive system	1.37	2.31
Diseases of the musculoskeletal system	1.70	3.24
Diseases of the genitourinary system	1.22	2.01
Pregnancy and childbirth	1.15	1.18
Diseases of the skin	1.00	1.00

Source: AIHW analysis of National Hospital Morbidity Database

Although these exploratory analyses have been critical in identifying some of the factors underlying the disparity between Indigenous and other Australians in the likelihood of receiving a procedure once in hospital, they were not able to fully account for the differences between Indigenous Australians and other Australians. Further research is needed to explore the mechanisms underlying these disparities.

Procedures are clinical interventions that are surgical in nature, carry a procedural risk, carry an anaesthetic risk, require specialised training, and/or require special facilities or equipment that is only available in an acute-care setting. Procedures, therefore, encompass surgical procedures and non-surgical investigative and therapeutic procedures such as X-rays and chemotherapy. Client-support interventions that are neither investigative nor therapeutic (such as anaesthesia) are also included.

- Over the period July 2006 to June 2008, there were 680,598 hospital procedures performed on Indigenous patients in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined. Approximately one third (33%) of these procedures were for haemodialysis (Table 3.05.9).
- Procedures on the urinary system was the most frequently reported procedure chapter for Indigenous patients (233,544). The number of haemodialysis procedures per 1,000 population for persons identified as Indigenous was about 11 times that for other persons. For procedures on the respiratory system, the rate for persons identified as Indigenous was about twice that for other persons and for procedures on the cardiovascular system the rate was 1.2 times that of other persons.
- Procedures for which the rate for Indigenous persons was less than that for other persons included: procedures on the nervous system; procedures on the nose, mouth and pharynx; procedures on the male genital organs; dental services; procedures on the digestive system; and gynaecological procedures.

Table 3.05.9: Hospital procedures, by type of procedure reported and Indigenous status, NSW, Vic, Qld, WA, SA and NT, July 2006 to June 2008^{(a)(b)(c)(d)}

	Number		Per cent		Age standardised per cent ^(e)		Number per 1,000 ^(e)		
	Indigenous	Other ^(f)	Indigenous	Other ^(f)	Indigenous	Other ^(f)	Indigenous	Other ^(f)	Ratio ^(g)
Procedure on the urinary system	233,544	2,236,949	34.3	7.6	45.8	7.6	444.7	53.2	8.4*
Haemodialysis	225,337	1,659,718	33.1	5.7	45.5	5.7	429.9	39.5	10.9*
Non-invasive and cognitive and other interventions, n.e.c.	216,498	13,711,265	31.8	46.9	34.0	46.9	310.1	332.1	0.9*
Imaging services	31,519	1,573,970	4.6	5.4	5.5	5.4	49.2	37.8	1.3*
Procedures on the cardiovascular system	20,158	1,132,585	3.0	3.9	3.6	3.9	33.0	26.9	1.2*
Procedures on the digestive system	24,365	2,744,325	3.6	9.4	3.5	9.4	38.8	66.2	0.6*
Dermatological and plastic procedures	24,242	1,173,957	3.6	4.0	3.5	4.0	27.7	28.6	0.97*
Obstetric procedures	29,953	969,727	4.4	3.3	3.3	3.3	25.8	25.5	1.0
Procedures on the musculoskeletal system	23,270	1,389,961	3.4	4.8	3.0	4.8	26.9	34.1	0.8*
Dental services	29,556	1,024,040	4.3	3.5	2.5	3.5	19.8	26.7	0.7*
Procedures on the respiratory system	12,067	347,308	1.8	1.2	1.6	1.2	15.0	8.5	1.8*
Gynaecological procedures	13,155	957,245	1.9	3.3	1.4	3.3	15.1	24.4	0.6*
Procedures on the eye and adnexa	4,604	556,705	0.7	1.9	1.1	1.9	10.7	13.2	0.8*
Procedures on the nervous system	4,488	412,538	0.7	1.4	0.6	1.4	5.4	10.0	0.5*
Procedures on the nose and mouth and pharynx	4,530	402,625	0.7	1.4	0.4	1.4	4.3	10.2	0.4*
Procedures on the ear and mastoid process	4,157	109,467	0.6	0.4	0.3	0.4	2.9	2.9	1.0
Procedures on the male genital organs	1,726	204,351	0.3	0.7	0.2	0.7	2.1	5.0	0.4*
Procedures on blood and blood-forming organs	1,038	103,938	0.2	0.4	0.2	0.4	1.7	2.5	0.7*
Procedures on the breast	1,066	134,243	0.2	0.5	0.1	0.5	1.6	3.3	0.5*
Radiation oncology procedures	369	31,200	0.1	0.1	0.1	0.1	0.7	0.7	1.0
Procedures on endocrine system	293	26,728	0.0	0.1	0.0	0.1	0.4	0.7	0.7*

(continued)

Table 3.05.9 (continued): Hospital procedures, by type of procedure reported and Indigenous status, NSW, Vic, Qld, WA, SA and NT, July 2006 to June 2008^{(a)(b)(c)(d)}

	Number		Per cent		Age standardised per cent ^(e)		Number per 1,000 ^(e)		Ratio ^(g)
	Indigenous	Other ^(f)	Indigenous	Other ^(f)	Indigenous	Other ^(f)	Indigenous	Other ^(f)	
Total (excluding haemodialysis)	455,261	27,583,418	66.9	94.3	65.8	94.3	606.2	673.1	0.9*
Total (including haemodialysis)	680,598	29,243,136	100.0	100.0	100.0	100.0	1,036.1	712.6	1.5*

* 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. Data exclude 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 presented by state/territory of usual residence of the patient and are reported for New South Wales, Victoria, Western Australia, South Australia, the Northern Territory and Queensland only. These six jurisdictions 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.

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

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

(g) Rate ratio—Indigenous: other.

Source: AIHW analysis of National Hospital Morbidity Database.

Time series analyses

Longer term time series data are limited to four jurisdictions that have been assessed as having adequate identification of Indigenous hospitalisations for all years from 1998–99 to 2007–08: Queensland, Western Australia, South Australia and the Northern Territory. These four jurisdictions represent approximately 60% of the Indigenous Australian population.

New South Wales and Victoria were identified as having adequate identification of Indigenous hospitalisations from 2004–05 onwards, and so they were included as part of the current period analysis (2006–07 to 2007–08).

Hospital procedure rates, rate ratios and rate differences between Indigenous and other Australians in Queensland, Western Australia, South Australia and the Northern Territory combined over the 9-year period 1998–99 to 2007–08, excluding haemodialysis procedures, are presented in Table 3.05.10 and Figure 3.05.9.

Hospital procedure rates, rate ratios and rate differences between Indigenous and other Australians in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined over the time period 2004–05 to 2007–08, excluding haemodialysis procedures, are presented in Table 3.05.11 and Figure 3.05.10.

- Over the period 2001–02 to 2007–08 for Queensland, Western Australia, South Australia and Northern Territory combined, there were significant increases in hospital procedure rates, excluding dialysis, for both Indigenous and other Australians. The fitted trend implies an average yearly increase in the rate of 5.9 per 1,000 for Indigenous Australians (equivalent to a 17% increase over the period) and 1.8 per 1,000 for other Australians (equivalent to a 4.5% increase over the period).
- There was a significant change in the hospitalisation rate ratios and rate differences between Indigenous and other Australians over the period.

Note that changes in the level of accuracy of Indigenous identification in hospital records will result in changes in the level of reported hospital procedures for Indigenous Australians. Also, changes in access, hospital policies and practices all have an impact on the level of hospitalisation over time. Caution should be used in interpreting changes over time because it is not possible to ascertain whether a change in reported hospitalisation is due to changes in the accuracy of Indigenous identification or real changes in the rates at which Indigenous people are hospitalised. An increase in procedures may reflect better access to hospitals/hospital procedures rather than a worsening of health.

Table 3.05.10: Age-standardised hospital procedure rates, rate ratios and rate differences (excluding haemodialysis), Qld, WA, SA and NT, 2001–02 to 2007–08^(a)

	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08	Annual change ^(b)	Per cent change over period ^(c)
Indigenous separations									
Males	18,197	18,747	19,800	19,989	21,462	21,956	24,482	962*	31.7*
Females	25,853	26,321	27,486	27,823	29,515	31,181	32,687	1,152*	26.7*
Persons	44,057	45,069	47,286	47,813	50,977	53,137	57,169	2,113*	28.8*
Other Australian^(d) separations									
Males	774,647	796,414	817,192	841,720	876,520	921,528	962,417	31,174*	24.1*
Females	930,302	957,209	983,668	1,001,148	1,032,416	1,082,022	1,089,673	27,732*	17.9*
Persons	1,704,958	1,753,639	1,800,861	1,842,872	1,908,939	2,003,556	2,052,102	58,905*	20.7*
Indigenous no. per 1,000									
Males	189.5	196.6	214.2	201.9	217.4	213.1	240.2	6.7*	21.3*
Females	232.7	235.9	243.6	233.6	246.2	255.7	268.6	5.4*	13.8*
Persons	211.3	216.1	227.8	216.9	230.7	234.1	253.3	5.9*	16.7*
Other Australian^(d) rate per 1,000									
Males	229.8	230.3	230.6	231.3	234.3	239.4	243.0	2.2*	5.8*
Females	258.5	260.4	261.9	261.0	263.4	269.6	265.6	1.5*	3.4*
Persons	242.8	244.0	244.9	244.8	247.4	253.1	252.8	1.8*	4.5*
Rate ratio^(e)									
Males	0.8	0.9	0.9	0.9	0.9	0.9	1.0	0.02*	14.6*
Females	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.02*	10.1*
Persons	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.02*	11.7*
Rate difference^(f)									
Males	-40.2	-33.7	-16.4	-29.4	-16.9	-26.3	-2.8	4.5*	-67.5*
Females	-25.8	-24.5	-18.3	-27.5	-17.2	-13.8	3.0	3.9*	-90.6*
Persons	-31.5	-27.9	-17.0	-27.9	-16.7	-19.0	0.5	4.1*	-77.7*

(continued)

Table 3.05.10 (continued): Age-standardised hospital procedure rates, rate ratios and rate differences (excluding haemodialysis), Qld, WA, SA and NT, 2001–02 to 2007–08^(a)

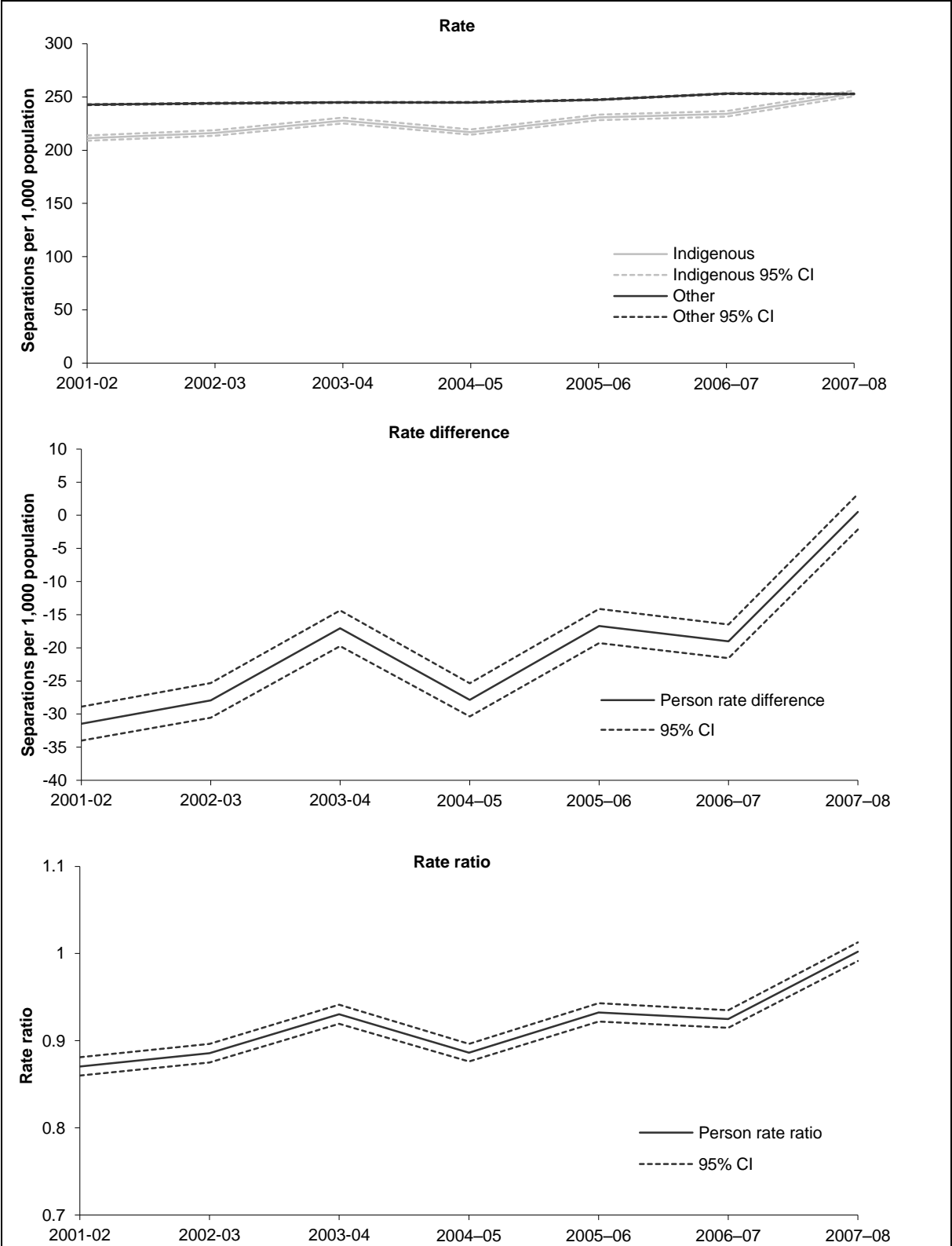
* Represents results with statistically significant increases or declines at the $p < 0.05$ level over the period 1998–99 to 2007–08.

- (a) Data are from public and most private hospitals. Data exclude private hospitals in the Northern Territory.
- (b) Average annual change in rates, rate ratios and rate differences were determined using linear regression analysis.
- (c) Per cent change between 1998–99 and 2007–08 are based on the average annual change over the period.
- (d) 'Other Australian' includes hospitalisations for non-Indigenous Australians and those for whom Indigenous status was not stated.
- (e) Hospitalisation rates for Indigenous Australians divided by hospitalisation rates for other Australians.
- (f) Hospitalisation rates for Indigenous Australians minus hospitalisation rates for other Australians.

Notes

1. Rates have been directly age-standardised using the Australian 2001 standard population.
2. Excludes procedures for haemodialysis (block no. 1060 for 2002–03 to 2007–08 and block no. 1059 for 1998–99 to 2001–02).

Source: AIHW analysis of National Hospital Morbidity Database.



Source: AIHW analysis of National Hospital Morbidity Database.

Figure 3.05.9: Hospital procedure rates, rate ratios and rate differences (excluding haemodialysis) between Indigenous and other Australians, Qld, WA, SA and NT, 2001-02 to 2007-08

Table 3.05.11: Age-standardised hospital procedure rates, rate ratios and rate differences (excluding haemodialysis) NSW, Vic, Qld, WA, SA and NT, 2004-05 to 2007-08^(a)

	2004-05	2005-06	2006-07	2007-08	Annual change ^(b)	Per cent change over period ^(c)
Indigenous separations						
Males	28,886	31,359	32,744	35,784	2,208*	22.9*
Females	39,943	42,602	45,830	48,112	2,774*	20.8*
Persons	68,832	73,961	78,574	83,896	4,981*	21.7*
Other Australian separations						
Males	2,112,071	2,192,105	2,288,547	2,387,661	92,321*	13.1*
Females	2,532,007	2,616,581	2,730,724	2,795,827	90,560*	10.7*
Persons	4,644,112	4,808,700	5,019,286	5,183,504	182,876*	11.8*
Indigenous rate per 1,000						
Males	178.8	193.1	193.8	212.9	10.3*	17.3*
Females	209.7	221.3	235.4	246.5	12.5*	17.8*
Persons	193.8	206.5	214.6	229.3	11.5*	17.8*
Other Australian rate per 1,000^(d)						
Males	226.3	229.9	234.5	238.8	4.2*	5.5*
Females	252.7	256.8	263.0	264.1	4.0*	4.8*
Persons	238.3	242.2	247.5	250.2	4.1*	5.2*
Rate ratio^(e)						
Males	0.8	0.8	0.8	0.9	0.03*	11.1*
Females	0.8	0.9	0.9	0.9	0.03*	12.5*
Persons	0.8	0.9	0.9	0.9	0.03*	12.0*
Rate difference^(f)						
Males	-47.5	-36.9	-40.7	-25.8	6.1*	-38.7*
Females	-43.1	-35.5	-27.6	-17.6	8.4*	-58.7*
Persons	-44.5	-35.7	-32.9	-20.9	7.4*	-49.7*

* Represents results with statistically significant increases or declines at the $p < 0.05$ level over the period 2004-05 to 2007-08.

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

(b) Average annual change in rates, rate ratios and rate differences were determined using linear regression analysis.

(c) Per cent changes between 1998-99 and 2007-08 are based on the average annual change over the period.

(d) 'Other Australian' includes hospitalisations for non-Indigenous Australians and those for whom Indigenous status was not stated.

(e) Hospitalisation rates for Indigenous Australians divided by hospitalisation rates for other Australians.

(f) Hospitalisation rates for Indigenous Australians minus hospitalisation rates for other Australians.

Notes

1. Rates have been directly age-standardised using the Australian 2001 standard population.

2. Excludes procedures for haemodialysis (block no. 1060).

Source: AIHW analysis of National Hospital Morbidity Database.

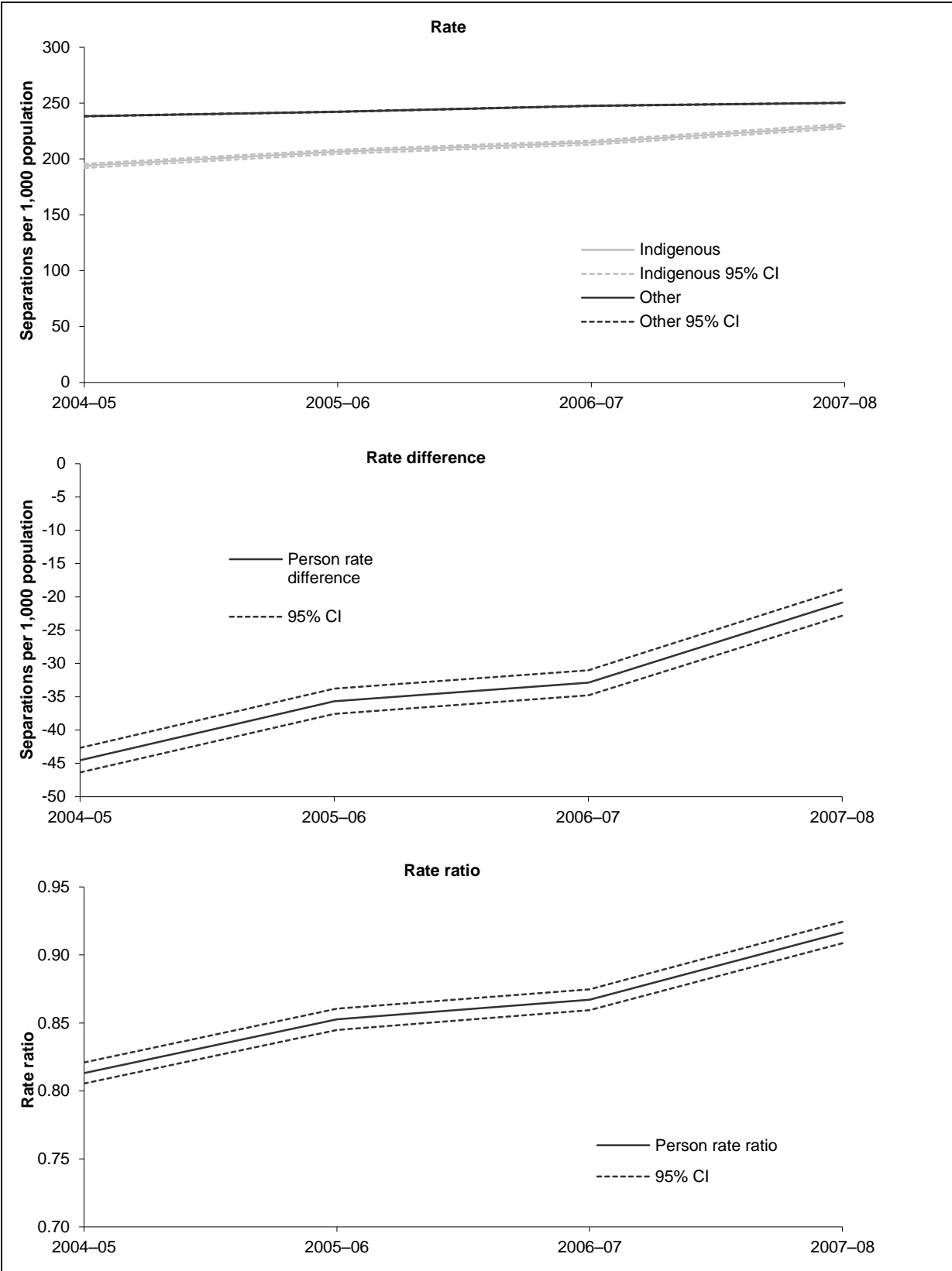


Figure 3.05.10: Hospital procedure rates, rate differences and rate ratios (excluding haemodialysis) between Indigenous and other Australians, NSW, Vic, Old, WA, SA and NT, 2004-05 to 2007-08

Source: AIHW analysis of National Hospital Morbidity Database.

Coronary heart disease hospital procedures

The AIHW report *Aboriginal and Torres Strait Islander people with coronary heart disease: further perspectives on health status and treatment* (AIHW 2006) looked at the disparities between Aboriginal and Torres Strait Islander people and other Australians with respect to their health status and treatment of coronary heart disease, including the use of coronary procedures in hospital. These data have been updated and the key findings from these analyses are outlined below.

- In 2006–08, among those Australians hospitalised with coronary heart disease, Indigenous Australians were less likely to receive coronary procedures such as coronary angiography and revascularisation procedures than other Australians. This was evident across all age groups (Table 3.05.12). The detailed age-specific rates indicate that, in both relative and absolute terms, the largest differences for both angiography and revascularisation occurred in the 55–64 and 65–74 year age groups, where the rates for other Australians were around double that for Indigenous Australians and the rate difference was over 20 percentage points for angiography and over 15 percentage points for revascularisation. Revascularisation procedures include percutaneous coronary intervention (PCI) and coronary artery by-pass grafts (CABG).
- After taking the different population age structures into account, the angiography and revascularisation rate for Aboriginal and Torres Strait Islanders was 50% lower than the rate for other Australians (rate ratio of 0.5 for both).
- Similar results were observed when PCI and CABG were analysed separately, with Indigenous Australians generally less likely to receive these procedures than other Australians across all age groups for those hospitalised for coronary heart disease, except for CABG and those in the 35–44 age group (Table 3.05.13). The age-adjusted procedure rate for PCI is around 60% lower than other Australians, although the age-adjusted rate for CABG is 20% lower (age-standardised rate ratio of 0.4 and 0.8, respectively).
- Indigenous Australians with coronary heart disease tended to have more complex cases (measured by the number of comorbidities). In 2006–08, Indigenous people with coronary heart disease were less likely to undergo a coronary procedure across all levels of complexity. In the lower complex group (none, 1 or 2 comorbidities present), Indigenous Australians were no more than half as likely to have a coronary procedure.
- The complexity of cases did not explain the lower procedure rate in Indigenous Australians compared with other Australians.

Table 3.05.12: Use of coronary procedures for those hospitalised with coronary heart disease, by Indigenous status, NSW, Vic, Qld, WA, SA and NT, July 2006 to June 2008

Age group	Indigenous Australians		Other Australians		Inequality measures	
	Number	Per cent ^(a)	Number	Per cent ^(a)	Rate ratio ^(b)	Rate difference ^(c)
Coronary angiography						
25–34	88	32.2	477	37.8	0.9	–5.6
35–44	444	31.0	4,589	45.3	0.7*	–14.3
45–54	699	30.4	17,986	49.7	0.6*	–19.3
55–64	516	28.5	37,549	53.3	0.5*	–24.8
65–74	252	26.8	41,815	51.3	0.5*	–24.5
75+	74	17.0	36,588	34.9	0.5*	–17.9
All ages^(d)						
Crude	2,083	28.9	139,070	45.7	0.6*	–16.8
ASR^(e)	—	—	—	—	0.5*	—
Revascularisation (PCI and CABG)						
25–34	41	15.0	246	19.5	0.8	–4.5
35–44	279	19.5	2,976	29.4	0.7*	–9.9
45–54	429	18.7	12,048	33.3	0.6*	–14.6
55–64	328	18.1	24,088	34.2	0.5*	–16.1
65–74	145	15.4	25,540	31.4	0.5*	–15.9
75+	42	9.6	20,852	19.9	0.5*	–10.3
All ages^(d)						
Crude	1,268	17.6	85,765	28.2	0.6*	–10.6
ASR^(e)	—	—	—	—	0.5*	—

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

(a) Per cent refers to the proportion of hospitalisations with coronary heart disease as the principal diagnosis receiving either coronary angiography or coronary revascularisation.

(b) Rate ratio—Indigenous: other.

(c) Hospitalisation rates for Indigenous Australians minus hospitalisation rates for other Australians.

(d) Includes those aged less than 25 years.

(e) ASR refers to indirectly age-standardised rate using 'other Australians' population as the standard population.

Source: AIHW analysis of National Hospital Morbidity Database

Table 3.05.13: Inequalities in the use of PCI and CABG procedures for those hospitalised with a principal diagnosis of coronary heart disease, NSW, Vic, Qld, WA, SA and NT, July 2006 to June 2008

	Age group (years)						All ages ^(a)	
	25–34	35–44	45–54	55–64	65–74	75+	Crude	ASR ^(b)
PCI								
Rate ratio ^(c)	0.9	0.6*	0.5*	0.4*	0.4*	0.4*	0.5*	0.4*
Rate difference ^(d) (%)	-2.3	-11.2	-14.3	-15.1	-13.2	-8	-9.4	—
CABG								
Rate ratio ^(c)	— ^(e)	1.3	0.9	0.9*	0.7*	0.6*	0.8*	0.8
Rate difference ^(d) (%)	— ^(e)	1.3	-0.3	-1.0	-2.7	-2.2	-1.2	—

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

(a) Includes those aged less than 25 years.

(b) ASR refers to indirectly age-standardised rate using 'other Australians' population as the standard population.

(c) Rate ratio—Indigenous: other.

(d) Hospitalisation rates for Indigenous Australians minus hospitalisation rates for other Australians.

(e) The estimates are not reliable because some of the numbers involved are small.

Source: AIHW analysis of National Hospital Morbidity Database

Digestive system hospital procedures

A study looking at hospital procedures performed for diseases of the digestive tract between July 2003 to June 2006 showed that Aboriginal and Torres Islander people were significantly less likely to receive a corresponding procedure during hospital admissions for complicated or uncomplicated hernias, diseases of the extrahepatic biliary tree and non-neoplastic diseases of the anus or rectum. Indigenous people were as likely as other Australians to receive an appendicectomy for a principal diagnosis recorded as appendicitis, and only marginally less likely to receive a large intestinal resection for admissions where a malignant neoplasm of the large intestine/rectum was recorded as the principal diagnosis. These results were statistically adjusted for age, sex, hospital, urgency of admission, remoteness of usual residence, remoteness of hospital and several comorbidities (Moore et al. 2008).

This study was replicated using the most recent data from July 2005 to June 2008, and results are summaries in Table 3.05.14. The data suggest a similar pattern as the study using data for an earlier period, that being that Aboriginal and Torres Islander people were significantly less likely to receive a corresponding procedure during hospital admissions for complicated or uncomplicated hernias and diseases of the extrahepatic biliary tree, and more likely than other Australians to receive an appendicectomy for a principal diagnosis recorded as appendicitis.

Table 3.05.14: Relative odds of receiving corresponding procedure for Indigenous people versus other Australians for hospital admissions involving diagnoses of the digestive tract, June 2005 to July 2008

Principal diagnoses	Adjusted odds ratio	95% confidence interval	p value
Appendicitis	1.33	1.09 – 1.62	0.006
Complicated and uncomplicated hernias	0.78	0.69 – 0.88	< 0.001
Diseases of extrahepatic biliary tree	0.84	0.78 – 0.91	< 0.001
Non-neoplastic anorectal disease	0.91	0.82 – 1.01	0.085
Malignant neoplasm of the large intestine/rectum	1.01	0.81 – 1.26	Not significant

Source: AIHW analysis of National Hospital Morbidity Database.

Cancer research work

A recent study of 815 Indigenous and 810 non-Indigenous patients diagnosed with cancer in Queensland between 1997 and 2002 found that, after adjustment for stage at diagnosis, treatment and comorbidities, non-Indigenous Australians had better survival than Indigenous patients (hazard ratio = 1.3, 95% CI 1.1-1.5). Indigenous patients were less likely to have had treatment for cancer (surgery, chemotherapy or radiotherapy) and waited longer for surgery (hazard ratio = 0.84, 95% CI 0.72-0.97) than non-Indigenous patients (Valery et al. 2006).

A study in Western Australian of patients who had a cancer registration in the state between 1982 and 2001 found that Indigenous people were less likely to receive surgery for lung cancer and prostate cancer, but not breast cancer (Hall et al. 2004).

Discharge against medical advice

Table 3.05.15 presents number and proportion of hospitalisations with a procedure reported for Indigenous Australians who were discharged against medical advice for the 2-year period from July 2006 to June 2008, in NSW, Vic, Qld, WA, SA and the NT.

- Overall, 2.8% of Indigenous Australians who were hospitalised with a procedure reported were discharged against medical advice.
- For Indigenous Australians who were hospitalised and had a procedure reported, the highest proportion of them who were discharged against medical advice had a principal diagnosis chapter of 'mental and behavioural disorders', 'injury, poisoning and external causes' or 'diseases of the skin' (7.8%, 4.4% and 4.3%, respectively).

Table 3.05.15: Number and proportion of hospitalisations with a procedure reported, by principal diagnosis and discharge against medical advice, NSW, Vic, Qld, WA, SA and NT, Indigenous Australians, July 2006 to June 2008

Principal diagnosis chapter (excluding dialysis)	Discharged against medical advice		Not discharged against medical advice	
	Number	Per cent	Number	Per cent
Diseases of the eye	n.p.	n.p.	n.p.	n.p.
Congenital malfunctions	n.p.	n.p.	n.p.	n.p.
Diseases of the blood	24	1.4	1,653	98.6
Neoplasms	42	0.8	5,091	99.2
Diseases of the ear	8	0.3	2,395	99.7
Factors influencing health status ^(a)	29	0.8	3,722	88.2
Certain conditions in perinatal period	13	0.4	3,272	99.6
Diseases of the musculoskeletal system	114	2.6	4,295	97.4
Diseases of the genitourinary system	87	1.5	5,918	98.6
Endocrine, nutritional and metabolic disorders	135	2.8	4,622	97.2
Diseases of the digestive system	343	2.5	13,245	97.5
Injury, poisoning and external causes	788	4.4	17,132	95.6
Pregnancy and child birth	254	1.4	18,014	98.6
Diseases of the circulatory system	186	2.5	7,121	97.5
Diseases of the skin	207	4.3	4,564	95.7
Diseases of the nervous system	99	3.8	2,514	96.2
Diseases of the respiratory system	279	3.2	8,402	96.8
Mental and behavioural disorders	524	7.8	6,205	92.2
Infectious and parasitic diseases	67	3.4	1,911	96.6
Total	3,207	2.8	112,922	97.2

(a) Excludes care involving dialysis

Note: Proportions are age-standardised using the age- and cause-specific rates of other Australians.

Source: AIHW analysis of National Hospital Morbidity Database.

Sub-acute care

Sub-acute care service provision in Australia was recently measured in a report produced by the COAG Reform Council (CRC 2010). This report presented sub-acute services disaggregated by state, Indigenous status and age group.

Table 3.05.16 presents hospital separation rates involving non-acute care for all states and territories for the financial year 2007-08. Table 3.05.17 presents this information further disaggregated by the type of care provided.

- The highest rate of separations involving non-acute care for Indigenous people was observed in Western Australia, at 8.0 separations per 1,000 population in 2007-08. The lowest rate was observed in New South Wales, at 3.6 separations per 1,000 population. For non-Indigenous people, the rate varied from 2.7 in Queensland and South Australia to 3.5 separations per 1,000 population in Victoria (Table 3.05.16).

Table 3.05.16: Non-acute care separations^(a), by state/territory and Indigenous status, 2007-08

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia ^(b)
	Number per 1,000 population ^(c)								
Indigenous	3.6	4.1	6.3	8.0	4.4	n.p.	n.p.	6.9	5.2
Non-Indigenous	3.0	3.5	2.7	3.2	2.7	n.p.	n.p.	2.8	2.9

(a) Non-acute care separations are for overnight admissions only and include the care types rehabilitation, palliative care, geriatric evaluation and management, psychogeriatric care and maintenance care. Caution should be used in the interpretations of these data because there is some variation in the use of care type categories between jurisdictions.

(b) The Australian totals for Indigenous/other Australians do not include data for the ACT and Tasmania.

(c) Rates are age standardised to the Australian population as at 30 June 2001.

Source: CRC 2010.

- The most common form of non-acute care provided in the 2007-08 financial year was rehabilitation. Rates of separations for care involving rehabilitation for Indigenous people varied from 1.5 per 1,000 in the Northern Territory to 4.5 per 1,000 in Western Australia. The range was somewhat lower for non-Indigenous people, ranging from 0.5 per 1,000 in the Northern Territory to 2.2 per 1,000 in Victoria. The number per thousand nationally was 2.6 per 1,000 for Indigenous people and 1.8 per 1,000 for non-Indigenous people.
- Separations involving maintenance care for Indigenous people were around seven times more common in the Northern Territory, which had the highest rate (4.2 per 1,000), than in New South Wales, which experienced the lowest rate (0.6 per 1,000). The next highest rate was observed in Western Australia, at 2.1 per 1,000, which is half the rate observed in the Northern Territory (Table 3.05.17).

Table 3.05.17: Non-acute care separations^(a), by care type, Indigenous status, sex and state/territory 2007-08

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia ^(b)
Number per 1,000 population ^(c)									
Rehabilitation									
Indigenous	2.2	2.8	3.1	4.5	2.1	n.p.	n.p.	1.5	2.6
Non-Indigenous	2.1	2.2	1.4	1.9	1.8	n.p.	n.p.	0.5	1.8
Palliative care									
Indigenous	0.6	0.5	1.3	1.3	0.9	n.p.	n.p.	1.2	0.9
Non-Indigenous	0.5	0.5	0.6	0.7	0.4	n.p.	n.p.	1.2	0.5
Geriatric evaluation and management									
Indigenous	0.1	0.6	0.1	0.1	n.p.	n.p.	n.p.	n.p.	0.1
Non-Indigenous	0.1	0.6	—	0.1	n.p.	n.p.	n.p.	0.3	0.2
Psychogeriatric care									
Indigenous	—	0.2	n.p.	n.p.	n.p.	n.p.	n.p.	—	—
Non-Indigenous	—	0.2	—	0.1	—	n.p.	n.p.	—	0.1
Maintenance care									
Indigenous	0.6	—	1.9	2.1	1.3	n.p.	n.p.	4.2	1.5
Non-Indigenous	0.3	0.1	0.6	0.4	0.4	n.p.	n.p.	0.8	0.3

(a) Non-acute care separations are for overnight admissions only and include the care types rehabilitation, palliative care, geriatric evaluation and management, psychogeriatric care and maintenance care. Caution should be used in the interpretations of these data because there is some variation in the use of care type categories between jurisdictions.

(b) The Australian totals for Indigenous/other Australians do not include data for the ACT or Tasmania.

(c) Rates are age standardised to the Australian population as at 30 June 2001.

Source: CRC 2010.

Table 3.05.18 presents separation rates for Indigenous and non-Indigenous people aged 65 years or over who received sub-acute services. Rates in this table are not age-standardised, and caution should be exercised making Indigenous/non-Indigenous comparisons.

- Separations involving sub-acute services per 1,000 population among those aged over 65 years were lowest in the Northern Territory for both Indigenous people (9.9) and other Australians (36). The highest rates were observed in Victoria for Indigenous people (59), and in New South Wales for non-Indigenous people (78).

Table 3.05.18: Separations for persons aged 65 years or over, receiving sub-acute services^(a), by Indigenous status and state/territory, 2007-08

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia ^(b)
Number per 1,000 population ^(c)									
Indigenous	32.3	59.2	26.7	38.1	15.6	n.p.	n.p.	9.9	28.9
Other Australians	78.4	62.3	52.5	44.6	42.0	n.p.	n.p.	36.3	60.1

(a) Sub-acute services includes separations where the type of care was reported as rehabilitation, palliative care, geriatric evaluation and management or psychogeriatric care.

(b) The Australian totals for Indigenous/other Australians do not include data for the ACT or Tasmania.

(c) Crude rates.

Source: CRC 2010.

Emergency department waiting times

Emergency department waiting times are measured as a percentage of patients who are seen within the clinically recommended triage times as advised by the Australasian College of Emergency Medicine. The percentages of patients seen within recommended times are presented in Table 3.05.19.

- Nationally, the percentages of patients seen within the recommended waiting times were similar for Indigenous and non-Indigenous people (65 and 67%).
- Rates of Indigenous people seen within the recommended times were higher when compared with non-Indigenous rates in Victoria, Queensland, Western Australia and the Northern Territory. In all other jurisdictions, rates were similar.
- Rates were lowest in the Northern Territory for both Indigenous and non-Indigenous people (44 and 39%). The highest rates were observed in New South Wales (73%) for both Indigenous and non-Indigenous people.

Table 3.05.19: Patients treated within national benchmarks for emergency department waiting times, by Indigenous status and state/territory, 2007-08^{(a)(b)(c)}

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
	Per cent								
Indigenous	73	77	70	64	56	59	58	44	65
Non-Indigenous	73	70	62	58	58	60	58	39	67

(a) Data represent the proportion of presentations for which the waiting time to service delivery was within the time specified in the definition of the triage category.

(b) It should be noted that the data presented here are not necessarily representative of the hospitals not included in the NNAPEDCD. Peer group A and B hospitals provided approximately 69% of emergency department services.

(c) The quality of the identification of Indigenous patients in the National Non-admitted Patient Emergency Department Care Database has not been assessed. Identification of Indigenous patients is not considered to be complete, and completeness may vary among the states and territories.

Source: CRC 2010.

Elective surgery waiting times

The median and 90th percentile waiting times for elective surgery procedures in public acute care hospitals are presented in Table 3.05.20. Elective surgery refers to a situation where surgery can safely be delayed for 24 hours. The median represents the number of days it took for 50% of patients on the waiting list to be removed from the list, and the 90th percentile represents the time it took for 90% of patients to be removed from the list.

- Nationally, Indigenous the median wait time for Indigenous people was 37 days, compared with 34 days for other Australians. In the Northern Territory, the median wait for Indigenous people was 62 days, compared with 37 days for other Australians. In South Australia, Indigenous people were on the waiting list for a median of 37 days, and other Australians 42 days.
- The longest 90th percentile waiting time was in the Northern Territory for Indigenous people, at 533 days. The 90th percentile for other Australians in the Northern Territory was 282 days. The shortest 90th percentile waiting times for both Indigenous and other Australians were observed in Queensland, at 174 and 136 days.

- South Australia was the only jurisdiction where Indigenous people waited less time than other Australians for elective surgery. This difference was observed at both the median (37 and 42 days) and the 90th percentile (202 and 209 days).

Table 3.05.20: Waiting times for elective surgery in public hospitals, by Indigenous status, procedure and state/territory, 2007-08 (days)^(a)

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia ^(b)
Indigenous									
50th percentile	40	40	31	31	37	n.p.	n.p.	62	37
90th percentile	290	221	174	272	202	n.p.	n.p.	533	276
Other Australians									
50th percentile	38	32	27	31	42	n.p.	n.p.	37	34
90th percentile	277	216	136	207	209	n.p.	n.p.	282	228

(a) The data presented for this indicator are sourced from linked records in the National Hospital Morbidity Database and National Elective Surgery Waiting Times Data Collection. The linked records represent about 97% of all records in National Elective Surgery Waiting Times Data Collection for 2007-08.

(b) The Australian totals for Indigenous/other Australians do not include data for the Australian Capital Territory or Tasmania.

Source: CRC 2010.

Overnight separations

Age-standardised separation rates where the length of stay in hospital was at least one night are presented in Table 3.05.21. The CRC (2010) has noted that comparability across the jurisdictions for this indicator is not particularly meaningful, but this indicator does depict the level of activity in public and private hospitals as an end point in the health system.

- The highest rates of Indigenous people with overnight stays in hospital were observed in Western and South Australia (314 and 318 separations per 1,000 population). The lowest rate was observed in Victoria, at 164 separations per 1,000.
- New South Wales had the lowest rate of overnight stays for other Australians, at 112 separations per 1,000.
- Nationally, the overnight separation rate for Indigenous Australians about twice the rate of other Australians (111 and 224 per 1,000). The greatest difference was in the Northern territory, where the overnight separation rate for Indigenous Australians was over three times that for other Australians (298 compared with 88 per 1,000 population).

Table 3.05.21: Overnight separations, by Indigenous status and state/territory, 2007-08

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia ^(a)
Number per 1,000 population^(b)									
Indigenous	190.4	164.1	216.5	314.0	317.8	n.p.	n.p.	298.1	224.2
Other Australians	112.4	116.6	117.3	115.7	128.1	n.p.	n.p.	88.4	111.3

(a) The Australian totals for Indigenous/other Australians do not include data for the ACT or Tasmania.

(b) Rates are age standardised to the Australian population as at 30 June 2001.

Source: CRC 2010.

Data quality issues

National Hospital Morbidity data

Hospital separations data

The number and pattern of hospitalisations can be affected by differing admission practices among the jurisdictions and from year to year, and differing levels and patterns of service delivery.

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 why 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 peoples. 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 covered by these six jurisdictions 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 2010 (ABS 2009).

Data sources for injury emergency episodes

The National Non-admitted Patient Emergency Department Care Database is a national collection of de-identified data on emergency department episodes based on the Non-admitted Emergency Department Care National Minimum Data Set. This data set includes the standard Indigenous status question but does not include injury coding (for example, ICD-10). The Injury Surveillance National Minimum Data Set includes injury coding (components of ICD-10) but does not include demographic details such as Indigenous status. Therefore, there is currently no national minimum data set containing both Indigenous status and injury coding.

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

- ABS (Australian Bureau of Statistics) 2009. Experimental estimates and projections: Aboriginal and Torres Strait Islander Australians 1991 to 2021. ABS cat. no. 3238.0. Canberra: ABS.
- AIHW 2005. Improving the quality of Indigenous identification in hospital statistics. Health services series no. 25. Cat. no. HSE 101. Canberra: AIHW.
- AIHW 2006. Aboriginal and Torres Strait Islander people with coronary heart disease: further perspectives on health status and treatment. Cat. no. CVD 33. Canberra: AIHW.
- AIHW 2007. Australian Hospital Statistics 2005–06. Health Services Series no. 30. Cat. no. HSE 50. Canberra: AIHW.
- AIHW 2009. Australian hospital statistics 2007–08. Health services series no. 33. Cat. no. HSE 71. Canberra: AIHW.
- AIHW 2010. Indigenous identification in hospital separations data – quality report. Health Services Series no. 35. Cat. no. HSE 85. Canberra: AIHW.
- CRC (COAG Reform Council) 2010. National Healthcare agreement: Baseline performance report for 2008–09. Sydney: CRC.
- Hall SE, Bulsara CE, Bulsara MK, Leahy TG, Culbong MR & Hendrie D et al. 2004. Treatment patterns for cancer in Western Australia: does being Indigenous make a difference? Medical Journal of Australia 181: 191–4.
- Moore A, Vu H, Herceg A & Al-Yaman F 2008. Hospital procedures for diseases of the digestive tract in Indigenous and other Australians: a multivariate analysis of hospital separation data.
- National Centre for Classification in Health 2006. International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification. 5th Edition. Sydney: National Centre for Classification in Health.
- Valery PC, Coory M, Sterling J & Green AC 2006. Cancer diagnosis, treatment, and survival in Indigenous and non-Indigenous Australians: a matched cohort study. The Lancet 367: 1842–8.

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