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Occasional Paper

Hospital Statistics

Aboriginal and Torres Strait Islander Australians

1999–2000

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SUMMARY

This publication provides information for the 1999–2000 financial year about the diagnoses of people identified as Aboriginal and/or Torres Strait Islander in public and private hospital morbidity collections, and the procedures performed on them in hospital. Comparisons undertaken between Indigenous and non-Indigenous rates are based on population estimates for the same period.

The quality of Aboriginal and Torres Strait Islander hospital data is limited by the extent to which Indigenous status is accurately recorded in hospital morbidity collections, which may have varied with time. Changes in the coding practice for diagnosis and procedures presents a further challenge when conducting time series analysis. These issues preclude the direct comparison of the 1999–2000 Indigenous hospital morbidity collection with data from earlier years.

Obtaining high quality Indigenous data has been recognised as a key outcome across all levels of government. Recent work coordinated by the Australian Bureau of Statistics (ABS) and the Australian Institute of Health and Welfare (AIHW), in partnership with State and Territory authorities, has resulted in improvements in the completeness with which Aboriginal and Torres Strait Islander peoples are identified in administrative collections, including hospital morbidity collections. These programs are continuing, but there is further progress yet to be made.

In 1999–2000 the hospital separations statistics indicate that Aboriginal and Torres Strait Islander persons were hospitalised at twice the rate of non-Indigenous Australians. However, this publication notes that the identification of Aboriginal and Torres Strait Islander patients in hospital records is considered to be incomplete in most jurisdictions, and therefore the true hospital separation rates for Aboriginal and Torres Strait Islander peoples would be even higher (see Chapter 2).

Two-thirds of all separations occurred in public hospitals, but 97% of separations recorded for patients identified as Indigenous occurred in public hospitals. Both males and females who were identified as Indigenous had higher separation rates than the non-Indigenous population for all age groups.

A major reason for hospitalisation (principal diagnosis) for persons identified as Indigenous was ‘care involving dialysis’, used in the treatment of kidney failure. ‘Care involving dialysis’ accounted for 29% of all separations for patients identified as Indigenous. Males identified as Indigenous were six times as likely to be hospitalised for ‘care involving dialysis’ as non-Indigenous males, and Indigenous females 14 times as likely to be hospitalised for this reason.

Other key reasons for hospitalisation of persons identified as Indigenous were conditions associated with 'pregnancy, childbirth and puerperium'; 'injury, poisoning and certain other consequences of external causes'; and 'respiratory diseases'. For most broad diagnosis types shown in this publication (i.e., for each chapter in *The International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification*), Indigenous persons were more likely than non-Indigenous persons to be hospitalised. The exceptions were for 'neoplasms', 'diseases of the musculoskeletal system and connective tissues', and 'congenital anomalies'.

Analysis of procedures in this publication takes all recorded procedures into account, reflecting a recent acute health sector shift away from the separate concepts of principal and additional procedures. Admitted patients identified as Indigenous were less likely than non-Indigenous patients to have one or more procedures recorded. Recent research indicates that a variety of factors (including age, sex, area of residence, same-day admission, patient accommodation status, type of hospital and principal diagnosis) suggest possible reasons for the disparity in public hospitals (Cunningham 2002).

In 1999–2000, haemodialysis accounted for the majority of procedures for patients identified as Indigenous. Other common types of procedures performed on patients identified as Indigenous were 'allied health interventions', and 'obstetric procedures'.

Both males and females identified as Indigenous were more than twice as likely as non-Indigenous persons to be admitted to hospital in South Australia, Western Australia, and the Northern Territory. However, it is noted that the variability in Indigenous identification across jurisdictions makes it difficult to compare hospital data between States and Territories.

CHAPTER 1

INTRODUCTION

This publication presents hospital statistics on Aboriginal and Torres Strait Islander patients who were identified as Indigenous in public and private hospital morbidity collections for the financial year 1999–2000. The publication presents a summary of hospitalisation statistics, for admitted patients only, from the Australian Institute of Health and Welfare's (AIHW) National Hospital Morbidity Database (NHMD) on the diagnoses of Indigenous patients, the procedures they underwent and a range of patient characteristics. Comparisons are made with non-Indigenous rates for the same period. While the majority of the analysis in this publication looks at total admission rates for the Indigenous population, some analysis is also presented on the proportion of admitted patients undergoing procedures in hospital.

The first detailed national report on hospital morbidity collections relating to the Indigenous population published by the Australian Bureau of Statistics (ABS) was *Occasional Paper: Hospital Statistics, Aboriginal and Torres Strait Islander Australians 1997–98* (cat. no. 4711.0). This second edition, for 1999–2000, updates the 1997–98 report. Summary information for earlier years is presented in *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples* (ABS and AIHW 1999, 2001) and data for 1999–2000 were published in *Australia's Health* (AIHW 2002) and *Australian Hospital Statistics 1999–00* (AIHW 2001a).

Analysis of hospital data is important, as a large proportion of recurrent health expenditure is used to fund hospitals and associated services. The most recent analysis of expenditure on health services for Aboriginal and Torres Strait Islander persons shows that $467 million was spent on admitted patient services for 1998–99. This represents 38% of all health expenditure for Indigenous Australians. In that same period, 31% of all health expenditure for non-Indigenous persons was spent on admitted patient services (AIHW 2001b).

In this publication, some terminology has been simplified to allow for wider dissemination. The terms 'separation rates' and 'rate of hospitalisation' have been used interchangeably. Any reference made to 'separations identified as Indigenous', represents separations for persons identified as Indigenous. The term 'Indigenous' is used throughout the publication to include all Aboriginal or Torres Strait Islander persons and the term 'non-Indigenous' refers to persons recorded as non-Indigenous or unknown. As records relate to separations, rather than to patients, it is not possible to identify and analyse multiple admissions for individuals. Explanations provided in Chapter 2 should be used in conjunction with analysis of data presented throughout the publication.

Notwithstanding the limitations in hospital data described in Chapter 2, statistical information presented in this publication provides a useful indication of the health status of Indigenous Australians, and should be interpreted in conjunction with other health measures to provide a more substantial view of Indigenous health status.

Analysis of hospital morbidity collections for Indigenous Australians is complicated by difficulties in estimating both the numbers of Indigenous patients admitted to hospital and the numbers in the overall population. Information concerning the numbers of Indigenous patients in hospital is limited by the accuracy with which they are identified in hospital records. Studies in a number of hospitals across Australia have indicated that the rate at which hospitals correctly record Indigenous status varied from as few as 44% complete in some hospitals, to 100% complete in others (Shannon, Brough and Haswell-Elkins 1997; Lynch and Lewis 1997; Condon et al. 1998; ATSIHWIU 1999; Young 2001) (see Chapter 2). The numbers presented in this publication will, therefore, underestimate the true level of hospital utilisation by Indigenous Australians.

Under-identification of Aboriginal and Torres Strait Islander patients in hospital morbidity collections makes it difficult to draw conclusions over time. Improvements in the identification of Indigenous patients can lead to higher apparent rates of hospitalisation. At present, it is not possible to ascertain whether a change in identified hospitalisation rates reflects changed Indigenous identification or a genuine change in hospital use. All states and territories are continuing to work toward the improvement of Indigenous identification. Recent initiatives include annual data quality reporting, data quality audits and various training programs for staff (see Chapter 2 and Appendix C).

CHAPTER 2 METHODS AND DATA QUALITY

HOSPITAL SEPARATIONS DATA

Data presented in this publication are from the National Hospital Morbidity Database (NHMD), a national collection of de-identified hospital separation records maintained by the Australian Institute of Health and Welfare (AIHW). Information on the characteristics, diagnoses and care of admitted patients in public and private hospitals is provided to the AIHW by State and Territory health departments. Further detail regarding the NHMD is available from the Australian Institute of Health and Welfare (AIHW 2001a).

This publication includes data from all States and Territories for almost all hospitals: public acute hospitals, public psychiatric hospitals, private acute hospitals, private psychiatric hospitals and private free-standing day hospital facilities. No data were available from a few smaller public and private hospitals (for more detail, see AIHW 2001a, pp. 2–3).

Records for 1999–2000 are for hospital separations (discharges, transfers, deaths or changes in type of episode of care) in the period 1 July 1999 to 30 June 2000. A record is included for each separation, not for each patient, so patients who separated more than once in the year have more than one record in the database. Many hospital separations are recorded each year for individual patients with conditions requiring admission several times a week, such as haemodialysis for end stage renal disease. Records for hospital boarders and healthy newborns are excluded (see *Australian Hospital Statistics 1999–00* for more detail (AIHW 2001a)).

Data presented in this publication are for admitted patients only. The number and pattern of hospitalisation can be affected by the variation between hospitals in decisions about whether to admit patients or treat them as non-admitted patients and information concerning non-admitted patients is not routinely reported.

Classification of diagnoses and procedures

This publication reports hospital separations and procedures classified using the first edition of *The International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification (ICD-10-AM)* (National Centre for Classification in Health (NCCH) 1998). Details of codes and certain adapted terminology used in this publication are provided in Appendix A.

The previous issue of this publication used *The Australian version of the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)* (National Coding Centre 1996). The two coding systems are significantly different and the capacity to undertake time-series analysis of diagnosis and procedure information is limited. Further details on the differences between the two classification systems are provided in Appendix B.

Classification of diagnoses and procedures *continued*

Data on separations are presented in this publication by principal diagnosis. The *National Health Data Dictionary* (NHDD) defines a principal diagnosis as 'The diagnosis established after study to be chiefly responsible for occasioning the patient's episode of care in hospital (or attendance at the health care facility)' (AIHW 1999a, p. 115).

In addition, data are presented on all procedures reported for each separation, as unlike principal diagnosis, no one procedure is considered to be more relevant than any other. The *National Health Data Dictionary* (NHDD) defines a procedure as 'a clinical intervention that: is surgical in nature; and/or carries a procedural risk; and/or carries an anaesthetic risk; and/or requires special training; and/or requires special facilities or equipment only available in an acute care setting' (AIHW 1999a, p. 318).

Identifying indigenous patients in hospital separation records

The methods employed by public hospital admission processes to identify Indigenous patients vary between jurisdictions (ATSIHWIU 1999). The ABS recommends using the following standard question for identifying persons as members of the Indigenous population:

Are you of Aboriginal or Torres Strait Islander origin?
(For person of both Aboriginal and Torres Strait Islander origin, mark both 'yes' boxes.)

- ☐ *No*
- ☐ *Yes, Aboriginal*
- ☐ *Yes, Torres Strait Islander*

The standard question is used in the Census of Population and Housing and in other surveys conducted by the ABS, and has also been adopted by Registrars-General throughout Australia. The quality of Indigenous hospitalisation rates is improved when the same Indigenous identification question is asked to establish the numerator (for example, number of Indigenous separations) and the denominator (for example, number of people in the Indigenous population) (Cunningham and Beneforti 2000). The standard question is also supported by, and included in, the *National Health Data Dictionary*, which is the basis of the NHMD (see Appendix D).

There are no national estimates of the level of completeness of coverage of Indigenous identification in hospital morbidity collections. Assessments of the level of completeness of Indigenous identification in hospital morbidity collections are provided annually by each State and Territory to the Australian Institute of Health and Welfare. In 1999–2000, only the Northern Territory and South Australia reported the quality of Indigenous status to be acceptable (see Appendix C). These comments are based on the jurisdiction in which the separation occurred, as opposed to the State or Territory of the patient's usual residence. This further limits the ability within this publication to provide data quality assessments for each jurisdiction, as data are presented by State and Territory of usual residence.

Identifying indigenous patients in hospital separation records *continued*

Western Australia and the Northern Territory have calculated estimates from data quality audits. The Health Department of Western Australia undertook an assessment of hospital data involving 10,000 patients in 26 hospitals. Results from this project indicated that 86% of hospital records had an accurate indication of Indigenous status (Young 2001). In the Northern Territory, a 1997 data quality audit of all public hospitals showed a 94% agreement in Indigenous status responses recorded between hospital separation records and patient interviews (Condon et al. 1998). Some smaller, localised studies have also been conducted (see table 2.1).

2.1 SELECTED STUDIES ASSESSING DATA QUALITY OF INDIGENOUS STATUS IN HOSPITAL RECORDS

Authors(b)	*Year of study*	*Location and number of hospitals*	*Total number of patients interviewed*	*Number of patients who identified as Indigenous at interview*	*Proportion of Indigenous people(a) correctly identified in hospital records*
			no.	*no.*	*%*
Shannon, Brough & Haswell-Elkins (1997)	1997	2 Queensland hospitals	451	25	44% overall
Lynch & Lewis (1997)	1997	2 Queensland hospitals	1 836	76	66% and 70%
Condon et al. (1998)	1997	5 public hospitals in the Northern Territory	400	216	94% overall; range 92–100%
ATSIHWIU (1999)	1998	11 hospitals in 5 States and Territories	8 276	648	range 55–100%
Young (2001)	2000	26 hospitals in Western Australia	10 106	754	86% overall; range 78–94
Health Information Centre, Queensland Health (2002)	2000	2 Queensland hospitals	1 090	35	82% and 62%

(a) Based on identification at interview.
(b) See List of References for more details.

As a result of a 1998 pilot study conducted by the Aboriginal and Torres Strait Islander Health and Welfare Information Unit (ATSIHWIU), a set of procedures was developed, detailing steps that hospitals and jurisdictions can follow to assess Indigenous status data quality within their collection(s). The procedures included sample selection procedures and a training package for interviewers who undertake data collection (ATSIHWIU 1999). This methodology was used in the Western Australian audit (Young 2001).

The Australian Health Ministers' Advisory Council (AHMAC) has allocated resources to promote improved Indigenous identification in all State and Territory hospitals. As part of this process, all jurisdictions were asked to assess the completeness of recording of Indigenous status in their hospital morbidity collections, by the end of 2001. Most States and Territories are now implementing or planning training programs for staff, and/or conducting data quality audits. Other activities include awareness-raising for data collectors and the general public, and research and documentation of best practice guidelines, which includes research into less confronting strategies for collecting Indigenous status information. The project also involves joint partnership arrangements between hospitals and health departments.

Missing data

In this publication, where Indigenous status was not reported, the separation was regarded as being for a non-Indigenous patient. There were approximately 147,000 separations for which Indigenous status was not reported, compared to approximately 170,000 separations identified as Indigenous. The proportion of records where Indigenous status was not reported declined from approximately 12% of all separations presented in the National Hospital Morbidity Database in 1997–98 (AIHW 1999b) to approximately 3% of all separations in 1999–2000.

As noted previously, in 1999–2000, data were not provided for a few smaller public hospitals and for a number of private hospitals. It is estimated that approximately 5.7% of private hospital separations were not provided to the National Hospital Morbidity Database (for more detail see AIHW 2001 pp 2–3, 239).

POPULATION ESTIMATES

While experimental resident Indigenous population estimates for 30 June 2001, based on the 2001 Census of Population and Housing, have been compiled, interpolated estimates for earlier years will not be available until mid-2003. Therefore, for the calculation of hospitalisation rates in this publication, the experimental resident Indigenous population projections (low series, based on 1996 Census results) for 30 June 1999 and 30 June 2000 are used to produce a 31 December 1999 estimate (the 1999–00 financial year mid-point), by age, sex, State and Territory. Population estimates for the non-Indigenous population were derived by subtracting the Indigenous estimates from the total population.

The Census count for the total Indigenous population increased by 16% from 1996 to 2001. Natural increase (births minus deaths) accounted for a 12% increase, with a further 4% increase due to other factors, such as an increasing propensity for people to be identified as Indigenous on Census forms. The 'low series' population projections assume no unexplained increase in the Indigenous population since 1996. The 'low series' population projections therefore slightly underestimate the Indigenous population and slightly overestimate hospitalisation rates. However, for most of the analyses in this publication a slight understatement in the population denominator will be more than offset by a larger understatement in the numerator (due to under-identification of Indigenous patients in hospital separations records) and Indigenous hospitalisation rates are therefore likely to be understated.

RATES OF HOSPITALISATION

There are a number of ways to quantify the morbidity experience of a population. For example, dividing the number of separations by the population would provide a 'crude separation rate', which could be expressed as separations per 1,000 or per 100,000 population.

RATES OF HOSPITALISATION *continued*

It is important to note that the likelihood of hospitalisation is closely related to age and, as the age structure of the Indigenous population is very different to that of the total population, it is necessary to adjust for the effect of age before meaningful comparisons can be made. Adjustment for the differences in age structure can be made using various age-standardisation measures. Those presented in this publication are age-specific rates, directly age-standardised rates (ASR) and rate ratios.

Age-specific rates are the number of separations (or procedures) for a specified age group, per 1,000 of the estimated resident population of the same age group at the mid-point of the year. Directly age-standardised rates (ASR) for a specific sub-population (e.g. the Indigenous population) are the overall separation (or procedure) rate that would have prevailed in the total Australian population if it had experienced, at each age, the hospital separation (or procedure) rate of the sub-population (e.g. Indigenous population). Rate ratios are the age-standardised rate of the Indigenous population, divided by the age-standardised rate for the non-Indigenous population. This enables a single figure comparison of the hospitalisation experience of two separate population groups. A rate ratio of 1.0 indicates that the Indigenous and non-Indigenous population both experience the same hospital separation (or procedure) rate. A rate ratio greater than 1.0 indicates that Indigenous people are more likely to be hospitalised, or have a particular procedure performed.

Effects of data inadequacies on rate calculations

The accuracy of the Indigenous population projections (used in the denominator where calculating hospitalisation rates), and the completeness of Indigenous identification in hospital morbidity collections (used as the numerator in hospitalisation rates), will separately affect the accuracy of the information presented here. As noted previously, the Northern Territory and South Australia reported the quality of Indigenous status to be acceptable in their hospital morbidity collections. The additional issue of under-identification, therefore, is not as relevant for these jurisdictions.

The omission of some public and private hospitals from the NHMD will also impact on rate calculations. For example, the restriction of Northern Territory data to only public hospitals is likely to understate the non-Indigenous hospitalisation rates and overstate the Indigenous to non-Indigenous separation rate ratios for that jurisdiction. This is due to the relatively lower attendance at private hospitals by Indigenous patients than non-Indigenous patients (see table 3.1).

Readers are advised to observe overall differences, similarities and trends rather than focus on the actual numbers presented. In some instances, numbers of separations/procedures presented in this publication are small, and caution should be used in analysing associated rate ratios. This publication has not presented measures of statistical significance, as this would suggest a greater level of precision than exists (Cunningham and Beneforti 2000).

CHAPTER 3 OVERVIEW OF HOSPITAL UTILISATION

HOSPITAL SEPARATIONS

In Australia during 1999–2000 there were 5.9 million hospital separations recorded. Separations where patients were recorded as Indigenous accounted for 170,862 or 2.9% of total separations. Males identified as Indigenous accounted for 2.7% of all male separations. Females identified as Indigenous accounted for 3.1% of all female separations. As at 30 June 2001, Indigenous peoples made up 2.4% of Australia's population (ABS 2002).

Hospital sector

Two-thirds of separations for both the total population and the non-Indigenous population occur in public hospitals and private hospitals account for the remainder. However, public hospitals accounted for more than 97% of both male and female separations identified as Indigenous (table 3.1). While Indigenous patients may be correctly identified less frequently in private hospitals than in public hospitals, the much lower proportions of separations identified as Indigenous patients in private hospitals largely reflects lower attendance at private hospitals by Indigenous patients.

3.1 HOSPITAL SEPARATIONS, BY HOSPITAL SECTOR(a)

	Separations identified as Indigenous			*Non-Indigenous separations(b)*				
	no.	*%*	*rate(c)*	*no.*	*%*	*rate(c)*	*rate ratio(d)*	*Proportion of separations identified as Indigenous %*
				MALES				
Public hospitals(e)	70 217	97.1	511	1 751 453	65.9	188	2.7	3.9
Private hospitals(f)(g)	2 114	2.9	33	906 485	34.1	96	0.3	0.2
Total	72 331	100.0	544	2 657 938	100.0	283	1.9	2.6
				FEMALES				
Public hospitals(e)	96 073	97.5	643	1 955 020	63.7	199	3.2	4.7
Private hospitals(f)(g)	2 458	2.5	26	1 114 911	36.3	110	0.2	0.2
Total	98 531	100.0	669	3 069 931	100.0	309	2.2	3.1

(a) Data are for the financial year 1999–2000.
(b) Includes separations identified as non-Indigenous and those for whom Indigenous status was not reported.
(c) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(d) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.
(e) Includes public psychiatric hospitals.
(f) No data were available for a number of small private and private free-standing day hospital facilities.
(g) Includes private free-standing day hospitals.

Age-specific hospital separation rates

The principal diagnosis, 'care involving dialysis', used in the treatment of kidney failure, was recorded for 29% of all separations among patients identified as Indigenous and 8% of all separations among non-Indigenous patients. It is therefore useful to look at Indigenous/non-Indigenous comparisons of hospital separations both including and excluding 'care involving dialysis'.

'Care involving dialysis' was most common for separations for adult patients identified as Indigenous, although the age onset of the disease is younger than in the general population (ABS & AIHW 2001). The associated procedure — haemodialysis — is mostly performed on a same day basis and patients may regularly have several treatments weekly. Further information on 'care involving dialysis' and haemodialysis are presented in chapters 4 and 5.

Age-specific hospital separation rates including separations for which 'care involving dialysis' was recorded, in table 3.2 and graph 3.3 indicate that at all ages, and for both sexes, patients recorded as Indigenous had higher separation rates than non-Indigenous rates. The smallest difference was between the ages 5–14 years, for both males and females, with much higher rate ratios for both males over age 24 and females over age 14.

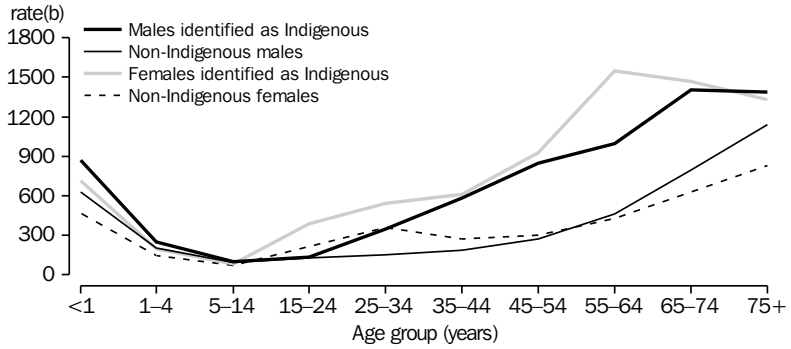
After excluding separations where the principal diagnosis was 'care involving dialysis', the Indigenous rate ratio showed a similar pattern of falling through childhood age groups, rising through early and mid adulthood age groups (to the mid 50s) and declining again in older age groups. However, from age 35 years onwards, excluding 'care involving dialysis' substantially lowers the rate ratios (see table 3.4 and graph 3.5).

3.2 AGE-SPECIFIC HOSPITAL SEPARATION RATES(a)

	Males			*Females*		
Age group (years)	*Indigenous rate(a)*	*Non-Indigenous rate(a)(b)*	*Rate ratio(c)*	*Indigenous rate(a)*	*Non-Indigenous rate(a)(b)*	*Rate ratio(c)*
Under 1	869	627	1.4	716	468	1.5
1–4	251	201	1.3	197	144	1.4
5–14	101	94	1.1	83	73	1.1
15–24	136	128	1.1	386	213	1.8
25–34	348	152	2.3	542	361	1.5
35–44	585	189	3.1	614	274	2.2
45–54	848	273	3.1	930	299	3.1
55–64	999	462	2.2	1 546	425	3.6
65–74	1 408	796	1.8	1 465	628	2.3
75 and over	1 385	1 142	1.2	1 332	832	1.6

(a) Per 1,000 population. Data are for the financial year 1999–2000.
(b) Includes separations identified as non-Indigenous and those for whom Indigenous status was not reported.
(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

3.3 HOSPITAL SEPARATIONS(a)



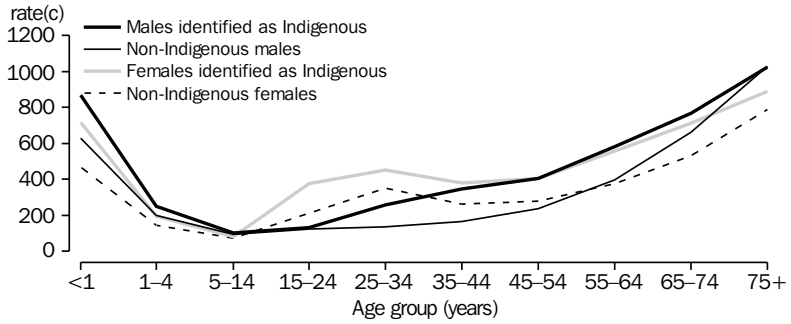
(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

3.4 AGE-SPECIFIC HOSPITAL SEPARATION RATES EXCLUDING CARE INVOLVING DIALYSIS(a)

	Males			*Females*		
Age group (years)	*Indigenous rate(a)*	*Non-Indigenous rate(a)(c)*	*Rate ratio(d)*	*Indigenous rate(a)*	*Non-Indigenous rate(a)(c)*	*Rate ratio(d)*
Under 1	869	627	1.4	716	468	1.5
1–4	251	200	1.3	197	144	1.4
5–14	101	94	1.1	83	73	1.1
15–24	132	123	1.1	378	211	1.8
25–34	259	137	1.9	451	352	1.3
35–44	346	166	2.1	380	263	1.4
45–54	406	238	1.7	406	279	1.5
55–64	581	397	1.5	557	375	1.5
65–74	766	663	1.2	714	532	1.3
75 and over	1 023	1 029	1.0	888	788	1.1

(a) Per 1,000 population. Data are for the financial year 1999–2000.
(b) Excludes all records with a principal diagnosis of 'care involving dialysis'.
(c) Includes separations identified as non-Indigenous and those for whom Indigenous status was not reported.
(d) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

3.5 HOSPITAL SEPARATIONS(a) EXCLUDING CARE INVOLVING DIALYSIS(b)



(a) Data are for the financial year 1999–2000.
(b) Excludes all records with a principal diagnosis of 'care involving dialysis'.
(c) Per 1,000 population.

Separations by State and Territory of usual residence

Males and females identified as Indigenous had higher separation rates when compared with non-Indigenous males and females in most States and Territories. The rate of hospitalisation was, overall, two to four times higher for people identified as Indigenous living in the Northern Territory, Western Australia, South Australia and Queensland compared to non-Indigenous people for these jurisdictions (table 3.6). As noted in Chapter 2, caution is needed in comparing data across jurisdictions as some public and private hospitals are omitted from the data for some jurisdictions. For example, the restriction of Northern Territory data to only public hospitals is likely to understate the non-Indigenous hospitalisation rates and overstate the Indigenous to non-Indigenous separation rate ratios for that jurisdiction.

3.6 HOSPITAL SEPARATIONS(a) IDENTIFIED AS INDIGENOUS BY STATE/ TERRITORY OF USUAL RESIDENCE

	Separations identified as Indigenous		*Non-Indigenous separations(b)*				
State and Territory	*no.*	*rate(c)(d)*	*no.*	*rate(c)(d)*	*rate ratio(e)*	*Proportion of separations identified as Indigenous* %	*Proportion of the population identified as Indigenous(f)* %
			MALES				
New South Wales	14 905	420	859 420	267	1.6	1.7	1.8
Victoria	2 323	270	690 478	291	0.9	0.3	0.5
Queensland	19 683	552	514 912	300	1.8	3.7	3.2
South Australia	5 511	715	229 570	296	2.4	2.3	1.6
Western Australia(g)	14 832	700	251 287	285	2.5	5.6	3.1
Tasmania	470	133	58 279	250	0.5	0.8	3.5
Northern Territory(h)	13 868	827	12 553	214	3.9	52.5	26.9
Australian Capital Territory	504	479	29 199	215	2.2	1.7	1.1
Australia(i)	**72 331**	**544**	**2 657 938**	**283**	**1.9**	**2.6**	**2.2**
			FEMALES				
New South Wales	19 349	456	991 983	292	1.6	1.9	1.8
Victoria	3 728	414	815 272	319	1.3	0.5	0.5
Queensland	27 184	693	576 750	324	2.1	4.5	3.3
South Australia	7 316	915	271 959	336	2.7	2.6	1.6
Western Australia(g)	20 571	914	288 433	312	2.9	6.7	3.3
Tasmania	779	141	69 394	285	0.5	1.1	3.4
Northern Territory(h)	19 084	976	12 891	220	4.4	59.7	30.0
Australian Capital Territory	383	1275	33 743	225	5.7	1.1	1.1
Australia(i)	**98 531**	**669**	**3 069 931**	**309**	**2.2**	**3.1**	**2.2**

(a) Based on place of usual residence. Data are for the financial year 1999–2000 for public and private hospitals.
(b) Includes separations identified as non-Indigenous and those for whom Indigenous status was not reported.
(c) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(d) The true rate of hospitalisation of Indigenous people in States and Territories will be underestimated to the extent that Indigenous people are under-identified in the hospital records of those jurisdictions (refer chapter 2, Methods and data quality).
(e) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.
(f) As estimated for 31 December 1999.
(g) The Health Department of Western Australia suggests a correction factor of 1.09 for state level Indigenous counts, although this has not been applied to data presented in this table.
(h) Public hospitals only.
(i) Includes those usually resident in other Australian territories or overseas, and those for whom place of usual residence was not stated.

Same day separations

In 1999–2000 about half of all hospital separations occurred on a same day basis, that is, patients were admitted and discharged on the same day. Indigenous patients were less likely than non-Indigenous patients to have a same day separation. The principal diagnosis for same day separations for Indigenous patients was more likely to be coded as 'care involving dialysis' than for non-Indigenous patients.

Males and females identified as Indigenous respectively experienced 45% and 46% of separations on a same day basis, compared with 51% for non-Indigenous males and 48% for non-Indigenous females (table 3.7). 'Care involving dialysis' was reported for over a quarter of all Indigenous separations (table 4.1) and for 63% and 65% of same day separations for Indigenous male and female patients respectively (table 3.7). In comparison, 'care involving dialysis' was reported for 21% of non-Indigenous male same day separations and 13% of non-Indigenous female same day separations. When separations for which 'care involving dialysis' are excluded, 17% of Indigenous male and 16% of Indigenous female separations were on a same day basis, compared with 40% of non-Indigenous male and 42% of non-Indigenous female same day separations (table 3.7).

3.7 SAME DAY SEPARATIONS(a)

	Separations for patients identified as Indigenous			*Non-Indigenous separations(b)*		
	no.	*% of same day separations*	*% of all separations*	*no.*	*% of same day separations*	*% of all separations*
	MALES					
Same day separations for care involving dialysis	20 339	63	28	290 309	21	11
Same day separations for all other principal diagnoses	11 994	37	17	1 069 735	79	40
Total same day separations	*32 333*	*100*	*45*	*1 360 044*	*100*	*51*
	FEMALES					
Same day separations for care involving dialysis	29 524	65	30	193 176	13	6
Same day separations for all other principal diagnoses	15 822	35	16	1 272 342	87	42
Total same day separations	*45 346*	*100*	*46*	*1 465 518*	*100*	*48*

(a) Data are for the financial year 1999–2000.
(b) Includes separations identified as non-Indigenous and those for whom Indigenous status was not reported.

Average length of stay

For separations which did not occur on a same day basis, the average length of stay was about 5.6 days for Indigenous patients, and 6.5 days for non-Indigenous patients. Apart from patients aged less than one, the length of stay generally increased with age group. For most age-groups, the average length of stay for patients identified as Indigenous was longer than for non-Indigenous patients (table 3.8).

3.8 AVERAGE LENGTH OF STAY(a)

	Males		Females	
	Identified as Indigenous	*Non-Indigenous(b)*	*Identified as Indigenous*	*Non-Indigenous(b)*
Age groups (years)	*no. of days*	*no. of days*	*no. of days*	*no. of days*
Less than 1	6.3	6.0	6.9	6.4
1–4	3.5	2.4	4.0	2.4
5–14	3.5	2.7	3.7	2.9
15–24	6.1	5.3	4.3	3.8
25–34	6.8	5.8	4.2	4.2
35–44	5.7	5.8	4.8	4.9
45–54	7.3	5.8	5.3	5.7
55–64	6.9	6.5	7.7	6.2
65–74	10.8	7.7	8.8	8.0
75 and over	14.1	9.6	14.1	11.3
Average all age groups	**6.3**	**6.7**	**5.2**	**6.5**

(a) Excludes same-day separations. Data are for the financial year 1999–2000.
(b) Includes separations identified as non-Indigenous and those for whom Indigenous status was not reported.

Mode of separation

There are several ways in which a patient can leave a hospital. These include when the patient is discharged and goes home; is transferred to another facility; leaves against medical advice; dies; or leaves for other, or unspecified reasons. Patients returning home accounted for 92% of all separations. Indigenous patients were more likely than non-Indigenous patients to have their separation mode recorded as having left against medical advice, and less likely to have their separation mode recorded as having died while in hospital (table 3.9).

3.9 HOSPITAL SEPARATIONS BY MODE OF SEPARATION(a)

	Identified as Indigenous			*Non-Indigenous(b)*		
	Males	*Females*	*Total*	*Males*	*Females*	*Total*
	%	%	%	%	%	%
Went home	87.4	89.7	88.7	92.1	92.7	92.5
Transferred to another facility	7.1	6.3	6.6	5.1	5.0	5.1
Left against medical advice	4.1	2.9	3.4	0.5	0.3	0.4
Died	0.7	0.5	0.6	1.4	1.0	1.2
Other(c)	0.8	0.7	0.7	0.9	1.0	0.9
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Data are for the financial year 1999–2000.
(b) Includes separations identified as non-Indigenous and those for whom Indigenous status was not reported.
(c) Includes statistical discharge, unknown or not supplied.

Indigenous identification

In 1999–2000, there were 72,332 separations for males identified as Indigenous, and 98,532 for females identified as Indigenous. Of these 92.3% were identified as Aboriginal, 5.2% as Torres Strait Islander, 1.9% as both Aboriginal and Torres Strait Islander and 0.5% were identified as Indigenous without further specification (table 3.10).

3.10 HOSPITAL SEPARATIONS BY INDIGENOUS GROUP(a)

	Identified as Indigenous					
	Males		*Females*		*Total*	
	no.	%	no.	%	no.	%
Aboriginal	66 912	92.5	90 823	92.2	157 735	92.3
Torres Strait Islander	3 350	4.6	5 569	5.7	8 919	5.2
Both Aboriginal & Torres Strait Islander origin	1 432	2.0	1 846	1.9	3 278	1.9
Indigenous not further specified	638	0.9	294	0.3	932	0.5
Total	**72 332**	**100.0**	**98 532**	**100.0**	**170 864**	**100.0**

(a) Data are for the financial year 1999–2000. Includes separations for which age was not stated.

PROCEDURES

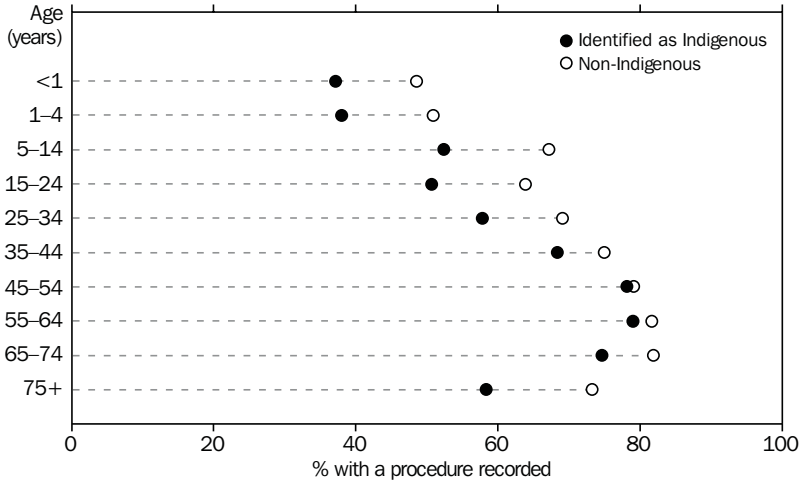
Procedures can be analysed as either the number reported per 1,000 total population, or the number reported per 100 separations. Peoples identified as Indigenous were more likely to undergo a procedure than the non-Indigenous population (table 5.4). However, hospitalised Indigenous patients were less likely than non-Indigenous patients to have a procedure reported (graph 5.19). This was evident for every age group and for both males and females.

It is important to note that this publication is not comparable with the previous edition, which only considered the formerly recognised concept of 'principal procedure', rather than all procedures. The total of all procedures documented in separation records is higher than the number of principal procedures in 1999–2000 by 50% for Indigenous females, 54% for Indigenous males, 73% for non-Indigenous males and 78% for non-Indigenous females. Because the changes in recording increase the non-Indigenous procedure rates to a greater extent than the Indigenous rates, rate ratios overall will be lower than those calculated using principal procedures only. Therefore the procedure rates and ratios presented in this issue cannot be compared with the rates and ratios appearing in the previous edition of this publication. As noted in the publication summary, further analysis of the disparities in principal procedure rates between the Indigenous and non-Indigenous population has been conducted recently, for separations reported by public hospitals (Cunningham, 2002).

Hospital sector

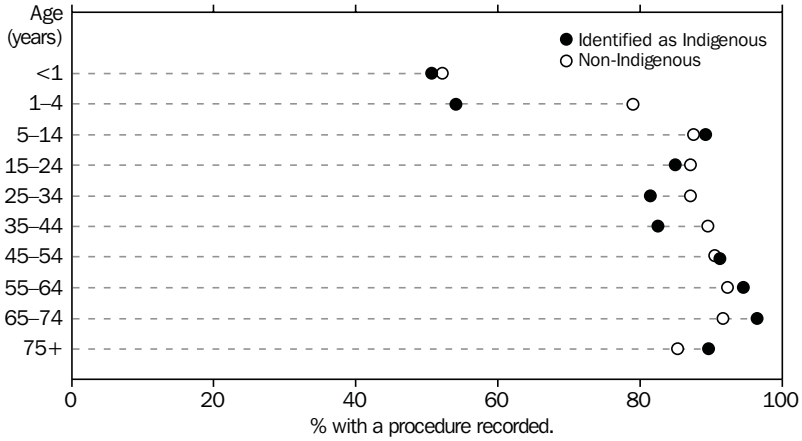
The proportion of separations with one or more procedures differed between public and private hospitals (graphs 3.11 and 3.12). Patients separating from a private hospital were more likely than those separating from a public hospital to have had a procedure recorded, independent of their Indigenous status or age.

3.11 PUBLIC HOSPITAL SEPARATIONS WITH A PROCEDURE RECORDED(a)



(a) Data are for the financial year 1999–2000.

3.12 PRIVATE HOSPITAL SEPARATIONS WITH A PROCEDURE RECORDED(a)(b)



(a) Data are for the financial year 1999–2000.
(b) No data were available for a number of small private and private free-standing day hospital facilities.

As a proportion of all procedures, patients identified as Indigenous were less likely than non-Indigenous patients to have a procedure performed in a private hospital. Procedures performed in public hospitals accounted for 96% of all procedures for patients identified as Indigenous, compared to 62% of procedures recorded for non-Indigenous patients (table 3.13).

3.13 PROCEDURES BY HOSPITAL SECTOR(a)

	Public hospitals(b)		*Private hospitals(c)(d)*		*Total*	
	no.	*%*	*no.*	*%*	*no.*	*%*
PROCEDURES FOR SEPARATIONS IDENTIFIED AS INDIGENOUS						
Males	65 448	95.5	3 072	4.5	68 520	100.0
Females	92 379	96.5	3 331	3.5	95 710	100.0
Total	*157 827*	*96.1*	*6 403*	*3.9*	*164 230*	100.0
PROCEDURES FOR NON-INDIGENOUS SEPARATIONS(e)						
Males	2 284 647	62.9	1 350 301	37.1	3 634 948	100.0
Females	2 639 690	61.6	1 647 476	38.4	4 287 166	100.0
Total	*4 924 337*	*62.2*	*2 997 777*	*37.8*	*7 922 114*	100.0

(a) Data are for the financial year 1999–2000.
(b) Includes public psychiatric hospitals.
(c) Includes private free-standing day clinics.
(d) No data were available for a number of small private and private free-standing day hospital facilities.
(e) Includes procedures identified as non-Indigenous and those for whom Indigenous status was not reported.

Further analysis of procedures is provided in chapter 5 of this publication.

CHAPTER 4 PRINCIPAL DIAGNOSES

PRINCIPAL DIAGNOSIS

Reasons for hospitalisation can be analysed in several ways e.g. principal diagnoses, procedures, or external causes. In this chapter of the publication, information is presented by principal diagnosis, and a summary of external causes for separations with principal diagnoses of 'injury, poisoning and certain other consequences of external causes' is also provided.

In this publication, principal diagnoses were reported using The International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification (ICD-10-AM). Each principal diagnosis is grouped into an ICD-10-AM chapter — see Appendix A for a listing of the ICD-10-AM codes and names for each chapter and subcategory used in this publication. Some titles have been abbreviated in this publication for use in tables and graphs, for example, chapter XXI in ICD-10-AM is titled 'factors influencing health status and contact with health services', and in tables and graphs in this publication it is referred to as 'factors influencing health status'. Principal diagnoses group/chapter titles represent all principal diagnosis contained within them, for example, the phrase 'the principal diagnosis was respiratory disease' equates to the principal diagnosis being in the respiratory disease group/chapter. Terms used in graph/table headings, such as 'hospital separations for respiratory diseases', are proxy for the full titles, which would be 'hospital separations reported with a principal diagnosis in the ICD-10-AM chapter respiratory diseases'. The term 'main reason for hospitalisation' has been used to mean 'principal diagnosis'. Analysis should be conducted in light of the definition of principal diagnosis provided in chapter 2.

In this chapter of the publication, data are presented in order of the most frequently recorded ICD-10-AM principal diagnosis chapters. A summary table is presented however, in standard ICD-10-AM chapter order (table 4.1).

'Factors influencing health status and contact with health services' was the most frequently recorded principal diagnosis for Indigenous patients during 1999–2000. This principal diagnosis includes 'care involving dialysis'. 'Care involving dialysis' accounted for 28% of male separations and 30% of female separations (table 4.1). The next three most commonly recorded principal diagnoses were in the chapters for: 'pregnancy, childbirth and puerperium'; 'injury, poisoning and certain other consequences of external causes'; and 'respiratory diseases'. Over half of all separations that were recorded as Indigenous had a principal diagnosis in one of these four groups, 52% of separations for males and 61% of separations for females (table 4.1, graph 4.2).

4.1 HOSPITAL SEPARATIONS RECORDED AS INDIGENOUS, BY PRINCIPAL DIAGNOSIS(a)

	Separations recorded for patients identified as Indigenous		*Proportion of separations for patients recorded as Indigenous*		*Directly age-standardised rate(b)*		*Rate ratio(c)*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
	no.	*no.*	*%*	*%*				
Infectious/parasitic diseases	2 476	2 379	3.4	2.4	10.8	10.3	2.3	2.3
Neoplasms	1 030	1 598	1.4	1.6	12.9	13.8	0.6	0.7
Diseases of the blood, blood-forming organs & immune mechanism	269	525	0.4	0.5	2.5	3.9	0.8	1.2
Endocrine, nutritional & metabolic diseases	1 301	1 580	1.8	1.6	11.7	12.4	4.2	3.7
Mental & behavioural disorders	4 338	3 301	6.0	3.4	25.7	18.4	2.2	1.4
Nervous system diseases	1 751	1 183	2.4	1.2	12.0	7.4	1.8	1.3
Diseases of the eye & adnexa	624	751	0.9	0.8	7.8	8.5	1.0	1.0
Diseases of the ear & mastoid process	949	924	1.3	0.9	3.2	3.4	1.0	1.3
Circulatory diseases	3 390	3 168	4.7	3.2	37.5	30.8	1.5	1.9
Respiratory diseases	7 880	7 669	11.0	7.8	47.5	47.0	2.6	3.2
Digestive diseases	4 929	4 989	6.9	5.1	34	31.5	1.0	0.9
Diseases of the skin & subcutaneous tissue	2 768	2 517	3.8	2.6	16.1	13.7	2.8	2.9
Diseases of the musculoskeletal system & connective tissue diseases	1 762	1 655	2.4	1.7	13.0	12.0	0.7	0.8
Genitourinary system diseases	1 551	4 481	2.2	4.6	13.7	28.6	1.2	1.2
Pregnancy, childbirth & puerperium	—	15 534	—	15.8	—	68.2	—	1.4
Certain conditions originating in the perinatal period	1 238	991	1.7	1.0	3.1	2.6	1.0	1.0
Congenital anomalies	406	330	0.6	0.3	1.2	1.0	0.6	0.6
Symptoms, signs not elsewhere classified	3 463	4 008	4.8	4.1	25.1	25.8	1.6	1.5
Injury/poisoning	8 817	7 193	12.3	7.3	47.5	38.9	1.9	2.3
Factors influencing health status(d)								
Care involving dialysis	20 451	29 646	28.3	30.1	194.8	263.3	6.4	14.0
Other	2 852	4 040	3.9	4.1	22.4	26.6	0.7	0.8
Total	*23 303*	*33 686*	*32.2*	*34.2*	*217.1*	*289.8*	*3.6*	*5.7*
Not specified	86	69	0.2	0.1	1.5	0.9	5.5	2.8
Total (excluding care involving dialysis)	**51 880**	**68 885**	**71.7**	**69.9**	**349.4**	**405.8**	**1.4**	**1.4**
Total (including care involving dialysis)	**72 331**	**98 531**	**100.0**	**100.0**	**544.2**	**669.0**	**1.9**	**2.2**

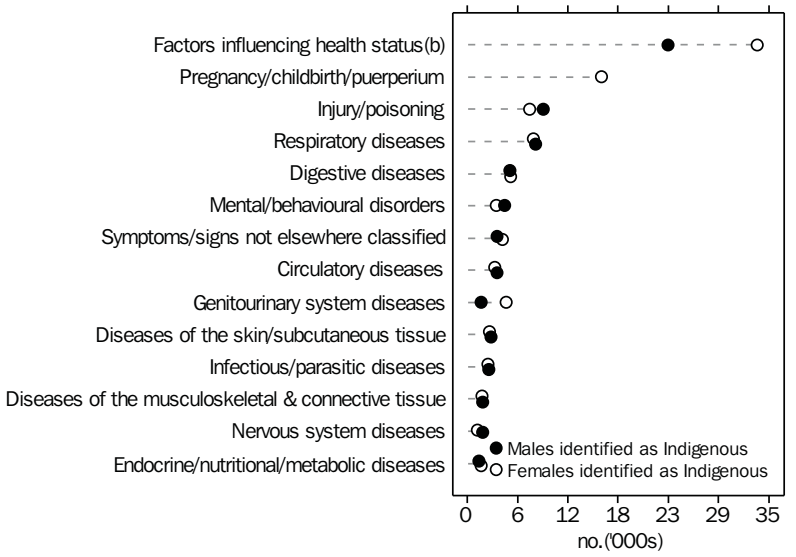
(a) Data are for the financial year 1999–2000 for public and private hospitals. No data were available for a number of small private and private free-standing day hospital facilities. External causes not included.

(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.

(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

(d) Includes hospitalisation for care involving dialysis, chemotherapy, radiotherapy and other reasons for contact that are not a disease or injury classified elsewhere.

4.2 MOST COMMON PRINCIPAL DIAGNOSES(a)



(a) Data are for the financial year 1999–2000.
(b) Includes hospitalisation for care involving dialysis, chemotherapy, radiotherapy and other reason for contact that are not a disease or injury classified elsewhere.

Factors influencing health status and contact with health services

Under this principal diagnosis, the codes Z00–Z99 are provided for occasions when circumstances other than a disease, injury or external cause (classifiable to codes A00–Y89), are recorded as 'diagnoses'. These occasions can arise in two main ways:

(a) when a person who may or may not be sick has a health service encounter for a specific purpose, e.g. to receive limited care for a current condition, to donate an organ or tissue, to receive prophylactic vaccination; or to discuss a problem which is in itself not a disease or injury.

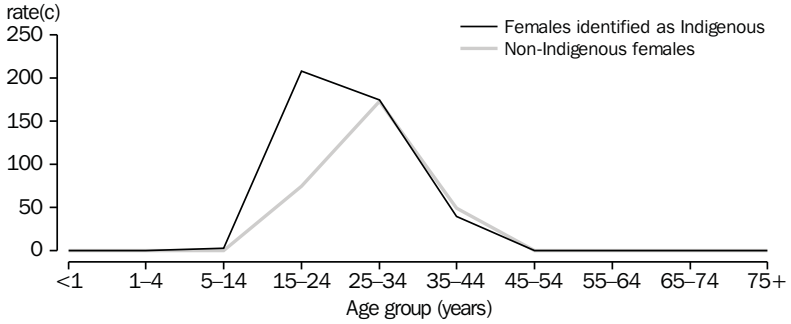
(b) when a circumstance or problem is present which influences the person's health status but is not in itself a current illness or injury (National Centre for Classification in Health (NCCH) 1998).

In 1999–2000, 'factors influencing health status and contact with health services' was the reported principal diagnosis for about 30% of all separations for persons identified as Indigenous. 'Care involving dialysis' was the major principal diagnosis, accounting for 89% of these separations for patients identified as Indigenous (table 4.1). Indigenous patients had a higher rate of separations for 'care involving dialysis' when compared with non-Indigenous patients. Males identified as Indigenous had 6 times as many separations for 'care involving dialysis' as non-Indigenous males. Females identified as Indigenous had 14 times as many separations for 'care involving dialysis' as non-Indigenous females (table 4.1). Data on the associated procedure haemodialysis are described in chapter 5.

Pregnancy, childbirth and puerperium

'Pregnancy, childbirth and puerperium' includes normal labour and deliveries. Separations relating to 'pregnancy, childbirth and puerperium' accounted for 16% of all separations for females identified as Indigenous (table 4.1). The rate of hospitalisation was higher for Indigenous females than for non-Indigenous females up to the age of 24 years (graph 4.3), which reflects the higher birth rates among younger Indigenous women (Day et al. 1999).

4.3 HOSPITAL SEPARATIONS FOR PREGNANCY, CHILDBIRTH AND PUERPERIUM(a)



(a) Data are for the financial year 1999–2000.
(b) Includes normal delivery.
(c) Per 1,000 population.

Females identified as Indigenous had more separations in 1999–2000, when compared with non-Indigenous females for all of the reported subcategories (table 4.4).

4.4 AGE-STANDARDISED RATES FOR PREGNANCY, CHILDBIRTH AND PUERPERIUM(a)

	Indigenous females			
	Separations			
	no.	%	rate(b)	rate ratio(c)
Pregnancy with abortive outcome	2 009	2.0	8.9	1.1
Duration of pregnancy, oedema, proteinuria, hypertensive disorders	888	0.9	4.0	1.3
Other maternal disorders, related to pregnancy	1 646	1.7	7.3	2.4
Maternal care — fetus, amniotic cavity & delivery	3 840	3.9	16.9	1.5
Complications of labour and delivery	3 913	4.0	17.0	1.2
Single delivery	1 652	1.7	7.2	1.8
Complications related to puerperium	287	0.3	1.2	1.1
Other obstetric conditions	1 299	1.3	5.7	2.5
Total	**15 534**	**15.8**	**68.2**	**1.4**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

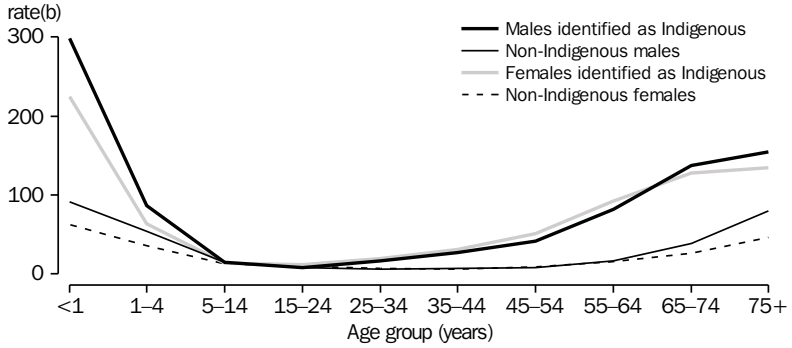
Respiratory diseases

Respiratory system diseases accounted for 11% of all separations for males identified as Indigenous, and 8% of separations for females identified as Indigenous (table 4.1).

Respiratory diseases *continued*

During infancy and early childhood, children identified as Indigenous had considerably higher hospital separation rates than the non-Indigenous rates. For age groups over 25 years, females and males identified as Indigenous had higher hospital separation rates than the non-Indigenous rates (graph 4.5). 'Respiratory diseases' were the main reason for hospitalisation for over 30% of separations recorded for Indigenous infants and children aged 1–4 years.

4.5 HOSPITAL SEPARATIONS FOR RESPIRATORY DISEASES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Separation rates were higher for most types of respiratory diseases for persons who were identified as Indigenous when compared to rates for non-Indigenous persons. Overall, the Indigenous male rate was 2.6 times as high as the rate for non-Indigenous males with a principal diagnosis of respiratory diseases, and the Indigenous female rate was 3.2 times as high (table 4.6). Separations recorded for Indigenous persons were most likely to have been classified to the subcategories 'influenza and pneumonia', 'other acute lower respiratory infections' and 'chronic lower respiratory diseases', and were the principal diagnoses where Indigenous separation rates were much higher than the non-Indigenous rates for both males and females. For 'influenza and pneumonia', the separation rates were 4.6 times as high for males, and 4.9 times as high for females.

4.6 AGE-STANDARDISED RATES FOR RESPIRATORY DISEASES(a)

	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Acute upper respiratory infections	1 047	1.4	3.4	1.7	956	1.0	4.0	2.5
Influenza and pneumonia	2 417	3.3	15.2	4.6	2 114	2.1	12.6	4.9
Other acute lower respiratory infection	1 802	2.5	7.8	4.7	1 613	1.6	7.7	5.7
Other diseases, upper respiratory tract	338	0.5	1.5	0.4	383	0.4	1.6	0.4
Chronic lower respiratory diseases	1 879	2.6	16.6	3.0	2 322	2.4	18.8	4.1
Other respiratory diseases	397	0.5	3.0	1.9	281	0.3	2.4	2.6
Total	**7 880**	**11.0**	**47.5**	**2.6**	**7 669**	**7.8**	**47.0**	**3.2**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

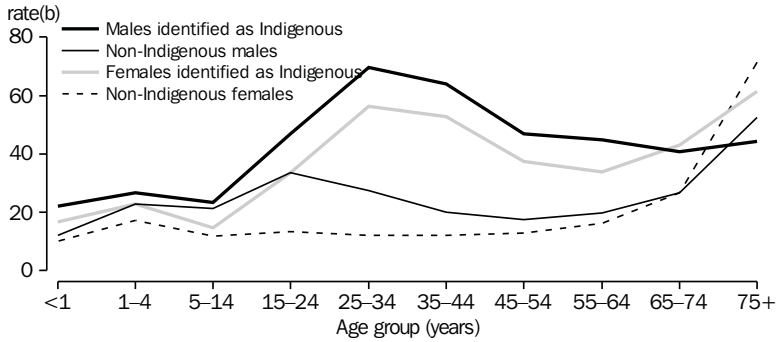
Injury, poisoning and certain other consequences of external causes

Persons who identified as Indigenous were separated from hospitals at approximately twice the rate of non-Indigenous peoples, for 'injury, poisoning and certain other consequences of external causes'. The rate ratio (Indigenous separation rate divided by the non-Indigenous rate) was higher for females in aggregate and for the majority of the subcategories for this ICD-10-AM chapter. Injury and poisoning accounted for more separations for males identified as Indigenous (12%) than for females identified as Indigenous (table 4.1).

In most age groups, hospitalisation rates for 'injury, poisoning and certain other consequences of external causes' were higher for Indigenous peoples, with large differences for all adult age groups to age 75.

The largest differences were apparent for the 25–45 age groups. Males generally had higher rates than females. However, for all adult age groups Indigenous females generally had higher rates than non-Indigenous persons, and the female rate ratio was higher than the male rate ratio for all age groups except 55–64 years of age (graph 4.7).

4.7 HOSPITAL SEPARATIONS FOR INJURY/POISONING(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Injury, poisoning and certain other consequences of external causes *continued*

The ICD-10-AM codes S00–T19, referred to here as the subcategory 'injuries', accounted for the majority of hospital separations within the injury and poisoning chapter. After adjusting for age, Indigenous males and females were more likely to be hospitalised for every subcategory of the injury and poisoning chapter than non-Indigenous males and females (table 4.8).

4.8 AGE-STANDARDISED RATES FOR PRINCIPAL DIAGNOSIS OF INJURY/POISONING(a)

	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Injuries	7 072	9.8	37.0	1.9	5 222	5.3	27.2	2.5
Burns and frostbite	332	0.5	1.5	3.0	167	0.2	0.8	3.5
Poisoning	414	0.6	2.1	1.6	625	0.6	3.2	1.7
Toxic effects	166	0.2	0.8	1.6	149	0.2	0.7	2.3
External causes, trauma	214	0.3	1.2	2.8	189	0.2	0.9	2.9
Complications not elsewhere classified	617	0.9	4.8	1.4	840	0.9	6.2	2.0
Sequelae injuries, poisoning, external causes	2	—	—	4.3	1	—	—	3.7
Total	**8 817**	**12.3**	**47.5**	**1.9**	**7 193**	**7.3**	**38.9**	**2.3**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

Separations with a principal diagnosis of Injury, poisoning and certain other consequences of external causes are required by standard coding practice to also be assigned at least one code for the external cause of the injury. External causes represent the environmental events and circumstances of the cause of injury, poisoning and other adverse effects. They are intended to be used in addition to codes from other ICD-10-AM chapters to assist interpretation of the hospital episode (NCCH 1998, ICD-10-AM, 1st ed., v1, p. 423).

Table 4.9 presents information on the first reported external cause code for separations with a principal diagnosis of injury and poisoning. It should be noted that the first reported external cause code will not necessarily relate to the principal diagnosis.

Males identified as Indigenous were eight times more likely than non-Indigenous males to have 'assault' as the first reported cause of injury or poisoning. The hospital separation rate for Indigenous females recorded for 'assault' is also very much higher than that recorded for non-Indigenous females. However, comparisons are complicated for females, as injuries purposely inflicted by others may be under-reported by women. 'Intentional self-harm' was reported at approximately twice the rate for Indigenous persons compared to non-Indigenous persons (table 4.9).

4.9 AGE-STANDARDISED RATES FOR EXTERNAL CAUSES OF INJURY/POISONING(a)

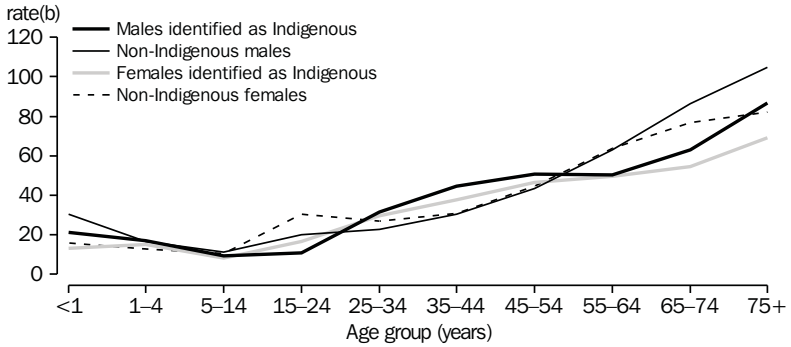
	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Transport accidents	858	1.2	4.0	1.1	394	0.4	1.8	1.0
Accidental falls	1 453	2.0	7.9	1.4	1 018	1.0	6.4	1.1
Exposure to inanimate mechanical forces	1 187	1.6	5.6	1.3	614	0.6	2.7	2.0
Exposure to animate mechanical forces	359	0.5	1.8	1.9	151	0.2	0.7	2.1
Exposure to electric current/ smoke/animals/nature(d)	345	0.5	1.7	2.2	184	0.2	0.8	2.1
Accidental poisoning	239	0.3	1.1	1.5	280	0.3	1.3	2.0
Other accidental exposures(e)	577	0.8	3.1	1.2	374	0.4	2.1	1.7
Intentional self-harm	394	0.5	2.1	2.3	466	0.5	2.3	1.8
Assault(f)	1 949	2.7	10.7	7.9	2 103	2.1	10.5	36.5
Complications of medical and surgical care	635	0.9	5.0	1.4	844	0.9	6.2	2.0
Other external causes	153	0.2	0.8	2.9	141	0.1	0.7	3.4
Total(g)	**8 817**	**12.2**	**47.5**	**1.9**	**7 193**	**7.3**	**38.9**	**2.3**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.
(d) Includes exposure to electric current, radiation, extreme ambient air temperature and pressure, smoke, fire, flames, forces of nature; and contact with heat and hot substances, and with venomous animals and plants.
(e) Includes overexertion, travel and privation; and accidental exposure to other and unspecified factors.
(f) These figures should be interpreted with caution, as injuries purposely inflicted by others may be under-reported by women.
(g) Includes injuries where no external cause was reported.

Digestive diseases

In 1999–2000, diseases of the digestive system were the main reason for hospitalisation in 7% of all male separations identified as Indigenous and 5% of all female separations identified as Indigenous (table 4.1). The Indigenous male and female rates showed similar patterns across various life stages as did the non-Indigenous male and female rates (graph 4.10).

4.10 HOSPITAL SEPARATIONS FOR DIGESTIVE DISEASES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Digestive diseases *continued*

Across all 'digestive diseases' in aggregate and for several of the subcategories relating to digestive diseases there were lower rates of hospital separations in the Indigenous population than in the non-Indigenous population (table 4.11). Persons who identified as Indigenous had higher rates of hospitalisation for 'diseases of the liver' (three times as high for males and four times as high for females), 'disorders of the gallbladder, biliary tract and pancreas' and for 'diseases of the peritoneum'.

4.11 AGE-STANDARDISED RATES FOR DIGESTIVE DISEASES(a)

	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Diseases of oral cavity, salivary glands, jaw	822	1.1	3.1	0.7	927	0.9	3.6	0.6
Diseases of oesophagus, stomach, duodenum	1 153	1.6	9.5	1.0	1 015	1.0	7.4	0.8
Diseases of appendix	271	0.4	1.2	0.9	308	0.3	1.4	1.2
Hernia	403	0.6	2.9	0.5	200	0.2	1.3	0.7
Noninfective enteritis, colitis	187	0.3	1.5	0.8	313	0.3	2.5	1.0
Other diseases of intestines	459	0.6	4.2	0.6	498	0.5	4.3	0.6
Diseases of peritoneum	37	0.1	0.3	2.3	75	0.1	0.5	2.0
Diseases of the liver	263	0.4	1.9	3.2	193	0.2	1.3	4.0
Disorders of gallbladder, biliary tract & pancreas	1 051	1.5	7.4	2.8	1 247	1.3	7.8	1.6
Other diseases of the digestive system	283	0.4	2.4	1.3	213	0.2	1.5	0.9
Total	**4 929**	**6.9**	**34.3**	**1.0**	**4 989**	**5.1**	**31.5**	**0.9**

(a) Data are for the financial year 1999–2000.

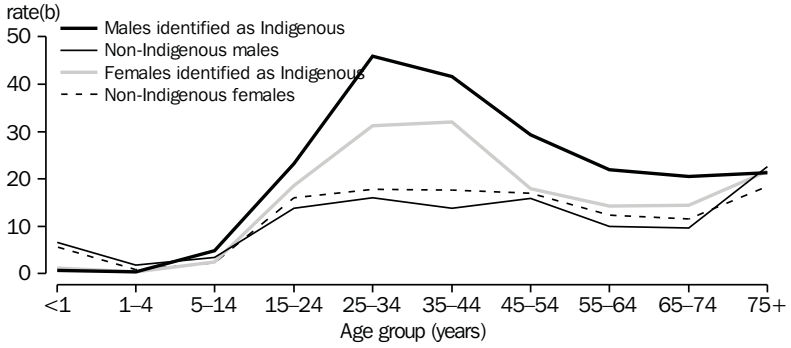
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.

(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

Mental and behavioural disorders

'Mental and behavioural disorders' were the principal diagnosis for 6% of separations for male patients identified as Indigenous, compared to 3% of separations for Indigenous females. Males identified as Indigenous were twice as likely to be hospitalised for 'mental and behavioural disorders' as non-Indigenous males, and Indigenous females were 1.4 times more likely to be hospitalised than non-Indigenous females (table 4.1). Between the ages of 15–74, Indigenous males and females had higher rates of hospitalisation for 'mental and behavioural disorders' than the non-Indigenous population (graph 4.12).

4.12 HOSPITAL SEPARATIONS FOR MENTAL AND BEHAVIOURAL DISORDERS(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

For persons hospitalised for 'mental and behavioural disorders due to psychoactive substance use', Indigenous hospitalisation rates were higher than the rates recorded for the non-Indigenous population (4.8 times as high for Indigenous males and 3.7 times as high for Indigenous females) (table 4.13). 'Mental disorders due to alcohol use' accounted for 35% of separations for males identified as Indigenous, and 19% of separations for females identified as Indigenous, compared to 13% for non-Indigenous males, and 6% for non-Indigenous females.

4.13 AGE-STANDARDISED RATES FOR MENTAL AND BEHAVIOURAL DISORDERS(a)

	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Organic mental disorders	106	0.1	1.4	2.3	61	0.1	0.8	1.6
Disorders, psychoactive substance use	1 980	2.8	12.2	4.8	943	1.0	5.1	3.7
Schizophrenia	1 076	1.5	5.7	2.2	595	0.6	3.2	1.7
Mood and neurotic disorders	830	1.2	5.0	1.0	1 459	1.5	8.3	1.1
Other mental disorders	346	0.5	1.4	1.3	243	0.2	1.0	0.6
Total	**4 338**	**6.0**	**25.7**	**2.2**	**3 301**	**3.4**	**18.4**	**1.4**

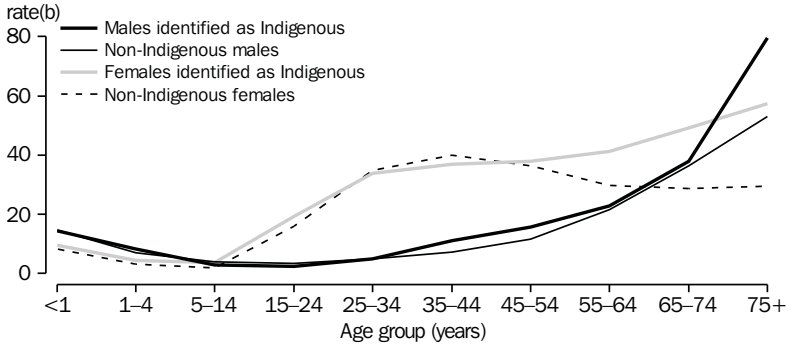
(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

Genitourinary system diseases

In 1999–2000, 'genitourinary system diseases' were the main reason for hospitalisation in 2% of separations for males identified as Indigenous and almost 5% of separations for females identified as Indigenous (table 4.1). 'Care involving dialysis' is not included in this ICD-10-AM chapter.

Separation rates across age groups were similar for Indigenous males to those for non-Indigenous males hospitalised, except for those aged 75 years and over where the Indigenous rate rose more markedly. Rates of hospitalisation due to 'genitourinary system diseases' were generally similar for females in age groups under 54 years. In later year age groups, the Indigenous rate increased, while the rate for non-Indigenous females decreased (graph 4.14).

4.14 HOSPITAL SEPARATIONS FOR GENITOURINARY SYSTEM DISEASES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Males and females identified as Indigenous were hospitalised more frequently than non-Indigenous patients for 'genitourinary system diseases', reflecting the higher rates of hospitalisation for these diseases of older Indigenous patients when compared with non-Indigenous patients. The rate for Indigenous male separations for 'renal failure' was 4.9 times as high as for non-Indigenous male separations. The rate for Indigenous female separations was 6.5 times as high as non-Indigenous female separations (table 4.15).

4.15 AGE-STANDARDISED RATES FOR GENITOURINARY SYSTEM DISEASES(a)

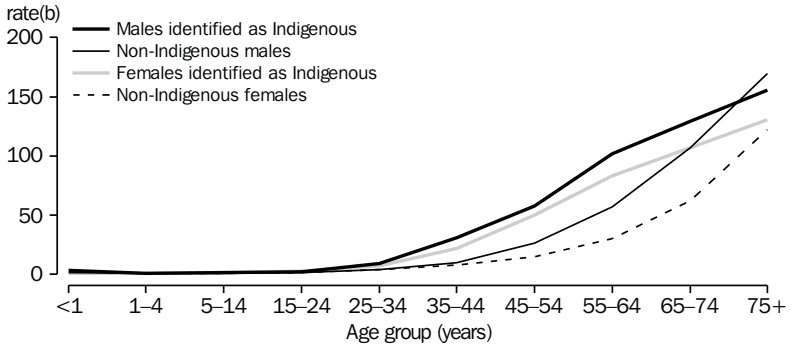
	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Glomerular diseases	104	0.1	0.4	2.5	88	0.1	0.4	3.1
Renal failure	301	0.4	3.3	4.9	328	0.3	3.0	6.5
Other disorders of the genitourinary system	681	0.9	6.2	1.0	1 627	1.7	11.7	2.2
Disorders of the male genital organs	453	0.6	3.7	0.8	. .	. .	. .	. .
Disorders of the breast	12	—	0.1	0.4	238	0.2	1.3	1.0
Disorders of the female genital organs	. .	. .	. .	. .	2 200	2.2	12.2	0.7
Total	**1 551**	**2.2**	**13.7**	**1.2**	**4 481**	**4.6**	**28.6**	**1.2**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

Circulatory system diseases

Diseases of the circulatory system were the main reason for hospitalisation in nearly 5% of separations for males identified as Indigenous and 3% of separations for females identified as Indigenous (table 4.1). Indigenous males up until 74 years of age had higher separation rates than the non-Indigenous population. Indigenous females from one year of age had higher separation rates than the non-Indigenous population, with the difference for both males and females most marked from age 25 years (graph 4.16).

4.16 HOSPITAL SEPARATIONS FOR CIRCULATORY SYSTEM DISEASES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Persons who identified as Indigenous experienced higher separation rates for most types of 'circulatory system diseases' than the non-Indigenous population. The rate for Indigenous males for 'rheumatic disease' was 6.9 times as high as separations for non-Indigenous males. The separation rate for Indigenous females was 8.2 times as high as for non-Indigenous females. For the most prevalent type of circulatory system disease (ischaemic heart disease) the Indigenous separation rates were 1.5 times as high for males and 2.5 as high for females (table 4.17).

4.17 AGE-STANDARDISED RATES FOR CIRCULATORY SYSTEM DISEASES(a)

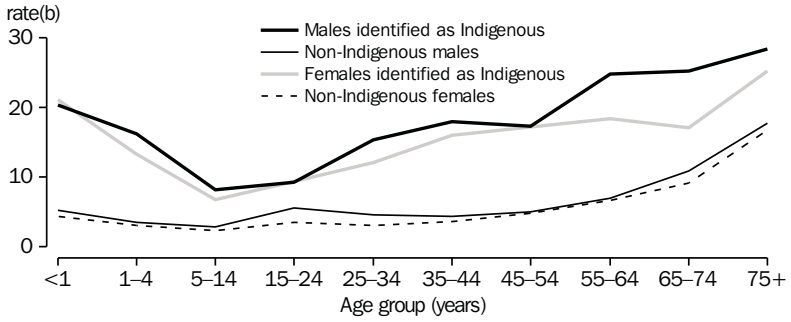
	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Rheumatic disease	113	0.2	0.5	6.9	182	0.2	0.9	8.2
Hypertensive disease	165	0.2	1.7	5.8	266	0.3	2.4	5.9
Ischaemic heart disease	1 478	2.1	16.2	1.5	1 177	1.2	11.5	2.5
Other heart disease	960	1.3	11.4	1.8	890	0.9	9.2	2.0
Cerebrovascular disease	288	0.4	3.7	1.6	231	0.2	2.7	1.7
Other diseases of the circulatory system	386	0.5	4.0	0.7	422	0.4	4.1	0.8
Total	**3 390**	**4.7**	**37.5**	**1.5**	**3 168**	**3.2**	**30.8**	**1.9**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

Diseases of the skin and subcutaneous tissue

'Diseases of the skin and subcutaneous tissue' were the main reason for hospitalisation in almost 4% of separations for males identified as Indigenous and in 3% of separations for females identified as Indigenous. Patients identified as Indigenous had rates of hospitalisation for 'diseases of the skin and subcutaneous tissue' which were about three times the rate of separation recorded for non-Indigenous patients (table 4.1). Male and female rates were similar within each of the Indigenous and non-Indigenous population groups, but with Indigenous male and Indigenous female rates higher than the comparative male or female non-Indigenous rates across all age groups (graph 4.18).

4.18 HOSPITAL SEPARATIONS FOR DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Infections were the most significant component of 'diseases of skin and subcutaneous tissue' for males and females identified as Indigenous, accounting for over 80% of this disease grouping. Separation rates for 'infections of the skin and subcutaneous tissue' were 4.9 times as high for males identified as Indigenous and 6.3 times as high for females identified as Indigenous (table 4.19).

4.19 AGE-STANDARDISED RATES FOR DISEASES OF SKIN AND SUBCUTANEOUS TISSUE(a)

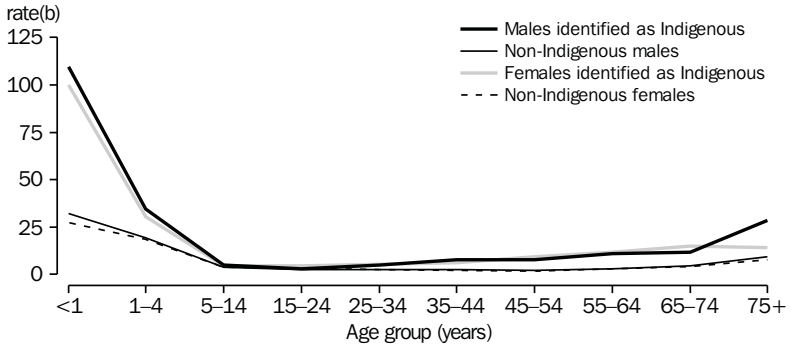
	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Infections of skin and subcutaneous tissue	2 313	3.2	12.9	4.9	2 049	2.1	10.7	6.3
Dermatitis and eczema	40	0.1	0.1	0.6	55	0.1	0.3	1.2
Urticaria and erythema	28	—	0.1	1.2	32	—	0.1	1.2
Other disorders of the skin	387	0.5	3.0	1.1	381	0.4	2.6	1.0
Total	**2 768**	**3.8**	**16.1**	**2.8**	**2 517**	**2.6**	**13.7**	**2.9**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to rate of separations identified as Indigenous divided by the rate of non-Indigenousr separations.

Infectious and parasitic diseases

In 1999–2000, 'infectious and parasitic diseases' were the main reason for hospitalisation in 3% of all separations for males identified as Indigenous and 2% of all separations for females identified as Indigenous (table 4.1). Hospital separation rates for both male and female Indigenous patients were higher than the respective non-Indigenous rates for all age groups. The largest differences in rates were observed in children aged less than 1 year (graph 4.20). Among patients identified as Indigenous, 'infectious and parasitic diseases' were the main reason for hospitalisation in 13% of male infant and 14% of female infant separations. Among Indigenous children aged between 1–4 years, 'infectious and parasitic diseases' were the main reason for hospitalisation in 14% of male separations and 15% of female separations.

4.20 HOSPITAL SEPARATIONS FOR INFECTIOUS AND PARASITIC DISEASES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Infectious and parasitic diseases *continued*

The separation rate for Indigenous persons was more than twice that of the non-Indigenous population for infectious and parasitic diseases, with males and females identified as Indigenous being hospitalised at higher rates for most of the infectious and parasitic diseases identified in table 4.21. Intestinal infectious diseases were a large contributor to Indigenous separations for infectious and parasitic diseases, accounting for 51% of Indigenous male and female separations.

4.21 AGE-STANDARDISED RATES FOR INFECTIOUS AND PARASITIC DISEASES(a)

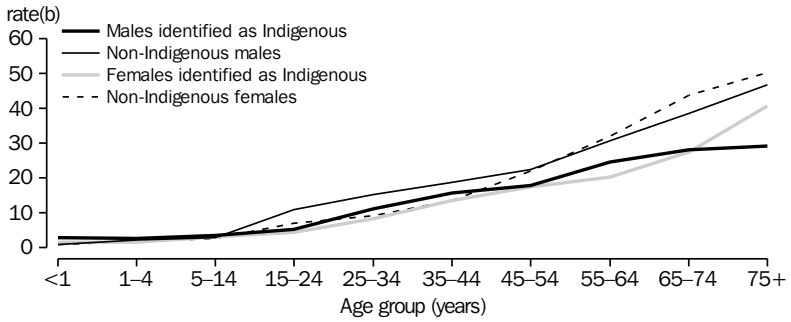
	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Intestinal infectious disease	1 240	1.7	3.9	2.2	1 184	1.2	4.1	2.2
Other bacterial diseases	290	0.4	2.4	3.3	305	0.3	2.3	4.2
Infections, sexual transmission	40	0.1	0.2	2.8	108	0.1	0.5	3.9
Viral infections	197	0.3	0.9	1.2	163	0.2	0.6	1.0
Other viral infections	282	0.4	1.0	1.1	262	0.3	1.1	1.2
Other infectious diseases	318	0.4	1.5	5.7	301	0.3	1.4	6.1
Remainder infectious & parasitic diseases	109	0.2	0.9	6.8	56	0.1	0.3	4.8
Total	**2 476**	**3.4**	**10.8**	**2.3**	**2 379**	**2.4**	**10.3**	**2.3**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

Diseases of the musculoskeletal system and connective tissues

'Diseases of the musculoskeletal system and connective tissues' were the main reason for hospitalisation in 2% of separations for males and females identified as Indigenous (table 4.1). Indigenous males and females experienced lower hospital separation rates than the non-Indigenous population in most age groups (graph 4.22).

4.22 HOSPITAL SEPARATIONS FOR DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Diseases of the musculoskeletal system and connective tissues *continued*

Males and females identified as Indigenous were less likely than non-Indigenous persons to be hospitalised for each of the subcategories comprising conditions of the musculoskeletal system and connective tissues except 'osteopathies and chondropathies' (diseases of the bone and cartilage) (table 4.23).

4.23 AGE-STANDARDISED RATES FOR MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUES(a)

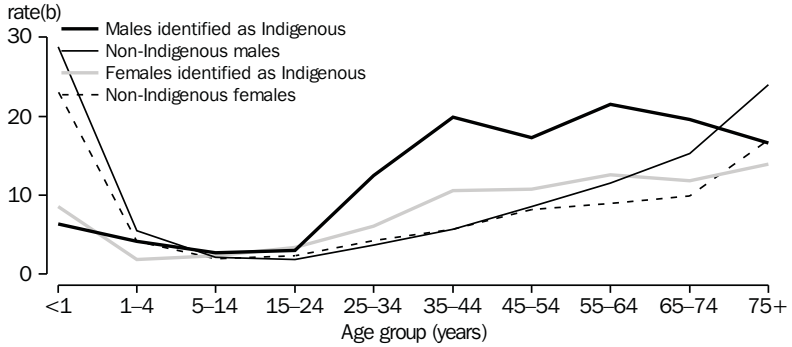
	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Arthropathies/connective tissue disorders	960	1.3	6.9	0.8	746	0.8	5.8	0.8
Dorsopathies/soft tissue disorders	551	0.8	4.5	0.7	678	0.7	4.8	0.8
Osteopatheis and chondropathies	241	0.3	1.5	1.1	223	0.2	1.3	1.0
Total(d)	**1 762**	**2.4**	**13.0**	**0.7**	**1 655**	**1.7**	**12.0**	**0.8**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.
(d) Includes 'other musculoskeletal system/tissue disorders'.

Nervous system diseases

In 1999–2000, males and females identified as Indigenous had higher hospitalisation rates for 'nervous system diseases' (table 4.25). Diseases of the nervous system were the main reason for hospitalisation in over 2% of separations for males identified as Indigenous and over 1% of separations for females identified as Indigenous (table 4.1). Indigenous children to age 4 years had lower separation rates for 'nervous system diseases' than non-Indigenous children. Between 5–74 years Indigenous patients had higher separation rates when compared with equivalent non-Indigenous rates (graph 4.24).

4.24 HOSPITAL SEPARATIONS FOR NERVOUS SYSTEM DISEASES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Males and females identified as Indigenous had higher hospitalisation rates for 'nervous system diseases' (table 4.25).

4.25 AGE-STANDARDISED RATES FOR NERVOUS SYSTEM DISEASES(a)

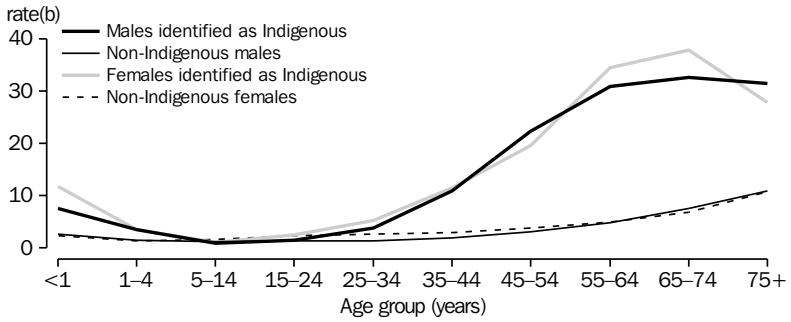
	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Meningitis/encephalitis	42	0.1	0.2	2.1	40	—	0.1	2.1
Other nervous system diseases	1 709	2.4	11.9	1.8	1 143	1.2	7.3	1.3
Total	**1 751**	**2.4**	**12.0**	**1.8**	**1 183**	**1.2**	**7.4**	**1.3**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

Endocrine, nutritional and metabolic disorders

'Endocrine, nutritional and metabolic disorders' were the main reason for hospitalisation in 2% of separations for males and females identified as Indigenous (table 4.1). Separation rates of Indigenous males and females for 'endocrine, nutritional and metabolic disorders' were higher than for the non-Indigenous population in all age groups except 5–14 year olds (graph 4.26).

4.26 HOSPITAL SEPARATIONS FOR ENDOCRINE, NUTRITIONAL AND METABOLIC DISORDERS(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Patients identified as Indigenous had hospitalisation rates for 'endocrine, nutritional and metabolic disorders' four times as high as non-Indigenous people (table 4.1). 'Diabetes mellitus' accounted for 63% of separations within this chapter, for patients identified as Indigenous. There were seven and eight times as many separations for 'diabetes mellitus' for males and females identified as Indigenous, respectively, than for non-Indigenous males and females (table 4.27). The principal diagnosis 'care involving dialysis' and 'renal failure' are associated with diabetes, and data for these are presented elsewhere — see table 4.1 and 4.15 respectively. Separations with a principal diagnosis of 'gestational diabetes' are contained within the subcategory 'other maternal disorders related to pregnancy' in table 4.4.

4.27 AGE-STANDARDISED RATES FOR ENDOCRINE, NUTRITIONAL AND METABOLIC DISORDERS(a)

	Indigenous males				*Indigenous females*			
	Separations				*Separations*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Disorders of thyroid gland	8	—	0.1	1.1	60	0.1	0.5	1.1
Diabetes mellitus								
Diabetes type 1	202	0.3	1.5	2.5	267	0.3	1.9	3.4
Diabetes type 2	652	0.9	6.7	10.2	658	0.7	5.9	12.4
Total (includes 'other diabetes')	*863*	*1.2*	*8.3*	*6.6*	*944*	*1.0*	*7.9*	*7.6*
Other metabolic or nutritional disorders	430	0.6	3.2	2.2	576	0.6	4.1	2.1
Total	**1 301**	**1.8**	**11.7**	**4.2**	**1 580**	**1.6**	**12.4**	**3.7**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of separations identified as Indigenous divided by the rate of non-Indigenous separations.

PRINCIPAL DIAGNOSIS BY STATE AND TERRITORY OF USUAL RESIDENCE

Under-identification of Indigenous hospital-admitted patients generally, and variability in data quality across jurisdictions, means that comparisons should be undertaken with caution. Such comparisons are useful in indicating patterns of similarity or difference between jurisdictions, but are indicative only (see *Australian Hospital Statistics 1999–00* for more information).

In 1999–2000, the most common ICD-10-AM chapter for principal diagnosis in each jurisdiction, for both males and females identified as Indigenous, was 'factors influencing health status and contact with health services'. In the Northern Territory, over half of the separations for patients recorded as Indigenous were coded to this chapter (table 4.28 and table 4.29). 'Factors influencing health status and contact with health services' includes 'care involving dialysis', which accounted for 28% of Indigenous male separations and 30% of Indigenous female separations (table 4.1).

For males identified as Indigenous, the proportion of separations reported in each ICD-10-AM chapter was similar for each jurisdiction. The ICD-10-AM chapter 'Injury, poisoning and certain other consequences of external causes' was the second most common principal diagnosis and 'respiratory diseases' the third (table 4.28). For females identified as Indigenous, 'pregnancy, childbirth and the puerperium' were the second most common principal diagnosis, and 'respiratory diseases' the third, except in Queensland and Victoria, where injury/poisoning and 'digestive diseases', respectively, were slightly more common (table 4.29).

4.28 MOST COMMON PRINCIPAL DIAGNOSES, MALES IDENTIFIED AS INDIGENOUS(a)(b)(c)

	New South Wales	*Victoria*	*Queensland*	*South Australia*	*Western Australia*	*Northern Territory(d)*	*Australia(e)*
	%	%	%	%	%	%	%
Factors influencing health status(f)	24	19	26	36	30	52	32
Injury/poisoning	12	12	15	12	13	9	12
Respiratory diseases	11	10	12	10	13	9	11
Digestive diseases	9	10	8	7	7	3	7
Mental/behavioural disorders	9	10	6	7	6	2	6
Symptons/signs not elsewhere classified	6	6	5	4	5	3	5
Other principal diagnoses(g)	29	33	29	24	27	22	27
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**

(a) Data are for the financial year 1999–2000, based on place of usual residence. Data for Tasmania and the Australian Capital Territory are not presented due to relatively small numbers. 'Most common principal diagnoses' are based on ICD-10-AM chapters. See Appendix A for a full listing.
(b) It is likely that the quality of identification of Indigenous patients varies by State and Territory, although the level of under-identification is unknown for most hospitals.
(c) No data were available for a number of small private and private free-standing day hospital facilities.
(d) Public hospitals only.
(e) Includes Tasmania and the Australian Capital Territory.
(f) Includes hospitalisation for care involving dialysis, chemotherapy, radiotherapy and other reasons for contact that are not a disease or injury classified elsewhere.
(g) Includes all other ICD-10-AM chapters combined.

4.29 MOST COMMON PRINCIPAL DIAGNOSES, FEMALES IDENTIFIED AS INDIGENOUS(a)(b)(c)

	New South Wales	*Victoria*	*Queensland*	*South Australia*	*Western Australia*	*Northern Territory(d)*	*Australia(e)*
	%	%	%	%	%	%	%
Factors influencing health status(f)	24	31	31	33	33	51	34
Pregnancy/childbirth/puerperium	19	17	17	15	15	13	16
Respiratory diseases	9	7	7	7	10	6	8
Injury/poisoning	6	6	8	7	9	6	7
Digestive diseases	7	8	6	5	5	3	5
Genitourinary system diseases	5	5	5	5	4	3	5
Other principal diagnoses(g)	30	26	26	28	25	18	25
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**

(a) Data are for the financial year 1999–2000, based on place of usual residence. Data for Tasmania and the Australian Capital Territory are not presented due to relatively small numbers. 'Most common principal diagnoses' are based on ICD-10-AM chapters. See Appendix A for a full listing.
(b) It is likely that the quality of identification of Indigenous patients varies by State and Territory, although the level of under-identification is unknown for most hospitals.
(c) No data were available for a number of small private and private free-standing day hospital facilities.
(d) Public hospitals only.
(e) Includes Tasmania and the Australian Capital Territory.
(f) Includes hospitalisation for care involving dialysis, chemotherapy, radiotherapy and other reasons for contact that are not a disease or injury classified elsewhere.
(g) Includes all other ICD-10-AM chapters combined.

CHAPTER 5 PROCEDURES

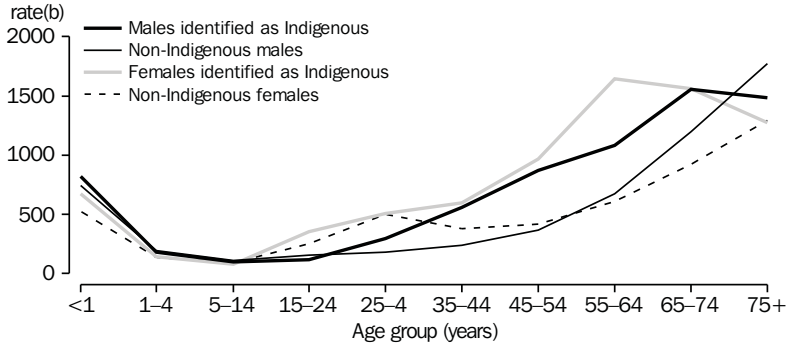
PROCEDURES

This chapter in the publication presents further analysis of procedures reported for Indigenous and non-Indigenous patients in 1999–2000. Selected summary and overview information on procedures is provided in chapter 3. As noted previously, there are several ways to present data on procedures. The majority of data presented in this chapter are actual counts of procedures and population rates (for example table 5.1 and table 5.2). These will differ from the presentation of *separations* with one or more procedures recorded (see for example graph 3.11, table 5.3). The chapter outlines age-specific rates for procedures, procedures recorded by principal diagnoses, and procedures performed on a same day basis, and then presents further analysis of the most common procedures recorded for patients identified as Indigenous.

Age-specific rates for procedures

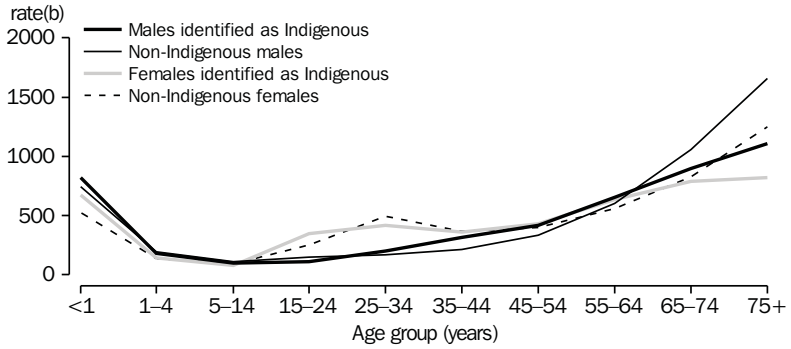
Indigenous males and females aged 25–74 years had higher age-specific procedure rates than were recorded for the non-Indigenous population, with Indigenous rates for some age groups 2 to 3 times the non-Indigenous rates (graph 5.1). The procedure rates for the non-Indigenous population for both males and females were greater than the corresponding rates for the Indigenous population in the 75+ age group. Excluding haemodialysis procedures, rates for the Indigenous males and females overall were the same as for non-Indigenous males and females, respectively, and across most age groups they were also similar (graph 5.2).

5.1 PROCEDURES, ALL TYPES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

5.2 PROCEDURES, ALL TYPES EXCLUDING HAEMODIALYSIS(a)

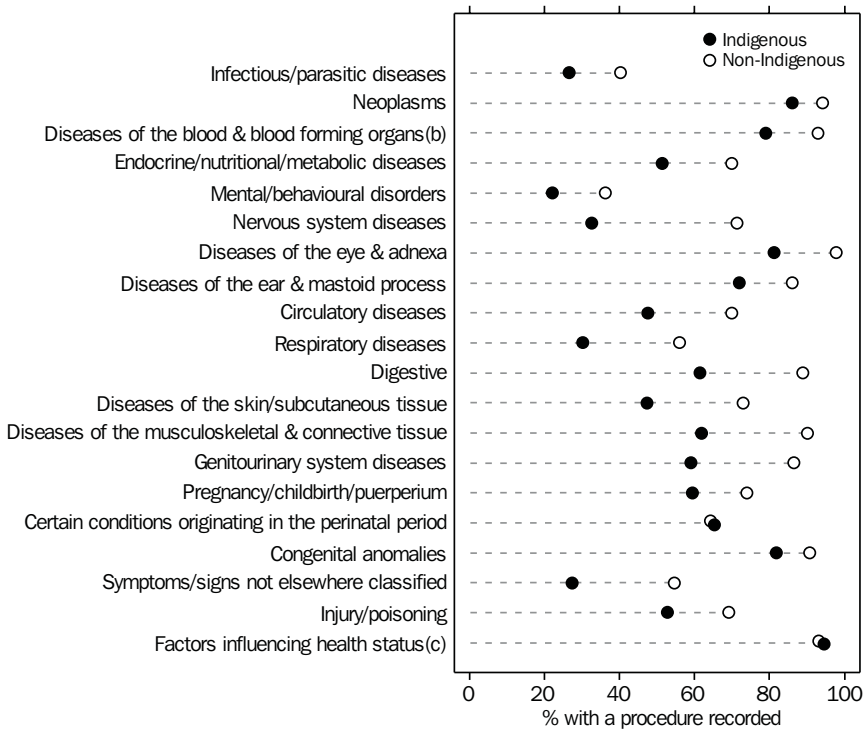


(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Procedures recorded by principal diagnoses

For almost all principal diagnoses chapters, patients identified as Indigenous were less likely than non-Indigenous patients to have one or more procedures recorded (graph 5.3). Principal diagnoses of 'certain conditions originating in the perinatal period' and 'factors influencing health status and contact with health services' were the only exceptions to this. As noted in the introduction to this publication chapter, graph 5.3 presents separations with one or more procedure recorded, and cannot be directly compared with counts of procedures and population rates presented elsewhere.

5.3 HOSPITAL SEPARATIONS WITH A PROCEDURE RECORDED, BY PRINCIPAL DIAGNOSIS(a)



(a) Data are for the financial year 1999–2000.
(b) Includes diseases of the immune mechanism.
(c) Includes hospitalisation for care involving dialysis, chemotherapy, radiotherapy and other reasons for contact that are not a disease or injury classified elsewhere.

TYPES OF PROCEDURES

In 1999–2000, nearly half of all procedures recorded for patients identified as Indigenous were either 'operations on the urinary system' — 95% of which were haemodialysis procedures, or 'allied health interventions' (table 5.4 and graph 5.5). For males identified as Indigenous, the next most commonly reported procedures were 'miscellaneous procedures' and 'operations on the musculoskeletal system', whereas for Indigenous females, the next most common procedures were 'obstetrical procedures' and 'miscellaneous procedures'. 'Miscellaneous procedures' (ICD-10-AM chapter 19) covers a wide range of procedures which include cognitive actions such as evaluation, education, or counselling; or therapeutic or diagnostic interventions that do not require incision to the skin, or entry to a body part or cavity. These procedures also include drug and alcohol interventions, psychiatric consultations, ophthalmology and immunisation and injections (NCCH 1998).

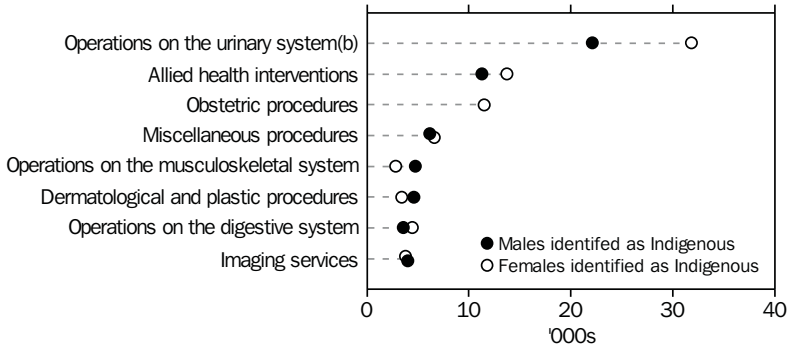
For non-Indigenous patients, the most common types of procedures were 'allied health interventions', 'operations on the digestive system', 'operations on the urinary system' and 'miscellaneous procedures', together accounting for almost half of all non-Indigenous procedures.

5.4 PROCEDURES RECORDED FOR PATIENTS IDENTIFIED AS INDIGENOUS, BY ICD-10-AM CHAPTER(a)

	Procedures reported for patients identified as Indigenous		*Proportion of procedures reported for patients identified as Indigenous*		*Directly age-standardised rate(b)*		*Rate ratio(c)*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
	no.	*no.*	*%*	*%*				
Operations on the nervous system	921	947	1.3	1.0	5	5	0.6	0.6
Operations on the endocrine system	30	96	—	0.1	—	1	0.9	0.9
Operations on the eye and adnexa	745	826	1.1	0.9	9	9	1.0	1.0
Operations on the ear and mastoid process	905	877	1.3	0.9	3	3	0.8	1.1
Operations on the nose, mouth, pharynx	792	778	1.2	0.8	4	4	0.4	0.5
Dental services	2 011	1 977	2.9	2.1	7	7	0.8	0.6
Operations on the respiratory system	1 773	1 255	2.6	1.3	13	8	1.6	1.8
Operations on the cardiovascular system	3 427	2 819	5.0	2.9	32	22	1.1	1.4
Operations on the blood & blood forming organs	165	215	0.2	0.2	1	2	0.7	0.8
Operations on the digestive system	3 572	4 432	5.2	4.6	32	32	0.6	0.6
Operations on the urinary system								
Haemodialysis	20 935	30 404	30.6	31.8	199	270	6.5	14.3
Other	1 172	1 441	1.7	1.5	13	11	0.9	1.1
Total	*22 107*	*31 845*	*32.3*	*33.3*	*212*	*281*	*4.7*	*9.7*
Operations on the male genital organs	829	—	1.2	—	5	—	0.6	—
Gynaecological procedures	—	7 001	—	7.3	—	38	—	0.7
Obstetric procedures	—	11 448	—	12.0	—	50	—	1.0
Operations on the musculoskeletal system	4 700	2 820	6.9	2.9	26	17	0.8	0.8
Dermatological and plastic procedures	4 616	3 417	6.7	3.6	28	19	1.1	1.0
Operations on the breast	11	368	—	0.4	—	3	0.2	0.5
Chemotherapeutic and radiation oncology procedures	525	524	0.8	0.5	5	4	0.3	0.3
Miscellaneous procedures	6 139	6 589	9.0	6.9	36	37	1.0	1.2
Imaging services	3 987	3 747	5.8	3.9	32	27	1.2	1.4
Allied health interventions	11 265	13 729	16.4	14.3	97	100	1.4	1.4
Total (excluding dialysis)	*47 585*	*65 306*	*69.4*	*68.2*	*347*	*399*	*1.0*	*1.0*
Total (including dialysis)	**68 520**	**95 710**	**100.0**	**100.0**	**546**	**668**	**1.4**	**1.6**

(a) Data are for the financial year 1999–2000 for public and private hospitals. No data were available for a number of small private and private free-standing day hospital facilities.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of procedures for persons identified as Indigenous divided by the rate of procedures for non-Indigenous persons.

5.5 MOST COMMON TYPES OF PROCEDURES(a)



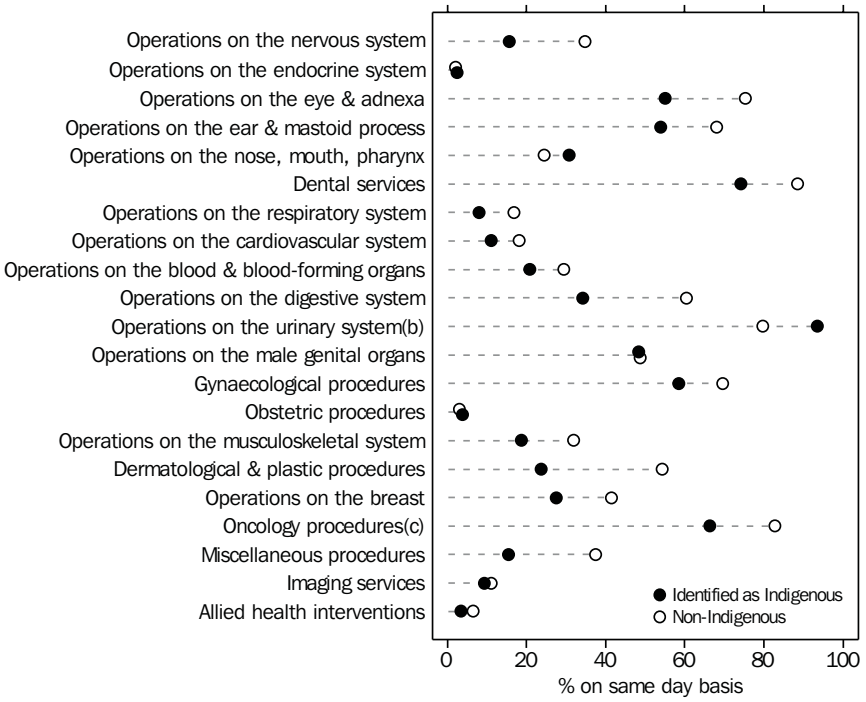
(a) Data are for the financial year 1999–2000.
(b) Includes haemodialysis.

Procedures performed on a same day basis

While Indigenous patients were less likely than non-Indigenous patients to have a same day separation (admitted and discharged on the same day), a higher proportion (44%) of all procedures recorded for patients identified as Indigenous were performed on patients with same day separations, compared with 40% of procedures for non-Indigenous patients. Almost all of the haemodialysis procedures for Indigenous and non-Indigenous patients were reported for same day separations — 97% and 98% respectively. Haemodialysis procedures accounted for 69% of all procedures for Indigenous patients separating on a same day basis, compared to 15% for non-Indigenous patients.

Within each ICD-10-AM chapter, there are a range of procedures that may or may not be reported as a same day procedure. For most types of procedures other than haemodialysis, patients identified as Indigenous were less likely to separate on a same day basis (graph 5.6).

5.6 TYPE OF PROCEDURE BY PROPORTION PERFORMED ON A SAME DAY BASIS(a)

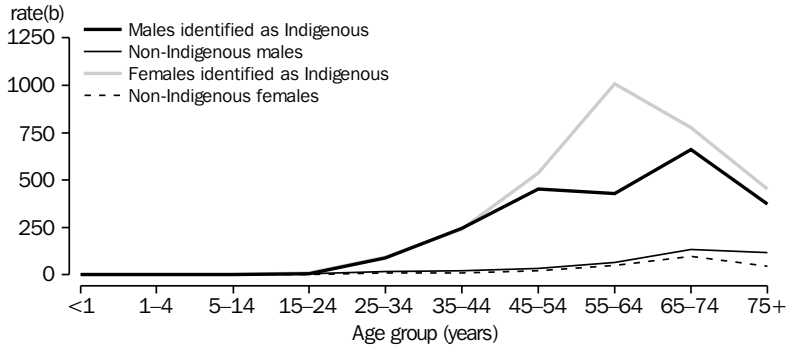


(a) Data are for the financial year 1999–2000.
(b) Includes haemodialysis.
(c) Includes chemotherapeutic and radiation oncology procedures.

Operations on the urinary system

The ICD-10-AM chapter 'operations on the urinary system', which includes haemodialysis, accounted for 33% of all procedures recorded for patients identified as Indigenous (table 5.4). For age groups 25–34 years and over for males, and 15–24 years and over for females, haemodialysis procedure rates for patients identified as Indigenous were higher than for the non-Indigenous population (graph 5.7).

5.7 HAEMODIALYSIS PROCEDURES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

'Operations on the kidneys' (which includes haemodialysis) accounted for 97% of 'operations on the urinary system' for Indigenous patients, with males identified as Indigenous six times more likely than non-Indigenous males to undergo such an operation and females identified as Indigenous fourteen times more likely (table 5.8). Non-Indigenous patients were, however, more likely than Indigenous patients to undergo other operations on the urinary system, including operations on the bladder, ureter and urethra.

5.8 AGE-STANDARDISED RATES FOR OPERATIONS ON THE URINARY SYSTEM(a)

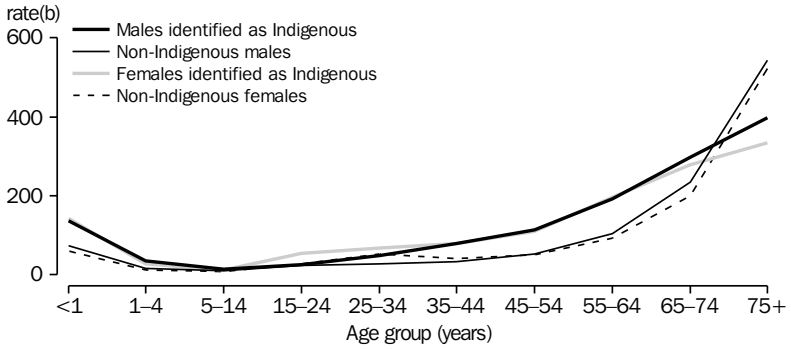
	Indigenous males				*Indigenous females*			
	Procedures				*Procedures*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Operations on the kidney(d)	21 301	31.1	202	6.3	31 003	32.4	275	13.7
Operations on the ureter	176	0.3	2	0.6	203	0.2	2	0.9
Operations on the bladder	539	0.8	7	0.8	606	0.6	5	0.7
Operations on the urethra/other urinary system sites	91	0.1	1	0.8	33	—	—	0.6
Total	**22 107**	**32.3**	**212**	**4.7**	**31 845**	**33.3**	**281**	**9.7**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of procedures for persons identified as Indigenous divided by the rate of procedures for non-Indigenous persons.
(d) Includes haemodialysis.

Allied health interventions

The ICD-10-AM chapter 'allied health interventions' includes social work, physiotherapy and speech pathology interventions. In 1999–2000, 16% of procedures reported for males identified as Indigenous and 14% of procedures for Indigenous females were recorded as an allied health intervention (table 5.4). Males and females identified as Indigenous were more likely than the non-Indigenous population to have an allied health intervention across all age groups, except 75 years and over (graph 5.9).

5.9 ALLIED HEALTH INTERVENTIONS(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Obstetric procedures

Of all procedures recorded for females identified as Indigenous, 12% were obstetric in nature (table 5.4). Indigenous females were as likely overall to have an obstetric procedure as non-Indigenous females, but more likely to have delivery and antepartum procedures and less likely to have procedures associated with labour, assisted delivery and the postpartum (table 5.10).

5.10 AGE-STANDARDISED RATES FOR OBSTETRIC PROCEDURES(a)

	Indigenous females			
	Procedures			
	no.	%	rate(b)	rate ratio(c)
Antepartum procedures	69	0.1	—	1.1
Procedures associated with labour	4 231	4.4	18	0.9
Delivery procedures	3 648	3.8	16	1.2
Procedures assisting delivery	1 567	1.6	7	0.9
Postpartum procedures	1 933	2.0	8	0.9
Total	**11 448**	**12.0**	**50**	**1.0**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of procedures for persons identified as Indigenous divided by the rate of procedures for non-Indigenous persons.

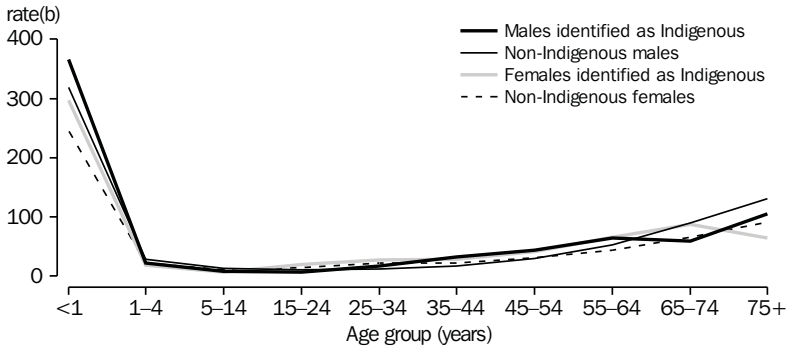
Miscellaneous procedures

This ICD-10-AM chapter included a range of non-operative procedures and investigations. For procedures for Indigenous patients recorded to this ICD-10-AM chapter, about half were for 'other miscellaneous procedures', recorded at rates slightly lower than for the non-Indigenous patients. 'Other miscellaneous procedures' included postnatal care such as injection of antibiotics, vaccinations for hepatitis B, and parenteral fluid therapy for infants. The chapter also included 'drug and alcohol interventions', containing all procedures relating to drug and alcohol rehabilitation and detoxification (NCCH 1998).

Miscellaneous procedures *continued*

In 1999–2000, 9% of procedures for males identified as Indigenous and 7% of procedures for females identified as Indigenous were reported as 'miscellaneous procedures' (table 5.4). The age-specific rates for both Indigenous and non-Indigenous patients were similar across all age groups, with high rates for miscellaneous procedures for infants under the age of one (graph 5.11)

5.11 MISCELLANEOUS PROCEDURES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Males identified as Indigenous were almost three times as likely as non-Indigenous males to have a drug and alcohol intervention recorded and females identified as Indigenous were almost twice as likely as non-Indigenous females. Males identified as Indigenous were also almost 3 times more likely to have immunisation and injections, and Indigenous females were more likely to have respiratory or haematology procedures recorded (table 5.12).

5.12 AGE-STANDARDISED RATES FOR MISCELLANEOUS PROCEDURES(a)

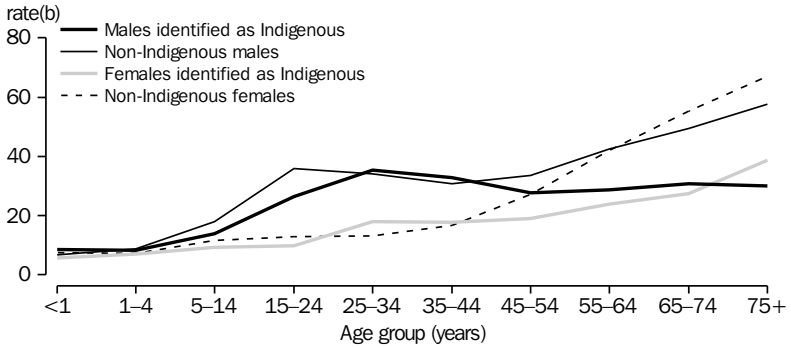
	Indigenous males				*Indigenous females*			
	Procedures				*Procedures*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Drug and alcohol interventions	426	0.6	3	2.8	190	0.2	1	1.8
Respiratory	827	1.2	4	1.2	667	0.7	3	1.7
Haematology	1 147	1.7	11	1.1	1 690	1.8	12	1.6
Gastroenterology	409	0.6	1	1.2	349	0.4	1	1.0
Immunisation/injections	238	0.3	1	2.7	337	0.4	1	0.9
Other miscellaneous procedures	3 092	4.5	17	0.9	3 356	3.5	19	0.9
Total	**6 139**	**9.0**	**36**	**1.0**	**6 589**	**6.9**	**37**	**1.2**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of procedures for persons identified as Indigenous divided by the rate of procedures for non-Indigenous persons.

Operations on the musculoskeletal system

'Operations on the musculoskeletal system' accounted for 7% of procedures for males identified as Indigenous, and 3% of procedures for Indigenous females (table 5.4). For age groups 1–4 through to 45–54, males were more likely than females to undergo an operation on the musculoskeletal system, regardless of Indigenous status. For age groups 35–44 years and over, persons identified as Indigenous were less likely than non-Indigenous people to undergo an operation on the musculoskeletal system (graph 5.13).

5.13 OPERATIONS ON THE MUSCULOSKELETAL SYSTEM(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Overall, persons identified as Indigenous were less likely than non-Indigenous persons to undergo an operation on the musculoskeletal system. However, males identified as Indigenous were twice as likely to undergo an operation on the head as non-Indigenous males, and females identified as Indigenous three times as likely as the non-Indigenous female population (table 5.14). Over half of the records of operations on the head for Indigenous patients also had an external cause reported of assault by bodily force.

5.14 AGE-STANDARDISED RATES FOR OPERATIONS ON THE MUSCULOSKELETAL SYSTEM(a)

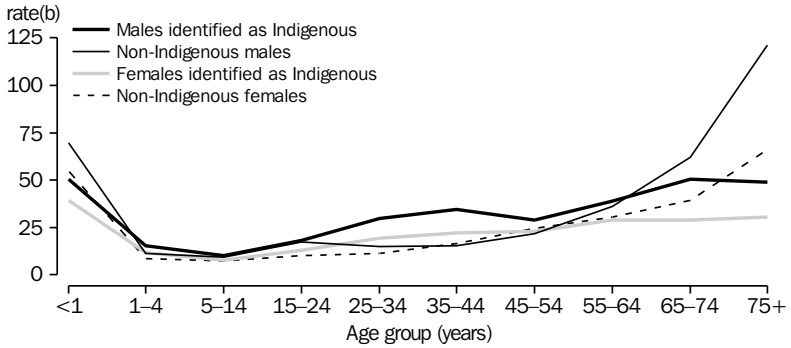
	Indigenous males				*Indigenous females*			
	Procedures				*Procedures*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Operations on the head	398	0.6	2	2.0	198	0.2	1	2.8
Operations on the forearm	537	0.8	2	0.9	415	0.4	2	1.1
Operations on the hand/wrist	801	1.2	4	1.0	362	0.4	2	0.9
Operations on the knee joint/leg	737	1.1	5	0.5	429	0.4	3	0.5
Operations on the ankle/foot	419	0.6	3	1.1	308	0.3	2	0.7
Operations on other musculoskeletal sites(d)	1 245	1.8	7	0.9	754	0.8	5	0.9
Remainder of operations on the musculoskeletal system	563	0.8	3	0.6	354	0.4	3	0.6
Total	**4 700**	**6.9**	**26**	**0.6**	**2 820**	**2.9**	**17**	**0.6**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of procedures for persons identified as Indigenous divided by the rate of procedures for non-Indigenous persons.
(d) Not elsewhere classified.

Dermatological and plastic procedures

'Dermatological and plastic procedures' accounted for 7% of procedures recorded for males identified as Indigenous and for 4% of procedures recorded for Indigenous females (table 5.4). Indigenous males had higher rates for 'dermatological and plastic procedures' than Indigenous females in all age groups. Procedure rates for the Indigenous males and females were higher than non-Indigenous rates for the age groups from 25–44 years, at similar rates for age groups 35–64, but lower for age groups 65–74 years and over (graph 5.15).

5.15 DERMATOLOGICAL AND PLASTIC PROCEDURES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Males and females identified as Indigenous were as likely as non-Indigenous people to undergo dermatological and plastic procedures (table 5.4). Almost all dermatological and plastic procedures for Indigenous patients were skin and subcutaneous tissue procedures, which were performed at higher rates than for the non-Indigenous population (table 5.16). This subcategory included repair and dressing of wounds, burns etc.; removal of foreign bodies, or growths from the skin; and skin grafts.

5.16 AGE-STANDARDISED RATES FOR DERMATOLOGICAL AND PLASTIC PROCEDURES(a)

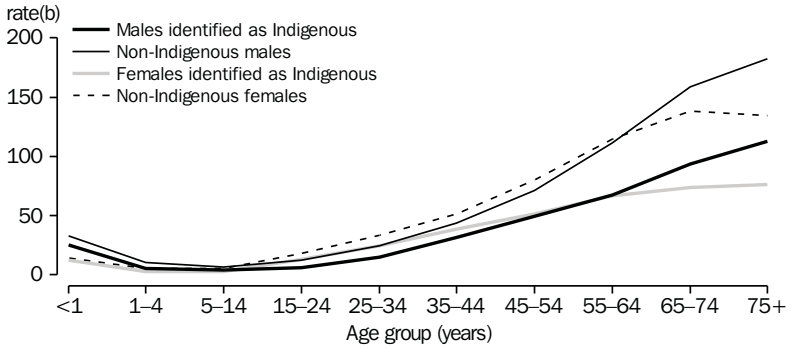
	Indigenous males				*Indigenous females*			
	Procedures				*Procedures*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Operations on the skin/subcutaneous tissue	4 509	6.6	27	1.2	3 294	3.4	19	1.2
Other dermatological and plastic procedures	107	0.2	1	0.4	123	0.1	1	0.2
Total	**4 616**	**6.7**	**28**	**1.1**	**3 417**	**3.6**	**19**	**1.0**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of procedures for persons identified as Indigenous divided by the rate of procedures for non-Indigenous persons.

Operations on the digestive system

'Operations on the digestive system' accounted for 5% of all procedures for patients identified as Indigenous (table 5.4). Across all age groups males and females identified as Indigenous had lower rates of 'operations on the digestive system' than males and females in the non-Indigenous population. Both Indigenous and non-Indigenous females were less likely than males to have an operation on the digestive system in younger age groups (under 15) and older age groups (65–74 years and older) (graph 5.17).

5.17 OPERATIONS ON THE DIGESTIVE SYSTEM(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

After adjusting for age differences, males and females identified as Indigenous were much less likely overall to have an operation on the digestive system than the non-Indigenous population (table 5.4). Indigenous patients, however, were as likely to have a procedure recorded for operations on the gallbladder and biliary tract (table 5.18).

5.18 AGE-STANDARDISED RATES FOR OPERATIONS ON THE DIGESTIVE SYSTEM(a)

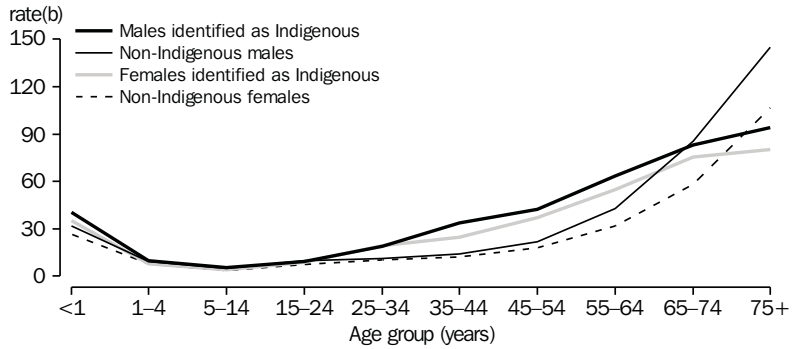
	Indigenous males				*Indigenous females*			
	Procedures				*Procedures*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Operations on the large intestine	566	0.8	6	0.4	724	0.8	6	0.4
Operations on the appendix	238	0.3	1	0.7	295	0.3	1	0.9
Operations on the gallbladder/biliary tract	265	0.4	3	1.0	905	0.9	6	0.9
Operations on the abdomen/ peritoneum/omentum	750	1.1	5	0.7	826	0.9	5	1.1
Other operations on the digestive system	1 753	2.6	16	0.7	1 682	1.8	13	0.6
Total	**3 572**	**5.2**	**32**	**0.6**	**4 432**	**4.6**	**32**	**0.6**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of procedures for persons identified as Indigenous divided by the rate of procedures for non-Indigenous persons.

Imaging services

In 1999–2000, 'imaging services' accounted for 6% of procedures for males identified as Indigenous and 4% of procedures for females identified as Indigenous (table 5.4). The age-specific rates for males and females followed similar patterns for the Indigenous and non-Indigenous groups. Indigenous male and female rates were higher than the non-Indigenous rates for age groups to 64 years (graph 5.19).

5.19 IMAGING SERVICES(a)



(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population.

Overall, both males and females identified as Indigenous were more likely than non-Indigenous persons to receive an imaging service (table 5.4). Indigenous patients were about twice as likely to undergo radiography as non-Indigenous patients (table 5.20).

5.20 AGE-STANDARDISED RATES FOR IMAGING SERVICES(a)

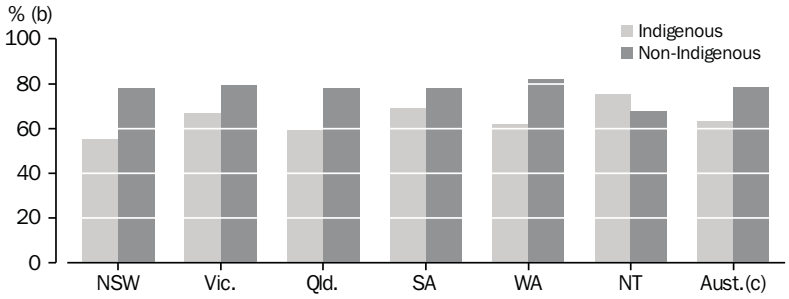
	Indigenous males				*Indigenous females*			
	Procedures				*Procedures*			
	no.	%	rate(b)	rate ratio(c)	no.	%	rate(b)	rate ratio(c)
Ultrasound scan	359	0.5	3	1.0	465	0.5	3	1.4
Computerised tomography (CT) scan	2 424	3.5	19	1.4	2 022	2.1	15	1.5
Radiography	346	0.5	2	1.6	368	0.4	2	2.2
Nuclear medicine imaging	340	0.5	3	1.0	377	0.4	3	1.1
Magnetic Resonance Imaging (MRI)	219	0.3	1	1.0	197	0.2	1	0.9
Other imaging services	299	0.4	3	1.0	318	0.3	3	1.6
Total	**3 987**	**5.8**	**32**	**1.2**	**3 747**	**3.9**	**27**	**1.4**

(a) Data are for the financial year 1999–2000.
(b) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(c) Rate ratio is equal to the rate of procedures for persons identified as Indigenous divided by the rate of procedures for non-Indigenous persons.

PROCEDURES BY STATE AND TERRITORY

Based on place of hospitalisation, patients identified as Indigenous were less likely than non-Indigenous patients to have one or more procedures recorded in all States of Australia. In the Northern Territory patients identified as Indigenous were more likely than non-Indigenous patients to have one or more procedures recorded (graph 5.21).

5.21 HOSPITAL SEPARATIONS WITH A PROCEDURE RECORDED, BY STATE AND TERRITORY OF HOSPITALISATION(a)



(a) Data are for the financial year 1999–2000.
(b) With one or more procedures recorded.
(c) Includes Tasmania and the Australian Capital Territory.

By taking age and population size into account, the outlook presented is different. Indigenous Australians resident in all States and Territories except Victoria and Tasmania were more likely than non-Indigenous Australians to undergo a procedure. Aboriginal and Torres Strait Islander persons in South Australia, Western Australia and the Northern Territory were approximately two to four times more likely than non-Indigenous persons in these jurisdictions to undergo at least one procedure, based on place of usual residence (table 5.22).

Caution should be used in interpreting this pattern as it is possible that at least part of the variation between jurisdictions is a result of differences in Indigenous identification, and variations in methods of assessing and recording Indigenous status. As noted in Chapter 2, for some jurisdictions data from some public and private hospitals are excluded. For example, the restriction of Northern Territory data to only public hospitals is likely to understate the non-Indigenous hospitalisation rates.

5.22 PROCEDURES(a) BY STATE AND TERRITORY OF USUAL RESIDENCE

	Procedures reported for patients identified as Indigenous		*Procedures reported for non-Indigenous patients(b)*				
State and Territory	*no.*	*rate(c)(d)*	*no.*	*rate(c)(d)*	*rate ratio(e)*	*Proportion of procedures for patients identified as Indigenous* %	*Proportion of the population identified as Indigenous(f)* %
			MALES				
New South Wales	12 971	433	1 208 684	374	1.2	1.1	1.8
Victoria	2 285	300	935 157	393	0.8	0.2	0.5
Queensland	17 389	513	688 786	402	1.3	2.5	3.2
South Australia	5 402	680	288 385	370	1.8	1.8	1.6
Western Australia	14 472	702	351 814	401	1.8	4.0	3.1
Tasmania	419	104	85 850	364	0.3	0.5	3.5
Northern Territory(g)	14 761	906	16 848	302	3.0	46.7	26.9
Australian Capital Territory	587	757	42 195	318	2.4	1.4	1.1
Australia(h)	**68 520**	**546**	**3 634 948**	**386**	**1.4**	**1.9**	**2.2**
			FEMALES				
New South Wales	17 833	454	1 417 892	407	1.1	1.2	1.8
Victoria	3 903	450	1 111 873	427	1.1	0.3	0.5
Queensland	24 967	654	795 618	446	1.5	3.0	3.3
South Australia	7 510	926	346 298	429	2.2	2.1	1.6
Western Australia	20 907	932	432 942	468	2.0	4.6	3.3
Tasmania	976	169	103 797	420	0.4	0.9	3.4
Northern Territory(g)	19 064	1007	14 710	265	3.8	56.4	30.0
Australian Capital Territory	393	1275	50 963	339	3.8	0.8	1.1
Australia(h)	**95 710**	**668**	**4 287 166**	**426**	**1.6**	**2.2**	**2.2**

(a) Based on place of usual residence. Data are for financial year 1999–2000 for public and private hospitals.
(b) Includes patients identified as non-Indigenous and those for whom Indigenous status was not reported.
(c) Per 1,000 population. Directly age-standardised using the total Australian population as at 30 June 1991.
(d) The true rate of hospitalisation of Indigenous people in States and Territories will be underestimated to the extent that Indigenous people are under-identified in the hospital records of those jurisdictions (refer Chapter 2, Methods and data quality).
(e) Rate ratio is equal to the rate of procedures for persons identified as Indigenous divided by the rate of procedures for non-Indigenous persons.
(f) As estimated for 31 December 1999.
(g) Public hospitals only.
(h) Includes those usually resident in other Australian territories or overseas, and those for whom place of usual residence was not stated.

'Operations on the urinary system' (including haemodialysis) was the most common type of procedure recorded for males and females identified as Indigenous, resident in all States and Territories except Victoria (table 5.23 and table 5.24). The next most common type of procedure was 'allied health interventions'.

5.23 PROCEDURES MOST COMMONLY REPORTED FOR MALES IDENTIFIED AS INDIGENOUS(a)(b)(c)

	New South Wales	*Victoria*	*Queensland*	*South Australia*	*Western Australia*	*Northern Territory(d)*	*Australia(e)*
	%	%	%	%	%	%	%
Operations on the urinary system(f)	25	16	27	35	30	48	32
Allied health interventions	18	18	15	16	18	14	16
Miscellaneous procedures	10	9	10	9	10	7	9
Operations on the musculoskeletal system	7	10	7	6	7	6	7
Dermatological and plastic procedures	5	6	9	7	7	6	7
Other types of procedures(g)	35	39	31	27	28	19	29
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**

(a) Data are for the financial year 1999–2000, based on place of hospitalisation. Data for Tasmania and the Australian Capital Territory are not presented due to relatively small numbers. 'Procedures most commonly reported' are based on ICD-10-AM chapters. See Appendix A for a full listing.
(b) It is likely that the quality of identification of hospital patients varies by State and Territory, although the level of under-identification is unknown for most hospitals.
(c) No data were available for a number of small private and private free-standing day hospital facilities.
(d) Public hospitals only.
(e) Includes Tasmania and the Australian Capital Territory.
(f) Includes haemodialysis.
(g) Includes all other ICD-10-AM chapters combined.

5.24 PROCEDURES MOST COMMONLY REPORTED FOR FEMALES IDENTIFIED AS INDIGENOUS(a)(b)(c)

	New South Wales	*Victoria*	*Queensland*	*South Australia*	*Western Australia*	*Northern Territory(d)*	*Australia(e)*
	%	%	%	%	%	%	%
Operations on the urinary system(f)	22	27	32	30	32	49	33
Allied health interventions	17	15	13	16	15	12	14
Obstetrical procedures	12	10	14	9	15	7	12
Gynaecological procedures	11	11	6	9	6	5	7
Miscellaneous procedures	8	5	7	8	7	6	7
Other types of procedures(g)	31	31	27	27	25	21	26
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**

(a) Data are for the financial year 1999–2000, based on place of hospitalisation. Data for Tasmania and the Australian Capital Territory are not presented due to relatively small numbers. 'Procedures most commonly reported' are based on ICD-10-AM chapters. See Appendix A for a full listing.
(b) It is likely that the quality of identification of hospital patients varies by State and Territory, although the level of under-identification is unknown for most hospitals.
(c) No data were available for a number of small private and private free-standing day hospital facilities.
(d) Public hospitals only.
(e) Includes Tasmania and the Australian Capital Territory.
(f) Includes haemodialysis.
(g) Includes all other ICD-10-AM chapters combined.

CHAPTER 6 DISCUSSION

In 1999–2000, Indigenous males and females were more likely than the non-Indigenous population to be admitted to hospital. Population procedure rates indicate that Indigenous persons were also more likely to undergo a procedure than non-Indigenous persons. As population procedure rates are based on the entire Indigenous population, they do not indicate the likelihood of undergoing a procedure once a person is admitted to hospital. Indigenous patients were less likely than non-Indigenous patients to undergo a procedure once admitted to hospital.

Almost all hospital separations and procedures for patients identified as Indigenous occurred in public hospitals. Persons identified as Indigenous were less likely than non-Indigenous patients to have a separation or procedure recorded in a private hospital.

The main reason for hospitalisation for persons identified as Indigenous was 'care involving dialysis', used in the treatment of kidney failure. 'Care involving dialysis' accounted for approximately 29% of all separations for patients identified as Indigenous. Males identified as Indigenous were six times as likely to be hospitalised for 'care involving dialysis' as non-Indigenous males and Indigenous females 14 times as likely to be hospitalised. 'Pregnancy, childbirth and puerperium'; injury and poisoning; and 'respiratory diseases' were other common ICD-10-AM principal diagnosis chapters for hospitalisation for persons identified as Indigenous. Indigenous peoples were also more likely than non-Indigenous people to be hospitalised for all other ICD-10-AM principal diagnosis chapter groupings, with the exception of 'neoplasms', 'musculoskeletal system and connective tissues diseases' and 'congenital anomalies'.

While hospital utilisation data provide insights into the health of the population, they are not accurate indicators of the health of the total community. Hospital morbidity collections are limited to information about the reasons for which people are hospitalised and the procedures they undergo in hospital and do not include information on those who access other health services, such as general practitioners and community health clinics, those who have not accessed health care at all and non-admitted hospital services.

Other factors, such as availability of and access to other medical services, may influence hospital utilisation; as may social factors relating to culture, socioeconomic status of patients, transport availability and the ability to speak English. Consequently the data reported do not describe levels of need or ill health in the Australian Indigenous community. A rising rate of hospitalisation, for example, could mean that health status is deteriorating, that access to hospitals has improved, that Indigenous identification has improved, or a combination of each (ABS & AIHW 2001).

DISCUSSION continued

Despite incomplete Indigenous identification in hospital records and the restricted perspective on health status that hospital utilisation data provide, hospital morbidity collections remain a key health indicator. Work coordinated by the Australian Bureau of Statistics (ABS), in partnership with State and Territory authorities, is targeting improvements in the completeness with which Aboriginal and Torres Strait Islander peoples are identified in administrative data collections, including hospital morbidity collections. Recent projects have also been undertaken by the Australian Health Ministers' Advisory Council (AHMAC) to improve the completeness of coverage of Indigenous identification by using less confronting methods of collection of Indigenous status. Nevertheless, further progress is needed to enhance the value of such an important data source on the health of Indigenous persons.

APPENDIX A ICD-10-AM CODES GROUPINGS USED IN THIS PUBLICATION

The ICD-10-AM 1st edition, July 1998 (National Centre for Classification in Health (NCCH) 1998) disease groupings used in this publication are listed below. In the interest of brevity the chapter and subgrouping headings used in this publication are an abbreviated form of those used within the ICD-10-AM publications. To assist readers the disease groupings related to each is indicated.

DIAGNOSIS CODES

CHAPTER	NAME USED IN THIS PUBLICATION	ICD-10-AM CODES
I	Infectious and parasitic diseases	A00–B99
II	Neoplasms	C00–D48
III	Diseases of the blood and blood-forming organs and immune mechanism	D50–D89
IV	Endocrine, nutritional and metabolic diseases	E00–E90
V	Mental and behavioural disorders	F00–F99
VI	Nervous system diseases	G00–G99
VII	Diseases of eye and adnexa	H00–H59
VIII	Diseases of ear and mastoid	H60–H95
IX	Circulatory system diseases	I00–I99
X	Respiratory diseases	J00–J99
XI	Digestive diseases	K00–K93
XII	Diseases of the skin and subcutaneous tissue	L00–L99
XIII	Diseases of the musculoskeletal system and connective tissue	M00–M99
XIV	Genitourinary system diseases	N00–N99
XV	Pregnancy, childbirth and puerperium	O00–O99
XVI	Certain conditions originating in the perinatal period	P00–P96
XVII	Congenital anomalies	Q00–Q99
XVIII	Symptoms, signs not elsewhere classified	R00–R99
XIX	Injury, poisoning and certain other consequences of external causes	S00–T98
XXI	Factors influencing health status and contact with health services	Z00–Z99

The following sub-chapter groupings were used.

CHAPTER	SUBCATEGORIES	ICD-10-AM CODES
Infectious and parasitic diseases		A00–B99
	Intestinal infectious diseases	A00–A09
	Other bacterial diseases	A30–A49
	Infections, sexual transmission	A50–A64
	Viral infections	A80–B19
	Other viral infections	B25–B34
	Other infectious diseases	B35–B99
	Remainder infectious and parasitic diseases	A15–A19, A20–A28, A65–A69, A70–A74, A75–A79, B20–B24
Endocrine, nutritional and metabolic diseases		E00–E90
	Diseases of the thyroid gland	E00–E07
	Diabetes mellitus	E10–E14
	Diabetes type 1	E10
	Diabetes type 2	E11
	Other diabetes	E12–E14
	Other metabolic or nutritional disorders	E15–E90
Mental and behavioural disorders		F00–F99
	Organic mental disorders	F00–F09
	Disorders, psychoactive substance use	F10–F19
	Schizophrenia	F20–F29
	Mood and neurotic disorders	F30–F48
	Other mental disorders	F50–F99
Circulatory system diseases		I00–I99
	Rheumatic disease	I00–I02, I05–I09
	Hypertensive disease	I10–I15
	Ischaemic heart diseases	I20–I25
	Other heart disease	I26–I28, I30–I52
	Cerebrovascular diseases	I60–I69
	Other diseases of the circulatory system	I70–I79, I80–I89, I95–I99
Respiratory diseases		J00–J99
	Acute upper respiratory infections	J00–J06
	Influenza and pneumonia	J10–J18
	Other acute lower respiratory infection	J20–J22
	Other diseases, upper respiratory tract	J30–J39
	Chronic lower respiratory diseases	J40–J47
	Other respiratory diseases	J60–J99

DIAGNOSIS CODES *continued*

CHAPTER	SUBCATEGORIES	ICD-10-AM CODES
Digestive diseases		K00–K93
	Diseases of oral cavity, salivary glands, jaws	K00–K14
	Diseases of oesophagus, stomach, duodenum	K20–K31
	Diseases of appendix	K35–K38
	Hernia	K40–K46
	Noninfective enteritis, colitis	K50–K52
	Other diseases of intestines	K55–K63
	Diseases of peritoneum	K65–K67
	Diseases of the liver	K70–K77
	Disorders of gallbladder, biliary tract and pancreas	K80–K87
	Other diseases of the digestive system	K90–K93
Diseases of the skin and subcutaneous tissue		L00–L99
	Infections of skin and subcutaneous tissue	L00–L08
	Dermatitis and eczema	L20–L30
	Urticaria and erythema	L50–L54
	Other disorders of the skin	L10–L14, L40–L45, L55–L99
Diseases of the musculoskeletal system and connective tissue		M00–M99
	Arthropathies/connective tissue disorders	M00–M25, M30–M36
	Dorsopathies/soft tissue disorders	M40–M54, M60–M79
	Osteopathies and chondropathies	M80–M94
	Other musculoskeletal system/tissue disorders	M95–M99
Genitourinary system diseases		N00–N99
	Glomerular diseases	N00–N08
	Renal failure	N17–N19
	Other disorders of the genitourinary system	N10–N16, N20–N39, N99
	Disorders of the male genital organs	N40–N51
	Disorders of the breast	N60–N64
	Disorders of the female genital organs	N70–N98
Pregnancy, childbirth and puerperium		O00–O99
	Pregnancy with abortive outcome	O00–O08
	Duration of pregnancy, oedema, proteinuria, hypertensive disorders	O09–O16
	Other maternal disorders, related to pregnancy	O20–O29
	Maternal care—fetus, amniotic cavity and delivery	O30–O48
	Complications of labour and delivery	O60–O75
	Single delivery	O80–O82
	Complications related to puerperium	O85–O92
	Other obstetric conditions	O98–O99

DIAGNOSIS CODES *continued*

CHAPTER	SUBCATEGORIES	ICD-10-AM CODES
Injury, poisoning and certain other consequences of external causes		S00–T98
	Injuries	S00–T19
	Burns and frostbite	T20–T35
	Poisoning	T36–T50
	Toxic effects	T51–T65
	External causes, trauma	T66–T79, T89
	Complications not elsewhere classified	T80–T88
	Sequelae injuries, poisoning, external causes	T90–T98
Factors influencing health status and contact with health services		Z00–Z99
	Care involving dialysis	Z49

PROCEDURES

CHAPTER	NAME USED IN THIS PUBLICATION	ICD-10-AM BLOCKS
I	Operations on the nervous system	1–86
II	Operations on the endocrine system	110–129
III	Operations on the eye and adnexa	160–256
IV	Operations on the ear and mastoid process 300–333	
V	Operations on the nose, mouth, pharynx 370–422	
VI	Dental services	450–490
VII	Operations on the respiratory system	520–569
VIII	Operations on the cardiovascular system	600–767
IX	Operations on the blood and blood forming organs	800–817
X	Operations on the digestive system	850–1011
XI	Operations on the urinary system	1040–1128
XII	Operations on the male genital organs	1160–1203
XIII	Gynaecological procedures	1230–1299
XIV	Obstetric procedures	1330–1347
XV	Operations on the musculoskeletal system 1360–1579	
XVI	Dermatological and plastic procedures	1600–1718
XVII	Operations on the breast	1740–1759
XVIII	Chemotherapeutic and radiation oncology procedures	1780–1799
XIX	Miscellaneous procedures	1820–1899
XX	Imaging services	1940–2016
XXI	Allied health interventions	2050–2140

PROCEDURES *continued*

CHAPTER	SUBCATEGORIES	ICD-10-AM BLOCKS
Operations on the digestive system		850–1011
	Operations on the large intestine	904–925
	Operations on the appendix	926–927
	Operations on the gallbladder/biliary tract	957–973
	Operations on the abdomen/peritoneum/omentum	983–1004
	Other operations on the digestive system	850–903, 928–956 974–982, 1005–1011
Operations on the urinary system		1040–1128
	Operations on the kidney	1040–1063
	Operations on the ureter	1064–1087
	Operations on the bladder	1088–1110
	Operations on the urethra and other urinary system sites	1111–1128
Obstetric procedures		1330–1347
	Antepartum procedures	1330–1332
	Procedures associated with labour	1333–1335
	Delivery procedures	1336–1340
	Procedures assisting delivery	1341–1343
	Postpartum procedures	1344–1347
Operations on the musculoskeletal system		1360–1579
	Operations on the head	1360–1372
	Operations on the forearm	1421–1438
	Operations on the hand/wrist	1439–1475
	Operations on the knee joint/leg	1495–1525
	Operations on the ankle/foot	1526–1549
	Remainder of operations on the musculoskeletal system	1373–1420, 1476–1494
Dermatological and plastic procedures		1600–1718
	Operations on the skin/subcutaneous tissue	1600–1660
	Other dermatological and plastic procedures	1661–1718
Miscellaneous procedures		1820–1899
	Drug and alcohol interventions	1828
	Respiratory	1844–1849
	Haematology	1859–1861
	Gastroenterology	1862–1867
	Immunisation/injections	1880–1883
	Other miscellaneous procedures	1820–1827, 1829–1843 1850–1858, 1868–1879 1884–1899

DIAGNOSIS CODES *continued*

CHAPTER	SUBCATEGORIES	ICD-10-AM CODES
Imaging services		1940–2016
	Ultrasound scan	1940–1950
	Computerised tomography (CT) scan	1952–1966
	Radiography	1967–1988
	Nuclear medicine imaging	2000–2014
	Magnetic resonance imaging (MRI)	2015
	Other imaging services	1951, 1989–1999, 2016
EXTERNAL CAUSES		
XX External causes of morbidity and mortality		V01–Y98
	Transport accidents	V01–V99
	Accidental falls	W00–W19
	Exposure to inanimate mechanical forces	W20–W49
	Exposure to animate mechanical forces	W50–W64
	Exposure to electric current/smoke/animals/nature	W85–X39
	Accidental poisoning	X40–X49
	Other accidental exposures	X50–X59
	Intentional self-harm	X60–X84
	Assault	X85–Y09
	Complications of medical and surgical care	Y40–Y84
	Other external causes	W65–W84,Y10–Y36, Y85–Y98

APPENDIX B: THE INTRODUCTION OF ICD-10-AM

Note: The following is based on text provided in Australian Institute of Health and Welfare 2000, *Australian Hospital Statistics 1998–99*, cat. no. HSE 11. AIHW, Canberra, pp. 224–231.

Introduction of ICD-10-AM

The previous edition of this publication, *Occasional Paper: Hospital Statistics, Aboriginal and Torres Strait Islander Australians 1997–98* (cat. no. 4711.0), presented information on diseases, procedures and external causes of injury and poisoning using *The Australian Version of the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)* (National Coding Centre 1996). This 1999–2000 edition of 4711.0 uses *The International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification, first edition (ICD-10-AM)* (National Centre for Classification in Health (NCCH) 1998).

The ICD-10-AM classification was developed in Australia by the National Centre for Classification in Health. The disease and external cause classifications were based on the World Health Organization ICD-10, and the procedure classification was based on the procedure listing of the Medicare Benefits Schedule. Assistance provided by Australian clinicians and coders in this development ensured that the classification was current and appropriate for Australian clinical practice. It has been used by New South Wales, Victoria, the Australian Capital Territory and the Northern Territory since July 1998, and by the other States since July 1999.

Data for 1999–2000 were provided by all States and Territories using ICD-10-AM. The second edition of the classification was endorsed by the National Health Information Management Group for implementation nation-wide on 1 July 2000, and the third from 1 July 2002.

The ICD-10-AM classification

ICD-10-AM consists of:

- A disease classification based on World Health Organization's publication of ICD-10
- A new Australian classification of procedures based on the Medicare Benefits Schedule (MBS), sometimes referred to as MBS-Extended, or MBS-E
- Australian Coding Standards for the selection of disease and procedure codes.

Readers should refer to the published classification (NCCH 1998) and its Implementation Kit (NCCH 1997) (which is the source of some of the information in this appendix) for detailed information about ICD-10-AM and its relationship with its predecessor, ICD-9-CM. However, the sections below summarise the main characteristics of the new classification and major differences between it and ICD-9-CM, to guide readers in interpretation of the data presented in this report. The following information relates to ICD-10-AM first edition.

The disease classification

ICD-10-AM uses an alphanumeric coding scheme for diseases, comprising one alphabetic character generally followed by two, three or four numerals. The disease categories are grouped into 19 chapters (see appendix A), and the supplementary classifications in ICD-9-CM (external causes of morbidity and mortality, and factors influencing health status and contact with health services) also have chapter status in ICD-10-AM. The ICD-10-AM chapters generally have the same subject matter as in the chapters of ICD-9-CM. However, the order of the chapters was changed slightly and the ICD-9-CM chapter on 'Diseases of the nervous system and sense organs' was split into chapters on diseases of the nervous system, of the eye and adnexa and of the ear and mastoid processes. In addition, there has also been some relocation of diseases and conditions. Relevant post-procedural disorders have also been moved, from chapter 17 'Complications of surgical and medical care' in ICD-9-CM, to the end of each body system chapter in ICD-10-AM.

Other changes between ICD-9-CM and ICD-10-AM include the use of the term 'sequelae' rather than 'late effects', and a change of the axis for classifying injuries from type of injury (e.g. fractures) in ICD-9-CM to body site (e.g. head) in ICD-10-AM. Fifth characters for obstetric codes have also been discontinued. They were used in ICD-9-CM to distinguish between antepartum and postpartum conditions or complications pre and post delivery. These, and other changes, are provided in further detail in *Australian Hospital Statistics 1998–99* (AIHW 2000a).

The classifications for external causes of injury and poisoning

The chapter classifying external causes of injury and poisoning (chapter XX) is part of the disease classification in ICD-10-AM. However, this chapter is used to classify and code external causes, rather than diagnoses, in the *National Hospital Morbidity Database* and in this report, so it is not included with the remainder of the ICD-10-AM disease classification in chapter 4 reporting diagnoses.

The ICD-10-AM external cause classification is largely similar to the ICD-9-CM external cause classification; however, the injured person's mode of transport, rather than the accident type, is used as the main axis for classification of land transport accidents.

The procedure classification

The chapters of the procedure classification follow the ICD-10 body system structure closely. Within each chapter, a number of axes are used to arrange the procedure codes. The principal axis is defined by anatomical site and is structured with a 'proximal to distal' or 'head to toe' approach. For example, gynaecological procedures are sequenced: ovary, fallopian tubes, uterus, cervix, vagina and vulva. Under the secondary axis, the procedures are listed under the anatomical site (principal axis) from the least invasive procedures through to the most invasive. Some of the general categories of the secondary axis are: examination, excision, reduction, repair, reoperation. The tertiary axis includes details of the specific site, the specific procedure, the technology and techniques used.

The procedure classification *continued*

The actual procedure codes exist at the tertiary axis level. They have as their basis the MBS item numbers (5-digit), and have a 2-digit extension to identify individual procedural concepts within the MBS item number. The procedure codes (which are not in numerical order in the classification) are grouped into blocks (one to four digits), that are numbered sequentially and allow location of the codes and aggregation of the data. Codes are usually therefore referred to with their block number, for example 48224-00 [1435] (Bone graft to radius or ulna, in Block 1435, Bone graft to forearm).

As the ICD-10-AM procedure classification is not based on the ICD-9-CM procedure classification, it cannot be easily compared with it. The chapter structure (see appendix A) is broadly similar; however, the ICD-9-CM chapter on operations on the nose, mouth and pharynx was split into chapters for procedures on the nose, mouth and pharynx, and for dental services in ICD-10-AM. In addition, there is a separate chapter for procedures on the breast, which were included with operations on skin and subcutaneous tissue in the ICD-9-CM chapter on operations on the integumentary system. Procedures grouped into the ICD-9-CM chapter on miscellaneous diagnostic and therapeutic procedures have been split into separate ICD-10-AM chapters for chemotherapeutic and radiation oncology, diagnostic imaging services, allied health interventions and miscellaneous procedures.

In addition, the different structure of ICD-10-AM (compared with ICD-9-CM) has meant that some procedures are categorised within a different body system in the new classification and so appear to have 'moved' chapters. For example, some procedures for excision of skin or skin lesions were classified with the area of the body under 'of the skin' in ICD-9-CM, but all these procedures are located together in the ICD-10-AM chapter XVI (Dermatological and plastic procedures). These and other examples of 'movements' (other than the chapter changes mentioned above) are detailed further in *Australian Hospital Statistics 1998–99 (AIHW 2000a).*

APPENDIX C: JURISDICTIONAL ASSESSMENTS OF THE QUALITY OF INDIGENOUS IDENTIFICATION IN HOSPITAL SEPARATION RECORDS

Note: The following is based on text provided in Australian Institute of Health and Welfare 2001, *Australian Hospital Statistics 1999–00*, (cat. no. HSE 14.) AIHW, Canberra, pp. 79–80.

The variation in the number of Aboriginal and Torres Strait Islander separations per 1,000 Aboriginal and Torres Strait Islander persons among the States and Territories suggests that there was variation in the proportion of Aboriginal and Torres Strait Islander persons who identified as such in hospital separation records and/or in the total population.

The quality of the data provided for Aboriginal and Torres Strait Islander status in 1999–2000, although better than previous years, is still in need of improvement, being considered acceptable for only the Northern Territory and South Australia.

For 1999–2000, the New South Wales Health Department reports that its data were in need of improvement. To address this issue, the Department implemented a range of strategies which include the ongoing distribution of better practice guidelines, and principles for correctly recording Aboriginal and Torres Strait Islander status. In addition, its Aboriginal Health Information Strategy Unit continues to conduct a training program for frontline staff which targets staff who collect patient information. It also trains staff as facilitators across all Area Health Services.

The Victorian Department of Human Services reports that its 1999–2000 data were in need of improvement. The National Health Data Dictionary question on Aboriginal and Torres Strait Islander status is a mandatory data field for admission to all hospitals. However, the question is not always asked and it is sometimes possible for systems to default to 'no'. Hospitals are encouraged to assess the quality of their data internally, but this is not mandatory and not all hospitals do so.

Queensland Health reports that its 1999–2000 data were regarded as being in need of improvement. The Department is conducting a program of audits and is working to improve overall Aboriginal and Torres Strait Islander identification in all mainstream administrative data collections.

The Health Department of Western Australia regards its 1999–2000 Aboriginal and Torres Strait Islander status data as requiring improvement. This view is supported by findings of a recent project undertaken to assess the quality of identification of Aboriginal and Torres Strait Islander patients in Western Australian hospital data (Young 2001). The project involved surveys in rural and metropolitan hospitals using the methodology developed in 1998 by the Aboriginal and Torres Strait Islander Health and Welfare Information Unit (a collaborative work program of the Australian Bureau of Statistics and the Australian Institute of Health and Welfare).

The South Australian Department of Human Services regards its 1999–2000 Aboriginal and Torres Strait Islander status data as being of acceptable quality. The Department conducts training courses in data collection every year and these reinforce the need to comply with National Health Data Dictionary standards for Aboriginal and Torres Strait Islander identification. A 30% loading for casemix payments is applied to Aboriginal and Torres Strait Islander separations in South Australia, and this acts as an incentive for improved identification.

The Tasmanian Department of Human Services reports that its 1999–2000 data were much improved since 1998–99, but still in need of improvement. An outposted Australian Bureau of Statistics staff member has been working with the Department to improve the data quality throughout the State. The number of patients not responding to the Aboriginal and Torres Strait Islander question is low.

The Australian Capital Territory Department of Health and Community Care considers that its 1999–2000 data were in need of improvement. During 2000 the Department conducted training for both the Canberra Hospital and Calvary Hospital staff. Aboriginal Liaison Officers were employed and Aboriginal and Torres Strait Islander status is a funding component in contracts with the hospitals. Identification has improved for 2000–01, and further work continues on improving results.

The Northern Territory's Department of Health and Community Services reports that the quality of its 1999–2000 Aboriginal and Torres Strait Islander status data is considered to be acceptable. The Department now retains historical reporting of Indigenous status and is soon to embark on a project where individual client systems will receive a report of individuals who have reported their Indigenous status as Aboriginal on one occasion and as Torres Strait Islander on another. System owners will follow up on these clients. For patients with multiple episodes in any one financial year, all management and statistical reporting for that financial year, is based on the identification of a person's Indigenous status at the most recent episode recorded in that year.

APPENDIX D: NATIONAL HEALTH DATA DICTIONARY, VERSION 8.0 — INDIGENOUS STATUS DATA ELEMENT

NATIONAL HEALTH DATA DICTIONARY — INDIGENOUS STATUS DATA ELEMENT

The *National Health Data Dictionary, Version 8.0, 1999* (AIHW 1999a) contains an Indigenous data element that includes a discussion of the data domain and data collection methods. This data element forms the basis of the data in the National Hospital Morbidity Database (NHMD). An abbreviated version of the data element is given below, illustrating how the data dictionary description is based on the ABS standard and is consistent with, and mappable to, ABS codes. This has been superseded by version 3.0 of the Indigenous status data element since July 2000, presented in subsequent editions of the *National Health Data Dictionary* (AIHW 2000b).

Indigenous status

Definition

An Aboriginal or Torres Strait Islander is a person of Aboriginal or Torres Strait Islander descent who identifies as an Aboriginal or Torres Strait Islander and is accepted as such by the community in which he or she lives.

Data domain

1	Indigenous — Aboriginal but not Torres Strait Islander origin
2	Indigenous — Torres Strait Islander but not Aboriginal origin
3	Indigenous — Aboriginal and Torres Strait Islander origin
4	Not Indigenous — Neither Aboriginal nor Torres Strait Islander origin
9	Not stated (not for use in primary data collection)

Guide for use

There are three components to the definition:

- descent
- self-identification
- community acceptance

It is not possible to collect the three components of the definition in a single question. The Australian Bureau of Statistics (ABS) proposes that the focus of a single question should be self-identification based on descent, the first component of the definition. The ABS therefore proposes the use of the following alternative questions, depending on whether the person is present or not.

When the person is present,

'Are you of Aboriginal or Torres Strait Islander origin?'; or

where the person is not present and someone who knows the person well responds for them,

'Is the person of Aboriginal or Torres Strait Islander origin?'

Indigenous status *continued*

The ABS recommends collection of response in tick boxes, e.g.;

- ☐ *No*
- ☐ *Yes, Aboriginal*
- ☐ *Yes, Torres Strait Islander*

Persons of both Aboriginal and Torres Strait Islander origin will mark 'Yes' to both questions enabling the responses to be coded.

Self reporting of descent is not equivalent to self reporting of identity but because of the absence of a second 'identity' question some respondents will interpret the 'origin' question to mean both descent and identification. What identification in the context of the variable Indigenous status should measure is an individual's self assessed historical and cultural affiliation.

The code in the not stated classification is for use in administrative collections when transferring data from data sets where the item has not been collected. It is not to be used in primary collections.

APPENDIX E: LIST OF REFERENCES

Aboriginal and Torres Strait Islander Health and Welfare Information Unit 1999, *Assessing the quality of identification of Aboriginal and Torres Strait Islander people in hospital data*, Australian Health Ministers' Advisory Council, Australian Institute of Health and Welfare and Australian Bureau of Statistics, Canberra.

ABS 2002, *Population Distribution, Aboriginal and Torres Strait Islander Australians, 2001*, Australian Bureau of Statistics cat. no. 4705.0, ABS, Canberra.

ABS and AIHW 1999, *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples*, Australian Bureau of Statistics cat. no. 4704.0, Australian Institute of Health and Welfare cat. no. IHW 3, ABS, Canberra.

ABS and AIHW 2001, *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples*, Australian Bureau of Statistics cat. no. 4704.0, Australian Institute of Health and Welfare cat. no. IHW 6, ABS, Canberra.

AIHW 1999a, *National Health Data Dictionary*, Version 8.0, cat. no. HWI 18. Australian Institute of Health and Welfare, Canberra.

AIHW 1999b, *Australian Hospital Statistics 1997–98*, cat. no. HSE 6. Australian Institute of Health and Welfare, Canberra.

Health Expenditure Database 1999–2000, Australian Institute of Health and Welfare, annual updating.

AIHW 2000a, *Australian Hospital Statistics 1998–99*, cat. no. HSE 11 Australian Institute of Health and Welfare, Canberra.

AIHW 2000b, *National Health Data Dictionary*, Version 9.0, cat. no. HWI 24. Australian Institute of Health and Welfare, Canberra.

AIHW 2001a, *Australian Hospital Statistics 1999–00*, cat. no. HSE 14 Australian Institute of Health and Welfare, Canberra.

AIHW 2001b, *Expenditures on health services for Aboriginal and Torres Strait Islander people 1998–99*, cat. no. IHW 7, Australian Institute of Health and Welfare, Canberra.

AIHW 2002, *Australia's health 2002*, cat. no. AUS 25, Australian Institute of Health and Welfare, Canberra.

Condon, JR, Williams, DJ, Pearce, MC & Moss E 1998, *Northern Territory hospital morbidity dataset: Validation of demographic data 1997*, Territory Health Services, Darwin.

Cunningham, J & Paradies, Y 2000, *Occasional paper: Mortality of Aboriginal and Torres Strait Islander Australians, 1997*, cat. no. 3315.0, ABS, Canberra.

Cunningham, J & Beneforti, M 2000, *Occasional paper: Hospital Statistics, Aboriginal and Torres Strait Islander Australians, 1997–98*, cat. no. 4711.0, ABS, Canberra.

Cunningham, J 2002, 'Diagnostic and therapeutic procedures among Australia hospital patients identified as Indigenous', *Medical Journal of Australia*, vol. 176, pp. 58–62.

Day, P, Sullivan, EA & Lancaster, P 1999, *Indigenous mothers and their babies, Australia, 1994–96*, Perinatal Statistics Series no. 8, Australian Institute of Health and Welfare National Perinatal Statistics Unit, Sydney.

Department of Aboriginal Affairs Constitutional Section 1981, *Report on a review of the administration of the working definition of Aboriginal and Torres Strait Islander*, Department of Aboriginal Affairs, Canberra.

Lynch, T and Lewis, D 1997, *Indigenous identification improvement project, interim report, April 1997*, Queensland Health, Brisbane.

National Centre for Classification in Health (NCCH) 1997, *ICD-10-AM implementation kit*, University of Sydney, Sydney.

National Centre for Classification in Health (NCCH) 1998, *The International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian modification (ICD-10-AM)*, 1st ed, University of Sydney, Sydney.

National Coding Centre 1996, *The Australian Version of the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM),* 2nd ed, University of Sydney, Sydney.

Queensland Health 2002 (forthcoming), *In draft—Report on improving Indigenous status collection in public hospitals*, Queensland Health, Brisbane.

Ross, K 1999, *Occasional paper: Population issues, Indigenous Australians, 1996*, cat. no. 4708.0, Canberra.

Shannon, C, Brough, M & Haswell-Elkins, M 1997, *Identifying Aboriginal and Torres Strait Islander people on hospital records: Problems and solutions in public health information*, Australian Centre for International and Tropical Health and Nutrition, University of Queensland & Queensland Institute of Medical Research, Brisbane.

Young, MJ 2001, *Assessing the quality of identification of Aboriginal and Torres Strait Islander people in Western Australian hospital data 2000*, Health Department of Western Australia, Perth, Health Information Centre Occasional Paper 13, ISSN 1329 7252.

Abbreviations and Symbols

ABS	Australian Bureau of Statistics
AHMAC	Australian Health Minister's Advisory Council
AIHW	Australian Institute of Health and Welfare
ASR	age-standardised rates
ATSIHWIU	Aboriginal and Torres Strait Islander Health and Welfare Information Unit
ICD-9-CM	The Australian version of the International Classification of Diseases, 9th Revision, Clinical Modification
ICD-10-AM	The International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification
NHDD	National Health Data Dictionary
NHMD	National Hospital Morbidity Database
NCCH	National Centre for Classification in Health
—	nil or rounded to zero (including null cells)
. .	not applicable

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