

3.08 Discharge against medical advice

The rate at which Aboriginal and Torres Strait Islander peoples leave hospital against medical advice or are discharged at their own risk

Data sources

Data for this measure come from the AIHW's 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in 2004–05 – New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory (AIHW unpublished). These six jurisdictions represent approximately 96% of the Indigenous population of Australia. Data are presented by state/territory of usual residence of the patient.

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 2004 to June 2006. 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, which can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay beginning or ending a change in a 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.

Proportion of hospitalisations involving discharge against medical advice

The tables below present the crude and age standardised proportions of hospitalisations that involved discharge against medical advice in Australia.

- For the period from July 2004 to June 2006, there were 57,056 hospitalisations in Australia where the patient left hospital against medical advice or was discharged at their own risk, 11,926 (21%) of which were hospitalisations of Indigenous patients.
- For approximately 2.6% of all hospitalisations of Indigenous Australians, the patient was discharged against medical advice. The Northern Territory had the highest proportion of Indigenous persons hospitalised who discharged against medical advice (4%).
- After adjusting for differences in age structure, Indigenous persons were six times as likely as other persons to discharge from hospital against medical advice. Disparities were greatest in South Australia and Western Australia where Indigenous persons discharged from hospital against medical advice at 10 and 8 times the rate of other persons respectively (Table 3.08.1).
- Indigenous males were more likely than Indigenous females to discharge against medical advice (3% compared to 2%) (Table 3.08.2).

Table 3.08.1: Discharges from hospital against medical advice, by Indigenous status and state/territory (excluding mental and behavioural disorders), July 2004 to June 2006^{(a)(b)(c)(d)}

	Number		Proportion	Age standardised proportion		Ratio ^(a)
	Indigenous	Other	Indigenous	Indigenous	Other	
New South Wales	2,081	21,725	2.4	1.9	0.5	3.6
Victoria	267	8,126	1.6	1.4	0.2	6.2
Queensland	1,852	7,853	1.6	1.3	0.3	4.2
Western Australia	2,602	3,450	2.7	2.1	0.3	7.6
South Australia	1,078	2,812	3.4	2.6	0.3	10.1
Tasmania	34	624	0.8	0.7	0.4	1.8
Australian Capital Territory	10	221	0.6	0.5	0.2	2.2
Northern Territory	4,002	319	4.0	3.5	0.6	5.7
Australia	11,926	45,130	2.6	2.1	0.3	6.2

(a) Ratio= observed hospitalisations divided by the expected number of hospitalisations based on the age and sex specific proportions for other Australians.

Notes:

1. Excludes private hospitals in Tasmania, the Northern Territory and the Australian Capital Territory.
2. Other includes separations for non-Indigenous Australians and those for whom Indigenous status was not stated.
3. Data are based on state/territory of usual residence.

Source: AIHW National Hospital Morbidity Database.

Table 3.08.2: Discharges from hospital against medical advice, by Indigenous status (excluding mental and behavioural disorders), Australia, July 2004 to June 2006^(a)

	Number		Proportion	Age standardised proportion		Ratio ^(a)
	Indigenous	Other	Indigenous	Indigenous	Other	
Males	5,854	25,614	3.0	2.3	0.4	5.5
Females	6,072	19,586	2.3	1.4	0.2	5.9
Persons	11,926	45,130	2.6	2.1	0.3	6.2

(a) Ratio= observed hospitalisations divided by the expected number of hospitalisations based on the age and sex specific proportions for other Australians.

Notes:

4. Excludes private hospitals in Tasmania, the Northern Territory and the Australian Capital Territory.
5. Other includes separations for non-Indigenous Australians and those for whom Indigenous status was not stated.
6. Data are based on state/territory of usual residence.

Source: AIHW National Hospital Morbidity Database.

Rates (hospitalisations per 1,000 population) of discharge against medical advice

The following tables present the number of hospitalisations involving discharge against medical advice per 1,000 population in the six jurisdictions with adequate Indigenous identification in their hospital recording systems (New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory).

Hospitalisations by age and sex

- A slightly higher proportion of Indigenous males were discharged from hospital against medical advice (3.0%) than Indigenous females (2.4%) (Table 3.08.3).
- Indigenous Australians aged 35–44 and 45–54 years were most likely to be discharged from hospital against medical advice, at a rate 20 times that of other Australians (Table 3.08.4).

Table 3.08.3: Discharges from hospital against medical advice, by Indigenous status and sex (excluding mental and behavioural disorders), NSW, Vic, Qld, WA, SA and NT, July 2004 to June 2006^{(a)(b)(c)(d)}

	Number		Per cent ^(e)		Indigenous			Other ^(f)			Rate Ratio ^(j)
	Indigenous	Other ^(f)	Indigenous	Other ^(f)	No. per 1000 ^(g)	95% LCL ^(h)	95% UCL ⁽ⁱ⁾	No. per 1,000 ^(g)	95% LCL ^(h)	95% UCL ⁽ⁱ⁾	
Males	5,820	25,082	3.0	0.4	15.9	15.4	16.3	1.3	1.3	1.3	12.0*
Females	6,047	19,168	2.4	0.3	14.0	13.6	14.4	1.0	1.0	1.0	14.3*
Persons	11,867	44,250	2.6	0.3	14.9	14.6	15.2	1.1	1.1	1.2	13.0*

* 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 reported by state/territory of usual residence of the patient hospitalised and are for New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory 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) Percentage of hospital separations (excluding mental and behavioural disorders) in the period 2004–05 to 2005–06.
- (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.

Source: AIHW analysis of National Hospital Morbidity Database.

Table 3.08.4: Discharges from hospital against medical advice, by Indigenous status and age group (excluding mental and behavioural disorders), NSW, Vic, Qld, WA, SA and NT, July 2004 to June 2006^{(a)(b)(c)(d)}

Age group (years)	Number		Per cent ^(e)		Indigenous			Other ^(f)			Rate Ratio ^(j)
	Indigenous	Other ^(f)	Indigenous	Other ^(f)	No. per 1,000 ^(g)	95% LCL ^(h)	95% UCL ⁽ⁱ⁾	No. per 1,000 ^(g)	95% LCL ^(h)	95% UCL ⁽ⁱ⁾	
0–4	637	1,335	1.7	0.2	5.5	5.1	5.9	0.6	0.5	0.6	9.7*
5–14	237	712	1.1	0.1	1.0	0.9	1.1	0.1	0.1	0.2	7.2*
15–24	2,076	6,269	4.5	0.2	11.1	10.6	11.6	1.2	1.2	1.2	9.3*
25–34	3,098	8,689	5.6	0.2	22.1	21.3	22.9	1.6	1.6	1.6	13.8*
35–44	3,160	7,671	4.1	0.2	26.8	25.9	27.7	1.3	1.3	1.4	20.0*
45–54	1,894	6,317	2.1	0.1	24.2	23.1	25.2	1.2	1.2	1.2	20.3*
55–64	563	5,052	0.8	0.0	13.6	12.4	14.7	1.2	1.2	1.3	11.1*
65+	202	8,205	0.4	0.0	7.7	6.6	8.8	1.6	1.6	1.7	4.7*
Total^(k)	11,867	44,250	2.6	0.3	14.9	14.6	15.2	1.1	1.1	1.2	13.0*

* 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 reported by state/territory of usual residence of the patient hospitalised and are for New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory 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) Percentage of hospital separations (excluding mental and behavioural disorders) in the period 2004–05 to 2005–06.

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

(g) Age-specific rate.

(h) LCL = lower confidence limit.

(i) UCL = upper confidence limit.

(j) Rate ratio—Indigenous: other.

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

Source: AIHW analysis of National Hospital Morbidity Database.

Hospitalisations by state/territory

Table 3.08.5 presents hospitalisations for which patients were discharged against medical advice for the 2-year period from July 2004 to June 2006 for New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory. As well as rates and ratios for the six jurisdictions that have been assessed as having adequate identification of Indigenous hospitalisations in 2004–05, unadjusted and adjusted national level data are included in the hospitalisations by state and territory table. The Australia data is adjusted by applying a completeness factor of 89.4%, which is an estimate of the level of Indigenous under-identification in hospital separations data.

- Overall, Indigenous Australians in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined were discharged from hospital against medical advice at 13 times the rate of other Australians.
- When hospital rates are adjusted at the national level for Indigenous under-identification, Indigenous persons were discharged from hospital against medical advice at around 15 times the rate of other Australians.
- In New South Wales, Victoria and Queensland Indigenous Australians were discharged from hospital against medical advice at 5, 7 and 8 times the rate of other Australians in these jurisdictions, respectively. In Western Australia, South Australia and the Northern Territory, Indigenous Australians were discharged from hospital against medical advice at 24, 25 and 32 times the rate of other Australians in these jurisdictions, respectively (Table 3.08.5; Figure 3.08.1).

Table 3.08.5: Discharges from hospital against medical advice, by Indigenous status and state/territory (excluding mental and behavioural disorders), NSW, Vic, Qld, WA, SA and NT, July 2004 to June 2006^{(a)(b)(c)(d)}

	Number		Per cent ^(e)		Indigenous			Other ^(f)			Rate Ratio ^(j)
	Indig.	Other	Indig.	Other	No. per 1,000 ^(g)	95% LCL ^(h)	95% UCL ⁽ⁱ⁾	No. per 1000 ^(g)	95% LCL ^(h)	95% UCL ⁽ⁱ⁾	
NSW	2,074	21,700	2.4	0.5	8.8	8.4	9.2	1.6	1.6	1.6	5.4*
Vic	267	8,117	1.6	0.2	5.4	4.7	6.2	0.8	0.8	0.8	6.8*
Qld	1,852	7,852	1.6	0.3	8.2	7.8	8.6	1.0	1.0	1.0	8.1*
WA	2,602	3,450	2.7	0.3	21.2	20.3	22.1	0.9	0.9	0.9	24.0*
SA	1,078	2,812	3.4	0.3	23.3	21.8	24.9	0.9	0.9	1.0	25.4*
NT	3,994	319	4.0	0.6	37.0	35.7	38.2	1.2	1.0	1.3	32.0*
NSW, Vic, Qld, WA, SA and NT	11,867	44,250	2.6	0.3	14.9	14.6	15.2	1.1	1.1	1.2	13.0*
Australia unadjusted ^(k)	12,008	45,750	2.6	0.3	14.4	14.1	14.6	1.1	1.1	1.1	12.6
Australia adjusted ^{(k)(l)}	13,419	44,339	2.6	0.3	16.0	15.7	16.3	1.1	1.1	1.1	14.6

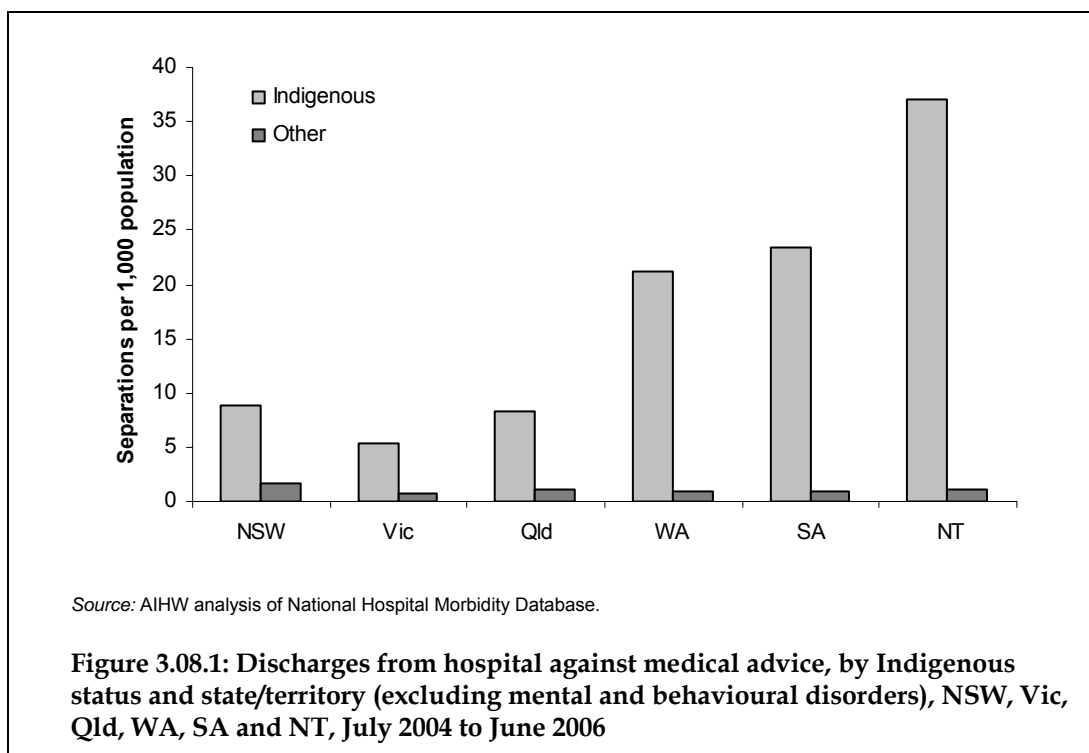
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Table 3.08.5 (continued): Discharges from hospital against medical advice, by Indigenous status and state/territory (excluding mental and behavioural disorders), NSW, Vic, Qld, WA, SA and NT, July 2004 to June 2006^{(a)(b)(c)(d)}

* 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 reported by state/territory of usual residence of the patient hospitalised and are for New South Wales, Victoria, Queensland, Western Australia, South Australia, and the Northern Territory 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) Percentage of hospital separations (excluding mental and behavioural disorders) in the period 2004–05 to 2005–06.
- (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) Includes 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).
- (l) Australian hospitalisation numbers and rates have been adjusted for Indigenous under-identification using a national adjustment factor of 0.89. This factor was derived from a study undertaken by the AIHW in 2007 which assessed the level of Indigenous under-identification in hospital data in all states and territories by comparing information gathered from face-to-face interviews in public hospitals with results from hospital records. By applying this factor, the number of Indigenous hospitalisations was increased by 11% and these additional hospitalisations then subtracted from the number of hospitalisations for Other Australians.

Source: AIHW analysis of National Hospital Morbidity Database.



Hospitalisations by principal diagnosis

- The most common principal diagnoses of hospitalisations of Indigenous Australians who were discharged against medical advice were injury and poisoning (2,578 separations) followed by respiratory diseases (1,677 separations). These two groups of diagnoses represented 36% of all hospitalisations discharged against medical advice. As a proportion of all Indigenous separations for each specific diagnoses group, discharge against medical advice was also highest for injury and poisoning (7.1%), followed by diseases of the skin (6.7%) and symptoms, signs and abnormal clinical and laboratory findings (6.4%) (Table 3.08.6).
- Indigenous Australians who were hospitalised for injury and poisoning were discharged from hospital against medical advice at 13 times the rate of other Australians. Indigenous Australians who were hospitalised for respiratory diseases were discharged against medical advice at 26 times the rate of other Australians and Indigenous Australians who were hospitalised for diseases of the skin were discharged from hospital against medical advice at 25 times the rate of other Australians.

Table 3.08.6: Discharges from hospital against medical advice, by Indigenous status and principal diagnosis (excluding mental and behavioural disorders), NSW, Vic, Qld, WA, SA and NT, July 2004 to June 2006^{(a)(b)(c)(d)}

	Number		Per cent ^(e)		Indigenous			Other ^(f)			Rate Ratio ⁽ⁱ⁾
	Indigenous	Other ^(f)	Indigenous	Other ^(f)	No. per 1,000 ^(g)	95% LCL ^(h)	95% UCL ⁽ⁱ⁾	No. per 1000 ^(g)	95% LCL ^(h)	95% UCL ⁽ⁱ⁾	
Injury, poisoning and certain other consequences of external causes (S00–Y98)	2,578	8,548	7.1	1.0	3.0	2.9	3.1	0.2	0.2	0.2	13.3*
Diseases of the respiratory system (J00–J99)	1,677	3,324	5.5	0.5	2.2	2.1	2.4	0.1	0.1	0.1	26.1*
Diseases of the digestive system (K00–K93)	1,296	4,764	5.2	0.3	1.7	1.6	1.8	0.1	0.1	0.1	13.7*
Symptom, signs and abnormal clinical and laboratory findings, n.e.c. (R00–R99)	1,290	6,883	6.4	0.8	1.7	1.6	1.8	0.2	0.2	0.2	9.8*
Complications of pregnancy, childbirth and the puerperium (O00–O99)	860	3,238	2.5	0.4	0.8	0.7	0.8	0.1	0.1	0.1	8.8*
Diseases of the skin and subcutaneous tissue (L00–L99)	731	1,310	6.7	0.6	0.9	0.8	0.9	—	—	—	25.4*
Diseases of the circulatory system (I00–I99)	586	3,602	3.8	0.4	1.0	0.9	1.0	0.1	0.1	0.1	10.6*
Endocrine, nutritional and metabolic diseases (E00–E90)	532	1,317	5.9	0.6	0.8	0.7	0.9	—	—	—	23.9*
Certain infectious and parasitic diseases (A00–B99)	476	895	4.9	0.5	0.5	0.4	0.5	—	—	—	20.3*
Diseases of the genitourinary system (N00–N99)	369	1,629	3.0	0.2	0.5	0.4	0.5	—	—	—	11.0*
Diseases of the musculoskeletal system (M00–M99)	365	1,643	4.5	0.2	0.5	0.4	0.5	—	—	—	10.8*
Other ^(k)	1,107	7,097	0.5	0.1	1.4	1.3	1.5	0.2	0.2	0.2	7.9*
Total^(l)	11,867	44,250	2.6	0.3	14.9	14.6	15.2	1.1	1.1	1.2	13.0*

(continued)

Table 3.08.6 (continued): Discharges from hospital against medical advice, by Indigenous status and principal diagnosis (excluding mental and behavioural disorders), NSW, Vic, Qld, WA, SA and NT, July 2004 to June 2006^{(a)(b)(c)(d)}

* 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 reported by state/territory of usual residence of the patient hospitalised and are for New South Wales, Victoria, Queensland, Western Australia, South Australia, and the Northern Territory 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) Percentage of hospital separations (excluding mental and behavioural disorders) in the period 2004–05 to 2005–06.
- (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) Includes: neoplasms, diseases of the nervous system, certain conditions originating in the perinatal period, diseases of the ear and mastoid process, diseases of the eye and adnexa, diseases of the blood and blood-forming organs and certain disorders involving the immune system, and congenital malformations, deformations and chromosomal abnormalities and factors influencing health status and contact with health services.
- (l) Includes hospitalisations for which no principal diagnosis was recorded. Excludes mental and behavioural disorders (F00–F99).

Source: AIHW analysis of National Hospital Morbidity Database.

Time series analyses

Time series data is presented for the four jurisdictions that have been assessed as having adequate identification of Indigenous hospitalisations for all years from 1998–99 to 2005–06 – 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 (2004–05 to 2005–06), but not as part of the time series analyses.

The number and rate of hospitalisations for which Indigenous and other Australians were discharged against medical advice over the 7-year period 1998–99 to 2005–06 are presented in Table 3.08.7 and Figure 3.08.2.

- Over the period 1998–99 to 2005–06, in Queensland, Western Australia, South Australia and the Northern Territory combined, there were significant increases in the rate at which Indigenous Australians were discharged from hospital against medical advice. The fitted trend implies an average annual increase in the rate of around 0.4 per 1,000 which is equivalent to a 16% increase in the rate over the period.
- Over the same period, there were no significant changes in the rates at which other Australians were discharged from hospital against medical advice.
- There was a significant increase in the rate ratio between Indigenous and other Australian rates of discharge from hospital against medical advice between 1998–99 and 2005–06 (9% increase 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 separations 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 hospitalisation rates may reflect better access to hospitals, rather than a worsening of health.

Table 3.08.7: Discharges against medical advice, by Indigenous status (excluding mental and behavioural disorders), Qld, WA, SA and NT, 1998–99 to 2005–06^{(a)(b)(c)(d)}

	Number		Indigenous			Other ^(e)			Rate Ratio ⁽ⁱ⁾
	Indigenous	Other ^(e)	No. per 1,000 ^(f)	95% LCL ^(g)	95% UCL ^(h)	No. per 1,000 ^(f)	95% LCL ^(g)	95% UCL ^(h)	
1998–99	3,917	6,089	16.6	16.0	17.2	0.9	0.9	0.9	18.5*
1999–00	4,196	6,383	17.5	16.9	18.1	0.9	0.9	1.0	18.8*
2000–01	4,206	6,520	17.4	16.8	18.0	0.9	0.9	1.0	18.5*
2001–02	4,387	6,531	17.5	16.9	18.1	0.9	0.9	1.0	18.8*
2002–03	4,343	6,222	17.3	16.8	17.9	0.9	0.8	0.9	19.9*
2003–04	4,514	6,534	17.8	17.2	18.3	0.9	0.9	0.9	19.8*
2004–05	4,753	7,092	18.7	18.1	19.3	1.0	0.9	1.0	19.6*
2005–06	5,178	7,554	20.1	19.5	20.7	1.0	1.0	1.0	20.2*

* 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 reported by state/territory of usual residence of the patient hospitalised and are for Queensland, Western Australia, South Australia, and the Northern Territory only. These four jurisdictions are considered to have adequate levels of Indigenous identification, although the level of accuracy varies by jurisdiction and hospital. Hospitalisation data for four jurisdictions should not be assumed to represent the hospitalisation experience in the other jurisdictions.

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

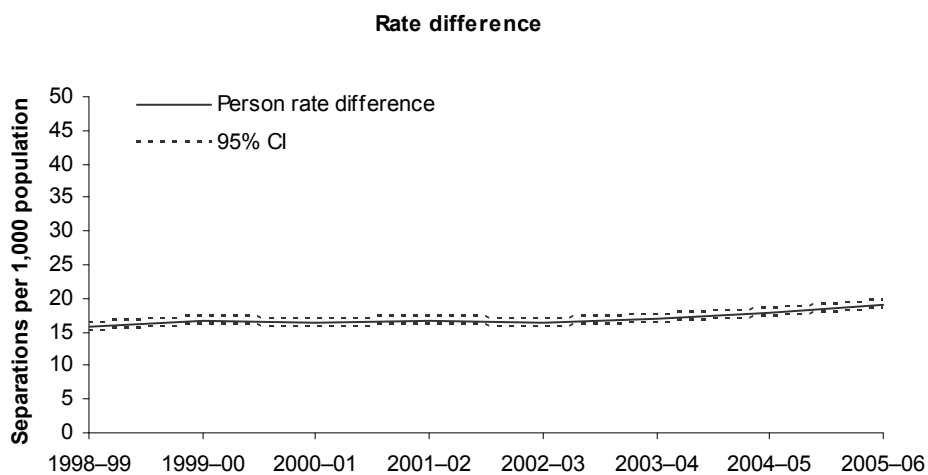
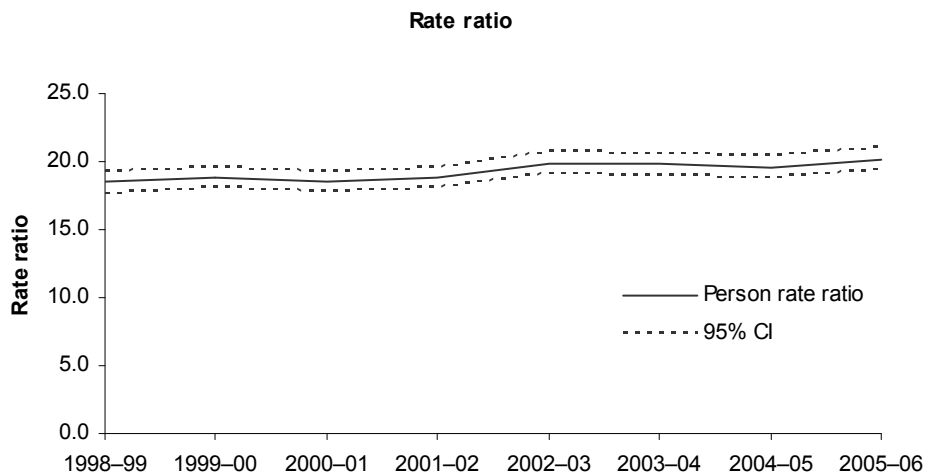
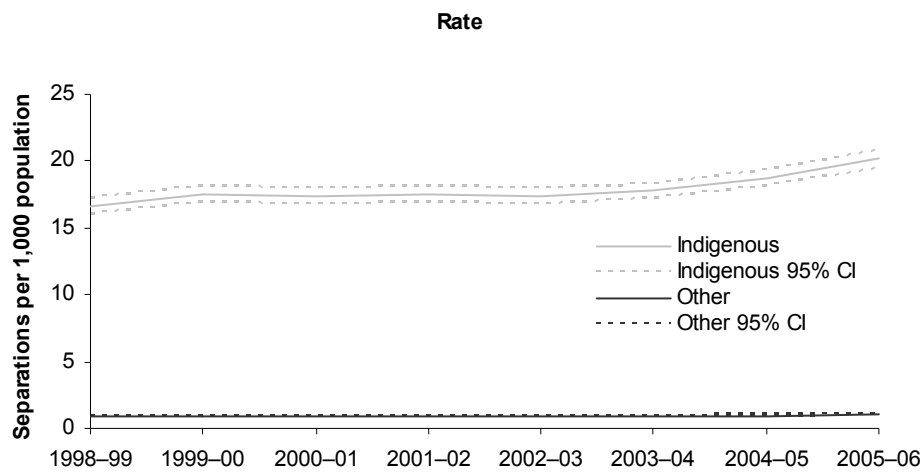
(f) Directly age-standardised using the Australian 2001 standard population.

(g) LCL = lower confidence limit.

(h) UCL = upper confidence limit.

(i) Rate ratio—Indigenous: Other.

Source: AIHW analysis of National Hospital Morbidity Database.



Source: AIHW analysis of National Hospital Morbidity Database.

Figure 3.08.2: Hospitalisation rates, rate ratios and rate differences between Indigenous and other Australians involving discharge against medical advice, Qld, WA, SA and NT combined, 1998-99 to 2005-06

Additional information

Detailed analysis (univariate and multivariate regression) of discharge from hospital against medical advice

In 2007–08 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 discharged themselves from hospital against medical advice for the period 2004–05 to 2005–06 in Australia. All eight states and territories were included in the detailed analyses.

The first series of univariate analyses revealed that there were variations in the likelihood of discharging against medical advice by state and principal diagnosis chapter. As shown in Figure 3.08.3, in all states and territories Indigenous Australians were more likely to leave hospital against medical advice than other Australians. For Indigenous Australians, the highest proportions were in the Northern Territory, South Australia, Western Australia, and New South Wales, with the lowest in the Australian Capital Territory and Tasmania.

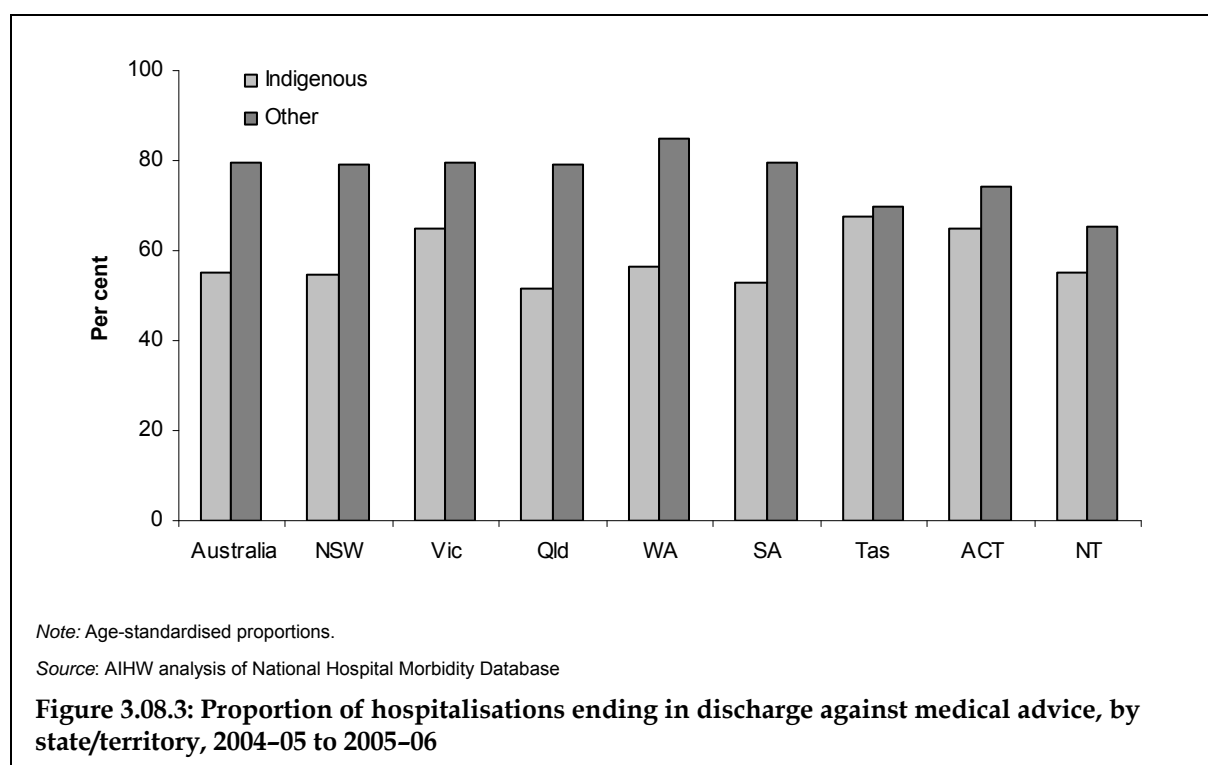
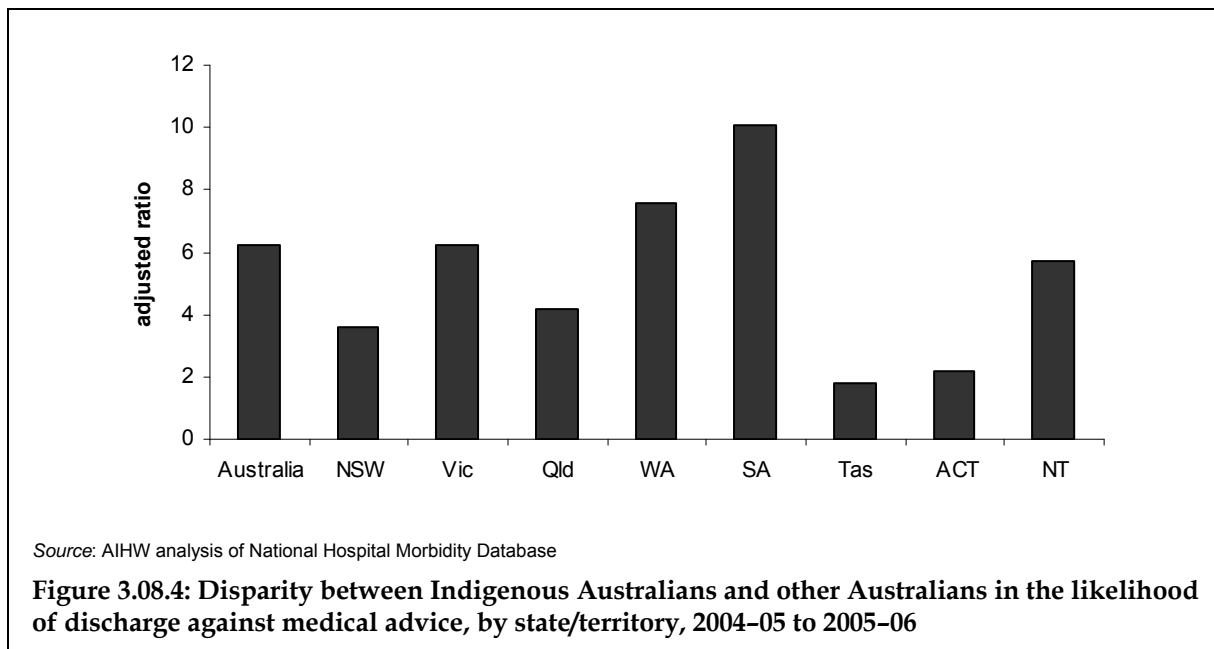
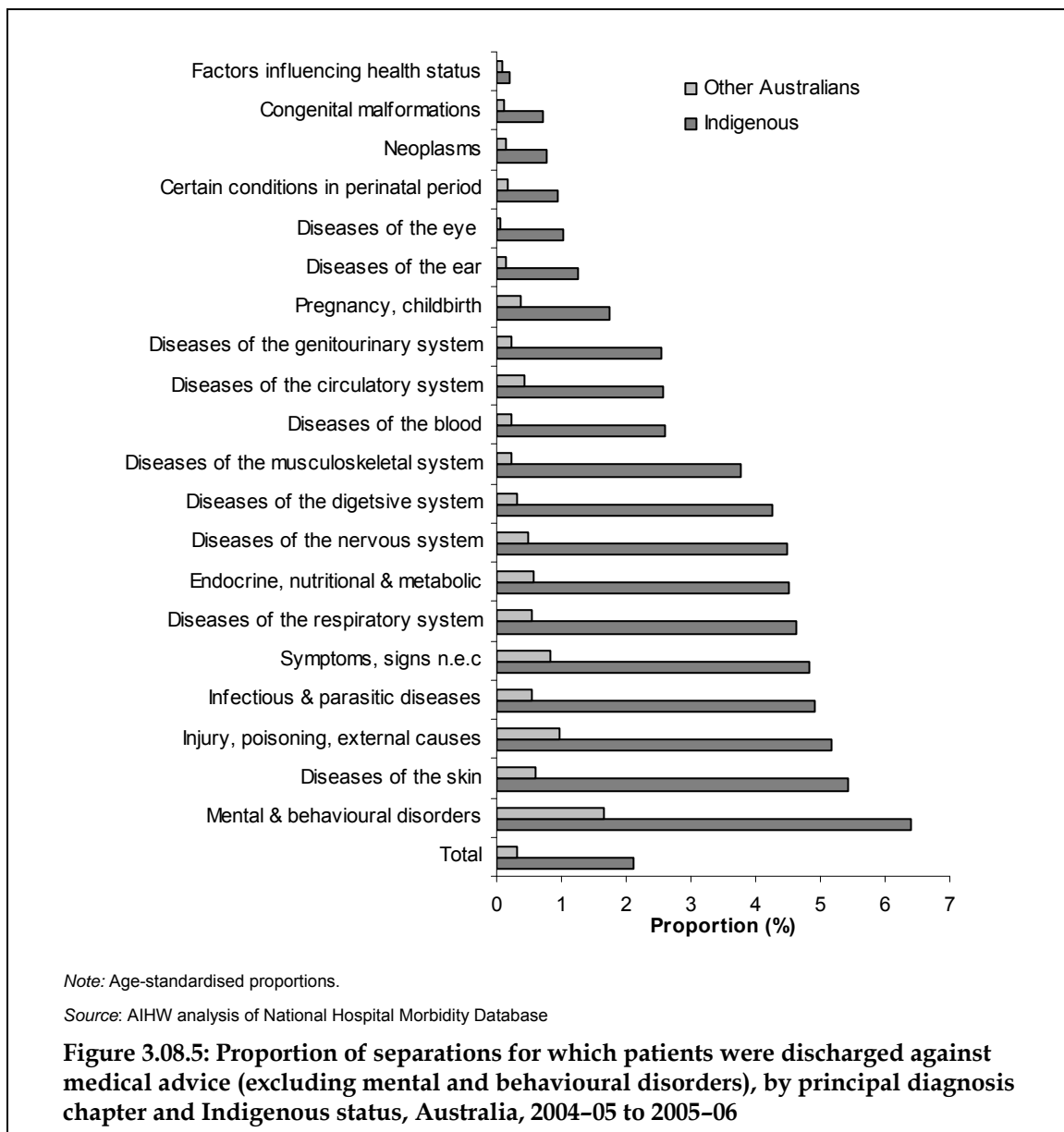


Figure 3.08.4 shows that the greatest disparities were observed in South Australia and Western Australia, where Indigenous patients were 8 to 10 times as likely to be discharged against medical advice as other patients. The lowest disparities were in Tasmania and the ACT.



The univariate analyses also found that across all diagnostic categories, a higher proportion of Indigenous patients were discharged against medical advice. Apart from mental and behavioural disorders, the principal diagnoses which had the highest numbers of separations for Indigenous people ending in self-discharge were injury, poisoning, external causes (2588), diseases of the respiratory system (1680), and diseases of the digestive system (1299). Figure 3.08.5 shows that the diagnosis categories with the highest proportions of self-discharge were diseases of the skin (5.4%), injury, poisoning and external causes (5.2%), and infectious and parasitic diseases (4.9%).

The disease categories with the greatest levels of inequality in self-discharge between Indigenous and other Australians were diseases of the musculoskeletal system (ratio of 16.6), diseases of the eye (ratio of 14.9), and diseases of the digestive system (ratio of 13.6).

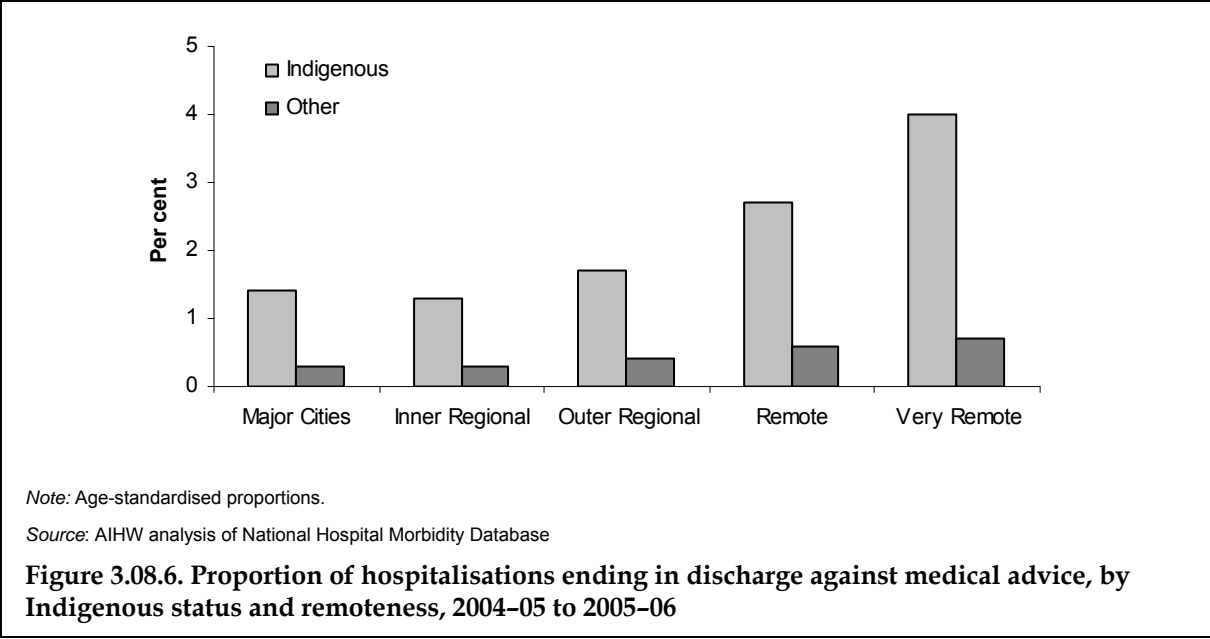


Further analyses by state/territory found that the Northern Territory had the highest proportion of separations of Indigenous patients discharged against medical advice for most diagnostic chapters. For example, for diseases of the skin, diseases of the musculoskeletal system, symptoms, signs and abnormal findings, diseases of the digestive system, and injury and poisoning, over 10% of separations of Indigenous patients involved discharge against medical advice.

In Queensland, disparities were greatest for diseases of the digestive system (ratio of 11) and diseases of the nervous system (ratio of 8). In Western Australia, disparities were greatest for musculoskeletal diseases (ratio of 24) and diseases of the digestive system (ratio of 16). In South Australia, disparities were greatest for musculoskeletal diseases (ratio of 43) and diseases of the skin (ratio of 28). In the Northern Territory, disparities were greatest for diseases of the genitourinary system (ratio of 33) and pregnancy and childbirth (ratio of 27). In New South Wales, disparities were greatest for musculoskeletal diseases (ratio of 8) and

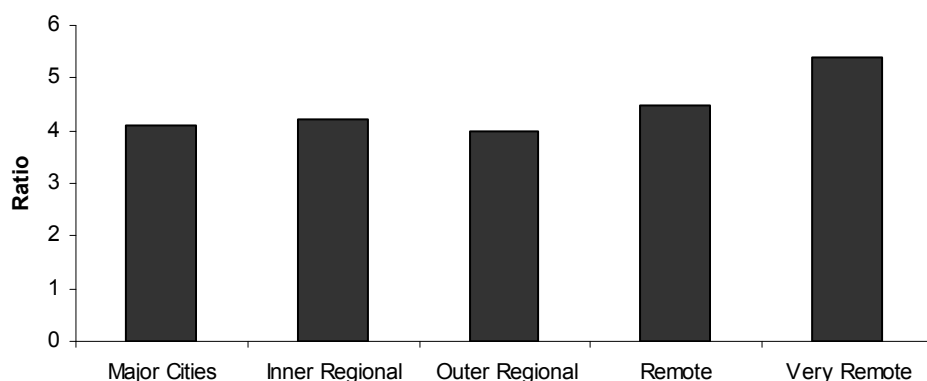
diseases of the digestive system (ratio of 7). In Victoria, disparities were greatest for diseases of the digestive system (ratio of 18) and diseases of the nervous system (ratio of 11).

A second series of univariate analyses focused on differences by state/territory, diagnosis chapter, and remoteness category. Figure 3.08.6 illustrates that the proportion of separations for which patients were discharged against medical advice among Indigenous Australians was much higher than among other Australians across all remoteness categories (excluding mental and behavioural disorders). For both Indigenous and other Australians, the proportions increased with increasing remoteness.



An examination of the variation in remoteness *within* each state/territory showed that these patterns of increasing proportions with increasing remoteness were generally persistent. In Queensland, proportions for Indigenous patients were highest in Remote areas (2.9%), followed by Very Remote areas (1.4%). In Western Australia, proportions were highest in Very Remote areas (4.6%), followed by Outer Regional areas (2.5%). In South Australia, proportions were highest in Remote and Very Remote areas (5.5%). In the Northern Territory, proportions were highest in Remote areas (4.8%), followed by Very Remote areas (4.1%).

In New South Wales, the proportions were much higher in Very Remote areas (2.5%) than other remoteness categories. In Victoria, proportions were slightly higher in Major Cities (1.6%) than in inner and Outer Regional areas (1.2% and 1.1%, respectively). In Tasmania, proportions were similar for inner and Outer Regional areas (0.6% and 0.7%, respectively). As shown in Figure 3.08.7, the greatest disparities between Indigenous Australians and other Australians were found in the Very Remote and Remote areas, with Indigenous Australians 4.5 to 5.4 times as likely to discharge themselves.



Source: AIHW analysis of National Hospital Morbidity Database

Figure 3.08.7. Disparity between Indigenous and other Australians in the likelihood of discharge against medical advice, by remoteness, 2004–05 to 2005–06

These patterns generally hold within the state/territory. The data were further broken down by remoteness category and principal diagnosis. The proportions of separations for which Indigenous patients were discharged against medical advice were highest in Remote and Very Remote areas for most principal diagnoses.

The diagnostic chapters with the highest proportions of Indigenous separations ending in discharge against medical advice varied by region (Table 3.08.8). Although some diagnostic chapters appear frequently (such as diseases of the skin and diseases of the digestive system), endocrine, nutritional and metabolic, and infectious and parasitic diseases have high rates only in Very Remote regions.

Table 3.08.8: Diagnosis chapters with the highest proportions of Indigenous separations ending in discharge against medical advice

Remoteness category	Highest proportion	Second highest proportion	Third highest proportion
Major City	Symptoms, signs, n.e.c. (3.5%)	diseases of the nervous system (3.4%)	Diseases of the skin (3.0%) and diseases of the digestive system (3.0%)
Inner Regional	Symptoms, signs, n.e.c. (3.5%)	Injury, poisoning, external causes (3.2%)	Diseases of the nervous system (3.2%)
Outer Regional	Injury, poisoning, external causes (5.0%)	Diseases of the skin (4.4%)	Diseases of the nervous system (4.3%) and diseases of the digestive system (4.3%)
Remote	Diseases of the skin (6.8%)	Injury, poisoning, external causes (6.7%)	Diseases of the nervous system (6.3%)
Very Remote	Endocrine, nutritional, and metabolic (9.0%)	Diseases of the skin (8.6%)	Infectious and parasitic diseases (8.4%)

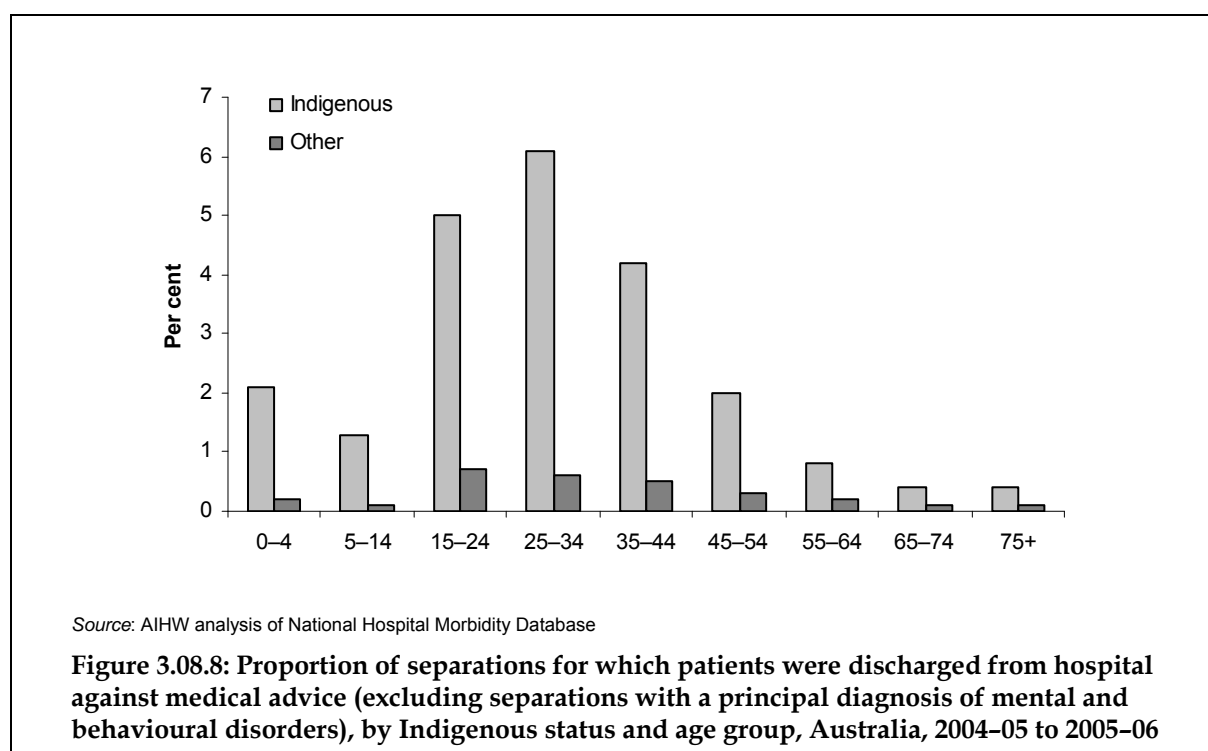
Source: AIHW analysis of National Hospital Morbidity Database

A third series of more detailed univariate analysis looked at the association between discharge against medical advice and other variables such as age, sex, average length of stay and diagnosis subcategories.

This analyses showed that Indigenous males were more likely to be discharged from hospital against medical advice than Indigenous females (3% compared with 2% of hospitalisations).

The disparity between Indigenous and other Australians in the proportion of hospitalisations for which patients were discharged against medical advice was greater for females (ratio of 7) than males (ratio of 6).

The majority of hospitalisations for which Indigenous and other patients were discharged against medical advice were among those aged 25–44 years (53% of Indigenous hospitalisations and 37% of other Australian hospitalisations). Within each age group, the highest proportion of hospitalisations for which Indigenous and other patients were discharged from hospital against medical advice were among those aged 15–24 and 25–34 years (4%–6% for Indigenous patients and around 1% for other patients). The greatest disparities between Indigenous and other Australians in the proportion of hospitalisations for which patients were discharged against medical advice were among those aged 25–34 years and 35–44 years (ratios of 9 and 7, respectively) (Figure 3.08.8).



Indigenous patients who were discharged from hospital against medical advice stayed in hospital longer on average than Indigenous patients who were not discharged from hospital against medical advice (3.1 days compared with 2.7 days) (Table 3.08.9). Indigenous patients who were discharged from hospital against medical advice had a similar average length of stay to other patients (3.1 days). In comparison, Indigenous patients who were not discharged from hospital against medical advice had a lower average length of stay in hospital than other patients (2.7 days compared with 3.1 days).

Table 3.08.9: Average length of stay in hospital for patients who were discharged against medical advice (excluding diagnoses for mental and behavioural disorders) and not discharged against medical advice, by Indigenous status and sex, Australia, 2004–05 to 2005–06

	Discharged against medical advice					Not discharged against medical advice				
	Number of bed days		Average length of stay		Ratio	Number of bed days		Average length of stay		Ratio
	Indig	Other	Indig	Other		Indig	Other	Indig	Other	
Males	19,476	79,824	3.3	3.1	1.1	531,841	19,031,331	2.8	3.1	0.9
Females	17,801	59,644	2.9	3.0	1.0	653,570	22,348,178	2.6	3.2	0.8
Persons	37,277	139,468	3.1	3.1	1.0	1,185,412	41,379,555	2.7	3.1	0.9

Source: AIHW analysis of National Hospital Morbidity Database.

The most common diagnosis subcategories for which Indigenous patients were discharged from hospital against medical advice were injuries to the head, representing 7% of total hospitalisations for which Indigenous patients were discharged against medical advice, followed by influenza and pneumonia (6%) and infections of the skin (6%). These three diagnosis subcategories were the most common diagnosis subcategories for which both Indigenous males and Indigenous females were discharged from hospital against medical advice.

Indigenous patients were more likely to be discharged from hospital against medical advice than other patients for all of the top 15 most common diagnosis subcategories for which patients were discharged against medical advice. The greatest disparities were for diseases of the oesophagus, stomach and duodenum (ratio of 15), influenza and pneumonia (ratio of 10) and diseases of the gallbladder, biliary tract and pancreas (ratio of 10).

Given the importance of all these factors, a further series of univariate and multivariate analyses were performed to examine the relative importance of selected variables in affecting the outcome of whether a person discharges against medical advice, and to see whether controlling for these factors eliminated the impact of Indigenous status. Thus, the analyses sought to answer the question of whether compositional differences between the two populations accounted for differences in the likelihood of discharge against medical advice. Categories of included variables were state and territory, remoteness, and principal diagnoses. All analyses controlled for age and sex. Univariate analyses showed that females hospitalised for each principal diagnosis chapter were less likely to discharge against medical advice than males (odds ratios ranged from 0.54 for factors influencing health status to 0.60 for injury and poisoning).

Results from both the univariate and multivariate analyses showed that Indigenous status was the most significant variable contributing to whether a patient would discharge themselves from hospital against medical advice, even after controlling for the other factors. The principal diagnosis chapters of 'factors influencing health status' (which includes care involving dialysis) and 'pregnancy and childbirth' were the second and third most significant variables after Indigenous status that affected the outcome of discharge from hospital against medical advice. Patients within these categories were less likely to discharge against medical advice than patients not hospitalised for those diagnoses.

Sex was the fourth most significant variable, with the odds for males approximately twice as high as those for females. Aside from other principal diagnosis chapters, which reduced the likelihood of discharge against medical advice (neoplasms, diseases of the digestive system,

diseases of the genitourinary system and diseases of the musculoskeletal system), age group was the next most significant variable.

Hospitalisation for mental and behavioural disorders was the most significant variable of all principal diagnosis chapters that increased the likelihood of being discharged against medical advice, followed by hospitalisations for symptoms, signs and abnormal findings, and injury and poisoning.

State/territory of usual residence of a patient paired with state/territory of hospital location was more significant in contributing to the outcome of whether a patient would discharge themselves from hospital than remoteness of usual residence paired with remoteness of hospital location. When the usual residence and hospital location variables were considered separately, results show that where a patient is hospitalised is more important than where a patient resides.

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; for example, whether living in a remote area has the same effect for other Australians that it does for Indigenous Australians.

The findings demonstrate that there were general similarities in the impacts of sex, age, and remoteness for Indigenous and other Australians. Results for Indigenous Australians showed that females were less likely to discharge against medical advice than males (odds ratio of 0.83). Similarly, for other Australians, females were also less likely to discharge against medical advice (odds ratio of 0.62). For Indigenous Australians, the odds of discharge against medical advice for patients in the 20–24, 25–29 and 30–34, 35–39 and 40–44 year age groups were between 11 and 13 times the odds for patients aged 75 years and over. These age groups were also associated with higher rates of discharge against medical advice for other Australians, but the odds ratios were much lower than for Indigenous Australians (between 4 and 5).

In general, for both Indigenous and other Australians, compared with patients with a usual residence in Major Cities and who were hospitalised in Major Cities, patients who were resident in Inner or Outer Regional, Remote or Very Remote areas and were hospitalised in Remote or Very Remote areas were most likely to discharge against medical advice.

For Indigenous Australians, patients who were resident in Very Remote areas and were hospitalised in Remote areas were most likely to discharge against medical advice (odds ratio of 4.06), followed by patients with residence in inner or Outer Regional areas who were hospitalised in Very Remote areas (ratios of around 3.3)

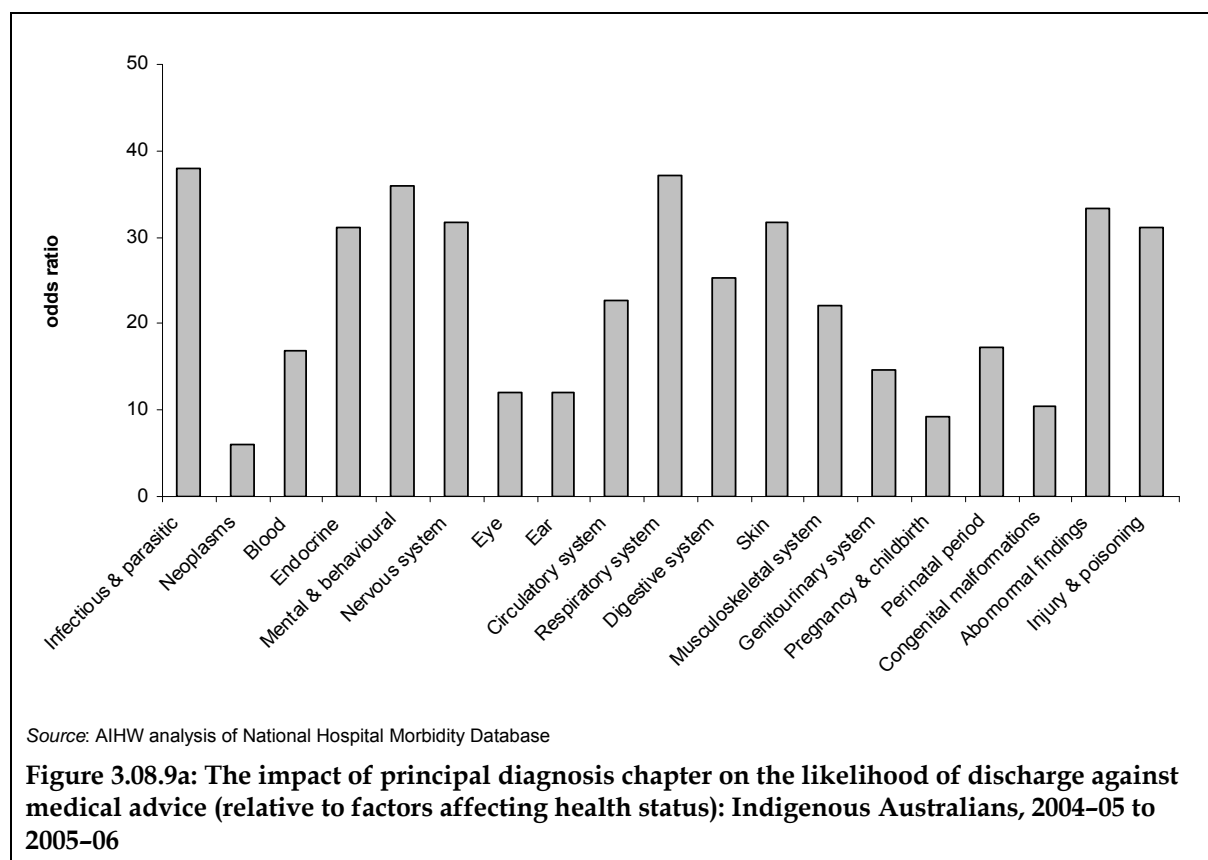
For other Australians, patients who were resident in Outer Regional areas and were hospitalised in Remote areas were most likely to discharge against medical advice (odds ratio of 2.99), followed by patients with residence in Outer Regional areas who were hospitalised in Very Remote areas (ratio of 2.63) and patients with residence in Very Remote areas who were hospitalised in Remote areas (ratio of 2.33)

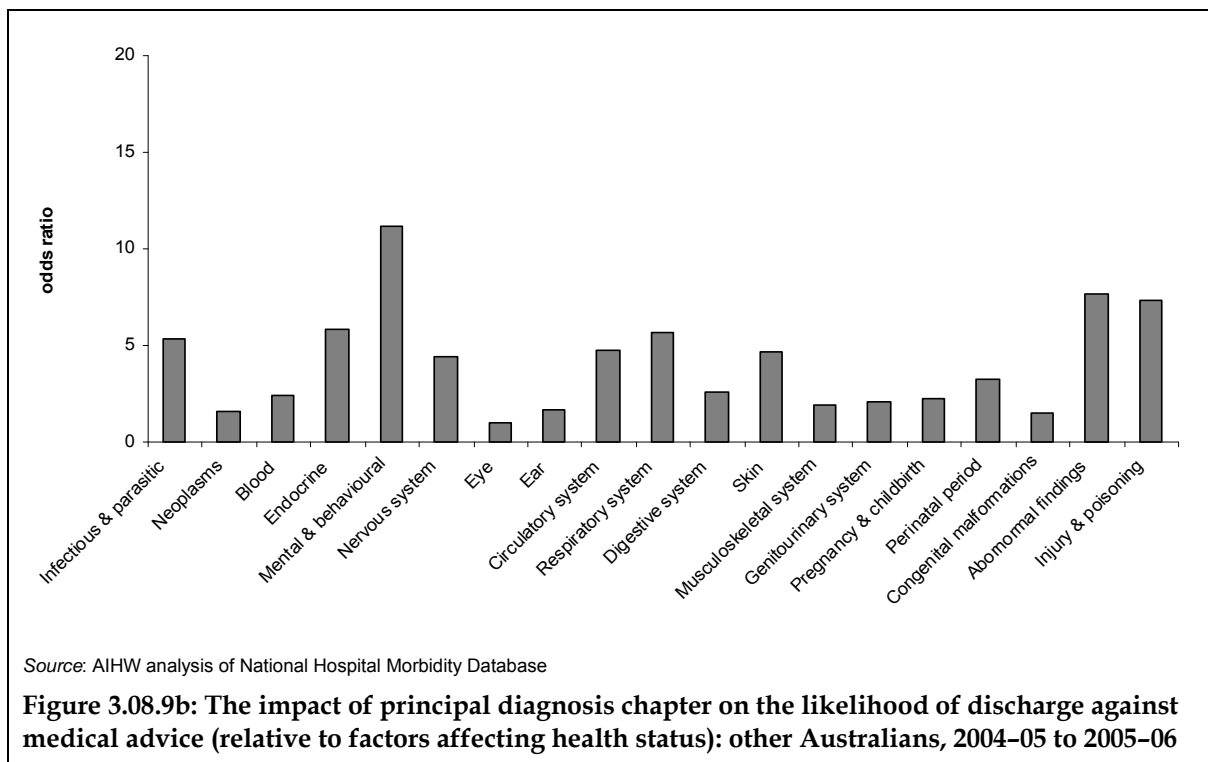
Results for Indigenous Australians showed that principal diagnosis was the most significant variable contributing to whether patients would discharge from hospital against medical advice. Infectious and parasitic diseases, diseases of the respiratory system and mental and behavioural disorders had the greatest odds ratios. Age group was the second most significant variable contributing to whether Indigenous patients would discharge against medical advice – odds ratios were highest amongst those aged 25–44 years. Remoteness of usual residence/remoteness of hospital was the next most significant variable affecting the outcome of discharge against medical advice for Indigenous Australians – odds ratios were

highest among those residing in Inner or Outer Regional, Remote or Very Remote areas and hospitalised in Remote or Very Remote areas. Sex was the least significant of the four variables.

In contrast, results for other Australians showed that sex was the most significant variable affecting the outcome of whether a patient would discharge from hospital against medical advice – odds ratios were highest for females. Principal diagnosis was the second most significant variable affecting the outcome of discharge from hospital against medical advice – mental and behavioural disorders had the highest odds ratio. Age group was the next most significant variable contributing to whether a patient would discharge from hospital against medical advice for other Australians followed by remoteness of usual residence/remoteness of hospital.

Figures 3.08.9a and 3.08.9b present the odds ratios of the principal diagnosis chapters for Indigenous Australians and other Australians. The results are relative to “factors affecting health status.” For Indigenous Australians, the highest odds ratios are for infectious and parasitic diseases, diseases of the respiratory system, and mental and behavioural disorders. The lowest odds ratios are for neoplasms, pregnancy and childbirth, and congenital malformations. For other Australians, the highest odds ratios are for mental and behavioural disorders, symptoms, signs and abnormal findings, and injury and poisoning. The lowest odds ratios are for diseases of the eye, congenital malformations, and neoplasms.





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 discharging against medical advice, they were not able to fully account for the differences. Thus, they point to the need for further research in other domains such as individual factors (such as psychosocial, personal circumstances, health and wellbeing, and cultural issues) and community level factors (such as trust/mistrust in system) and hospital level factors (such as staff, hospital policies and the environment).

Data quality issues

Hospital separations data

Separations

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.

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).

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. 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 (20% or less overall under-identification of Indigenous patients) in their hospital separations data (AIHW unpublished). It has therefore been recommended that reporting of Indigenous hospital separations data be limited to aggregated information from New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory. 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 (ABS & AIHW 2005):

- *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 for Western Australia and the Northern Territory and relatively marked Indigenous under-identification in data for South Australia and Victoria).*
- *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.

Numerator and denominator

Rate and ratio calculations rely on good numerator and denominator data. The changes in the completeness of identification of Indigenous people in hospital records may take place at different rates than changes in the identification of Indigenous people in other administrative collections and population censuses. Denominators used here are sourced from the Experimental estimates and projections: Aboriginal and Torres Strait Islander Australians 1991 to 2009 (ABS 2004).

References

ABS (Australian Bureau of Statistics) 2004. Experimental estimates and projections: Aboriginal and Torres Strait Islander Australians 1991 to 2009. ABS cat. no. 3238.0. Canberra: ABS.

ABS & AIHW (Australian Institute of Health and Welfare) 2005. The health and welfare of Australia's Aboriginal and Torres Strait Islander Peoples 2005. ABS cat. no. 4704.0, AIHW cat. no. IHW 14. Canberra: ABS & AIHW.

AIHW 2005. Improving the quality of Indigenous identification in hospital statistics. Health Services Series no. 25. Cat. no. HSE 101. Canberra: AIHW.

AIHW 2007. Australian Hospital Statistics 2005-06. Health Services Series no. 30. Cat. no. HSE 50. Canberra: AIHW.

National Centre for Classification in Health 2006. International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification. 5th Edition. National Centre for Classification in Health.