Australian Government
Australian Institute of Health and Welfare

Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11

An analysis by remoteness and disease

HEALTH AND WELFARE EXPENDITURE SERIES NO. 49

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Authoritative information and statistics to promote better health and wellbeing

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Abbreviations

ACCHS	Aboriginal Community Controlled Health Service
AIHW	Australian Institute of Health and Welfare
ASGC	Australian Standard Geographical Classification
DoHA	Department of Health and Ageing (Australian Government)
GP	general practitioner
MBS	Medicare Benefits Scheme
OATSIH	Office for Aboriginal and Torres Strait Islander Health
PBS	Pharmaceutical Benefits Scheme
PPH	potentially preventable hospitalisations
VII	Voluntary Indigenous Identifier

Summary

This report complements *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11* (AIHW 2013a) by providing a more detailed analysis of health expenditure estimates for Indigenous and non-Indigenous Australians in 2010–11. Estimates are disaggregated at the regional level, as well as for specific disease and injury groups.

Health expenditure by remoteness

Expenditure was analysed for selected health services (i.e. admitted patients, Aboriginal Community Controlled Health Services, Medicare Benefits Schedule and Pharmaceutical Benefits Scheme). For these services, for every dollar spent per non-Indigenous Australian, $1.52 was spent per Indigenous Australian and expenditure increased with remoteness for both Indigenous and non-Indigenous Australians.

The difference was greatest in *Remote/Very remote* areas where, for every dollar spent per non-Indigenous Australian, $2.22 was spent per Indigenous Australian. The higher expenditure on Aboriginal and Torres Strait Islander people in remote areas is mainly due to higher expenditure on admitted patient services.

Health expenditure by disease group

The disease groups that accounted for the highest proportion of admitted patient expenditure for Aboriginal and Torres Strait Islander people were genitourinary diseases ($195 million, or 11% of Indigenous admitted patient expenditure), which includes the cost of dialysis treatment, followed by mental and behavioural disorders ($191 million or 11%), unintentional injuries ($149 million or 8%) and maternal conditions ($144 million or 8%).

The largest disease group of admitted patient expenditure for non-Indigenous Australians was cardiovascular disease ($5,171 million, or 12% of non-Indigenous admitted patient expenditure).

Potentially preventable hospitalisations

Overall, for every dollar spent on potentially preventable hospitalisations (PPH) per non-Indigenous Australian, $2.22 was spent per Indigenous Australian.

The highest expenditure on PPH for Indigenous Australians was for chronic obstructive pulmonary disease ($36 million, or 16% of Indigenous PPH expenditure), followed by diabetes complications ($35 million or 16%) and cellulitis ($20 million or 9%). Expenditure on vaccine-preventable conditions was $21 per Indigenous Australian and $5 per non-Indigenous Australian.

1 Introduction

This report builds on the national and state level estimates published in *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11* (AIHW 2013a). It provides estimates at the regional level as well as for specific disease and injury groups.

Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11 showed that the estimated per person expenditure on health services for Indigenous Australians in 2010–11 was 1.47 times that for the non-Indigenous population. There is, however, considerable variation in health expenditure for Aboriginal and Torres Strait Islander people across regions, service types and disease groups that is not well reflected by the Australia-wide ratio.

This report provides a more detailed examination of how health services for Aboriginal and Torres Strait Islander people are delivered and used. It focuses on how Indigenous health expenditure varies by location and how expenditure on particular diseases differs between Indigenous and non-Indigenous people.

The effect of location on expenditure

As noted in *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11*, while more than half (54.3%) of Australia's Aboriginal and Torres Strait Islander people live in *Major cities* and *Inner regional* areas, a large proportion (23.3%) reside in *Remote/Very remote* areas. In comparison, only 1.7% of non-Indigenous Australians reside in *Remote/Very remote* areas.

Economies of scale and the relative isolation of some Aboriginal and Torres Strait Islander populations can affect the cost of delivering health goods and services. These factors can have large impacts on both the levels of health expenditure and the quantity of goods and services provided to particular population groups.

This report presents expenditure estimates by Australian Standard Geographical Classification (ASGC) remoteness areas.

Disease expenditure

Aboriginal and Torres Strait Islander people are hospitalised at a higher rate than non-Indigenous Australians, as well as being hospitalised for particular conditions at higher rates than non-Indigenous Australians (AIHW 2012a).

As reported in *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11*, expenditure per Indigenous Australian in public hospitals was more than twice that for non-Indigenous Australians.

This report provides an analysis of expenditure in public and private hospitals by presenting expenditure for particular disease and injury groups, including potentially preventable hospitalisations (PPH).

These estimates enable monitoring of expenditure on the conditions for which Indigenous people access hospital services. However, in this context it should be noted that expenditure is not a direct measure of the size of the disease burden on the Aboriginal and Torres Strait

Islander population. Expenditure is influenced by service availability and use, disease prevalence and severity, and treatment requirements.

Data sources and methods

The health expenditure estimates by remoteness presented in this report are derived from the Australian Institute of Health and Welfare's (AIHW's) Health expenditure database, which is compiled annually from a wide range of government and non-government sources. These data sources include:

- Australian Government Department of Health and Ageing (DoHA)
- Australian Bureau of Statistics
- Australian Government Department of Veterans' Affairs
- state and territory health authorities
- Private Health Insurance Administration Council
- Comcare
- major workers compensation and compulsory third party motor vehicle insurers in each state and territory.

Detailed descriptions of data sources and methods used in relation to all areas of expenditure are covered in *Health expenditure Australia 2010–11* (AIHW 2012b). This includes a data quality statement that is also available online at <http://meteor.aihw.gov.au/content/index.phtml/itemId/489552>.

The total health expenditure estimates are then allocated between Indigenous and non-Indigenous Australians (e.g. AIHW 2013a). Detail about the methodology for doing this is available in *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11* (AIHW 2013a).

Data for estimates of expenditure for disease groups and PPH are from the AIHW national hospital morbidity database. A data quality statement for this data is available online at < http://meteor.aihw.gov.au/content/index.phtml/itemId/511338>.

The specific methodologies used to produce the analysis of expenditure by remoteness and disease groups are included in the relevant chapters.

Results are often presented as a ratio of Indigenous to non-Indigenous expenditure for comparative purposes. Ratios over 1.0 mean that more is spent per Indigenous Australian than per non-Indigenous Australian, while ratios under 1.0 mean that less is spent per Indigenous Australian than per non-Indigenous Australian. Components in tables may not add due to rounding.

Some of the expenditure patterns in this report may be influenced by variations in the completeness of Indigenous identification. Despite the adjustments made for under-identification (see boxes 1 and 2), it is possible that health expenditure estimates for Indigenous Australians may slightly overestimate or underestimate the actual level of health expenditure on Indigenous Australians.

Structure of this report

Chapter 2 presents estimates for health expenditure on Indigenous and non-Indigenous Australians by ASGC remoteness areas for admitted patient services, Office for Aboriginal and Torres Strait Islander Health (OATSIH) grants to Aboriginal Community Controlled Health Services (ACCHSs) the Medicare Benefits Scheme (MBS) and Pharmaceutical Benefits Scheme (PBS).

Chapter 3 presents estimates of expenditure by disease and injury groups, for the principal diagnosis, for Indigenous and non-Indigenous Australians for admitted public hospital patient and private hospital services expenditure.

Chapter 4 presents estimates of expenditure on Indigenous and non-Indigenous Australians on PPH.

2 Expenditure by remoteness

This chapter examines health expenditure across the four areas of health services for which it was possible to estimate expenditure by remoteness:

- admitted patient services (public and private)
- OATSIH grants to ACCHSs
- MBS
- PBS.

In 2010–11, these areas of health expenditure accounted for 61% ($2,780 million) of health expenditure on Indigenous Australians, compared with 65% ($77,454 million) for non-Indigenous Australians (AIHW 2013a).

The remaining areas of health expenditure, excluded from the analyses, accounted for 39% of health expenditure on Aboriginal and Torres Strait Islander people in 2010–11, and include:

- community health services other than ACCHSs (15% of total Indigenous health expenditure)
- non-admitted patient hospital services (7%)
- patient transport (4%)
- public health services (4%)
- research (3%)
- dental services (2%)
- other MBS services (2%)
- other health practitioners, aids and appliances, and health administration (2%).

Because of these exclusions, care should be exercised when interpreting and/or comparing the estimates in this chapter with those published in *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11* (AIHW 2013a) and earlier reports.

Main findings

Expenditure was allocated to the ASGC remoteness areas *Major cities, Inner regional, Outer regional, Remote/Very remote* using service use data. This showed large variation in health expenditure across remoteness areas in Australia.

Overall, per person expenditure on Aboriginal and Torres Strait Islander people is higher in more remote areas. This difference in health expenditure could be due to the higher costs of delivering health care to remote populations or the greater health-care requirements of Indigenous people living in remote areas. While there is a large increase in per person expenditure on Indigenous Australians in remote areas, there is only a small increase in per person expenditure for non-Indigenous Australians. This suggests that patient-level factors are a major determinant of health expenditure in remote areas.

The higher expenditure on Aboriginal and Torres Strait Islander people in remote areas is mainly due to higher expenditure on admitted patient services. PBS expenditure increases

slightly with remoteness and MBS expenditure decreases with remoteness. However, this decrease in MBS expenditure by remoteness is offset by higher expenditure on ACCHSs.

Expenditure per person by remoteness

For the selected categories of health expenditure on Aboriginal and Torres Strait Islander people that were within scope for this analysis (i.e. admitted patient services, OATSIH grants to ACCHSs, MBS and PBS), for every dollar spent per non-Indigenous Australian, $1.52 was spent on Indigenous Australians.

Overall, there was an increase in per person health expenditure on Aboriginal and Torres Strait Islander people with remoteness (Table 2.1). In *Major cities*, expenditure was $3,899 per Indigenous person, while in *Remote/Very remote* areas it was $6,616 per Indigenous person. For non-Indigenous Australians, spending was similar across the remoteness areas, with per person expenditure decreasing slightly from $3,072 in *Major cities* to $2,979 in *Remote/Very remote* areas. Expenditure on non-Indigenous Australians was highest in *Outer regional* areas ($3,371 per person).

In 2010–11, expenditure per person on public hospital services on Indigenous Australians was higher across all areas of remoteness than expenditure per person on non-Indigenous Australians. For Indigenous Australians, expenditure was highest in *Remote/Very remote* regions where, for every dollar spent on non-Indigenous Australians, $2.68 was spent on Indigenous Australians. Health expenditure per person was also higher for Indigenous people in *Major cities* (ratio of 1.78), *Inner regional* areas (1.47) and *Outer regional* areas (1.77).

Expenditure per person on private hospital services was lower for Indigenous Australians compared to non-Indigenous Australians in all remoteness areas. The Indigenous to non-Indigenous expenditure ratio was highest in *Major cities* (0.66) and lowest in *Outer regional* areas (0.24).

In *Major cities*, expenditure on health services delivered through ACCHSs was $330 per Indigenous Australian, while in *Remote/Very remote* areas, the per person expenditure for Aboriginal and Torres Strait Islander people increased to $1,256 (Table 2.1). The higher expenditure among Aboriginal and Torres Strait Islander people is consistent with the Indigenous focus of OATSIH-funded ACCHSs.

Table 2.1: Health expenditure per person on selected health services[a], Indigenous and non-Indigenous Australians, by remoteness area of patient's residence, 2010–11 ($)

Area of expenditure		Major cities	Inner regional	Outer regional	Remote/ Very remote	All regions
Admitted patient services						
Public hospitals	Indigenous	2,342.3	2,358.6	3,149.2	4,683.0	3,071.6
	Non-Indigenous	1,313.4	1,604.6	1,778.2	1,745.2	1,419.9
	Ratio	1.78	1.47	1.77	2.68	2.16
Private hospitals	Indigenous	336.4	197.9	84.7	96.7	194.4
	Non-Indigenous	508.5	482.8	359.0	301.1	486.5
	Ratio	0.66	0.41	0.24	0.32	0.40
OATSIH grants to ACCHS	Indigenous	329.6	435.0	569.1	1,255.8	621.5
	Non-Indigenous	0.6	1.8	5.3	64.7	2.3
	Ratio	564.32	243.81	106.61	19.40	266.02
MBS[b]	Indigenous	567.6	514.0	396.6	224.3	467.6
	Non-Indigenous	753.4	726.0	689.8	490.1	665.8
	Ratio	0.75	0.71	0.58	0.46	0.70
PBS[c]	Indigenous	285.2	296.2	236.4	348.6	291.3
	Non-Indigenous	351.5	403.6	405.8	283.8	365.5
	Ratio	0.81	0.73	0.58	1.23	0.80
Total selected health services	**Indigenous**	**3,899.0**	**3,835.3**	**4,459.5**	**6,615.8**	**4,675.0**
	Non-Indigenous	**3,072.0**	**3,358.3**	**3,370.6**	**2,979.1**	**3,067.7**
	Ratio	**1.27**	**1.14**	**1.32**	**2.22**	**1.52**

(a) Excludes health expenditure on non-admitted patient services, patient transport, dental services, community health services other than ACCHSs, other professional services, public health, aids and appliances, research and health administration.

(b) Excludes allied health services, optometry and dental services.

(c) Excludes highly specialised drugs dispensed from public and private hospitals.

Source: AIHW health expenditure database.

Medicare Benefit Schedule and Pharmaceutical Benefits Scheme expenditure per person by remoteness

This report uses Medicare's Voluntary Indigenous Identifier (VII) data to estimate the MBS and PBS components of expenditure on health for Aboriginal and Torres Strait Islander people (see Box 1). Due to data limitations, the analysis by remoteness does not include expenditure reported as 'Other MBS services' in *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11* (AIHW 2013a). As a result, there may be some variation between the figures presented in each report.

Box 1: Voluntary Indigenous Identifier in MBS data

Since 2002, Aboriginal and Torres Strait Islander people have been able to voluntarily identify themselves to Medicare as Indigenous. This is referred to as the Voluntary Indigenous Identifier (VII) program. Voluntary identification has enabled information to be collated on the service-use patterns of the Indigenous population, including the type of service used, benefit paid and fee charged, and type of pharmaceutical dispensed.

As at June 2010, about 294,453 (52%) of the Aboriginal and Torres Strait Islander population had identified as Indigenous through Medicare (AIHW 2013a). This proportion varies by age group and sex as well as the state or territory and remoteness of the person's residence. Analysis of the VII and Medicare data indicates that the benefits paid to those who identify as Indigenous are broadly representative of the benefits paid nationally for the Aboriginal and Torres Strait Islander population.

The levels of MBS and PBS expenditure for Aboriginal and Torres Strait Islander people who have voluntarily identified as Indigenous have been scaled up to estimate expenditure for all Aboriginal and Torres Strait Islander people. These are calculated using the formula:

Factor = 100 / percentage of VII enrolees to estimated Aboriginal and Torres Strait Islander resident population.

VII data have been used in this way since the 2006–07 report in this series. The use of VII data provides more precise estimates of MBS and PBS expenditure, and the reliability of the estimates continues to increase as the level of voluntary identification rises. Nonetheless, comparisons over time should be interpreted with caution, as the effect of increased levels of voluntary identification on the Indigenous expenditure estimates has not been isolated.

The ratio of Indigenous to non-Indigenous MBS expenditure per person varied according to the type of services delivered.

In 2010–11, average MBS expenditure was $467 per Indigenous Australian and $666 per non-Indigenous Australian, a ratio of 0.70 (Table 2.2). Per person MBS expenditure on Indigenous Australians decreased with remoteness, from an average of $568 per person in *Major cities* to $224 per person in *Remote/Very remote* areas. A similar pattern was observed for non-Indigenous Australians.

In 2010–11, the expenditure ratio was generally higher for unreferred MBS services (such as general practitioner (GP) services) than for referred MBS services (specialist and other tertiary services). The ratio of Indigenous to non-Indigenous expenditure for GP services ranged from 1.02 in *Major cities* to 0.54 in *Remote/Very remote* areas, while the ratio of other unreferred services ranged from 1.39 in *Major cities* to 0.94 in *Remote/Very remote* areas.

Table 2.2: MBS expenditure per person, Indigenous and non-Indigenous Australians, by remoteness area of patient's residence, 2010–11 ($)

MBS categories[(a)]	Major cities	Inner regional	Outer regional	Remote/ Very remote	All regions
Unreferred services					
General practitioner[(b)]					
Indigenous	224.8	178.4	155.1	84.4	173.9
Non-Indigenous	220.2	199.1	201.8	157.3	192.5
Ratio	1.02	0.90	0.77	0.54	0.90
Other unreferred[(c)]					
Indigenous	69.8	74.5	58.0	31.0	62.0
Non-Indigenous	50.1	52.1	49.5	32.9	45.2
Ratio	1.39	1.43	1.17	0.94	1.37
Referred services					
Pathology					
Indigenous	75.0	67.2	58.8	47.2	68.3
Non-Indigenous	106.0	103.3	100.6	77.8	94.3
Ratio	0.71	0.65	0.58	0.61	0.72
Imaging					
Indigenous	74.3	69.2	47.1	21.1	56.6
Non-Indigenous	115.5	117.6	107.8	71.2	103.2
Ratio	0.64	0.59	0.44	0.30	0.55
Specialist					
Indigenous	48.6	42.9	23.4	7.9	33.0
Non-Indigenous	93.1	75.1	60.2	35.1	77.4
Ratio	0.52	0.57	0.39	0.22	0.43
Operations and other					
Indigenous	75.2	81.7	54.3	32.7	73.6
Non-Indigenous	168.4	178.9	169.8	115.8	153.0
Ratio	0.45	0.46	0.32	0.28	0.48
Total MBS					
Indigenous	**567.6**	**514.0**	**396.6**	**224.3**	**467.4**
Non-Indigenous	**753.4**	**726.0**	**689.8**	**490.1**	**665.7**
Ratio	**0.75**	**0.71**	**0.58**	**0.46**	**0.70**

(a) Excludes allied health services, optometry and dental services.

(b) Includes general practitioners and vocationally registered general practitioners.

(c) Includes enhanced primary care, practice nurses and other unreferred services.

Source: AIHW health expenditure database.

For referred MBS services, Indigenous expenditure was lower than non-Indigenous expenditure for all services. For example, the ratio of Indigenous to non-Indigenous expenditure for specialist services ranged from 0.52 in *Major cities* to 0.22 in *Remote/Very remote* areas, with an overall ratio of 0.43.

In 2010–11, average PBS expenditure per person was $291 for Indigenous Australians and $366 for non-Indigenous Australians; a ratio of 0.80 (Table 2.3). As with MBS services, PBS expenditure for Aboriginal and Torres Strait Islander people varied with remoteness, ranging from $236 per person in *Outer regional* areas to $349 per person in *Remote/Very remote* areas. The ratio of Indigenous to non-Indigenous expenditure was highest in *Remote/Very remote* areas (1.23) and lowest in *Outer regional* areas (0.58).

The high expenditure ratio in *Remote/Very remote* areas was primarily due to the PBS expenditure under Section 100 of the *National Health Act 1953*. This arrangement allows patients attending an approved remote area Aboriginal and Torres Strait Islander health service to receive PBS medicines directly from the service at no cost to the patient.

Table 2.3: PBS expenditure per person, Indigenous and non-Indigenous Australians, by remoteness area of patient's residence, 2010–11 ($)

PBS categories[(a)]	Major cities	Inner regional	Outer regional	Remote/ Very remote	All regions
Mainstream PBS benefits					
Indigenous	238.1	247.3	197.4	75.0	193.0
Non-Indigenous	317.5	364.6	366.5	244.3	330.0
Ratio	0.75	0.68	0.54	0.31	0.58
Section 100					
Indigenous	—	—	—	258.8	60.2
Non-Indigenous	—	—	—	13.3	0.2
Ratio[(b)]	—	—	—	19.39	265.99
Other PBS special supply					
Indigenous	47.1	48.9	39.0	14.8	38.2
Non-Indigenous	34.0	39.0	39.3	26.2	35.3
Ratio	1.38	1.25	0.99	0.57	1.08
Total PBS					
Indigenous	*285.2*	*296.2*	*236.4*	*348.6*	*291.3*
Non-Indigenous	*351.5*	*403.6*	*405.8*	*283.8*	*365.5*
Ratio	*0.81*	*0.73*	*0.58*	*1.23*	*0.80*
Total MBS and PBS[(c)]					
Indigenous	**852.9**	**810.1**	**633.1**	**572.8**	**758.8**
Non-Indigenous	**1,104.9**	**1,129.6**	**1,095.6**	**773.9**	**1,031.2**
Ratio	**0.77**	**0.72**	**0.58**	**0.74**	**0.74**

(a) Excludes highly specialised drugs dispensed from public and private hospitals.

(b) Per person expenditure in *Remote/Very remote* and *All regions* varies due to the different populations in these regions. Expenditure per person in *All regions* is based on the Australia-wide population.

(c) PBS data taken from Table 2.2.

Note: '—' denotes nil or rounded to zero.

Source: AIHW health expenditure database.

Hospital separations by remoteness

This section compares the rates of hospital separations for Indigenous and non-Indigenous Australians according to the remoteness of their usual residence. While the quality of Indigenous identification in hospital separation data is improving, the under-identification of Aboriginal and Torres Strait Islander people remains an issue (see Box 1).

The rate of hospital separations by remoteness and Indigenous status are included in this report to provide context to the admitted patient expenditure estimates for Aboriginal and Torres Strait Islander people. See Box 2 for issues with reporting hospital separations in this context.

Box 2: Issues with reporting hospital separations

Readers are advised to use the report *Australian hospital statistics 2010–11* (AIHW 2012a) for age-standardised rates of hospital separations. In this report, rates are not age-standardised to ensure consistency and comparability with *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11* (AIHW 2013a) and previous reports in that series. For more detail regarding issues related to age standardisation, see *Chapter 5*. In addition, rates of hospital separations in this report have been adjusted for Indigenous under-identification. This is not the case in *Australian hospital statistics 2010–11* (AIHW 2012a).

In 2010–11, hospital separation rates differed across remoteness areas, but were always higher for Indigenous Australians than for non-Indigenous Australians, particularly in remote areas. In *Remote* areas, hospital separation rates for Aboriginal and Torres Strait Islander people were 1,090 per 1,000 and for non-Indigenous people were 334 per 1,000. In *Very remote* areas, separation rates were 770 and 319 per 1,000 Indigenous and non-Indigenous Australians, respectively (Table 2.4).

Table 2.4: Hospital separation[(a)] rates[(b)], by remoteness area of patient's residence and Indigenous status[(c)], 2010–11

Indigenous status	Major cities	Inner regional	Outer regional	Remote	Very remote	All regions
Indigenous	521.3	487.6	736.0	1,090.0	769.6	650.7
Non-Indigenous	396.1	435.1	400.4	334.3	319.0	402.8
Total	***397.6***	***436.6***	***421.1***	***450.7***	***534.1***	***409.0***
Rate ratio[(d)]	**1.32**	**1.12**	**1.84**	**3.26**	**2.41**	**1.62**

(a) Excludes hospital separations for which care type was reported as Newborn with no qualified days, and records for Hospital boarders and Posthumous organ procurement.

(b) Number per 1,000 population.

(c) Admitted patient rates have been adjusted for Indigenous under-identification.

(d) Indigenous to non-Indigenous rate ratio.

Source: AIHW national hospital morbidity database.

The difference between the Indigenous and non-Indigenous hospital separation rates (that is, the rate ratios) also varied across remoteness areas. The difference was greatest in *Remote* areas, with a rate ratio of 3.26, and smallest in *Inner regional* areas, with a rate ratio of 1.12.

Hospital expenditure by remoteness

This section presents estimates of expenditure on hospital separations for Indigenous and non-Indigenous Australians. See Box 3 for information on adjustments for Indigenous under-identification. Hospital expenditure is estimated according to casemix-adjusted separations, which account for the average complexity of patient care across hospitals.

Average expenditure per casemix-adjusted hospital separation (hereafter referred to as 'separation') for Aboriginal and Torres Strait Islander people varied across remoteness areas. The highest average expenditure per separation for Indigenous Australians was in *Inner regional* areas ($5,761), while the lowest expenditure was in *Outer regional* areas ($4,706) (Table 2.5). For non-Indigenous Australians, the highest expenditure was in *Very remote* areas ($6,773) and the lowest was in *Major cities* ($4,710).

Overall, the ratio of Indigenous to non-Indigenous expenditure was 1.06, however this ranged from 0.81 in *Outer regional* and *Very remote* areas to 1.12 in *Major cities*.

Since 2008–09, the rate ratio for average expenditure per separation has decreased slightly across all remoteness areas. This change is primarily due to better identification of Indigenous patients in the hospital setting, which has led to fewer hospital episodes being re-classified as Indigenous (see Box 2 for further information on Indigenous identification in hospital data). The accuracy of the Indigenous health expenditure estimates continues to improve in line with better identification of patients in hospital-level data collections.

Table 2.5: Average expenditure per casemix[(a)]-adjusted hospital[(b)] separation[(c)], by remoteness area of patient's residence and Indigenous status, 2010–11 ($)

Indigenous status	Major cities	Inner regional	Outer regional	Remote	Very remote	All regions
Indigenous	5,264.0	5,760.9	4,705.7	5,247.6	5,507.5	5,242.7
Non-Indigenous	4,709.5	5,182.8	5,812.5	6,234.6	6,772.5	4,924.0
Total	***4,718.3***	***5,200.3***	***5,693.1***	***5,866.9***	***5,902.3***	***4,936.8***
Rate ratio[(d)]	**1.12**	**1.11**	**0.81**	**0.84**	**0.81**	**1.06**

(a) Casemix refers to the range and types of patients (the mix of cases) treated by a hospital or other health service. It provides a way of describing and comparing hospitals and other services for planning and managing health care. Casemix classifications put patients into manageable numbers of groups with similar conditions that use similar health-care resources, so that the activity and cost-efficiency of different hospitals can be compared.

(b) The cost of private medical services funded through Medicare is not included.

(c) Excludes hospital separations for which care type was reported as Newborn with no qualified days, and records for Hospital boarders and Posthumous organ procurement.

(d) Indigenous to non-Indigenous ratio.

Source: AIHW national hospital morbidity database.

Box 3: Estimating hospital expenditure on Indigenous Australians

In this report, admitted patient expenditure was calculated from data in the AIHW hospital morbidity costing model. This model applies Australian-Refined Diagnosis Related Group weights and length-of-stay adjustment to both Indigenous and non-Indigenous cases for each hospital. This model takes into account differences not only in casemix, but also in hospital operating costs across the regions. It also adjusts for under-identification of Aboriginal and Torres Strait Islander people in hospital admissions in each state and territory based on the study discussed below.

Box 3: Estimating hospital expenditure on Indigenous Australians (continued)

Indigenous under-identification in hospital data

Hospital records should indicate whether an admitted patient is Aboriginal and/or Torres Strait Islander or non-Indigenous based on a question on the forms completed on admission. However, the question is not always asked or answered, and there is therefore a degree of under-identification of Aboriginal and Torres Strait Islander people in hospital records.

In 2013, the Institute released revised under-identification factors based on a study conducted in 2011 and 2012. These studies are undertaken on a five-yearly basis to monitor identification levels over time. The level of under-identification is assessed through a data-quality study that compares the results of face-to-face interviews where Indigenous status is ascertained with the information recorded in the patients' administrative records. The results of this study represent the best information currently available on Indigenous under-identification in Australian hospitals.

Estimates of the level of Indigenous under-identification from Indigenous identification in hospital separation data (AIHW 2013b) have been used to adjust admitted patient expenditure in public hospitals. Under-identification factors can be used to estimate the 'true' number of records for Indigenous people by multiplying the number of Indigenous people in the hospital record by the weighted correction factor. In 2010–11, under-identification of Aboriginal and Torres Strait Islander people at the national level was estimated at 1.09% (AIHW 2013a). This suggests that the 'true' number of Indigenous people should be about 9% higher than indicated in the hospital record. The under-identification factor used in 2010–11 is a lower adjustment than used in 2008, 2007 (AIHW 2009) and 2005 (AIHW 2005b), which means that fewer hospital episodes have been reclassified as Indigenous. This has resulted in a slight decrease in Indigenous expenditure and a corresponding increase in non-Indigenous expenditure compared with the 2008–09 report. These changes represent an improvement in the methodology and a higher degree of accuracy in the estimates.

The under-identification of Indigenous Australians in public hospitals varies substantially between states and territories, as well as remoteness categories. In some states and territories, an average state-wide under-identification factor was applied to all hospital separations. In others, differential under-identification factors were used depending on the region in which particular service(s) were located.

As the AIHW studies on Indigenous identification in hospital data did not include private hospitals, an adjustment factor of 54% for private hospitals was derived from the analysis of linked hospital morbidity data from New South Wales (AIHW: Deeble et al. 1998).

A loading of 5% is added to the Aboriginal and Torres Strait Islander patient costs to take into account known differences in comorbidity for similar Diagnosis Related Groups in Aboriginal and Torres Strait Islander patients. This has been done in each of the Expenditure on health for Aboriginal and Torres Strait Islander people reports since the one for the 1998–99 year (AIHW 2001, 2005a, 2009, 2013a; AIHW: Deeble et al. 2008).

3 Expenditure by disease group

This chapter provides expenditure estimates by disease and injury groups based on the principal diagnosis (only) in public hospital admitted patient services and private hospital services for Indigenous and non-Indigenous Australians.

It is not possible to classify all expenditure on health goods and services by disease because not all expenditure can be apportioned to one specific disease or injury. The expenditure categories that could not be classified by disease include:

- community health services (25% of total Indigenous health expenditure)
- non-admitted patient hospital services (7%)
- medical services (8%)
- medications (5%)
- patient transport (4%)
- public health services (4%)
- research (3%)
- dental services (2%)
- other professional services, aids and appliances, and health administration (2%) (AIHW 2013a).

The following limitations should be noted when interpreting the estimates:

- they reflect 41% ($1,856 million) of total Indigenous health expenditure ($4,552 million) in 2010–11 (AIHW 2013a)
- they are an indication of access to health-care services and health service use, but are not a measure of the size of the disease burden on the Aboriginal and Torres Strait Islander population
- they do not, of themselves, provide guidance as to priorities for intervention
- they do not, of themselves, indicate how much would be saved if a specific disease, or all diseases, were prevented
- they are not an estimate of the total economic impact of diseases in the Aboriginal and Torres Strait Islander community. This is because the estimates do not include costs that are accrued outside the health system—for example, lost productivity, costs associated with the social and economic burden on carers and family, and costs due to lost quality and quantity of life.

See Box 4 for details of the disease groupings.

Box 4: Disease groups

Disease groups in this report are based on those in *The burden of disease and injury in Australia 2003* (AIHW: Begg et al. 2007), which estimates the impact of health problems in Australia. In 2010–11, diagnoses and external causes of injury were recorded using the sixth edition of *The International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification* (ICD-10-AM) (NCCH 2008).

Disease and injury categories in the 2007 report were assigned to three broad cause groups:

- communicable, maternal, neonatal and nutritional conditions
- non-communicable diseases
- injuries.

These three broad groups were then subdivided into 22 disease groups that correspond to chapter-level groups of ICD-10-AM codes. These were further divided into individual disease and injury categories—such as asthma, hypertensive renal disease and breast cancer—to provide a more comprehensive coverage of the diseases reported for hospital admission (principal diagnosis only).

The group 'signs, symptoms and ill-defined conditions, and other contact with health services' was included to cover some health service expenditure that could not be assigned to any other disease group.

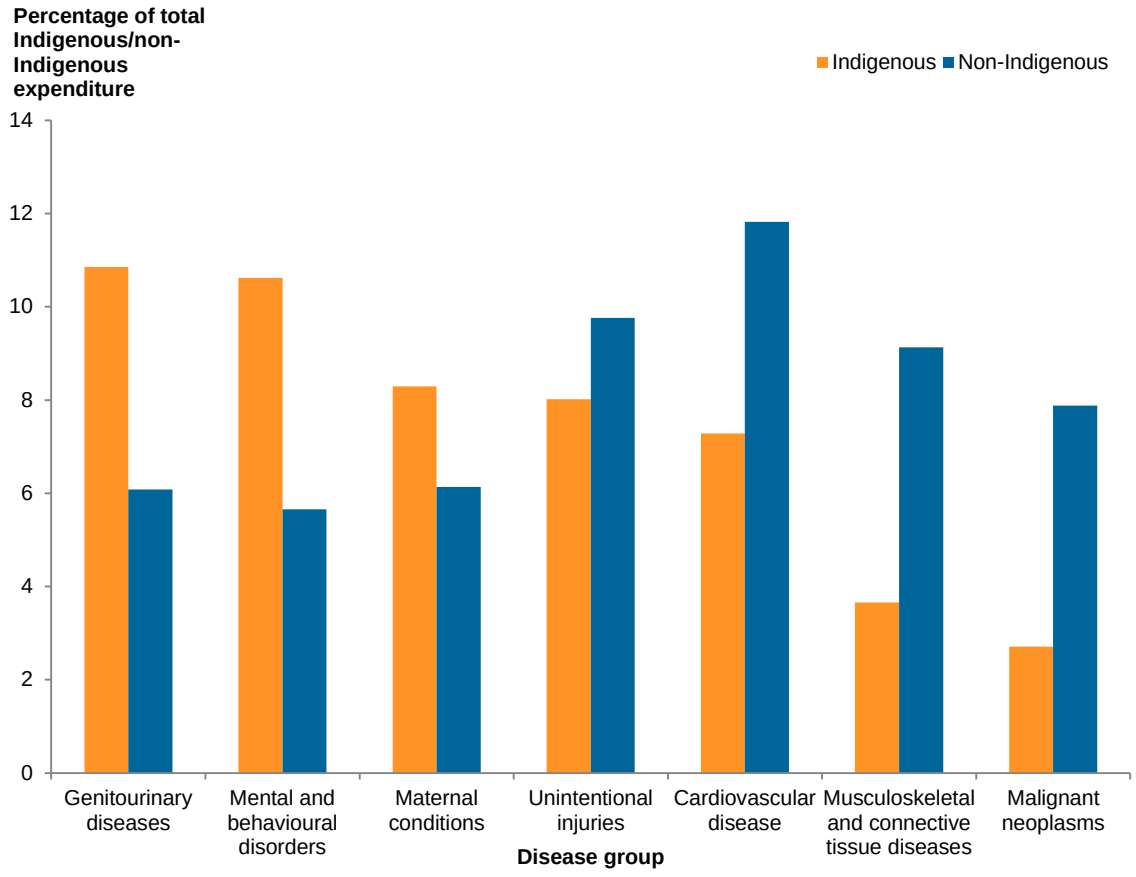
Total expenditure by disease group

The broad disease group with the highest admitted patient expenditure for Aboriginal and Torres Strait Islander people was *Non-communicable diseases* ($1,025 million). Within this group, *Genitourinary diseases* ($195 million) accounted for the largest proportion of expenditure (including expenditure on dialysis treatment), followed by *Mental and behavioural disorders* ($191 million) and *Cardiovascular disease* ($131 million) (Table 3.1).

The second highest broad disease group for Indigenous Australians was *Communicable diseases, maternal, neonatal and nutritional conditions* ($393 million). This includes expenditure of $144 million on *Maternal conditions*, $105 million on *Acute respiratory infections* and $72 million on *Neonatal causes*.

Overall, the disease groups that accounted for the highest proportion of admitted patient expenditure for Aboriginal and Torres Strait Islander people were *Genitourinary diseases* (11% of total admitted patient expenditure), *Mental and behavioural disorders* (11%), *Maternal conditions* (8%) and *Unintentional injuries* (8%) (Figure 3.1).

In comparison, the disease groups that accounted for the highest proportion of admitted patient expenditure for non-Indigenous Australians were *Cardiovascular diseases* (12%), *Unintentional injuries* (10%), *Musculoskeletal and connective tissue diseases* (9%) and *Malignant neoplasms* (8%).



Source: AIHW national hospital morbidity database.

Figure 3.1: Expenditure on hospital separations by selected disease groups and Indigenous status, 2010–11

Expenditure per person by disease group

The broad disease group with the highest per person expenditure for Aboriginal and Torres Strait Islander people was *Non-communicable diseases* ($1,801 per person), followed by *Communicable diseases, maternal, neonatal and nutritional conditions* ($691 per person), *Injuries* ($348 per person) and *Signs, symptoms and ill-defined conditions, and other contact with health services* ($320 per person).

The disease group with the highest per person expenditure ratio for Indigenous Australians compared with non-Indigenous Australians was *Intentional injuries* (ratio of 6.53) (Table 3.1). This was followed by *Diabetes mellitus* (3.33), *Neonatal causes* (3.26), *Diseases of the skin and subcutaneous tissue* (3.14) and *Acute respiratory infections* (3.10).

The lowest per person expenditure ratio was for *Malignant neoplasms* (0.49), followed by *Musculoskeletal and connective tissue diseases* (0.57), *Other neoplasms* (0.57), *Nervous system and sense organ disorders* (0.87) and *Cardiovascular disease* (0.88).

Table 3.1: Expenditure on hospital separations[a][b], by disease group and Indigenous status[c] in public and private hospitals, 2010–11

Disease group	Expenditure ($ million)			Indigenous share (per cent)	Expenditure ($) per person		Ratio
	Indigenous	Non-Indigenous	Total		Indigenous	Non-Indigenous	
Communicable diseases, maternal, neonatal and nutritional conditions	**392.9**	**5,902.4**	**6,295.4**	**6.2**	**690.5**	**299.4**	**2.31**
Infectious and parasitic diseases	*62.4*	*906.7*	*969.1*	*6.4*	*109.6*	*46.0*	*2.38*
Sexually transmitted diseases	6.4	65.8	72.2	8.8	11.2	3.3	3.36
Chlamydia	3.0	24.8	27.8	10.6	5.2	1.3	4.13
Gonorrhoea	1.1	0.6	1.7	64.9	1.9	—	64.09
Other sexually transmitted diseases[d]	2.4	40.4	42.7	5.5	4.1	2.0	2.02
Diarrhoeal diseases	11.4	251.6	263.0	4.3	20.1	12.8	1.57
Childhood immunisable diseases	0.7	9.7	10.4	6.7	1.2	0.5	2.49
Whooping cough	0.6	8.3	8.9	7.2	1.1	0.4	2.69
Other infectious and parasitic diseases	43.9	579.6	623.5	7.0	77.1	29.4	2.62
Acute respiratory infections	*104.8*	*1,169.4*	*1,274.2*	*8.2*	*184.1*	*59.3*	*3.10*
Otitis media	6.2	63.0	69.1	8.9	10.8	3.2	3.39
Maternal conditions	*144.2*	*2,682.8*	*2,827.0*	*5.1*	*253.4*	*136.1*	*1.86*
Neonatal causes	*71.9*	*763.2*	*835.1*	*8.6*	*126.3*	*38.7*	*3.26*
Nutritional deficiencies	*9.8*	*380.3*	*390.0*	*2.5*	*17.2*	*19.3*	*0.89*
Non-communicable diseases	**1,024.9**	**27,511.7**	**28,536.6**	**3.6**	**1,801.1**	**1,395.6**	**1.29**
Malignant neoplasms	*48.7*	*3,448.0*	*3,496.7*	*1.4*	*85.6*	*174.9*	*0.49*
Breast cancer	2.2	161.0	163.2	1.3	3.8	8.2	0.47
Leukaemia	4.2	223.3	227.5	1.8	7.4	11.3	0.65
Mouth and oropharynx cancer	4.5	126.8	131.3	3.4	7.9	6.4	1.23
Colorectal cancer	3.6	436.9	440.4	0.8	6.2	22.2	0.28
Lung cancer	3.9	193.0	197.0	2.0	6.9	9.8	0.70

Table 3.1 (continued): Expenditure on hospital separations[a][b], by disease group and Indigenous status[c] in public and private hospitals, 2010–11

Disease group	Expenditure ($ million)			Indigenous share (per cent)	Expenditure ($) per person		Ratio
	Indigenous	Non-Indigenous	Total		Indigenous	Non-Indigenous	
Non-communicable diseases (continued)							
Malignant neoplasm (continued)							
Cervical cancer	0.7	13.3	14.0	5.1	1.2	0.7	1.84
Other malignant neoplasms	29.7	2,293.6	2,323.3	1.9	52.1	116.3	0.47
Other neoplasms	*11.6*	*699.7*	*711.3*	*1.6*	*20.3*	*35.5*	*0.57*
Diabetes mellitus	*34.6*	*360.0*	*394.6*	*8.8*	*60.8*	*18.3*	*3.33*
Type 2 diabetes	28.5	256.6	285.1	10.0	50.1	13.0	3.85
Endocrine and metabolic disorders	*19.5*	*606.7*	*626.2*	*3.1*	*34.3*	*30.8*	*1.11*
Mental and behavioural disorders	*191.0*	*2,473.8*	*2,664.9*	*7.2*	*335.7*	*125.5*	*2.68*
Alcohol dependence and other harmful use	21.0	183.2	204.1	10.3	36.9	9.3	3.97
Anxiety and depression	30.3	635.0	665.3	4.6	53.3	32.2	1.65
Nervous system and sense organ disorders	*45.9*	*1,833.7*	*1,879.7*	*2.4*	*80.7*	*93.0*	*0.87*
Nervous system disorders	28.3	989.4	1,017.7	2.8	49.8	50.2	0.99
Sense organ disorders	17.6	844.4	862.0	2.0	31.0	42.8	0.72
Glaucoma-related blindness	0.2	13.6	13.8	1.5	0.4	0.7	0.53
Cataract-related blindness	6.1	455.4	461.5	1.3	10.7	23.1	0.46
Macular degeneration	0.3	84.4	84.7	0.4	0.5	4.3	0.12
Adult-onset hearing loss	1.2	48.6	49.8	2.4	2.1	2.5	0.84
Refractive disorder and other vision loss	9.8	242.5	252.3	3.9	17.3	12.3	1.40
Cardiovascular disease	*131.0*	*5,170.8*	*5,301.8*	*2.5*	*230.1*	*262.3*	*0.88*
Rheumatic heart disease	8.0	66.7	74.7	10.7	14.0	3.4	4.15
Ischaemic heart disease	50.9	1,633.1	1,684.0	3.0	89.4	82.8	1.08
Stroke	16.9	681.8	698.7	2.4	29.7	34.6	0.86

Table 3.1 (continued): Expenditure on hospital separations[a][b], by disease group and Indigenous status[c] in public and private hospitals, 2010–11

Disease group	Expenditure ($ million)			Indigenous share (per cent)	Expenditure ($) per person		Ratio
	Indigenous	Non-Indigenous	Total		Indigenous	Non-Indigenous	
Non-communicable diseases (continued)							
Cardiovascular disease (continued)							
Inflammatory heart disease	5.7	189.6	195.2	2.9	10.0	9.6	1.04
Peripheral vascular disease	4.5	335.4	339.9	1.3	7.9	17.0	0.47
Other cardiovascular disease[e]	45.0	2,264.2	2,309.2	1.9	79.1	114.9	0.69
Chronic respiratory disease	*70.8*	*1,557.2*	*1,628.0*	*4.3*	*124.3*	*79.0*	*1.57*
Chronic obstructive pulmonary disease	32.1	596.1	628.3	5.1	56.5	30.2	1.87
Asthma	9.8	145.5	155.3	6.3	17.2	7.4	2.33
Other chronic respiratory diseases	28.8	815.6	844.4	3.4	50.6	41.4	1.22
Diseases of the digestive system	*105.8*	*3,239.4*	*3,345.2*	*3.2*	*186.0*	*164.3*	*1.13*
Genitourinary diseases	*195.2*	*2,659.8*	*2,855.0*	*6.8*	*343.0*	*134.9*	*2.54*
Hypertensive renal disease	22.1	405.1	427.2	5.2	38.8	20.6	1.89
Other nephritis and nephrosis[f]	137.3	815.6	952.9	14.4	241.2	41.4	5.83
Other genitourinary diseases	35.9	1,439.0	1,474.9	2.4	63.1	73.0	0.86
Diseases of the skin and subcutaneous tissue	*70.3*	*775.3*	*845.6*	*8.3*	*123.6*	*39.3*	*3.14*
Musculoskeletal and connective tissue diseases	*65.8*	*3,994.7*	*4,060.5*	*1.6*	*115.7*	*202.6*	*0.57*
Congenital anomalies	*18.9*	*400.3*	*419.2*	*4.5*	*33.3*	*20.3*	*1.64*
Oral conditions	*15.8*	*292.2*	*307.9*	*5.1*	*27.7*	*14.8*	*1.87*
Injuries[g]	**198.2**	**4,531.0**	**4,729.2**	**4.2**	**348.3**	**229.8**	**1.52**
Unintentional injuries	*149.1*	*4,270.8*	*4,419.9*	*3.4*	*262.0*	*216.6*	*1.21*
Road traffic and other transport accidents	29.2	573.8	603.0	4.8	51.4	29.1	1.77

Table 3.1 (continued): Expenditure on hospital separations[a][b], by disease group and Indigenous status[c] in public and private hospitals, 2010–11

Disease group	Expenditure ($ million)			Indigenous share (per cent)	Expenditure ($) per person		Ratio
	Indigenous	Non-Indigenous	Total		Indigenous	Non-Indigenous	
Unintentional injuries (continued)							
Poisoning	2.2	48.0	50.1	4.4	3.8	2.4	1.58
Falls	34.0	1,723.7	1,757.7	1.9	59.7	87.4	0.68
Other unintentional injuries	83.7	1,925.3	2,009.0	4.2	147.1	97.7	1.51
Intentional injuries	*49.1*	*260.2*	*309.3*	*15.9*	*86.2*	*13.2*	*6.53*
Self-inflicted injuries	10.6	142.3	152.9	6.9	18.7	7.2	2.58
Injuries inflicted by another person	38.5	117.9	156.4	29.7	67.6	6.0	13.20
Signs, symptoms and ill-defined conditions, and other contact with health services[h]	**182.2**	**5,790.4**	**5,972.7**	**3.1**	**320.2**	**293.7**	**1.09**
Total	**1,798.3**	**43,735.5**	**45,533.9**	**3.9**	**3,160.1**	**2,218.5**	**1.42**

(a) Includes hospital separation data for all states/territories.
(b) Excludes hospital separations for which care type was reported as Newborn with no qualified days, and records for Hospital boarders and Posthumous organ procurement.
(c) Admitted patient rates have been adjusted for Indigenous under-identification.
(d) Includes HIV/AIDS, hepatitis B, syphilis and other sexually transmitted diseases.
(e) Includes hypertensive heart disease, aortic aneurysm and dissection, non-rheumatic heart disease and other cardiovascular disease.
(f) Includes expenditure for care involving dialysis.
(g) Hospital separations resulting from external cause events treated during hospitalisations.
(h) 'Signs, symptoms and ill-defined conditions' include diagnostic and other services for signs, symptoms and ill-defined conditions where the cause of the problem is unknown. 'Other contact with health services' includes fertility control, reproduction and development; elective cosmetic surgery; general prevention, screening and health examination; and treatment and after-care for unspecified disease.

Source: AIHW national hospital morbidity database

4 Expenditure by potentially preventable hospitalisations

This chapter presents estimates of expenditure on potentially preventable hospitalisations (PPH). PPH are conditions where hospitalisation is thought to have been avoidable, primarily if more timely and adequate care had been provided through other parts of the health system. See Box 5 for more information on the classification of PPH.

It is useful to examine expenditure on PPH for Indigenous and non-Indigenous Australians to gain some insight into health cost burdens that might have been reduced through more effective care. A high level of PPH expenditure, however, may reflect such things as increased prevalence of illness within the community leading to higher demand for health care.

In 2010–11, total expenditure on PPH for Aboriginal and Torres Strait Islander people was $219 million, or $385 per Indigenous person (Table 4.1). In comparison, non-Indigenous expenditure on PPH was $3,420 million, or $174 per non-Indigenous person. Further detail is provided below.

PPH expenditure by disease group

The highest PPH expenditure category for Aboriginal and Torres Strait Islander people was *Chronic conditions*, which accounted for $115 million. A large proportion of this expenditure was due to chronic obstructive pulmonary disease ($36 million) and diabetes complications ($35 million) (Table 4.1).

Expenditure on Indigenous Australians for *Acute conditions* was $93 million, which included cellulitis ($20 million), convulsions and epilepsy ($20 million) and pyelonephritis ($15 million).

Vaccine-preventable conditions accounted for $12 million of Indigenous expenditure, of which $11 million was attributed to influenza and pneumonia.

PPH expenditure per person by disease group

In 2010–11, per person expenditure on Indigenous Australians was much higher than non-Indigenous Australians for all categories of PPH (Figure 4.1).

Overall, *Chronic conditions* had the highest level of per person expenditure for both Indigenous Australians ($202 per person) and non-Indigenous Australians ($98 per person) (Table 4.1). For Indigenous Australians within this category, chronic obstructive pulmonary disease accounted for the highest per person expenditure ($63 per Indigenous Australian compared with $31 per non-Indigenous Australian), followed by diabetes complications ($61 per Indigenous Australian and $18 per non-Indigenous Australian). For all chronic conditions, the ratio of Indigenous to non-Indigenous expenditure was 2.06.

Box 5: Classification of potentially preventable hospitalisations (PPH)

This report uses three broad categories of PPH, which have been sourced from *The Victorian Ambulatory Care Sensitive Conditions Study* (DHS 2002) and are classified as:

Vaccine-preventable—these diseases can be prevented by proper vaccination and include influenza, bacterial pneumonia, tetanus, measles, mumps, rubella, pertussis and polio. These conditions are considered to be preventable and, therefore, hospitalisations are considered preventable.

Acute—these conditions may not be preventable, but theoretically would not have resulted in hospitalisation if adequate and timely care (usually primary health and/or outpatient care) was received. These include complicated appendicitis, dehydration/gastroenteritis, pyelonephritis, perforated ulcer, cellulitis, pelvic inflammatory disease, ear nose and throat infections, and dental conditions.

Chronic—these conditions may be preventable through behaviour modification and lifestyle change, but they can also be managed effectively through timely care to prevent deterioration and hospitalisation. These conditions include diabetes complications, asthma, angina, hypertension, congestive heart failure and chronic obstructive pulmonary disease.

Although the general concepts and classification of PPH used in this report are similar to those used in *Australian hospital statistics 2010–11* (AIHW 2012a), the methodology used to derive PPH expenditure separations differs substantially from the one used to derive PPH separations. In order to estimate expenditure on PPH, only the principal diagnosis is used. In other AIHW publications that include discussion of PPH, additional diagnoses are also taken into account. This is not done with respect to expenditure as there is no methodology for allocating expenditure against a number of diagnoses occurring during the same hospitalisation. As expenditure estimates apply only to the principal diagnosis, they are likely to underestimate the cost of PPH.

The estimates have been adjusted for Indigenous under-identification and are crude rather than age-standardised rates. This is to ensure consistency and comparability with data in the series, including the most recent report *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11* (AIHW 2013a).

The *Acute conditions* category had the second highest level of per person expenditure ($163 per Indigenous Australian and $71 per non-Indigenous Australian). For Indigenous Australians, cellulitis had the highest per person expenditure ($36 per person) followed by convulsions and epilepsy ($35 per person) and pyelonephritis ($26 per person). The overall ratio of Indigenous to non-Indigenous expenditure for acute conditions was 2.30.

Expenditure on *Vaccine-preventable conditions* was $21 per Indigenous Australian and $5 per non-Indigenous Australian. Within this category, per person expenditure on pneumonia and influenza was higher for Indigenous Australians ($19 per person) compared with non-Indigenous Australians ($4 per person); a ratio of 4.47. Under the Immunise Australia Program, free vaccines are available for Aboriginal and Torres Strait Islander people 15 years and older and to children with a pre-existing medical condition. These are provided through ACCHSs, state and territory immunisation clinics, and general practitioners (DoHA 2013).

Table 4.1: Expenditure on potentially preventable hospital separations[a] by Indigenous status in public and private hospitals, 2010–11

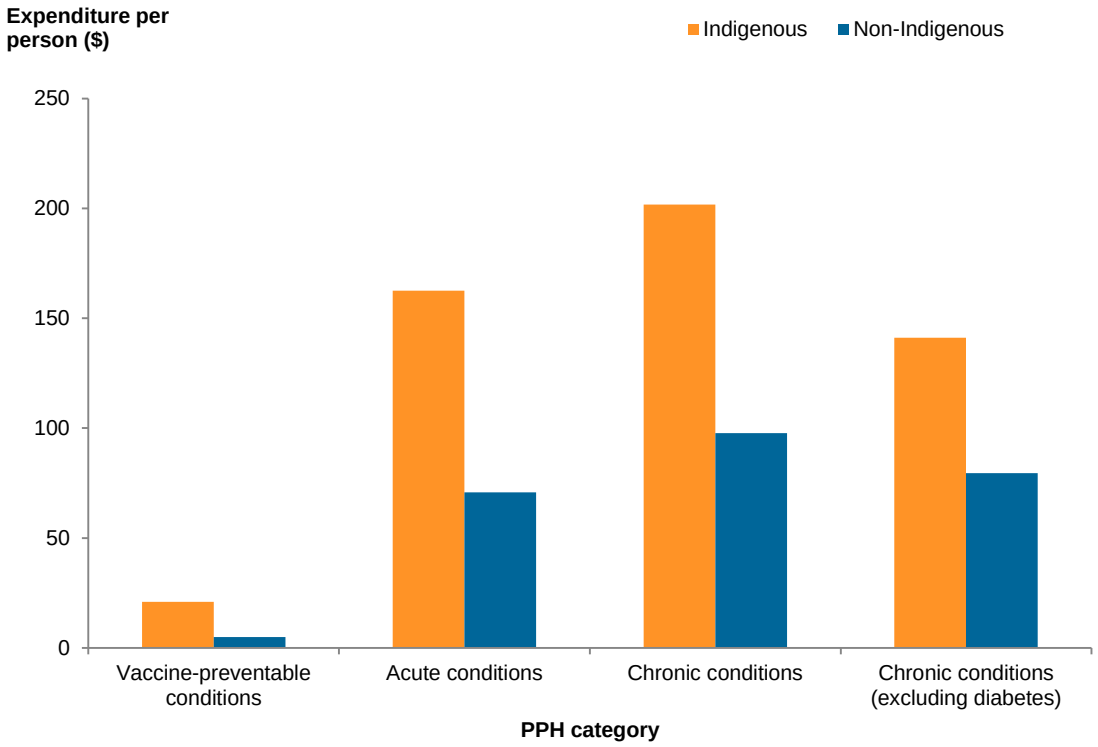
PPH category	Total expenditure ($ million)			Indigenous share (per cent)	Expenditure per person ($)		Ratio
	Indigenous	Non-Indigenous	Total		Indigenous	Non-Indigenous	
Vaccine-preventable conditions							
Influenza and pneumonia	11.0	85.0	95.9	11.4	19.3	4.3	4.47
Other vaccine-preventable conditions	0.9	13.4	14.3	6.5	1.6	0.7	2.40
Total vaccine-preventable conditions	*11.9*	*98.3*	110.2	*10.8*	*20.9*	*5.0*	*4.19*
Acute conditions							
Appendicitis with generalised peritonitis	—	—	—	—	—	—	—
Cellulitis	20.2	289.5	309.7	6.5	35.5	14.7	2.42
Convulsions and epilepsy	19.7	176.1	195.7	10.0	34.5	8.9	3.87
Dehydration and gastroenteritis	8.7	226.2	234.9	3.7	15.3	11.5	1.33
Dental conditions	13.1	135.9	149.0	8.8	23.1	6.9	3.35
Ear, nose and throat infections	10.9	108.8	119.7	9.1	19.2	5.5	3.48
Gangrene	0.6	7.2	7.8	8.1	1.1	0.4	3.04
Pelvic inflammatory disease	2.5	18.9	21.4	11.6	4.4	1.0	4.56
Perforated/ bleeding ulcer	1.7	69.6	71.3	2.4	3.1	3.5	0.87
Pyelonephritis	14.9	362.6	377.6	4.0	26.3	18.4	1.43
Total acute conditions	*92.5*	*1,394.7*	*1,487.1*	*6.2*	*162.5*	*70.7*	*2.30*
Chronic conditions							
Angina	5.2	112.2	117.3	4.4	9.1	5.7	1.60
Asthma	9.8	143.8	153.6	6.4	17.2	7.3	2.36
Chronic obstructive pulmonary disease	35.9	619.6	655.5	5.5	63.1	31.4	2.01
Congestive heart failure	16.9	510.5	527.4	3.2	29.7	25.9	1.15
Diabetes complications	34.5	359.1	393.6	8.8	60.6	18.2	3.33
Hypertension	1.8	32.4	34.2	5.2	3.1	1.6	1.91
Iron deficiency anaemia	2.2	77.5	79.7	2.8	3.9	3.9	0.98
Nutritional deficiencies[b]	0.5	5.6	6.1	8.5	0.9	0.3	3.22
Rheumatic heart disease	8.0	66.7	74.7	10.7	14.0	3.4	4.15
Total chronic conditions	*114.8*	*1,927.4*	*2,042.2*	*5.6*	*201.8*	*97.8*	*2.06*
Total	**219.2**	**3,420.4**	**3,639.5**	**6.0**	**385.1**	**173.5**	**2.22**

(a) Includes hospital separations data for all states/territories. Hospital separation rates differ from those published in *Australian hospital statistics: 2010–11* (AIHW 2012a) because the estimates in this report relate to principal diagnoses only, have been adjusted for Indigenous under-identification and are crude rates (rather than age-standardised rates).

(b) This condition is a subset of the burden of disease and injury group *Nutritional deficiencies* and cannot be compared with data in Table 3.1.

Note: '—' denotes nil or rounded to zero.

Source: AIHW national hospital morbidity database.



Source: AIHW national hospital morbidity database.

Figure 4.1: Expenditure on hospital separations for potentially preventable hospitalisations (PPH) by Indigenous status, 2010–11

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Related publications

This report is part of a biennial series. This and earlier editions can be downloaded free from the AIHW website < http://www.aihw.gov.au/expenditure-publications/>. The website also includes information on ordering printed copies.

Main tables relating to this report were published online, see <http://www.aihw.gov.au/publications>.

See also: AIHW 2013. Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11. Cat. no. HWE 57. Canberra: AIHW.

The following AIHW publications relating to the health of Indigenous Australians might also be of interest:

AIHW 2011. The health and welfare of Australia's Aboriginal and Torres Strait Islander people: an overview 2011. Cat. no. IHW 42. Canberra: AIHW.

AIHW 2012. Aboriginal and Torres Strait Islander health services report, 2010-11: OATSIH services reporting—key results. Cat. no. IHW 79. Canberra: AIHW.

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