Appendices

Appendix 1 Scope of report

Definition of health expenditure

The term 'health expenditure' in this report refers to expenditure on health and health-related goods and services. Health goods and services expenditure includes expenditure on health goods (pharmaceuticals, aids and appliances), health services (clinical interventions), and health-related services (public health, research and administration), often termed recurrent expenditure.

This definition of health expenditure closely follows the definitions and concepts used in the *Health Expenditure Australia* series based on the OECD's System of Health Accounts (OECD 2000) framework. It excludes the following:

- expenditure that may have a 'health' outcome but that is incurred outside the health sector (such as expenditure on building safer transport systems, removing lead from petrol, and educating health professionals);
- expenditure on personal activities not directly related to maintaining or improving personal health; and
- expenditure that does not have health as the main area of expected national benefit.

Total health expenditure reported is slightly underestimated in that it excludes health expenditure by the Australian Defence Force, some school health expenditure and some expenditure incurred by Corrective Services Institutions in the various states and territories. Difficulties in separating expenditures incurred by local governments on particular health functions from those of state and territory governments means that these funding sources are often combined.

Scope of expenditure reporting

This report expands the scope of reporting from the previous two reports on expenditure on health services for Aboriginal and Torres Strait Islander people. For example:

- State and territory government expenditures include more detailed reporting on a wider range of categories than past reports.
- The non-government expenditure included relates to all health expenditures irrespective of whether the related services were funded by government or non-government funding providers.
- Acknowledging that broader definitions of health exist, a chapter on health-related welfare expenditure has been included, covering welfare services for the aged (GPC 2622) and welfare services for people with a disability (GPC 2623).

Government Purpose Classification

In collecting information for this report from states and territories, the ABS's GPC was used as the framework for grouping government expenditure. This majority of this report focuses

on health services defined by GPC category 25 (Table A1.1). The definitions for GPC category 25 were applied regardless of whether the expenditure was incurred by health, welfare or other organisation.

The one deviation from the GPC was in the reporting of public health expenditures. Instead, the categories of the National Public Health Expenditure Project have been followed (refer to AIHW 2004c for more information).

Table A1.1: Government Purpose Classification (GPC) used in this report

GPC code	Name of GPC category	Reporting area
25	Health	Health expenditure
251	Acute-care institutions	Health expenditure
252	Mental health institutions	Health expenditure
253	Nursing home for the aged	Health expenditure
254	Community heath services	Health expenditure
255	Public health services	Health expenditure
256	Pharmaceuticals, medical aids and appliances	Health expenditure
257	Health research	Health expenditure
259	Health administration (not elsewhere classified)	Health expenditure
2622	Welfare services for the aged	Health-related welfare expenditure
2623	Welfare services for people with a disability	Health-related welfare expenditure

Source: ABS Government Purpose Classifications.

Expenditure estimates

The expenditure estimates for the total population were based on recurrent health expenditure data from the AIHW Health Expenditure database.

The presentation of health expenditure data is similar to reporting in *Health Expenditure Australia 2002–03* (AIHW 2004b) and other reports in that series. The major areas of reporting are described in Table A1.2 below.

Table A1.2: Major areas of health expenditure used in this report

Term	Definition
Public hospitals	Hospitals operated by, or on behalf of, state and territory governments that provide a range of general hospital services. Such hospitals are recognised under Australian Health Care Agreements.
Private hospitals	Privately owned and operated institutions that provide a range of general hospital services. In health expenditure publications the term includes private free standing day hospital facilities.
Emergency departments	The dedicated area in a public hospital that is organised and administered to provide emergency care to those in the community who perceive the need for or are in need of acute or urgent care. The emergency department must be part of a hospital and be licensed or otherwise recognised as an emergency department by the appropriate state or territory authority. An emergency department provides triage, assessment, care and/or treatment for patients suffering from medical condition(s) and/or injury.
Other non-admitted patient services	Dedicated areas within a public hospital that is organised to deliver clinical services to non-admitted patients not requiring urgent or acute-care.
Public (psychiatric) hospitals	Hospitals operated by, or on behalf of, state and territory governments that provide treatment and care specifically to patients with psychiatric disorders.
Services for older people (High-level residential care)	Care provided to residents in residential care facilities who have been classified as having a need for and are receiving a very high level of care (i.e. patients classified in RCS categories 1–4). Establishments that provide long-term care involving regular basic nursing care to chronically ill, frail, disabled or convalescent persons or senile in-patients. They must be approved by the Department of Health and Ageing (DoHA) and licensed by a state or territory government.
Patient transport	Public or registered non-profit organisations which provide patient transport (or ambulance) services associated with out-patient or residential episodes to and from health care facilities. Excludes patient transport expenses that are included in the operating costs of public hospitals.

(continued)

Table A1.2 (continued): Major areas of health expenditure used in this report

Term	Definition
Medical services	Services of a type listed in the Medical Benefits Schedule that are provided by registered medical practitioners. Most medical services in Australia are provided on a fee-for-service basis and attract benefits from the Australian Government under Medicare. Expenditure on medical services includes services provided to private patients in hospitals as well as some expenditure that is not based on fee-for-service (i.e. alternative funding arrangements).It also includes expenditures funded by injury compensation insurers. Excluded are expenditures on medical services provided to public patients in public hospitals and medical services provided at out-patient clinics in public hospitals.
Other professional services	Services provided by registered health practitioners (other than doctors and dentists). These include chiropractors, optometrists, physiotherapists, speech therapists, audiologists, dieticians, podiatrists, homeopaths, naturopaths, practitioners of Chinese medicine and other forms of traditional medicine, etc.
Benefit-paid pharmaceuticals	Pharmaceuticals in the Pharmaceutical Benefits Scheme (PBS) and the Repatriation Pharmaceutical Benefits Scheme (RPBS) for which the Australian Government paid a benefit.
Other pharmaceuticals	Pharmaceuticals for which no PBS or RPBS benefit was paid. Includes: • pharmaceuticals listed in the PBS or RPBS, the total costs of which are equal to, or less than, the statutory patient contribution for the class of patient concerned; • medicines dispensed through private prescriptions for items not listed in the PBS or RPBS; and • over-the-counter medicines such as aspirin, cough and cold medicines, vitamins and minerals, some herbal and other complementary medicines and a range of medical non-durables, such as bandages, band aids and condoms.
Aids and appliances	Durable medical goods dispensed to out-patients, that are designed for use more than once, such as optical products, hearing aids, wheelchairs and orthopaedic appliances and prosthetics that are not implanted surgically. Excludes prostheses fitted as part of in-patient care in a hospital.
Community health	Non-residential health services offered by public or registered non-profit establishments to patients/clients, in an integrated and coordinated manner in a community setting, or the coordination of health services elsewhere in the community. Includes: • dental services provided by the state and territories • community mental health • alcohol and other drug treatment • other community health services—such as domiciliary nursing services, well baby clinics and family planning services.

(Continued)

Table A1.2 (continued): Major areas of health expenditure used in this report

Term	Definition
Public health	Services provided and/or funded by governments that are aimed at protecting and promoting the health of the whole population or specified population sub-groups and/or preventing illness, injury and disability, in the whole population or specified population sub-groups. The nine reporting categories are those defined by the National Public Health Expenditure Project: 1. communicable disease control 2. selected health promotion 3. organised immunisation 4. environmental health 5. food standards and hygiene 6. breast cancer screening 7. cervical screening 8. prevention of hazardous and harmful drug use 9. public health research
Dental services	A range of services provided by registered dental practitioners. Includes maxiofacial surgery items listed in the Medical Benefits Schedule. Excludes state and territory government expenditure on dental services (see Community health)
Health administration	Activities related to the formulation and administration of government and non government policy in health and in the setting and enforcement of standards for medical and paramedical personnel and for hospitals, clinics, etc. Includes the regulation and licensing of providers of health services.
Health research	Research undertaken at tertiary institutions, in private non-profit organisations and in government facilities that has a health socio-economic objective. Excludes commercially oriented research carried out or commissioned by private business, the costs of which are assumed to have been included in the prices charged for the goods and services (e.g. pharmaceuticals that have been developed and/or supported by research activities).

Source: AIHW 2004b.

Primary and secondary/tertiary care

Total health expenditures have been allocated, where possible, to the broad categories of primary and secondary/tertiary care. Differences between primary, secondary and tertiary health services are difficult to precisely define, particularly when the allocation of data to expenditure categories is not always clear, or treated in a similar manner (Deeble et al 1998). However, a similar analysis to that performed in the two previous reports has been completed applying the following general definitions.

Those health practitioners who have first contact with people are considered to provide primary health care. Included in expenditures on primary health care are expenditures on

services provided by general practitioners (GPs)—including any associated diagnostic services and prescribed medications—plus community health services and public health activities. Expenditures on secondary/tertiary health care are those related to goods and services provided by providers to whom primary health care providers refer people—i.e. they are a secondary or tertiary point of contact for health services. These are generally limited to expenditures on admitted patient care in acute-care hospitals and specialist medical services—including any associated diagnostic services.

Therefore, for Aboriginal and Torres Strait Islander people, expenditure on primary health services comprised:

- allocated expenditures on public health activities and community health services (including all expenditure on health services by ACCHSs);
- expenditure on general practitioner (GP) services for which benefits were paid under Medicare to Indigenous people (and the diagnostic services ordered by them);
- pharmaceuticals prescribed by GPs for which PBS benefits were paid;
- non-benefit pharmaceuticals dispensed to individuals;
- a proportion of aids and appliances (split along the same lines as expenditure on pharmaceuticals);
- 50% of the estimated costs associated with non-admitted patient services in acute-care hospitals and transport for Aboriginal and Torres Strait Islander patients.

The remainder was classified as secondary/tertiary.

For non-Indigenous people, the same basic divisions were applied.

Expenditures on 'Administration' and 'Other health services nec' (including research) were not allocated to either group.

Data limitations

There are some important issues that need to be understood about the data contained in this report. The quality of the information and estimates is limited by underlying data and the methods used for calculation. A number of key issues are outlined below. Readers are urged to bear them in mind and to exercise appropriate caution in the interpretation of the estimates.

Quality of data on Indigenous service use

For many publicly funded health services there are few details available about service users and, in particular, their Indigenous status. For privately funded services, this information is frequently unavailable. For those services that do collect this information, recording Indigenous status accurately for all people does not always occur. The result is that it is not possible to make accurate estimations of health expenditure for Aboriginal and Torres Strait Islander people and their corresponding service use.

Furthermore, much of the data that is available relates only to needs that have been met. There are limited data available on unmet needs for health services by Aboriginal and Torres Strait Islander people. Consequently this report does not directly assist in identifying gaps in service delivery.

Variations within regions

There are variations in the health status of Aboriginal and Torres Strait Islander people across regions, however variability in data quality limits the reliability of examinations of health status by region. Indigenous identification is likely to be more accurate in areas where Indigenous Australians make up a larger proportion of the population, and poorer where they are a small minority (ATSIHWIU 1999, Young 2001).

This hypothesis was further supported by evidence from a number of studies examining the accuracy of hospital data in the lead-up to this report.

One WA study of the data collected by 26 public hospitals over the period from June 2000 to January 2001 found variations in the accuracy of hospital records covering Indigenous status (Young 2001). The study found that hospital data from the area with the highest proportion of Indigenous Australians within its catchment area had the highest level of accuracy in the recording of Indigenous status. This corroborated earlier evidence collected in a national study covering 11 hospitals (ATSIHWIU 1999).

In New South Wales, a record linkage study undertaken prior to the second Indigenous health expenditure report resulted in the application of Area Health Service specific under-identification factors. For this report, the results of that analysis were again used, however variations in the adjustment were applied at a very broad level to two regional classifications—a 38% under-identification adjustment was applied to data from hospitals in metropolitan areas and a 21% adjustment to all other hospitals.

It could be concluded that some of the patterns suggested in this analysis are influenced by these likely variations in identification. It is also important to consider that the application of under-identification adjustments, particularly when applied at a state than regional level, may mask the patterns this analysis is attempting to reveal.

Quality of expenditure estimates

There may be some limitations associated with the scope and definition of health expenditures included in this report. Other (non-health) agency contributions to health expenditure, such as 'health' expenditures incurred within education departments and prisons, are not included.

Furthermore, while every effort has been made to ensure consistent reporting and categorisation of expenditure on health goods and services, in some cases there may be inconsistencies across data providers. These may result from limitations of financial reporting systems, and/or different reporting mechanisms. Reporting of health administration (nec) is one such example, in some cases all the associated administration costs have been included in the estimates of expenditure on a particular health service category (for example acute-care services), whereas in other cases, they have not and have been separately reported.

Per person expenditure estimates

Reporting expenditure estimates on a per person or per capita basis is a practice followed in many financial reports aimed at enabling comparative assessments. Estimates of average expenditures per person have been included in this report. These estimates and comparisons need to be interpreted with care. They are an indication of the average health expenditure per head of the reference population(s)—in this case, the whole of the Indigenous and non-Indigenous populations drawn from ABS census estimates for 2001—and do not reflect

the average expenditure incurred by each person accessing the goods and services being discussed.

Depending on the nature of the services being examined, it is also important to bear in mind that the age structure of the Aboriginal and Torres Strait Islander population is younger than that of the non-Indigenous population. Accordingly, for programs that target particular population sub-groups—such as services for older people, childhood immunisation, breast and cervical screening—the reported estimates of average expenditures per person do not reflect average expenditures on the members of those target populations.

Economies of scale and geographic isolation

Economies of scale and the relative isolation of target populations both greatly influence the costs of producing and delivering health goods and services. Consequently, these are factors that can have large impacts on both the levels of health expenditure and the quantity of goods and services that can be provided to particular population groups. For example, the Northern Territory, with its relatively small population, faces substantial diseconomies in comparison with, say, Victoria in providing health goods and services to its population. This comparative disadvantage is further compounded by differences in the relative isolation of two jurisdictions' populations. And this disparity is even more pronounced in respect of the Indigenous populations of the two jurisdictions.

Furthermore, variations in Indigenous health status by geographic regions are likely, although these are not easily substantiated by the available data. Several reports, including one examining death rates within regions, attest to the poorer health of Australians who live in more remote areas (AIHW 2003c, AIHW & AACR 2003).

Appendix 2 Population estimates

Aboriginal and Torres Strait Islander population estimates

Population estimates used in this report are from the 2001 Census of Population and Housing conducted by the Australian Bureau of Statistics (ABS). To produce Indigenous population counts, the ABS makes allowance for net undercount and for instances in which Indigenous status is unknown (AIHW & ABS 2003). These estimates are sometimes referred to as 'Experimental estimates of the resident Indigenous population'.

Population estimates for non-regional analyses

Population estimates for Aboriginal and Torres Strait Islander people were as at June 2001. There is argument to suggest that the mean resident population over the year 1 July 2001 to 30 June 2002 should be calculated to produce a 2001–02 population estimate. However, as the population projections (covering 2002) were not available until part-way through the production process and the population estimates vary only slightly using a calculated annual mean, the beginning of period population was used.

It is important to note that the total Australian population is made up of the sum of the state and territory populations. As such, it excludes 2,584 people who reside in Christmas Island and the Cocos Islands.

Table A2.1: Population estimates for Aboriginal and Torres Strait Islander people and the total Australian population, 2001

	Total population		Indigenous population		
State/territory	Number	% of total population	Number	% of Indigenous population	% of state population
NSW	6,575,217	33.9	134,888	29.4	2.1
Vic	4,804,726	24.8	27,846	6.1	0.6
Qld	3,628,946	18.7	125,910	27.5	3.5
WA	1,901,159	9.8	65,931	14.4	3.5
SA	1,511,728	7.8	25,544	5.6	1.7
Tas	471,795	2.4	17,384	3.8	3.7
ACT	319,317	1.6	3,909	0.9	1.2
NT	197,768	1.0	56,875	12.4	28.8
Total	**19,410,656**	**100.0**	**458,287**	**100.0**	**2.4**
Total[(a)]	**19,413,240**		**458,520**		

(a) Includes Other Territories

Source: ABS 2003c.

Regional population estimates and classification scheme

A 2001 revised version of the Accessibility-Remoteness Index of Australia (ARIA), commonly referred to as ARIA+, has been used in this report as a framework for the regional analysis of health outcomes. The index is based on the Australian Standard Geographical Classification (ASGC) and replaces the original ARIA used in the 1998–99 study. Information on the development of ARIA+ is presented below, along with an outline of the differences between the ARIA+ and ARIA classifications.

Accessibility and remoteness—ASGC Remoteness area (ARIA+)

The ARIA+ classification system provides a framework for assessing regional differences in health expenditure. The original ARIA model was developed in 1997 by the National Key Centre for Social Application of Geographic Information Systems (GISCA). In 2001, the ABS added the Remoteness Area Structure (ASGC Remoteness Areas) to the ASGC; creating ARIA+.

Both ARIA and ARIA+ provide classification frameworks, which measure the level of access a region has to a range of services. Since remoteness is commonly associated with the lack of accessibility to services, this classification focuses on disadvantage in terms of access to services due to region of residence in Australia. Furthermore, as ARIA/ARIA+ are geographical approaches, they exclude socioeconomic, urban/rural and population size factors. They reflect the actual distance needed to travel by road from population localities to service centres of various sizes (see AIHW 2004d).

ARIA scores have previously been categorised as--highly accessible, accessible, moderately accessible, remote and very remote. Under ARIA+ a new classification structure has been developed (Box A2.1).

Box A2.1: Structure of the ASGC Remoteness Areas and ARIA+ index values

Class	*Abbreviation*	*Index value range*
Major cities of Australia	*MC*	$0 \leq MC \leq 0.2$
Inner Regional Australia	*IR*	$0.2 < IR \leq 2.4$
Outer Regional Australia	*OR*	$2.4 < OR \leq 5.92$
Remote Australia	*R*	$5.92 < R \leq 10.53$
Very Remote Australia	*VR*	$10.53 < VR \leq 15$

Source: ABS 2001b.

Population estimates for regional analysis

Regional analyses in this report have used ABS Population Characteristics data for Aboriginal and Torres Strait Islander Australians to provide population distributions by ASGC Remoteness Areas (using ARIA+ index values) (ABS 2003c).

Table A2.2: Population distribution in Australia by ASGC Remoteness Areas, Aboriginal and Torres Strait Islander people and total Australian population, 2001–02

ASGC remoteness area	Total population		Indigenous population	
	No.	%	No.	%
Major Cities	12,870,986	66.3	138,494	30.2
Inner Regional	4,025,895	20.7	92,988	20.3
Outer Region	2,013,563	10.4	105,875	23.1
Remote	324,321	1.7	40,161	8.8
Very Remote	178,475	0.9	81,002	17.7
Total	**19,413,240**	**100.0**	**458,520**	**100.0**

Note: The populations in this table include Other Territories.

Source: ABS 2003c.

Revisions to population estimates

In developing the 1998–99 estimates of expenditure on Aboriginal and Torres Strait Islander people, an estimated total Indigenous population of 406,311 was used (Table A2.3). This was based on an average of the official Australian Bureau of Statistics estimate of the Indigenous population for 1998 and 1999 at the time of publication.

The population estimates for 1998–99 and 2001–02, prima facie, suggest an average 4.1% per year increase between the two studies in the identified Indigenous population, which is well in excess of the overall rate of population growth for Australia of 1.0% per year.

Table A2.3: Estimated mean resident population, Indigenous Australians and non-Indigenous people, 1995–96, 1998–99 and 2001–02, Australia

Study period	Estimated mean resident population			
	Indigenous		Non-Indigenous	
	Population ('000)	Annual change (%)	Population ('000)	Annual change (%)
1995–96	367.81	. .	18,184.00	. .
1998–99	406.31	3.4	18,429.57	0.4
2001–02	458.52	4.1	18,954.72	0.9

Sources: 1995–96 estimates— Deeble, Mathers, et al 1998:63; 1998–99 estimates—AIHW 2001; 2001–02 estimates—ABS 2003c.

For the earlier (1995–96) study, the Indigenous population was estimated at 367,808. This was later revised to 381,402 (AIHW 2001:169).

Following the 2001 census, the population estimates, both for the total Australian population and for the Indigenous Australian sub-set of the aggregate, have been substantially revised. These revisions were undertaken subsequent to the publication of *Expenditures on health services for Aboriginal and Torres Strait Islander People 1998–99*.

The revised estimates of Indigenous populations for 1995–96 and 1998–99 are 409,690 and 436,650, respectively. This, in turn, indicates an average rate of increase in the Indigenous population between 1995–96 and 1998–99 of 2.1% and between 1998–99 and 2001–02 of 1.6% per year.

Appendix 3 Estimation of Australian Government expenditure on Aboriginal and Torres Strait Islander people

For many areas of expenditure by Australian Government there were limited administrative data on the utilisation of the associated services by Aboriginal and Torres Strait Islander people. Accordingly, in many areas, estimates were made on the basis of survey data, or an approximation of Indigenous use was made, based on likely Indigenous access to the service.

Details of the methodology for each of the major areas of health expenditure are outlined below.

Expenditure by the Health and Ageing portfolio

Public (non-psychiatric) hospitals

Because the states and territories are responsible for the provision of public hospital services, they are regarded as incurring almost all of the expenditure involved in providing those services. There are, however, some expenditures on public (non-psychiatric) hospitals that are considered to have been incurred by the Australian Government. These are related to specific Australian Government programs aimed at supporting particular activities, which are concentrated in public hospitals. The related expenditures were not included in expenditures reported by state and territory governments. In 2001–02, a total of $184.6 million was spent on those programs (Table A3.1). Of this, an estimated $9.1 million was for services to Aboriginal and Torres Strait Islander people.

Table A3.1: Expenditures incurred by the Australian Government on public (non psychiatric) hospitals, 2001–02 ($ million)

Program	Indigenous	Non-Indigenous	Total
Access to Public Hospitals	0.1	1.4	1.4
Australian Organ Donor Register	0.1	1.9	2.0
Bone Marrow Transplant Program	0.1	2.2	2.3
Radiation Oncology Services	1.3	25.2	26.5
National Cord Blood Collection Network	0.1	2.1	2.3
National demonstration hospitals	0.1	1.9	2.0
Organ and tissue donation sector	0.1	1.0	1.0
Blood and organ donation research and support	0.1	1.0	1.1
Blood fractionation products and blood related products	7.2	138.9	146.0
Total expenditure	**9.1**	**175.6**	**184.6**

Source: AIHW Health Expenditure Database.

The Indigenous share of this expenditure was determined on the basis of analysis of state and territory admitted patient expenditure for Aboriginal and Torres Strait Islander people.

Private hospitals

Approximately $7.7 million of direct expenditure by the Australian Government was for private hospital services in 2001–02. This expenditure was in the way of grants to not-for-profit hospitals to ease the costs of transition to new Fringe Benefits Tax arrangements. The estimated Indigenous share of this expenditure (0.5%) was calculated from survey data indicating the Indigenous proportion of all people with private health insurance (ABS 2002b).

Services for older Australians

High-level residential aged care

Most of the estimated expenditure on older people identified in this report relates to expenditure on people in residential care facilities—formerly nursing homes and hostels for the aged. These types of facilities were combined into the single classification 'Residential aged care facility' following a review of aged persons' residential care in the late 1990s. At that time, a number of different types of benefits and payments by the Australian Government were combined into a single residential care subsidy based, not on the type of institution, but on the care needs of and the levels of care provided to the residents of the recipient institution. The residents themselves are also required to make a contribution to the cost of their care in the form of a co-payment that is, in part, based on their ability to pay.

A Resident Classification Scale (RCS) level is assigned to each resident on admission to a residential aged care facility. That RCS level is reviewed regularly during the course of the resident's stay and, as a result of that review process, may be maintained or revised up or down, depending on the assessed care needs of the person, and the level of care that the facility will provide. The RCS for each resident is based on a combination of the person's health and personal care factors at the time of assessment or review.

There are eight levels in the RCS. They range from one—the highest care need—to eight. Residents who are assessed in the four highest RCS levels (that is levels one to four, inclusive) are regarded as needing and receiving predominantly health services. These are often referred to as receiving 'high-level' residential care, and both the Australian Government subsidy and the resident's contribution are included as expenditure on health services. Residents assessed in RCS levels five to eight are regarded as receiving predominantly personal care and other non-health services. The subsidy and resident's co-payment for these people are considered to be expenditure on health-related welfare services in this report.

The Australian Government's Department of Health and Ageing (DoHA) maintains a computer-based database known as the Aged and Community Care Management Information System (ACCMIS) to allow it to monitor its aged care programs, including the residential care subsidy scheme. In the case of the residential care subsidy scheme, ACCMIS contains detailed information in respect of each person in respect of whom an approved service provider attracts subsidies. The individual data in ACCMIS include:

- Indigenous status;
- pension status;
- usual residence status (prior to admission); and
- living arrangements (prior to admission).

DHA provided unidentifiable extracts of data from ACCMIS for use in estimating the Government's recurrent expenditure on the residential care subsidy. Those data were also used to estimate the residents' contribution, which has been included in this report as non-government expenditure on aged persons' care.

While Indigenous status is an element of the data received from ACCMIS, identification of Indigenous status by an approved service provider is not compulsory, nor is it an essential element of the subsidy assessment process. Therefore, there may be some degree of under-identification of Indigenous residents reported through ACCMIS.

An estimated daily subsidy cost to Government was applied to the number of occupied bed-days for each resident during the financial year. This cost depended on the type and level of care, and comprised a basic subsidy plus primary and other supplements less reductions and income tested fees.

About 9.9% of the total estimated funding through the residential care subsidy related to residents whose Indigenous status was not reported. This amount was allocated to expenditure on Indigenous and non-Indigenous residents according to the distribution of expenditure in relation to their peers. For example, the proportion of resident care days in each RCS level that were identified as relating to Indigenous residents was applied to those resident care days in the same RCS where the Indigenous status of the resident was not known. The sum of the identified Indigenous care days and the estimated Indigenous proportion of the days where the Indigenous status of the resident was not known was estimated to be the total number of subsidy days related to Indigenous residents at that RCS level.

The Australian Government, through the Health and Ageing portfolio, spent an estimated $3.4 billion on high-level residential aged care in 2001–02. Of this, $30.5 million (0.9%) was for Aboriginal and Torres Strait Islander people.

Services for veterans are also included in ACCMIS data. As such the same method was followed to estimate expenditure on Indigenous veterans.

Other services for older Australians

A further $9.0 million was spent on other high-level care services for Indigenous people provided through multi-purpose services in rural and remote areas and by flexible care services. Data were not available on the Indigenous status of residents in multi-purpose services. Indigenous expenditure was estimated using the proportions of Indigenous clients in high-level residential aged care services by remoteness areas were applied. All of the expenditure on Indigenous-specific multi-purpose services was allocated to Indigenous Australians.

A small amount of Australian Government expenditure was for the provision of services through the Extended Aged Care at Home (EACH) program. EACH services are primarily available in major cities. Indigenous use of these services was estimated to be low, in accordance with their low access to high-level residential aged care in major cities.

Medical services and Pharmaceuticals

Estimation of Medicare and PBS expenditure

In the course of preparation for this report, substantial investigations into the methodology for estimating the Indigenous share of Medicare and PBS occurred. The following material outlines much of these investigations, and ultimately the method followed in preparing the estimates of expenditure.

Australian Government expenditures on Aboriginal and Torres Strait Islander people through the Medical Benefits Scheme (MBS) and Pharmaceutical Benefits Scheme (PBS) are not easily quantified. Until very recently the administrative data collected through these programs has not included information on the Indigenous status of patients. Since November 2002, Aboriginal and Torres Strait Islander people have been able to voluntarily identify through the Medicare system. At the time of preparing this report, however, there were limited numbers of Indigenous Australians identified within Medicare data. Accordingly, in this report, the estimates of expenditure on Aboriginal and Torres Strait Islander people through these programs are largely based on survey data. Future report may be able to use the voluntarily identified Medicare data.

In this report, as in the previous report (for 1998–99), the national, continuing survey of general practitioner activity entitled 'Bettering the Evaluation and Care of Health', or BEACH, is the principal source of data used in estimating the Aboriginal and Torres Strait Islander share of MBS and PBS benefits. Two years of survey data, collected between April 2001 and March 2003, have been used in this analysis.

The BEACH survey, which is managed by the General Practice Statistics and Classification Unit, is a collaborative study between the Australian Institute of Health and Welfare and the Family Medicine Research Centre at the University of Sydney. The annual report of the survey, which has been conducted annually since 1998, contains a comprehensive description of the methods used to survey General Practitioners (GPs) (AIHW: Britt et al. 2002; AIHW: Britt et al. 2003).

Because the BEACH survey had not commenced, the estimates of MBS and PBS in the 1995–96 report were based on the results of special surveys of general practice and pharmacies undertaken in 1997. Full details of the method are provided in the first report on health expenditures for Aboriginal and Torres Strait Islander people (Deeble et al. 1998). Some information from the special surveys for the 1995–96 report has been used in this report and

the previous report. Those special surveys are still the only available source of information about certain aspects of practice such the proportions of referrals to private and publicly employed specialists, and information on dispensing patterns for Indigenous Australians.

BEACH survey—background

Since 1998–99, the BEACH survey has in each year randomly selected about 1000 GPs who billed Medicare for at least 375 GP service items in the preceding quarter. Each GP then records details of their activity for 100 consecutive patient encounters. After weighting for the characteristics of the participating doctors (age, gender, location, activity levels, etc.) there were 96,973 encounters in 2001–02 and 100,987 encounters in 2002–03.

Apart from such patient characteristics as age, gender, residence and health care card status, the survey collects data on the nature of each encounter (whether direct or indirect via telephone etc.), services provided, medications prescribed or recommended, pathology and imaging services ordered and referrals made, as well as sources of payment and entitlements to benefit under various schemes.

The weighted results of the survey are, in effect, a 0.1% sample of all GP activity in a year and their key statistical features correspond very closely with the aggregate Medicare data. Expenditure estimates are largely derived by expanding from the information collected through the BEACH survey.

Non-response and under-identification of Indigenous Australians

In order to prepare estimates of MBS and PBS benefits to Aboriginal and Torres Strait Islander people, two issues concerning the enumeration of Indigenous patients in BEACH data required investigation—the issues of non-response to the Indigenous status questions and under-identification of Indigenous Australians. Our investigations of these issues suggested that there are a number of different methodological pathways which could be followed to handle these issues in the expenditure estimation procedures. Each method relies on a combination of statistical evidence and assumptions which cannot be fully tested. Thus it is not possible to conclude definitively which of the alternative methods is best. Fortunately, the alternative methods result in very similar estimates of expenditure. And statistical evidence is accumulating which will support the choice of a definitive estimation method.

Non-response to Indigenous status questions

Each GP participating in the BEACH survey is instructed to ask the patient whether he or she identifies as an Aboriginal person and/or as a Torres Strait Islander. But it is not always clear that the question was asked exactly as prescribed and in many encounters, no response to the question was recorded on the survey form. For example, in 2001–02, the Indigenous status question was not completed at all in about 12.5% of encounters. In the reports produced summarising information from the BEACH survey, these encounters are treated as 'non-Indigenous', but the 1998–99 report on Indigenous health expenditure (AIHW 2001) followed a different approach—missing data were redistributed according to the 94% of encounters where the question was answered.

The issue of non-response was considered again when preparing estimates for this report. It was thought that there were no firm grounds for assuming that non-responses can validly be re-distributed proportionally to the Yes/No responses, even though this was the approach taken in the 1998–99 report. Similarly, there were no firm grounds for assuming that failure to enter a response indicated that a patient was or was not an Indigenous Australian. For

that reason, when preparing the estimates for this report, several alternative treatments of non-response were assessed, rather than invoking any single assumption about the characteristics of non-respondents.

Two methods of treating non-response are summarised later in this section. In the first method, all missing data are included with non-Indigenous encounters. It should be noted that this method embodies an implicit adjustment for under-identification of Indigenous patients. The second method takes a similar approach to the 1998–99 report—namely distributing the non-responses. This method has been coupled with a more conservative adjustment for under-identification than is implied by the first method.

Under-identification of Aboriginal and Torres Strait Islander patients

In addition to the issue of non-response, new evidence of under-enumeration of Aboriginal and Torres Strait Islander people in the BEACH survey (AIHW GPSCU 2004a) became available during the preparation of this report and it warranted further investigation.

In the 5th and 6th years of the BEACH data collection (April 2002 to March 2004), two sub-studies were run that aimed to validate the routine BEACH questions on language background and Indigenous status. The methodology for such BEACH substudies, referred to as SAND (Supplementary Analysis of Nominated Data), is outlined on the website of the AIHW's General Practice and Statistical Classification Unit (AIHW GPSCU 2004b).

The SAND substudies in question surveyed 18,091 patients attending 1,474 GPs between December 2002 and March 2004. A section on the bottom of each encounter form included questions about the patient's cultural background, based on the 2001 Census questions. Patients were asked about their country of birth, parents' countries of birth, whether the patient was of Aboriginal or Torres Strait Islander origin and what language was spoken at home.

The combined results of the SAND substudies suggested quite substantial under-enumeration of Aboriginal and Torres Strait Islander patients. However, the substudies had some limitations. First, the sample size in these SAND substudies was limited. Second, there was some evidence to suggest that external factors may have influenced the recorded rate of Indigenous encounters during 2003–04 (the period of the substudies). These factors included a campaign highlighting the importance of Indigenous identification and the introduction of the pneumococcal vaccination with associated incentive payments to GPs. These factors may have artificially boosted the percentage of Indigenous patients in the substudies' collection period above the percentage which it would be appropriate to use when adjusting 2001–02 expenditure estimates for under-identification.

The SAND substudies use a sample of the GPs who participated in the annual BEACH collection. An analysis of the proportion of Indigenous encounters recorded through the routine BEACH collection and through each block of the SAND sample was undertaken. The proportion of respondents identifying as Indigenous varied appreciably between blocks in both the routine BEACH and SAND samples. But, for any given block of GPs, there appeared to be a somewhat stable relationship between the proportion of patients identifying as Indigenous in the SAND vis-à-vis the routine BEACH collection. After removal of outlier blocks, the ratio of the proportion of Indigenous encounters in SAND to those in the routine BEACH collection was 1.4:1. These analyses imply that the Indigenous encounters in BEACH (on which expenditure estimates were based) should be adjusted upwards by 40% to compensate for under-identification.

The annual proportions of encounters with Aboriginal and Torres Strait Islander people that occurred since the commencement of the BEACH survey were also assessed. At the time six

full years of BEACH data were available. These indicated that the proportion of encounters with Aboriginal and Torres Strait Islander people fell within the range of 0.7% to 1.6% (Table A3.1). The collection methods in 1999–00 and 2000–01 differed, rendering the implied Indigenous proportions in these years somewhat unreliable. In 2003–04, as noted above, there were some external factors that may have influenced the recorded rate of Indigenous encounters. Furthermore, for many encounters in that year, the collection of information on Indigenous status occurred through the SAND substudy rather than through the routine method.

Examining only those BEACH data collected through the routine collection method, suggests that the unadjusted percentage of total encounters that were for Indigenous people fell within the range 1.0–1.2%.

Table A3.2: Proportion of BEACH encounters with Aboriginal and/or Torres Strait Islander patients, 1998–2002

Data collection year	Total encounters	Indigenous number	Per cent of encounters Indigenous (%)	95% LCL	95% UCL
1998–99	96,901	1,163	1.20	0.94	1.46
1999–00[(a)]	104,856	751	0.72	0.52	0.91
2000–01[(a)]	99,307	775	0.78	0.46	1.10
2001–02	96,973	982	1.01	0.76	1.27
2002–03	100,987	1,375	1.02	0.79	1.26
2003–04	98,877	1,600	1.62	1.19	2.04

(a) Data collection forms in these years allowed only for a single 'positive' response for Aboriginal and Torres Strait Islander data. Other years allowed for 'yes' or 'no' responses. This change in the reporting form is thought to have resulted in a lower response rate.

Source: AIHW—GPSCU BEACH data.

In the event, it was necessary to choose an adjustment for under-identification, based on a triangulation of this partial evidence. Applying an under-identification factor of 24% to the two years of BEACH data used to estimate Medicare and PBS benefits appeared reasonable. The implications of applying this factor are summarised in 'Method 1' below.

An alternate method ('Method 2') is also summarised below. Under this method, the non-responses were redistributed according to the encounters where questions on Indigenous status were answered. Such distribution of non-response was the method followed for the 1998–99 report. It effectively embodies a partial adjustment for under-identification and it alters the base survey data to which under-identification adjustments would be made. Accordingly, the adjustment for under-identification need not be as high as the 24% adopted under Method 1. A loading of 10% could be applied, as summarised in 'Method 2' below.

Method 1

Under this method, the non-responses were included with non-Indigenous encounters. However, a 24% adjustment for under-identification of Indigenous Australians was made to the base survey data. It implies that Indigenous Australians account for 1.26% of general practice encounters.

Table A3.3: Method 1, estimated Medicare-paid GP services, 2001–02

	BEACH data (weighted)[a]	Adjustments[b]	Est. MBS paid encounters	Expansion to MBS data	Est. services (million)	Est. bens ($ million)
Indigenous	2,014	2,492	2,319	534.38	1.239	34.0
Non-Indigenous	174,086	195,468	184,666	534.38	98.681	2,708.2
Non-responses	21,860					
Total	**197,960**	**197,960**	**186,985**		**99.921**	**2,742.2**
MBS GP services				99.92 million		

(a) BEACH data are drawn from the 2001–02 and 2002–03 collection years.

(b) Non-responses are included with non-Indigenous and a 24% adjustment for under-identification of Indigenous Australians is applied.

Sources: AIHW—GPSCU BEACH data; AIHW & Britt et al. 2003; AIHW & GPSCU 2004a; DoHA 2004a; Deeble et al. 1998; DoHA unpublished data.

Extrapolation of the data to all Medicare paid GP encounters suggests that 1,239,000 Aboriginal and Torres Strait Islander consultations were conducted in 2001–02. At an average benefit paid of $27.44 per service, this suggests that the total Medicare benefits for GP services to Indigenous Australians were $34.0 million.

Method 2

Under this method, the BEACH survey forms for which no information on Indigenous status was recorded—'non-responses'—were redistributed according to the encounters where questions on Indigenous status were answered. Following this pro-rata distribution of the non-responses and a more conservative adjustment of 10% for under-identification of Indigenous Australians, the estimated proportion of Indigenous general practice clients is 1.26% (the same as the proportion implied by Method 1).

Table A3.4: Method 2, estimated Medicare-paid GP services, 2001–02

	BEACH data (weighted)[a]	Adjustments[b]	Est. MBS paid encounters	Expansion to MBS data	Est. services (million)	Est. bens ($ million)
Indigenous	2,014	2,490	2,318	534.38	1.238	34.0
Non-Indigenous	174,086	195,470	184,668	534.38	98.682	2,708.2
Non-responses	21,860					
Total	**197,960**	**197,960**	**186,985**		**99.921**	**2,742.2**
MBS GP services				99.92 million		

(a) BEACH data are drawn from the 2001–02 and 2002–03 collection years.

(b) Non-responses are redistributed between Indigenous and non-Indigenous according to the identified encounters and a 10% adjustment for under-identification of Indigenous Australians is applied.

Sources: AIHW—GPSCU BEACH data; AIHW & Britt et al. 2003; AIHW & GPSCU 2004a; DoHA 2004a; Deeble et al. 1998; DoHA unpublished data.

Extrapolation of the data results in an estimated 1,238,000 Medicare-paid GP services for Aboriginal and Torres Strait Islander people. At an average benefit paid of $27.44 per service, the resultant estimate of Medicare benefits for GP services to Indigenous Australians was $34.0 million.

Conclusions regarding method

The application of either method produces similar estimates of Indigenous MBS benefits for GP services. The other service data (medications prescribed, pathology tests, imaging investigations ordered and referrals to specialists) follow from this base estimate of GP services. Therefore, the estimates of benefits for these other MBS and PBS services are also of a similar magnitude under either method.

The estimates of MBS and PBS benefits in this report have been produced following 'Method 1', outlined above. A more detailed description of the methodology follows this section.

Not withstanding the fact that the alternative approaches have resulted in similar estimates of MBS and PBS expenditures, additional evidence is needed before a definitive estimation method can be chosen for future issues of this triennial report. Fortunately, such evidence is accumulating. Additional SAND data, new data concerning BEACH encounters taking place in an ACCHS, and the Medicare Voluntary Indigenous Identifier (VII) data will all contribute to a greater understanding of these issues in the next report.

Results—estimated services and benefits

Estimates of Aboriginal and Torres Strait Islander MBS and PBS benefits were made on the basis of the numbers of GP encounters, services provided and prescriptions written for Aboriginal and Torres Strait Islander people.

MBS benefits

Calculating MBS benefits from the BEACH data is based largely on expansion of the survey data to the MBS data. As noted earlier, one year of BEACH data represent approximately a 0.1% sample of all GP activity. Two years of data were used in the analyses for this report.

The method involves the following steps:

- Services ineligible for Medicare benefits were excluded. Those ineligible services include compensable services and those paid through other means, such as state or hospital paid encounters.
- The GP generated services—pathology tests and imaging examinations requested by GPs—were directly estimated from the BEACH data, with the necessary adjustments for under-identification of Indigenous patients.
- In order to estimate specialist services, the BEACH data on referrals were examined. BEACH (as primarily a GP survey) recorded 'referrals', not the individual services on which Medicare payments are based. Some additional analysis was also required to determine those referrals that were to a private specialist and those to a specialist practising in a public hospital or public clinic—this is because it was assumed that specialist services provided in the public system would not generate a Medicare payment. These proportions were determined on the basis of information collected through the special surveys undertaken for the 1995–96 report. Overall the Medicare data suggested that, for each referral, an average of 2.9 consultations was generated.
- Specialist generated services—pathology, imaging and procedures also needed to be determined. There are no direct data on Aboriginal and Torres Strait Islander use of these services. It was assumed that they were similar to that for all other privately-referred patients and the cost of such services were allocated in proportion to the Indigenous share of specialist referrals (0.5%).

The method also involved adjustments for under-identification (as discussed in the previous section of this chapter).

Table A3.5: Estimated medical services and benefits through MBS for Aboriginal and Torres Strait Islander people, 2001–02

	Services (million)	Average benefit ($)[(a)]	Total estimated benefits ($ million)
Services by non-specialist practitioners			
GP	1.239	27.44	34.0
Pathology	0.491	27.05	13.3
Imaging	0.100	87.75	8.8
Services by specialist practitioners			
Consultations	0.094	52.55	4.9
Procedures	0.075	88.69	6.6
Pathology	0.061	30.32	1.8
Imaging	0.017	138.17	2.3
Total MBS (less dental + optometry)			**71.8**

(a) The average benefit for services has been calculated from MBS data for 2001–02.

Sources: AIHW—GPSCU BEACH data; AIHW & Britt et al. 2003; AIHW & GPSCU 2004a; DoHA 2004a; Deeble et al. 1998; DoHA unpublished data.

During 2001–02, Medicare benefits for optometry and dental services amounted to $179.7 million. Benefits for optometry services constituted the bulk of this expenditure—$171.9 (95.7%). There was no national data concerning Indigenous use of these services.

As in the 1998–99 report, the proportion of optometry benefits attributed to Aboriginal and Torres Strait Islander peoples was assumed to be the same as that for PBS benefits—0.83%. Use of these services were assumed to be low for Aboriginal and Torres Strait Islander people, given the potential costs of any associated optometrical devices.

PBS benefits

The estimation of PBS benefits to Aboriginal and Torres Strait Islander people was also largely made on the basis of BEACH data.

The BEACH survey collects information on prescriptions written but not on those dispensed. Not all prescriptions are dispensed, and of those that are dispensed a significant proportion are repeats of prescriptions written some time before. There are no Australian data on dispensing rates per se but it is possible to make some estimates. Also required, is information on the scripts that generate a benefit under the PBS. The available information on these issues is discussed below.

The special survey undertaken for the 1995–96 report collected information on dispensing rates for Indigenous Australians. The number of prescription items recorded as dispensed (GP and specialist) was 77 per 100 GP consultations, or 71.4% of those reported by the survey GPs as being ordered on original scripts. That proportion was applied to the BEACH prescribing data in the 1998–99 report to estimate the number of items dispensed in that year. It has been applied again in this report.

Two small-area surveys during 2003 and 2004 in the Darwin and Northern Adelaide health zones collected data on dispensing which, though geographically limited, were structurally very similar to the special surveys undertaken for the 1995–96 report. While clearly

insufficient to establish a national rate, the data provide confirmation of the dispensing rate being used in this and the previous report.

A sample survey of pharmacies conducted annually by the Pharmacy Guild includes information on total dispensing volumes. The data for 2001 indicate that of the scripts dispensed by pharmacies, 6.8% were not listed on the PBS or RPBS (DHA 2004a). Such scripts are available only on private prescription, which means that the patient pays the full cost for the item. The special survey for the 1995–96 report indicated, however, that the PBS covered 97% of items dispensed by private pharmacies to Aboriginal and Torres Strait Islander people. This latter proportion has been applied in calculations for this report.

PBS statistics show that in 2001–02, benefits were paid for 155.0 million items. Of these items 139.6 million (90.1%) were ordered by GPs and the remaining 15.3 million by specialists.

The calculations to estimate PBS services for GP ordered items for Aboriginal and Torres Strait Islander people included the following steps:

- BEACH data provide us with an estimate of the number of items prescribed. These are adjusted to remove from our count of prescribed items any that would be ineligible for benefits—such as encounters paid through workers compensation or hospitals;
- An adjustment is then made to exclude scripts not covered by the PBS (as discussed above);
- The data are then expanded to a national estimate, using the expansion factor determined for the MBS analysis;
- Finally, an adjustment for dispensing patterns of Aboriginal and Torres Strait Islander people (as discussed above) allows an estimate of the total number of PBS items for Indigenous Australians.

Information from the special survey for the 1995–96 report suggested that scripts dispensed for Indigenous Australians fell into the following categories: 80% were for concessional patients, 12% general patients and 8% had reached safety net provisions. Using these data, a weighted average benefit for PBS items for Indigenous people was calculated from PBS statistics. At $24.42, this average cost is marginally lower that the national average cost ($24.95). Simple extrapolation of these data allows for an estimate of total PBS benefits for GP ordered pharmaceuticals (Table A3.6).

Table A3.6: Estimated services and benefits through PBS for Aboriginal and Torres Strait Islander people, 2001–02

	Items (million)	Average benefit ($)	Total estimated benefits ($ million)
GP ordered	0.795	24.42	19.4
Specialist ordered	0.073	43.12	3.1
Doctor's bag	0.005	22.33	0.1
Drugs dispensed under Section 100			
Remote area AHS	0.698	n.a.	10.9
Other Section 100 drugs	n.a.	n.a.	0.7
Total PBS			**34.3**

Sources: AIHW—GPSCU BEACH data; AIHW & Britt et al. 2003; AIHW & GPSCU 2004a; DoHA 2004a; Deeble et al. 1998; DoHA unpublished data.

No information was available on specialist ordered items for Aboriginal and Torres Strait Islander people. So, wit was again assumed that they would be similar to the rate of privately-referred Indigenous patients and the cost of these items were allocated accordingly.

The $9.8 million in benefits for doctor's bag items were attributed on the basis of the estimated proportions of Indigenous clients of GPs and private specialists—1.2% of GP doctor's bag benefits and 0.4% of specialist doctor's bag were attributed to Aboriginal and Torres Strait Islander patients.

After the 1998–99 report, special provisions have were introduced under Section 100 of the national Pharmaceutical Act for Indigenous Australians in remote areas where access to private pharmacies was poor (refer Box A3.1). Clients of approved remote area Aboriginal Health Services (AHS) were able to receive PBS medicines directly from the AHS at the time of medical consultation, without the need for a normal prescription form, and without charge. DoHA data show that about 775,000 items were dispensed in 2001–02 for benefits of $12.1 million. The Service Activity Reports of Aboriginal Community Controlled Health Services indicate that around 10% of the services in remote and very remote areas were accessed by non-Indigenous people. Accordingly, a small proportion of the benefits for these items was attributed to non-Indigenous people.

In total, PBS benefits of $34.3 million were estimated to have been for items for Aboriginal and Torres Strait Islander people.

Box A3.1: Special arrangements through MBS and PBS for improving access by Indigenous Australians

Section 19(2) arrangements

Special arrangements were put in place in 1996 under section 19(2) of the Health Insurance Act 1973 allowing most Aboriginal Community Controlled Health Services (ACCHS) and some remote Aboriginal Health Services in Queensland and the Northern Territory to claim Medicare benefits for primary health care services (HIC 2004).

Figures for 2001–02 indicate that 398,358 services were provided under Section 19(2) to ACCHS, at a cost of $12.0 million. A further 247,731 referred services from ACCHS, contributing $7.2 million in benefits, were also paid through the Section 19(2) exemption (DoHA unpublished data). In addition, state funded remote clinics received Medicare payments of $2.4 million, covering 78,000 services (DoHA 2004a).

Section 100 arrangements

Special arrangements were introduced in 1999 for the supply of PBS medicines to clients of remote area Aboriginal Health Services (AHSs), under the provisions of section 100 of the National Health Act 1953. The objective was to overcome geographic, cultural and financial barriers to Indigenous Australians accessing medicines under the Pharmaceutical Benefits Scheme (PBS),

[Section 100 of the Act allows the Minister to make special arrangements for supplying PBS benefits to people in isolated areas, or where the normal pharmacy-centred supply chain does not work conveniently or efficiently.]

Under the arrangements, clients of approved remote area AHSs are able to receive PBS medicines directly from the AHS at the time of medical consultation, without the need for a normal prescription form, and without charge. Participating AHSs order the required PBS pharmaceuticals from community pharmacies, which transmit claims to the Health Insurance Commission for reimbursement.

These arrangements were restricted to remote areas because of the extra difficulties that Aboriginal and Torres Strait Islander people in those areas have in accessing basic health services due to either or both:

- *their distance from established centres of population; and*
- *service demands that exceed the resources, structures and personnel required to meet their needs.*

Remote health services operated by the States and Territories are also able to participate, conditional on commitments by State/Territory governments to maintain current outlays on health care services for Aboriginal and Torres Strait Islander peoples.

Clients of over 150 remote area AHSs benefited from improved PBS access through these arrangements. There were 775,212 prescriptions ordered through this program during 2001–02, and expenditure for the financial year 2001–02 was $13.2 million, including GST.

Comparability with previous estimates

Some major methodological changes were made in preparing estimates for this report compared with those for the 1998–99 report. These alterations to the method limit the ability to directly compare estimates produced for the previous report with those produced in this report.

The major changes to the methodology used in this report were in:

- the treatment of non-response to the BEACH survey questions about Indigenous status;
- an adjustment for under-identification of Aboriginal and Torres Strait Islander people in the BEACH survey; and
- the application of the BEACH sample weights.

The BEACH sample weights draw on differences between the GP sample obtained for the BEACH survey and Medicare data. They assist in drawing comparisons between the BEACH sample and the overall population. In the preliminary analyses of data for 2001–02, the application of sample weights had the effect of reducing the sample of Indigenous encounters by 21% and the proportion of Indigenous encounters from 1.3% to 1.0%. This suggests that there may have been some over-sampling of GPs in practices treating larger numbers of Aboriginal and Torres Strait Islander people. Advice obtained from the BEACH data custodians supported the application of sample weights to BEACH data for the purposes of this analysis.

The effect of not applying BEACH sample weights in the 1998–99 report would be to artificially boost the number of Indigenous encounters, which acted as a de facto upwards adjustment for under-identification. The redistribution of non-responses also inflated the estimated number of services for Indigenous Australians in 1998–99. The revised estimate of benefits for GP services in 1998–99, produced following the application of sample weights and a 24% under-identification factor, results in a similar estimate to that reported in the 1998–99 report—$29.5 million as opposed to $28.7 million (Table A3.7).

Table A3.7: Estimated MBS benefits for GP services, reported and revised results, 1998–99 and 2001–02

	Services (million)	Average benefit ($)	Total ($ million)	% all benefits
Reported 1998–99 GP services[(a)]	1.236	23.20	28.7	1.22
Revised estimate 1998–99 GP services	1.270	23.20	29.5	1.25
2001–02 GP services	1.239	27.44	34.0	1.24

(a) AIHW 2001.

Sources: AIHW analysis of AIHW—GPSCU BEACH data; AIHW & Britt et al. 2003; AIHW & GPSCU 2004a; DoHA 2004a; Deeble et al. 1998; DoHA unpublished data.

Other medical services

Some medical services expenditure occurred through programs, such as alternative funding for general practice services, primary care strategies and trials of coordinated care. These expenditures were distributed according to the Indigenous proportion of the total Australian population.

Community health

Per person expenditure by the Health and Ageing portfolio on community health programs for Aboriginal and Torres Strait Islander people was significantly greater than expenditure for non-Indigenous community health programs. This difference was largely attributable to expenditure on Aboriginal Community Controlled Health Services (ACCHS).

Aboriginal Community Controlled Health Services

The bulk of OATSIH funding was directed towards ACCHSs (sometimes referred to as Aboriginal Medical Services or Aboriginal Health Services), which were health services planned and governed by local Aboriginal communities. The ACCHSs deliver holistic and culturally appropriate health and health-related services to Aboriginal and Torres Strait

Islander people, with funding provided by state and territory governments and the Australian Government.

ACCHSs offered a wide range of services, including:

- general and specialist health services;
- eye health, hearing, substance use, mental health, remote health and sexual health services;
- services fostering emotional and social well-being; and
- transport.

These services often fulfilled a social role—for example, by acting as community centres (Keys Young 1997). Many such functions are important social determinants of health, but some are considered to be primarily serving 'welfare', 'community development' or other objectives. For the purposes of this report, these non-health functions were excluded from the estimates of health expenditure in this chapter and are reported on in Chapter 8, which covers expenditures on health-related services.

Programs administered by OATSIH, including ACCHS, accounted for $188.6 million of the expenditure on Aboriginal and Torres Strait Islander people. Of this, $22.4 million was spent on administration.

As outlined above, ACCHS provide a mixture of services, including some not generally classified as health services. It was estimated that 92.3% of the total expenditure on ACCHS was associated with providing health services. The remaining expenditure has been included in health-related expenditures reported in Chapter 8. These estimates result from an analysis of the professions, services provided by these professions, and salary costs associated with each profession at ACCHS throughout Australia (refer to Appendix 8 for details of the method). Use of ACCHSs by non-Indigenous people represents an estimated 10.9% of total expenditure on ACCHS.

Patient transport

The Health and Ageing portfolio contribution to patient transport is mostly through its provision of a $20 million grant in aid to the Royal Flying Doctor Service (RFDS). It was estimated that 46.5% of the patients managed by the service were Aboriginal and Torres Strait Islander people.

Dental

During 2001–02, Medicare benefits for dental services amounted to $7.7 million. As with other Medicare paid services, the proportion of this expenditure attributed to services for Aboriginal and Torres Strait Islander people was assumed to be low. The Indigenous share was estimated at 0.83% of total expenditure.

Other health professionals

During 2001–02, Medicare benefits for optometry services amounted to $171.9 million. Indigenous access to these services was assumed to be low, given the costs associated with optometry devices. As in the 1998–99 report, the results of the analysis for pharmaceutical benefits were applied, giving an Indigenous share of 0.83%.

Expenditure on audiology services managed by Australian Hearing was also included under Other health professionals. Over $161 million was spent on these audiology services in 2001–02. Expenditure on Indigenous Australians was estimated to be in proportion to their share of the total Australian population.

Australian Hearing also provided hearing services for eligible Indigenous Australians through the Australian Hearing Services Program for Indigenous Australians. Expenditure from this Indigenous-specific program was also included in the estimates of Indigenous-specific program expenditure.

Public health

For the majority of core public health activities where specific Indigenous expenditure was able to be identified, that data has been used to inform the Indigenous proportion of expenditure. For the remaining activities due to limited data on service utilisation, Indigenous expenditures incurred through some activities were estimated on a population basis. For instance, for the breast cancer screening and cervical screening programs, Australian Government expenditure on Aboriginal and Torres Strait Islander people was estimated using the Indigenous proportion of the female population within the target age group for these programs. This is not entirely unreasonable, given the findings of the ABS 2001 National Health Survey in which women were asked whether they had regular pap smear tests and mammograms. The application of these data is limited, however the response rates for Indigenous and non-Indigenous women were somewhat similar in each case. In the case of estimating organised immunisation expenditure, identified Indigenous specific expenditure on vaccines was added to an estimated expenditure based on GP attendances of Indigenous children aged seven years and younger.

Health research

National Health and Medical Research Council grants for research into Aboriginal and Torres Strait Islander health were estimated at $5.0 million in 2001–02. Part of these targeted expenditures ($2.4 million) was been included under the public health category as they related to research into public health issues.

Estimating health expenditure by DVA

Informal advice received during the course of the second Indigenous health expenditure report (AIHW 2001) was to the effect that Aboriginal and Torres Strait Islander veterans comprise a very small proportion of Australia's surviving veterans. It was advised that around one percent of the veteran community are thought to be Aboriginal and Torres Strait Islander people.

In order to estimate Australia's total health expenditure for Aboriginal and Torres Strait Islander people some approximation of DVA expenditure on Indigenous Australians was required. For each major area of expenditure we have applied the proportion of expenditure on Indigenous Australians calculated for expenditure by the Health and Ageing Portfolio. This was then deflated to take into account the estimate of Indigenous veterans.

Australian Government funding through private health insurance incentives payments

In July 1997 the Australian Government introduced the first of its incentive payments to people who took out or maintained membership in private health insurance funds. The private health insurance incentives subsidy (PHIIS) was a means-tested subsidy aimed at assisting low-to-middle income earners obtain and keep private health insurance cover.

The PHIIS was replaced, in January 1999, by a 30% rebate of premiums, which is available to all Australians, irrespective of means, who take out and/or maintain private health insurance cover.

Both the PHIIS and the rebate of premiums have been included as funding by the Australian Government.

In July 2001, in addition to the premium rebate, the Australian Government brought into effect legislation that penalised individuals and families who failed to obtain private health insurance cover before they reached 30 years of age. Lifetime health insurance cover, introduced a penalty of 2% of the premium for each year by which a member's age exceeded 30 at the time he or she obtained private health insurance cover. In other words, if a person was 35 years of age at the time of taking out health insurance cover, he or she would pay a premium that was effectively 10% greater than would be paid by a person aged 30 or less who obtained a similar level of cover.

The combined effect of including the 30% premium as Australian Government funding and the increased outlays by private health insurance funds resulting from the greater coverage following lifetime cover caused a substantial increase in funding by the Australian Government in 2001–02 (Table A3.8).

Of the 21.5% real increase in the Australian Government's estimated funding for acute-care hospitals, from $290.6 million in 1998–99 (at 2001–02 prices) to $352.9 million in 2001–02 (Appendix Table A9.10), $2.1 million (3.4%) was due to the allocation of the private health insurance incentives payments.

Table A3.8: Estimated health funding by the Australian Government for Indigenous Australians, through the private health insurance incentives payments, 1998–99 and 2001–02, constant prices[(a)], Australia

Health goods and services type	Funding ($ million) 1998–99	Funding ($ million) 2001–02	Average annual real change (%)
Acute-care hospitals	3.068	5.138	18.8
Public hospitals	0.298	0.510	19.6
Private hospitals	2.770	4.629	18.7
Medical services	0.276	0.812	43.3
Dental services	0.639	1.285	26.2
Other professional services	0.253	0.570	31.0
Community health services	—	—	11.0
Pharmaceuticals	0.034	0.086	36.3
Patient transport	0.121	0.257	28.5
Other (nec)	0.757	1.525	26.3
Total expenditure	**5.149**	**9.674**	**23.4**

(a) Constant price estimates for 1995–96 and 1998–99 have been calculated by applying specific implicit price deflators derived from the AIHW's Health expenditure database to the reported estimates of expenditure (at current prices) for the individual areas of expenditure.

Source: AIHW Health expenditure database.

Appendix 4 Health services for older Aboriginal and Torres Strait Islander people—some issues

In 2001–02, Australian Government recurrent expenditure on high-level residential care subsidy was estimated at $3,385.3 million. Of this, $28.3 million related to Aboriginal and Torres Strait Islander residents (see Table A4.1). This included specifically targeted funding for Aboriginal and Torres Strait Islander Flexible Care Services, which operated mainly in regional and remote areas. A small percentage of the recipients of these Flexible Care Services may have been non-Indigenous people (for example, non-Indigenous spouses of Indigenous people). Flexible Care Services serviced almost 20% of all Indigenous aged care clients and provide a range of high-level, low-level residential care and aged care packages. Of the total funding of $9.0 million for Flexible Care Services in 2001–02, an estimated $5.5 million or 61.5% related to high-level care places. In Victoria, the Australian Capital Territory and Western Australia there were no Flexible Care Service expenditure allocated to high-level care places.

Table A4.1: Australians Government recurrent health funding for high care in residential aged care homes[(a)], 2001–02

	Indigenous		Non-Indigenous	
State/territory	**($ million)**	**Per cent total**	**($ million)**	**Per cent total**
New South Wales	5.5	0.4	1,239.9	99.6
Victoria	0.7	0.1	817.0	99.9
Queensland	6.0	1.0	585.1	99.0
Western Australia	5.7	2.2	250.5	97.8
South Australia	2.8	0.9	328.8	99.2
Tasmania	0.3	0.3	95.5	99.7
Aust. Capital Territory	0.1	0.3	34.8	99.7
Northern Territory	7.2	56.4	5.5	43.6
Australia[(b)]	**28.3**	**0.8**	**3,357.1**	**99.2**

(a) Relates to the 'health component' of residential aged care, residents in RCS levels 1–4.

(b) Includes an estimated $5.5 million funding for Flexible Care Services on high-level care places.

Source: AIHW analysis of DoHA unpublished residential care data.

There were 111,451 residents in aged care facilities needing and receiving high-level care during 2001–02 (Table A4.2). Australia wide, Aboriginal and Torres Strait Islander people made up an estimated 0.7% (780) of these residents. The proportion of residents in receipt of high-level care who were Indigenous varied greatly by jurisdiction—from 53.3% in the Northern Territory to 0.1% in Victoria.

Table A4.2: Residents receiving high-level care in residential aged care facilities[(a)], by State, 2001-02

State	Aboriginal and Torres Strait Islander people		Non-Indigenous people	
	Number of residents	Per cent total	Number of residents	Per cent total
New South Wales	174	0.4	41,432	99.6
Victoria	18	0.1	25,298	99.9
Queensland	166	0.8	20,528	99.2
Western Australia	183	2.3	7,899	97.7
South Australia	16	0.1	10,989	99.9
Tasmania	8	0.3	3,159	99.7
Australian Capital Territory	3	0.3	1,181	99.7
Northern Territory	211	53.3	185	46.7
Australia	**780**	**0.7**	**110,671**	**99.3**

(a) Relates to the 'health component' of residential aged care, residents in RCS levels 1–4.

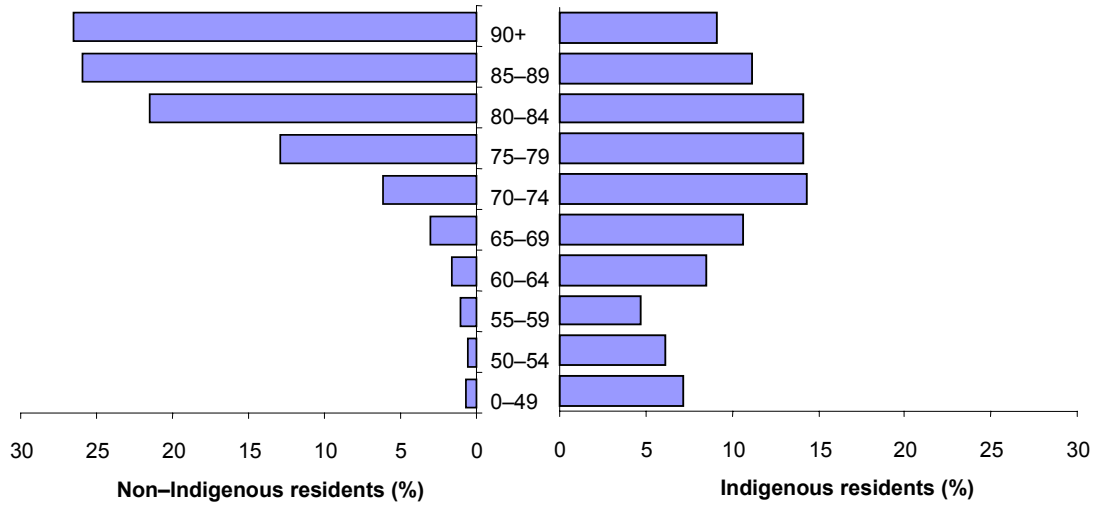
Note: Utilisation of Flexible Care Services has not been included.

Source: AIHW analysis of DoHA unpublished ACCMIS data.

The Australian Indigenous community has higher fertility and mortality rates than the rest of the Australian population. This has led to an age structure for Indigenous Australians in 2001–02 that was very different from that of the broader community. The Aboriginal and Torres Strait Islander population was, on average, much younger than the non-Indigenous population and this, in the absence of any other factors affecting demand, would tend to suggest a lower use of services for older people care when averaged across the whole Indigenous population. On the other hand, the generally poorer health status of Indigenous people at all ages increases the demand for these types of services at younger ages (Figure A4.1).

The implications of the different Indigenous needs are recognised in the Aged Care Act 1997, which uses 50 plus years in planning services for older Aboriginal and Torres Strait Islander people and 70 plus years for non-Indigenous people. These aged based planning criteria do not exclude people below these ages from accessing these types of services if an Aged Care Assessment Team determines that such services are the best means of meeting their care needs.

The combination of a much lower life expectancy and relatively poorer health status for Indigenous Australians results in an age structure of Indigenous residents in residential care facilities that is less skewed than that of non-indigenous residents—with a greater proportion of younger Indigenous people using such services. Well over half the non-Indigenous residents were aged 85 years and over, whereas less than a quarter of Indigenous residents were in those age groups. On the other hand, more than a quarter (26.5%) of the Indigenous residents were aged less than 65 years, compared with 3.9% of non-Indigenous residents.



(a) Relates to the 'health component' of residential aged care, residents in RCS levels 1–4.

Note: Utilisation of Flexible Care Services has not been included, as demographic information about these residents is not known.

Source: AIHW analysis of DHAC unpublished residential care data.

Figure A4.1: High-care residential aged care[(a)] utilisation, age profiles of Aboriginal and Torres Strait Islander and non-Indigenous persons, Australia, 2001-02 (%)

Indigenous users of high-level residential care were a greater share of the total population sub-group than were non-Indigenous users for every population sub-group (Table A4.3). For example, 21.6 per 1,000 Indigenous people aged 65–74 receive high-level residential aged care, compared with 7.8 per 1,000 for non Indigenous people.

Because of the older age-structure of the non-Indigenous population, their utilisation rate of 5.8 residents per 1,000 population was higher than that for the Indigenous population of 1.7 per 1,000.

Table A4.3: Rates of usage of high-care residential aged care[(a)] by Aboriginal and Torres Strait Islander people and non-Indigenous Australians, by age group, 2001-02

	Rate per 1,000 population		
Age group	**Indigenous**	**Non-Indigenous**	**Ratio**
1–49	0.16	0.08	1.99
50–64	1.64	0.88	1.87
65–74	21.62	7.79	2.77
75+	90.28	86.03	1.05
All ages	**1.72**	**5.83**	**0.29**

(a) Relates to the 'health component' of residential aged care, residents in RCS levels 1–4.

Note: Utilisation of Flexible Care Services has not been included.

Sources: Residential care population—ACCMIS data from DoHA; ABS 2003c.

The lower utilisation by Indigenous Australians (1.72 per 1,000 as opposed to 5.83) is reflected in the lower per person expenditure on high-level residential care facilities compared with non-Indigenous people.

The per person health component of Australian Government expenditure for Indigenous Australians has been analysed both with expenditure on Flexible Care Services ($5.5 million) included, and excluded. The difference that the inclusion of expenditure on Flexible Care Services made in some jurisdictions was marked. For example, in South Australia average per person expenditure increased from $17.24 to $110.41 by the inclusion of the Flexible Care Service expenditure. Naturally, the per person expenditure for Aboriginal and Torres Strait Islander people was increased by the inclusion of Flexible Care Services from $49.56 per person to an average of $61.65 per person.

The ratio of 3.12:1 for the Northern Territory was indicative of the different population structure in the Territory. The Territory had a higher concentration of Aboriginal and Torres Strait Islander people in its population and a younger age structure for the non-Indigenous population. All other States showed a low ratio of expenditure on high-level residential aged care for Aboriginal and Torres Strait Islander people relative to non-Indigenous people.

The Indigenous to non-Indigenous expenditure ratio of for residential care (0.34:1) is greater than the usage ratio of 0.29:1 (Table A4.3). This suggests that Indigenous residents had more complex care needs than did their non-Indigenous counterparts.

Table A4.4: Commonwealth recurrent health funding for high-level care in residential aged care facilities[(a)], per person 2001–02

	Indigenous ($)				
State	Residential aged care subsidy	Flexible Care Services	Total	Non-Indigenous ($)	Ratio
New South Wales	39.01	1.44	40.44	192.52	0.21
Victoria	25.05	—	25.05	171.02	0.15
Queensland	40.65	6.78	47.43	167.02	0.28
Western Australia	86.83	—	86.83	136.49	0.64
South Australia	17.24	93.18	110.41	221.24	0.50
Tasmania	16.89	2.21	19.10	210.16	0.09
Australian Capital Territory	23.22	—	23.22	110.40	0.21
Northern Territory	89.66	36.47	126.12	39.33	3.21
Australia	**49.56**	**12.08**	**61.65**	**177.11**	**0.35**

(a) Relates to the 'health component' of residential aged care, residents in RCS levels 1–4.

Source: AIHW analysis of Department of Health and Aged Care unpublished residential care data.

Appendix 5 Hospital costing method

Introduction

Estimated expenditure on hospital services was the largest health expenditure area for both Indigenous (47.5%, $849.5 million) and non-Indigenous people (34.2%, 21,456.9 million). This Appendix provides some background on hospital separations for Indigenous and non-Indigenous people in 2001–02 and outlines aspects of the methodology used to calculate the expenditure estimates. Four areas are described:

- Hospitalisations of Indigenous and non-Indigenous people;
- Under-identification of Indigenous people in hospital data and recent studies;
- Admitted patient costing methodology; and
- Non-admitted emergency department investigation.

Hospitalisation

Hospitalisation was more common for Aboriginal and Torres Strait Islander people than for the rest of the population. Hospital admissions generally represented a stage of illness that had progressed to a point where acute medical intervention was required to treat the disease process or injury. For Aboriginal and Torres Strait Islander people this was the case.

In 2001–02, Indigenous hospital separations accounted for 191,071 or 3.0% of total separations (Table A5.1). The majority of these (97.2%) were from public hospitals. Reported separations from private hospitals for Indigenous Australians represented only 0.2% of total private hospital separations. However, the low quality in the reporting of Indigenous status in some jurisdictions caution needs to be exercised (AIHW 2003a). In Tasmania, for example, for two-thirds of the separations from private hospitals Indigenous status was not reported.

Overall, on an age-standardised basis, there were 579 separations per 1,000 Indigenous persons, compared to a rate for the non-Indigenous population of 323 per 1,000 (Table A5.1). This indicates that in 2001–02, Aboriginal and Torres Strait Islander people experienced a rate of hospitalisation almost twice that of the non-Indigenous population (AIHW 2003a).

The Northern Territory reported the highest number of separations per 1,000 Indigenous population (999 per 1,000), followed by Western Australia (764 per 1,000). This indicates that the separation rate for Indigenous people in the Northern Territory was over four times that of non-Indigenous people.

Table A5.1: Reported Indigenous and non-Indigenous separations by hospital sector, states and territories, 2001–02

Indigenous status	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number of separations, public hospitals				
Indigenous	34,713	8,013	53,161	34,629	12,656	1,525	1,361	39,644	185,702
Non-Indigenous	1,224,276	1,081,851	630,006	318,130	340,374	73,030	58,428	23,572	3,749,667
Not reported	4,728	—	11,554	—	9,304	4,932	2,156	266	32,940
Total	**1,263,717**	**1,089,864**	**694,721**	**352,759**	**362,334**	**79,487**	**61,945**	**63,482**	**3,968,309**
					Per cent of separations				
Indigenous	2.7	0.7	7.7	9.8	3.5	1.9	2.2	62.4	4.7
Non-Indigenous	96.9	99.3	90.7	90.2	93.9	91.9	94.3	37.1	94.5
Not reported	0.4	—	1.7	—	2.6	6.2	3.5	0.4	0.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
					Number of separations, private hospitals				
Indigenous	468	383	1,374	2,739	212	145	48	. .	5,369
Non-Indigenous	691,236	579,453	462,031	262,393	192,357	23,151	25,558	. .	2,236,179
Not reported	838	—	129,669	—	5,201	47,353	1,580	. .	184,641
Total	**692,542**	**579,836**	**593,074**	**265,132**	**197,770**	**70,649**	**27,186**	**. .**	**2,426,189**
					Per cent of separations, private hospitals				
Indigenous	0.1	0.1	0.2	1.0	0.1	0.2	0.2	. .	0.2
Non-Indigenous	99.8	99.9	77.9	99.0	97.3	32.8	94.0	. .	92.2
Not reported	0.1	—	21.9	—	2.6	67.0	5.8	. .	7.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**. .**	**100.0**
					Number of separations, all hospitals				
Indigenous	35,181	8,396	54,535	37,368	12,868	1,670	1,409	39,644	191,071
Non-Indigenous	1,915,512	1,661,304	1,092,037	580,523	532,731	96,181	83,986	23,572	5,985,846
Not reported	5,566	—	141,223	—	14,505	52,285	3,736	266	217,581
Total	**1,956,259**	**1,669,700**	**1,287,795**	**617,891**	**560,104**	**150,136**	**89,131**	**63,482**	**6,394,498**
					Per cent of separations, all hospitals				
Indigenous	1.8	0.5	4.2	6.0	2.3	1.1	1.6	62.4	3.0
Non-Indigenous	97.9	99.5	84.8	94.0	95.1	64.1	94.2	37.1	93.6
Not reported	0.3	—	11.0	—	2.6	34.8	4.2	0.4	3.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
					Separation rate[(a)] per 1,000				
Indigenous people	354.7	410.4	620.8	763.7	699.3	124.6	747.1	999.0	579.0
Non-Indigenous people	290.5	340.3	351.8	326.0	348.5	315.7	308.1	224.8	322.5
All people	291.5	340.6	358.0	337.1	352.7	310.3	310.3	394.3	326.7
Rate ratio(b)	1.2	1.2	1.8	2.3	2.0	0.4	2.4	4.4	1.8

(a) Rates are directly age-standardised to the Australian population at 30 June 2001 and separation rate for non-Indigenous includes Not reported.

(b) The rate ratio is equal to the separation rate for Indigenous persons divided by the separation rate for non-Indigenous persons (which includes Not reported).

Source: AIHW 2003a.

These estimates were influenced by the quality of the data on Indigenous status, and in many jurisdictions the proportion of Indigenous separations is likely to be understated. Under-identification rates can be influenced by variation among the jurisdictions in the health status of Indigenous persons and in their access to hospital services.

In order to better understand the quantum of expenditure on admitted patient services for Aboriginal and Torres Strait Islander people, jurisdictions provided estimates of the level of possible under-identification in hospital records. The results of the application of these under-identification estimates to hospital separations are displayed below (Table A5.2).

Table A5.2: Estimated Indigenous and non-Indigenous separations by hospital sector, adjusted for under-identification of Aboriginal and Torres Strait Islander people, states and territories, 2001–02

Indigenous status	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Estimated under-identification (%)	30	25	20	6	0[(a)]	0[(a)]	30	0[(a)]	n.a.
Adjusted number of separations, public hospitals									
Indigenous	46,062	10,495	65,442	39,610	13,207	2,550	1,832	39,817	219,015
Non-Indigenous	1,907,285	1,659,202	1,222,352	584,901	546,857	147,586	87,299	23,674	6,179,156
Total	**1,953,347**	**1,669,697**	**1,287,794**	**624,511**	**560,064**	**150,136**	**89,131**	**63,491**	**6,398,171**
Per cent of separations									
Indigenous	2.4	0.6	5.1	6.3	2.4	1.7	2.1	62.7	3.4
Non-Indigenous	97.6	99.4	94.9	93.7	97.6	98.3	97.9	37.3	96.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Population proportion									
Indigenous	2.1	0.6	3.5	3.5	1.7	3.7	1.2	28.8	2.4
Non-Indigenous	97.9	99.4	96.5	96.5	98.3	96.3	98.8	71.2	97.6

(a) For South Australia, Tasmania and the Northern Territory, Non-responses have been redistributed in proportion to the identified separations.

Source: AIHW analysis of National Hospital Morbidity Database.

Under-identification of Aboriginal and Torres Strait Islander people in admitted patient data

Collection of information on the Indigenous status of hospital patients is, a typical part of the admission process in public hospitals. However, in both previous reports, adjustments were necessary to correct for under-enumeration of Aboriginal and Torres Strait Islander people, and advice from states and territories was to the affect that such adjustments were necessary part of the 2001–02 estimates.

Reported hospital separation data

A combination of factors was considered when determining the adjustments that should be made for Indigenous under-identification. These included the available studies of identification, adjustments applied in the two previous reports and current data covering hospital separations.

In 2001–02, there were 185,702 Indigenous separations from public hospitals reported. This represented 4.7% of all public hospital separations (see Table A5.1). Indigenous separations reported for private hospitals were minimal.

In an attempt to understand the under-enumeration of Aboriginal and Torres Strait Islander people, the reported information on public hospital separations was closely analysed. Reported hospital separations for Aboriginal and Torres Strait Islander people over the last seven years were examined for each jurisdiction (Table A5.3 and Figure A5.1). This showed that:

- In every state and territory, the ratio of reported Indigenous to non-Indigenous separation rates increased between 1995–96 and 2001–02.
- Large changes in Tasmania and the Australian Capital Territory reflect the relatively poor and variable rate of Aboriginal and Torres Strait Islander identification in hospital separations.
- Tasmanian identification of Aboriginal and Torres Strait Islander patients remains poor.

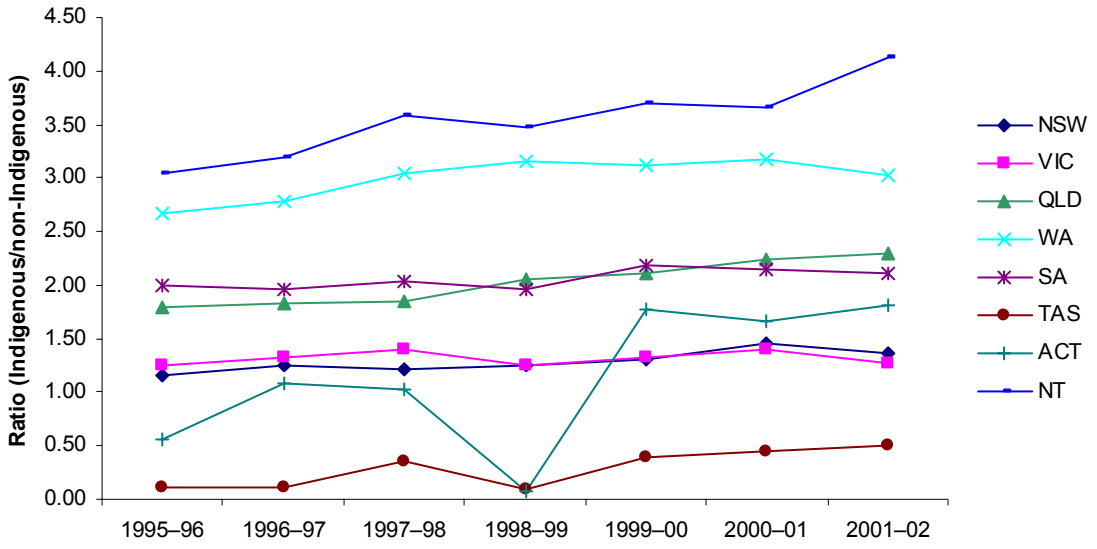
Table A5.3: Ratio of Indigenous to non-Indigenous reported separations per 1,000 population, public (non-psychiatric) hospitals, by state and territory, 1995–96 to 2001–02

Year	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Aust
1995–96	1.15	1.25	1.80	2.66	2.00	0.11	0.56	3.05	1.72
1996–97	1.25	1.33	1.82	2.79	1.96	0.12	1.07	3.19	1.80
1997–98	1.21	1.40	1.85	3.04	2.04	0.35	1.03	3.58	1.87
1998–99	1.25	1.25	2.05	3.15	1.97	0.09	0.07	3.48	1.92
1999–00	1.31	1.33	2.11	3.12	2.19	0.39	1.77	3.69	2.01
2000–01	1.46	1.41	2.25	3.17	2.15	0.44	1.65	3.66	2.09
2001–02	1.36	1.27	2.30	3.03	2.10	0.51	1.81	4.12	2.03
% change: 1995–96/ 2001–02	18.3	1.6	27.8	13.9	5.0	363.6	223.2	35.1	18.0

(a) Non-ACT residents represent 22% of separations in the ACT. These patients are included in the numerator and will overstate the population rate.

Note: No age adjustments or under-identification adjustments have been made to these data. Not stated responses for Indigenous status are included with non-Indigenous responses.

Source: AIHW National Hospital Morbidity Database.



Note: Non-ACT residents represent 22% of separations in the ACT. These patients are included in the numerator and will overstate the population rate.

Source: AIHW National Hospital Morbidity Database.

Figure A5.1: Ratio of Indigenous to non-Indigenous reported separations per 1,000 population, public (non-psychiatric) hospitals, by state and territory, 1995–96 to 2001–02

In some jurisdictions these data clearly indicate an increase in the proportion of separations defined as Indigenous. However, it is not possible to determine whether this increase can be attributed to improved identification, or a change in hospital use by Aboriginal and Torres Strait Islander people and changing population demographics.

Investigations of reporting accuracy in hospital separation data

The 1998–99 report into health expenditure for Aboriginal and Torres Strait Islander people included detailed reviews of a number of studies on Indigenous identification that provided evidence to inform the levels of under-identification used in that report (see Chapter 4 & Appendix 6, AIHW 2001). These included:

- ABS & AIHW study on the quality of Indigenous identification in hospital data (ATSIHWIU 1999),
- Victorian Department of Human Services surveys of Aboriginal and Torres Strait Islander identification in high hospital users, and
- New South Wales Health Department patient linkage studies.

Further investigations into under-identification of Indigenous patients have occurred in some jurisdictions prior to this particular study. These have been reviewed in determining the appropriate level of under-identification in some jurisdictions.

These included:

- A study in Western Australia during 2000–01 involving face-to-face interviews with patients in 26 Western Australian public hospitals (Young 2001); and

- An analysis of the Victorian Admitted Episodes Dataset (VAED) involving estimation of the level of Indigenous under-identification within six hospital groups. In those hospitals with a Koori Hospital Liaison Officer (KHLO), an independent assessment of the number of Indigenous separations was made by the KHLO. In other hospitals, under-identification was estimated based on the type of catchment area for the hospitals and the target Indigenous population.

Although the results of these studies may not have been directly applied to this analysis, initial analyses for this report centred around their findings.

In other jurisdictions where adjustment factors were used, consideration was given to:

- reported usage rates relative to other jurisdictions,
- under-identification studies undertaken for the earlier reports, and
- adjustment factors used in the two previous Indigenous health expenditure reports.

In most jurisdictions it was concluded that identification had not improved since 1998–99. Or, in some cases, the adjustments applied in the 1998–99 report may have understated the rate of Indigenous under-identification at the time. Accordingly, for most jurisdictions, the same under-identification adjustments applied in the 1998–99 report were again applied in this report (Table A5.4).

For those states and territories where no under-identification adjustment was made, the not stated responses were distributed between Indigenous and non-Indigenous patients according to the proportion of identified responses.

Table A5.4: Estimated under-identification adjustments for admitted patient data

State/territory	1998–99 under-identification adjustment	2001–02 under-identification adjustment
New South Wales	1.30	1.30
Victoria	1.25	1.25
Queensland	1.20	1.20
Western Australia	1.06	1.06
South Australia	1.10	Nil
Tasmania	See note[(a)]	See note[(b)]
Australian Capital Territory	1.44	1.30
Northern Territory	Nil	Nil

(a) A 1997 survey of outpatient services was used in place of admitted patient data.

(b) The Tasmanian Department of Health and Human Services Aboriginal Health and Wellbeing Steering Committee advised that no under-identification adjustment be used.

Source: AIHW 2001.

Treatment of under-identification in Tasmania

For the second Indigenous health expenditure report, Tasmanian admitted patient data was regarded as very poor. In place of identified admitted patient data, information from a 1997 survey of outpatient services was used. According to that study, 7.1% of outpatient services were for Aboriginal and Torres Strait Islander people. There have been some concerns that this method was somewhat arbitrary, with the relationship between Indigenous use of outpatient and inpatient services not clearly established.

For the 2001–02 report, the quality of Indigenous identification in admitted hospital records was again considered very poor. ABS census data suggest that Indigenous Australians represent 3.7% of the state's population, yet identified Indigenous separations accounted for 1.9% of all separations from public hospitals in 2001–02.

Advice from Tasmania indicated that Indigenous identification was problematic due to such factors as poor procedures and systems, poor levels of self-identification due to stigma, and issues regarding Aboriginal identity in Tasmania. The Tasmanian Department of Health and Human Services Aboriginal Health and Wellbeing Steering Committee requested that hospital separations be used in an un-manipulated form, stating that this would provide a statistically valid baseline for continual improvement with which to address the disparity in health outcomes between Indigenous Australians and non-Indigenous people.

Redistribution of the 'non-stated' responses in line with the identified Indigenous and non-Indigenous hospital separations increased the Indigenous proportion of separations to 2.05%.

Admitted patient costing methodology

The first two reports on expenditures Aboriginal and Torres Strait Islander health services used a core methodology outlined in the first disease costing study for estimating admitted patient costs. The publication *Disease costing methodology used in the Disease Costs and Impact Study 1993–94* covers this in more detail (Mathers et al. 1998). The model is a variation on the casemix costing at the time that allowed for differences in length of stay.

AIHW's hospital costing method estimates the cost of every hospital separation. Acute hospital admitted patient costs are estimated by apportioning the total admitted patient expenditure per establishment (calculated by applying an estimated in-patient fraction or Ifrac to the total expenditure reported for that establishment) to individual episodes of hospitalisation. An adjustment was made for the resource intensity of treatment for the specific episode using the Diagnostic Related Groups (DRG) and the length of stay. Adjustment factors were applied to data from most jurisdictions to correct for under-identification of Aboriginal and Torres Strait Islander people.

DRG cost weights reflected the average cost of all episodes included in the DRG. The length of stay adjustment reflected that some costs were proportional to length of stay, whereas others were independent of length of stay (e.g. ward nursing care and meals versus theatre costs) (Table A5.5).

Table A5.5: Assumed variation of DRG cost components by length of stay within DRG

Assumption	Component
Independent of length of stay	Prostheses Emergency Departments Critical Care Operating Rooms Specialised Procedure Suits
Proportional to length of stay	Ward Medical Ward surgical Pathology Imaging Allied Health Pharmacy Medical and Surgical supplies On Costs Hotel Depreciation

Source: AIHW 2001.

For sub and non-acute patients, where there are no DRG weights, the most recent cost relativities was the July to December 1996 sub- and non-acute patient (SNAP) study (Eager et al. 1997). Estimates of overall sub- and non-acute costs from states and territories, derived in Table A3.9 of *Australian Hospital Statistics 2001–02* (AIHW 2003a), were combined with the SNAP study relativities to estimate per diem costs for sub and non-acute patients.

Changes to costing method for this study

Some modifications were made to the costing model used in the second report to incorporate the differences in costs between hospitals. From data held at the AIHW, the total cost per hospital was known, hence the model was able to incorporate differences between treatment costs in hospitals within a jurisdiction. This enabled more detailed cost relativities to be revealed. However, for this report, jurisdictions advised that establishments data do not accurately represent expenditure on admitted patient services. Accordingly, the total expenditure on admitted patient services, as reported by states and territories in data provided to AIHW, has been retained in this report. The final proportions (Indigenous/non-Indigenous) derived from the hospital costing model for public hospitals and public patients in private hospitals, were applied to this total reported expenditure on admitted patient services.

The differences between the reported expenditure on hospital services and the information contained in the hospital establishments data can largely be explained by differences in the scope of the two sets of data:

- The establishments data report on expenditures incurred by public hospital establishments within each state and territory. The establishments data for New South Wales hospitals, for example, include expenditure incurred in providing hospital services in New South Wales hospitals for residents of other states, particularly Queensland, the Australian Capital Territory and Victoria. Similarly, the establishments data for those other jurisdictions include expenditure incurred in providing hospital services for, among others, New South Wales residents.
- On the other hand, the data provided by state and territory departments to AIHW covers expenditures incurred in providing hospital treatment to people who reside in the state or territory concerned. For example, the acute-care expenditure data provided

by NSW Health, deducts the revenue flows received from other jurisdictions in respect of their residents treated in New South Wales establishments and adds the flows to other jurisdictions relating to New South Wales residents treated in those other jurisdictions.

Another substantial cause of difference between the two data sets is the way contracted services provided by private hospitals were treated. Some states advised that they had entered into contractual arrangements with some private hospitals for the provision of services to public patients. Expenditure under those arrangements was often incurred at a state-wide level and not apparent to any individual public hospital establishment. Therefore, the establishments data would not have included such expenditure, while the data provided by the state or territory health authority would have included it as expenditure on admitted patient services.

Cost loading for Indigenous separations

Studies have demonstrated that length of stay among Aboriginal and Torres Strait Islander peoples were often longer than that of non-Indigenous people (Fisher et al. 1998). Within each DRG category there were variations that were reflected in higher costs than the mean that was built into the standard costing (Beaver et al. 1998).

The second report substantiated these findings, it found that the average length of stay for Aboriginal and Torres Strait Islander people was longer than that of non-Indigenous people within the same DRG, yielding a higher cost per casemix-adjusted separation using the hospital morbidity costing methodology. The factors that contributed to this difference may have included hospital/regional variations and differences in levels of complexity (AIHW 2001).

The first report theorised that the difference in length of stay explained most of the cost differentiation between Indigenous and non-Indigenous patients in the same casemix categories (Deeble et al. 1998). However, there was some evidence available for the second report that higher costs were involved in treating Aboriginal and Torres Strait Islander people in the same DRG because of greater co-morbidities.

The National Aboriginal and Torres Strait Islander Casemix Study (Brewerton & Associates 1997) measured costs of Aboriginal and Torres Strait Islander and non-Indigenous patients in 10 hospitals in Northern Territory, Western Australia, northern Queensland and South Australia. It showed, after adjustment for casemix, a 5% higher cost for Aboriginal and Torres Strait Islander patients but this difference was not statistically significant.

Modelling work, just prior to the finalisation of the second report, using data from the New South Wales Trendstar hospitals, showed that, after adjustment for casemix, Aboriginal and Torres Strait Islander patients cost 9.4 to 9.5% more per separation. Of that higher cost, 2.4 to 2.6% was shown to be due to longer length of stay. The hospitals in that study were mostly larger hospitals and mostly metropolitan.

It was concluded that there was sufficient evidence to make an adjustment for higher cost intensity for Aboriginal and Torres Strait Islander patients. The New South Wales study showed that there was a higher cost, not related to length of stay, of 1.094/1.025 = 1.07, i.e. a 7% higher cost intensity per bed day (AIHW 2001). In the method followed in the second report, a more conservative cost loading adjustment of 5% was applied to Aboriginal and Torres Strait Islander separations.

Practices in the states and territories

Investigations for this report of practices in the jurisdictions exposed inconsistencies in the treatment of cost loading for Aboriginal and Torres Strait Islander patients; loadings ranged from 0–50%. Cost modelling for national expenditure estimates required a base with less variation.

Where available, information was obtained from jurisdictions on the evidence base for the application of the cost loading for Indigenous hospital separations:

- Victoria has applied a loading of 10% to the Weighted Inlier Equivalent Separation (WIES) payment for all inpatients identified by Victorian public hospitals as Aboriginal and/or Torres Strait Islander since January 1999. The initiative was introduced in response to the National Aboriginal and Torres Strait Islander Casemix Study (Fisher et al. 1998). A study of Victorian cost weight data from 2001–02 showed that the difference in average cost between Indigenous and non-Indigenous patients was less than 1%. The cost weight study was based on 42 hospitals (out of 113) but included 40% of all Indigenous separations. In general, the greater the number of Indigenous separations in the DRG, the less difference there was between average costs. Some DRGs with very few Indigenous inpatients showed great variations between average Indigenous and non-Indigenous costs.
- New South Wales apply a 10% cost loading. Their analysis revealed that Indigenous separations were 9.4% more expensive to treat overall. The significant contributions to this excess were greater pathology, wards and clinical department costs. Notably, the average length of stay for Aboriginal and Torres Strait Islander people was not significantly different to non-Indigenous people.
- In South Australia, a 30% loading for Indigenous hospital separations applies. This is made on the basis of evidence from one of the national casemix studies, possibly Fisher et al. 1998.

Patient Clinical complexity Levels (PCCLs)

The AIHW also undertook an examination of relevant information collected in the hospital morbidity data. This included examining Patient Clinical Complexity Levels (PCCLs)—a variable included in the Australian Refined–Diagnosis Related Groups Version 4.2 (AR-DRG) data covering 2001–02.

The new PCCL variable is assigned to each separation record. PCCLs can be used to gauge the 'severity' of a patient's condition at a more detailed level than through the use of DRGs alone. The PCCL is calculated from severity weights, called complication and comorbidity levels (CCLs), assigned for all additional diagnoses for each episode. CCLs range from zero to four for surgical and neonate episodes, and from zero to three for medical episodes. The CCL values were developed from a combination of medical judgement and statistical analysis (DHAC 1998).

A PCCL is an estimate (derived for each episode) of the cumulative effect of each of the CCLs for that episode of care (DHAC 1998). The PCCL values range from zero (no complication or comorbidity) to four (catastrophic complication or comorbidity), see Table A5.6 below.

Table A5.6: Patient clinical complexity level (PCCL) values and descriptions

PCCL level	Description
0	No complication or comorbidity
1	Minor complication or comorbidity
2	Moderate complication or comorbidity
3	Severe complication or comorbidity
4	Catastrophic complication or comorbidity

Source: DHAC 1998.

At a national level, an analysis of PCCLs was undertaken using the costing model and controlling for DRG and length of stay. This indicated that the average PCCL level was 19% higher for Aboriginal and Torres Strait Islander people over non-Indigenous people. It should be noted, however, that the PCCL distribution is different across DRGs and currently there are no price values for PCCLs. Accordingly, the ability to quantify this difference in price terms is not yet available.

Cost loading adjustment

Based on evidence from the state and territories, the AIHW's PCCL investigation and that from the previous studies, a cost loading factor was again applied to Aboriginal and Torres Strait Islander separations to adjust for greater comorbidity. A 5% adjustment was made, which is the same as the value applied in the second report. This enabled some comparability with the second report.

Non-admitted patient services

In the two previous studies into expenditures on health for Aboriginal and Torres Strait Islander people, accident and emergency services were not reported separately from other non-admitted patient services. In the lead up to this report, data development work was undertaken to improve estimates in the area of non-admitted patient services. It was agreed that a survey of emergency departments should be undertaken.

The data required for the survey covered Indigenous status and triage category of Emergency Department clients over a two week period. An estimate of the annual number of episodes for each hospital's emergency department had also been provided prior to the survey. These estimates, combined with hospital peer group information, enabled the development of a weight, which when applied to the data enabled an estimate of the annual distribution Indigenous and non-Indigenous clients in Emergency Departments (Table A5.7). These proportions have been applied to expenditure information on emergency department services where available.

Table A5.7: Emergency department services, Indigenous and non-Indigenous proportion of clients

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Indigenous	3.53	2.69	7.79	14.27	3.41	3.50	1.90	42.55
Non-Indigenous	96.47	97.31	92.21	85.73	96.59	96.50	98.10	57.45

Source: AIHW unpublished data.

National Minimum Data Set—Non-admitted patient emergency department care

The National Minimum Data Set (NMDS)—Non-admitted patient emergency department care commenced in July 2003 and comprises 15 variables including Indigenous status, triage category and area of usual residence. It is collected in selected public hospitals in peer groups A and B (Principal referral, specialist women's and children's, Metropolitan and Rural and Remote hospitals) as defined in *Australian Hospital Statistics* collection.

In the future the NMDS will be able to provide information about the continuing use of emergency departments by Indigenous people in the larger hospitals. However, given the scope of the collection, there will still be some data gaps concerning the use of emergency departments in smaller hospitals.

Appendix 6 Estimation methods for state and territory expenditures

State and territory data

The state and territories provided responses to questionnaires seeking estimates of expenditure for the financial year 2001–02. This appendix covers the methods used to derive the Indigenous proportions for those estimates; including some notes provided by jurisdictions that accompanied data returns. Wherever possible, the AIHW grouped the state and territory data into its major expenditure categories for reporting health expenditure (see Table A1.2). In some instances the estimates originally provided by the states and territories were adjusted following discussions with the relevant jurisdiction(s).

Expenditure estimates for admitted patient services in acute-care hospitals and for emergency departments were derived using similar methods across all jurisdictions.

In the case of expenditure on public health, states and territories reported in terms of the core public health activities defined under the National Public Health Expenditure Project (NPHEP) (see Table A1.2).

Estimates of expenditure on community health services were also split into four types of community health expenditures (see Table A1.2).

Admitted patient costing methodology

The estimated expenditures on admitted patient services for Indigenous Australians were derived using information from both the state and territories and the Institute's hospital costing model (see Appendix 5 for details).

States and territories provided estimates of total expenditure on admitted patient services and on the estimated level of Indigenous under-identification applicable to those services. The final Indigenous/non-Indigenous proportions were derived, using the hospital costing model, for all patients in public hospitals and for public patients, only, in private hospitals. These were adjusted for under-identification and the resultant proportions were applied to the total expenditure on admitted patient services, which had been calculated using establishments data provided to the Institute as part of the Australian Hospital Statistics collection. A further adjustment of +5% was then added to the results. This final adjustment was to adjust for an assumed cost differential between Indigenous and non-Indigenous separations observed across all Diagnostic Related Groups (DRGs) (Appendix 5).

Emergency department methodology

Results from the emergency department survey (see Appendix 5) were used to derive Indigenous expenditure in emergency departments in states and territories. AIHW applied the proportions to jurisdictional estimates of total expenditure on emergency departments to calculate Indigenous expenditure.

Local government estimates

Local governments perform important functions delivering health services to communities they represent. Expenditure on these local government services is often funded by a combination of Australian Government, state and territory, and private funding, as well as funding by the local government authorities themselves.

Estimates of expenditure on health goods and services by local governments are uncertain and problematic. Estimates of expenditure by local governments rely heavily on the ABS public finance data (ABS 2003b), which do not consistently identify expenditures in sufficient detail to support estimates at anything but the broadest (health) level of detail.

The Indigenous share of health expenditure by local governments was estimated at 4.7%. Evidence from population surveys indicates that, where services are publicly funded, their use by Indigenous people tends to be higher than by non-Indigenous people (ABS 2002b).

New South Wales

Method for estimating Aboriginal and Torres Strait Islander expenditure

Three sets of expenditure estimates were provided by New South Wales Health (NSW Health). These were based on alternate assumptions of Indigenous under-identification in the data—low, medium or high. The estimates of expenditure based on medium-level under-identification were used in the report. This is similar to the method used in the second report (AIHW 2001). The medium estimates of Indigenous population were sourced from the Chief Health Officer's Report 2002 (NSW DoH 2002).

Admitted patient services

Estimated total expenditure on admitted patient services was derived from the New South Wales Inpatient Statistical Collection (ISC).

New South Wales estimated the Indigenous under-identification factor for admitted patient data to be used in the hospital cost model was 30%.

Non-admitted patient services

Estimated expenditure on non-admitted patient services is the sum of estimated expenditure on emergency departments and other non-admitted patient services.

Emergency departments

The estimated proportions for emergency department expenditure were derived using total expenditure data provided by NSW Health and the emergency department survey (see Appendix 5).

Other non-admitted patient services

Estimated expenditure on other non-admitted patient services included non-admitted outpatients and extended care provided by public acute-care hospitals.

The estimate of expenditure on other non-admitted patient services attributable to Aboriginal and Torres Strait Islander people was based on the Indigenous proportion of total separations, adjusted for under-identification. The Indigenous under-identification factor used in this process was the one reported by NSW Health for admitted patient services.

Public (psychiatric) hospitals

The estimated expenditure on public (psychiatric) hospitals was derived from New South Wales ISC.

Services for older people

Expenditure on services for older people was estimated from the New South Wales ISC.

Patient transport

Estimated expenditure on patient transport for Indigenous people was derived from two areas:

- New South Wales Ambulance Service; and
- the Isolated Patients Travel Assistance and Accommodation Scheme (IPTAAS).

The Indigenous proportion of expenditure on ambulance services was assumed to be similar to that of the cost-weighted hospital expenditures, after adjustment for under-identification. The estimated Indigenous proportion of IPTAAS was based on results from a 1998 survey; using the same method as in the second report (AIHW 2001).

Public health activities

Public health expenditure was reported using the nine NPHEP activity categories. In addition NSW Health estimated an additional category of expenditure—public health (nec)—that has been included as part of expenditure on other health services (nec).

For core public health activities, except breast cancer and cervical screening activities, the estimated Indigenous proportion of expenditure was determined using the Indigenous population proportion (1.9%) from the Chief Health Officer's Report 2002 (NSW DoH 2002).

For breast cancer screening the estimated Indigenous proportion of expenditure was based on data from NSW BreastScreen. The method used the annual average number of Indigenous women aged 50–69 screened during 2000–01 and 2001–02 combined to determine the proportion of screening tests performed in 2001–02 financial year that related to Indigenous women.

The Indigenous proportion of total expenditure reported for cervical screening was based on the proportion of Indigenous women in the New South Wales population within the target screening age group (20–69 years).

The estimated Indigenous expenditure on communicable disease control was derived using the proportion of New South Wales Aboriginal sexual health expenditure as a percentage of all expenditure on communicable disease control.

Community health services

Estimated expenditure on community health services is the sum of:

- dental services;
- community mental health;
- alcohol and other drug treatment; and
- other community health.

For the first three categories the Indigenous proportions of estimated expenditure were based on information taken from the Department of Health Reporting System (DOHRS).

Dental services

The Indigenous proportion of estimated expenditure on dental services was based on the proportion of oral health attendances recorded in DOHRS that related to Indigenous Australians. Two age categories were used:

- <18 years of age; and
- 18+.

Community mental health

The estimated Indigenous proportion of expenditure on community mental health was based on the proportion of community mental health occasions of service recorded in DOHRS that were identified as Aboriginal and Torres Strait Islander people.

Alcohol and other drug treatment

The Indigenous proportion of estimated expenditure was again based on occasions of service recorded in DOHRS. In this case, however, no information was available for 2001–02, so proportions for the 2002–03 were used.

Other community health

Estimated expenditure on other community health is made up of Indigenous-specific expenditures—such as Aboriginal Health Program and Aboriginal and Torres Strait Islander NGOs—and estimates of the Indigenous share of mainstream programs. The Indigenous share of expenditure on these mainstream programs was estimated using proportions identified in the previous report (AIHW 2001).

Health research

Estimates of expenditure on health research were calculated from two categories:

- research conducted in acute-care hospitals; and
- all other research.

They do not include expenditure on public health research, which is reported under expenditure on public health.

The estimated Indigenous proportion of expenditure on health research was based on the Indigenous population proportion (1.9%) from the Chief Health Officer's Report 2002 (NSW DoH 2002).

Other health services (nec)

Estimated expenditure on other health services (nec) is comprised of estimated expenditure on:

- aids and appliances; and
- public health (nec).

The estimated Indigenous proportion for expenditure on aids and appliances was calculated using the proportions from the previous report (AIHW 2001). The Indigenous proportion of expenditure on public health (nec) was based on the population proportion (NSW DoH 2002).

Other explanatory notes

Expenditure estimates have been complied using accrual accounting methods.

Victoria

Methods for estimating Aboriginal and Torres Strait Islander expenditure

The Victorian Department of Human Services (DHS) provided expenditure data for inclusion in this report. In some instances these were adjusted following discussions with DHS. It also provided advice regarding the level of Indigenous under identification in respect of admitted patient services.

Admitted patient services

The estimates of admitted patient services for Aboriginal and Torres Strait Islander people were informed by an analysis of the Victorian Admitted Episodes Dataset (VAED).

Victoria estimated the under-identification factor for admitted patient data to be used in the hospital cost model was 25%.

Estimated expenditure on admitted patient services includes expenditure on public (psychiatric) hospitals.

Non-admitted patient services

Estimated expenditure on non-admitted patient services is the sum of estimated expenditure on emergency departments and other non-admitted patient services.

Emergency departments

The estimated proportions for emergency department expenditure were derived using total expenditure data provided by DHS and the emergency department survey (Appendix 5).

Other non-admitted patient services

The estimated expenditure on other non-admitted patient services for Aboriginal and Torres Strait Islander people is made up of expenditure on some identified Indigenous-specific acute-care programs and a proportion of the mainstream expenditure. The proportion used to allocate mainstream expenditure was derived from the Victorian Ambulatory Classification System (VACS). This proportion was based on the Group A outpatients service utilisation data produced by VACS. This method of allocation relies on an untested assumption of consistent service usage and the results should be treated with some caution.

Services for older people

Estimated expenditure on services for older people is the sum of some identified Indigenous-specific expenditure and an estimate of the Indigenous share of mainstream expenditure. The estimated mainstream expenditure includes aged residential care and aged care assessment, the estimated proportion of the Indigenous expenditure was derived from the number of Indigenous clients in residential aged care.

Patient transport

Estimated expenditure on patient transport was derived as a proportion from a number of program areas. These include expenditure on:

- emergency and non-emergency patient transport services;
- training and development of ambulance crews; and
- other ambulance expenditure.

The Indigenous share of estimated expenditure on emergency and non-emergency patient transport was the identified proportion of Indigenous patients in the VAED. The proportion applied in respect of other patient transport expenditures was the Indigenous population proportion.

Public health activities

Public health expenditure was reported using the NPHEP activity categories. In addition DHS reported an expenditure category public health (nec), which has been included as expenditure on other health services (nec).

The DHS output group total expenditure for each public health activity does not necessarily concur with the expenditure on that core public health activity reported by the NPHEP. This is because different methods used to gather and collate the expenditure data used in the two projects. While at the aggregate level there is only a small difference in the estimates of expenditure, there are some large differences in relation to individual activities—such as health promotion and immunisation. These estimates, at the activity level, should be treated with caution as there is the possibility of some misallocation of expenditures at that level.

The methods used to estimate the Indigenous shares of expenditure on communicable disease control; selected health promotion; organised immunisation; breast cancer screening; and cervical screening activities are outlined below. Estimates in respect of other public health activities were based on the Indigenous proportion of the state's total population.

Communicable disease control

Total estimated expenditure on communicable disease control was based on the addition of Indigenous-specific expenditures to a proportion of mainstream expenditure. The identified Indigenous specific expenditure was through the Victorian Aboriginal Health Service Cooperative (VAHS). The proportion of mainstream expenditure was derived from the Indigenous proportion of infectious diseases notification.

Selected health promotion

Estimated expenditure on selected health promotion was based on identified Indigenous expenditure and a proportion of mainstream expenditure. The Identified expenditure was through Koori Health Promotion and the proportion of mainstream expenditure was based on the Indigenous population proportion.

Organised immunisation

The Indigenous proportion of estimated expenditure on organised immunisation was derived from a proportion of mainstream expenditure, using a combination of the Indigenous population proportion and the proportion of Australian Childhood Immunisation Register (ACIR) units of vaccine used in 2002 that related to Indigenous children.

Breast cancer screening

Estimated Indigenous expenditure on breast cancer screening was derived from the number of Indigenous women in the target screening age group (50–69 years of age).

Cervical screening

The Indigenous proportion of estimated expenditure on cervical screening was derived from the proportion of Indigenous women in the target screening age group (20–69 years of age).

Community health services

Estimated expenditure on community health services is the sum of expenditure on:

- dental services;
- community mental health;
- alcohol and other drug treatment services; and
- other community health.

Dental services

The estimated Indigenous proportion of total expenditure on dental services was based on the number of Indigenous patients treated in the community dental program and the school dental program.

Community mental health

Estimated Indigenous expenditure on community mental health is the sum of identified Indigenous-specific expenditure and a proportion of mainstream expenditure. The identified Indigenous-specific expenditure relates to Indigenous clients in clinical community care. The same proportion has been used to allocate a proportion of mainstream expenditure.

Alcohol and other drug treatment

Estimated Indigenous expenditure on alcohol and other drug treatment was based on identified expenditure on the Koori Drug and Alcohol Program.

Other community health

Estimated Indigenous expenditure on other community health was a combination of identified Indigenous-specific expenditures and a proportion of the expenditure on mainstream programs. The Indigenous-specific expenditure was on:

- Community health care; and
- Koori Maternal and Child Health.

In addition proportions of expenditures on:

- School Nursing; and
- service system development

were included in the estimate of Indigenous expenditure on other community health.

Health research

The estimated Indigenous share of expenditure on health research was calculated using the Indigenous proportion of the Victorian population.

Other health services (nec)

Estimated expenditure on other health services (nec) has been grouped in this category; the two areas included are aids and appliances and other public health (nec). The estimated Indigenous proportion of state government expenditure on aids and appliances was calculated using the adjusted admitted patient separations from the VAED (see Admitted patient services above). The estimated Indigenous proportion of other public health (nec) was identified Indigenous-specific expenditures.

Other explanatory notes

Expenditure estimates for this project were based on accrual accounting.

Queensland

Method for estimating Aboriginal and Torres Strait Islander expenditure

Queensland Health Department provided the estimates of expenditure reported in this section of the report. The methods used in deriving the estimated Indigenous proportion of expenditure and adjustments made to the raw data are outlined below.

The total expenditure reported in each category is that previously reported by Treasury to the Australian Bureau of Statistics using the standard GPC, except for public health where the classifications and amounts reported under the NPHEP have been used. Where possible, the determination of the Indigenous fraction of expenditure in a category was estimated from the fraction of 'activity' (e.g. hospital episodes of care) for Indigenous clients within that category.

Admitted patient services

Estimates of total expenditure was provided by Queensland Health, which also advised that the under-identification factor for admitted patient data to be applied in modelling hospital costs was 20%.

Non-admitted patient services

The total estimated expenditure on non-admitted patient service was estimated by Queensland Health. There were no centrally collected details of outpatient or emergency department attendances, by Indigenous status, in Queensland. Hence, no split of expenditure between emergency departments and other non-admitted patient services was possible. The Indigenous proportion of the expenditure on non-admitted patient services was derived using results from the emergency department survey (Appendix 5).

Public (psychiatric) hospitals

The Indigenous proportion of the estimated expenditure was based on the Indigenous fraction of separations (from both designated public (psychiatric) hospitals and acute hospitals), adjusted for Indigenous under-identification.

Services for older people

Estimated Indigenous expenditure on services for older people was derived from the overall fraction of Indigenous clients in all State-run nursing homes. No adjustment has been made for the under-identification of Indigenous clients.

Patient transport

The estimated Indigenous expenditure was calculated from the Indigenous proportion of admitted patient episodes requiring transfer to another facility.

Public health activities

Public health expenditure has been reported using the NPHEP categories, public health (nec) is included in the estimates for 'other health services (nec)'.

For activities other than breast cancer, cervical screening and organised immunisation, the Indigenous share of expenditure was estimated by adding identified Indigenous-specific expenditures to a proportion of mainstream expenditure.

In the case of breast cancer screening the Indigenous proportion of the Queensland female population aged 50–69 years was used to allocate the expenditure; and in the case of cervical screening it was the Indigenous proportion of the female population aged 20–69 that was used.

The Indigenous proportion of organised immunisation was calculated by adding identified Indigenous-specific expenditure to an estimate of mainstream expenditures based on the Indigenous population proportion for the target age groups in the immunisation schedules for children and adolescents.

Community health services

Estimated expenditure on community health services is the sum of expenditure on:

- dental services;
- community mental health; and
- other community health.

The total estimate was derived from two sources (see notes on dental services) hence these should be treated with care. Queensland was unable to provide estimates of expenditure on alcohol and other drug treatment services.

The overall Indigenous proportion (8.3%) was calculated excluding expenditure on dental services.

Dental services

Two distinct state government dental programs were identified, one targeting children aged 5–15 years, the other targeting adults. The Indigenous proportion of children aged 5–15 was used in estimating expenditure on the former; and broad utilisation rates were used for the latter.

Community mental health

The Indigenous proportion of estimated expenditure was derived from the Community Mental Health data collections with a 20% under-identification factor applied (see Admitted patient services, above).

Other community health

Estimated expenditure other community health was calculated as the difference between expenditure on identified programs (dental services and community mental health) and total community health expenditure. The total community health expenditure was calculated from the sum of Indigenous-specific expenditure and a proportion of the remaining expenditure derived using the Indigenous proportion of expenditure on non-admitted patient services.

Health research

The estimated Indigenous proportion of expenditure was based on the Indigenous population proportion.

Health administration (nec)

Indigenous health administration expenditure was derived using the same method as in the last report (AIHW 2001). The estimate was based on an average of the Indigenous proportion of the Queensland population (3.5%) and the calculated Indigenous share of expenditure on programs administered by Queensland DOH (6.0%).

Other health services (nec)

Estimated expenditure on other health services (nec) is the sum of expenditure on:

- aids and appliances; and
- other public health (nec).

The estimate of expenditure on aids and appliances for Indigenous people was derived by applying the Indigenous fraction of total weighted hospital separations, after adjustment for Indigenous under-identification. The estimated expenditure on other public health (nec) for Aboriginal and Torres Strait Islander people was derived using the overall public health proportion (see above).

Other explanatory notes

Queensland Health reports on an accrual basis.

Western Australia

Methodology for estimating Aboriginal and Torres Strait Islander expenditure

The Western Australian Department of Health (DOH) provided estimates of expenditure for Indigenous Australians and non-Indigenous people. It also provided advice regarding the level of Indigenous under-identification in respect of admitted patient services.

The methods used in developing the estimates of expenditure and the related Indigenous/non-Indigenous splits are, essentially, adaptations of the method used in the previous study (AIHW 2001).

The major data sources used by the Western Australian DOH in developing its estimates were:

- DOH administrative data; and

- DOH's Treasury Budget Statements (TBS) submission.

These data were adjusted to report outcomes for the 2001–02 financial year. The population data were from the 2001 Commonwealth Census.

For many areas of expenditure the calculation of the Aboriginal and Torres Strait Islander components were calculated using utilisation statistics—such as hospital morbidity data. Where these were not available, a number of surrogate indicators were used, including Indigenous population proportions.

Admitted patient services

Western Australia provided estimated total expenditure on admitted patient services.

Western Australia estimated the under-identification factor for admitted patient data to be used in the hospital cost model was 6%.

Non-admitted patient services

The estimated expenditure on non-admitted patient services is the sum of expenditure on other non-admitted patient services and emergency departments.

Emergency departments

The estimated proportions for emergency department expenditure were calculated using total expenditure data provided by DOH and the emergency department survey (see Appendix 5).

Other non-admitted patient services

The estimates of expenditure on health for Indigenous people for these services were based on Indigenous/non-Indigenous proportions of utilisation rates in the larger emergency departments in the State.

Public (psychiatric) hospitals

The majority of the cost is attributed and identified through mental health weighted hospital separations, the balance of the cost allocation was based on the Western Australian Indigenous population proportion.

Services for older people

The estimated Indigenous expenditure was derived according to population proportions, then adjusted for identified specific utilisation by Indigenous residents (the estimate includes some Home and Community Care Services).

Patient transport

This estimated expenditure was based on Country Health Services data and the Indigenous share was calculated using population data.

Public health activities

Public health expenditure has been reported using the nine NPHEP activity categories. DOH also reported expenditure on a tenth category, public health (nec). It is reported as part of estimated expenditure on 'other health services (nec)'.

Estimated expenditure on public health activities differ from the figures reported in the NPHEP Report due to differences in treatment of some core public health activities which

are run out of separate Statutory Authorities in the State and are not included in the NPHEP estimates.

Expenditure estimates in the community and public health area are not solely based on Indigenous client services information so should be treated with care.

In all of the nine public health activities a two stage method was used to calculate the Indigenous shares of expenditure. Initially expenditure was calculated according to the population proportion, these data were then adjusted for identified specific utilisation by Indigenous residents, where this could be determined.

Community health services

Estimated expenditure on community health services was calculated using utilisation data where data were available and the Indigenous population proportion when no administrative data could be obtained.

Dental services include only school dental services.

Expenditure on other community health is largely made up of expenditure incurred by the Office of Aboriginal Health.

Health research (nec)

Estimated expenditure on health research was identified from data used for the *Australian Hospital Statistics* collection. The Indigenous proportions were identified using population data. Included in the research expenditure estimates is a non-quantifiable teaching component.

Health administration (nec)

Indigenous health administration expenditure was derived using the same method as in the last report (AIHW 2001). The estimate was based on an average of the Indigenous proportion of the Western Australian population (3.5%) and the calculated Indigenous share of expenditure on programs administered by DOH (9.9%).

Other health services (nec)

Estimated expenditure by the Western Australian State Government on other health services (nec) includes expenditure on categories—such as health research, health administration (nec) and patient services—that cannot be clearly linked to other identified expenditures in these categories.

Other explanatory notes

Western Australian estimates were prepared using accrual accounting.

South Australia

Methodology for estimating Aboriginal and Torres Strait Islander expenditure

The South Australian Department of Health (DOH) provided estimates of expenditure for Indigenous and non-Indigenous people. The Department also provided advice on the level of under-identification to be used in the admitted patient costing model.

Estimated expenditure on Aboriginal and Torres Strait Islander's was in almost all cases calculated by DOH using one of the following methods:

- As a proportion of total expenditure using the identified Indigenous proportion clients; or
- The addition of DOH identified specific expenditure and a proportion of mainstream expenditure.

Admitted patient services

DOH provide the estimated total expenditure on admitted patient services and advised that the under-identification factor for admitted patient data to be used in the hospital cost model was zero.

Non-admitted patient services

Estimated expenditure on non-admitted patient services is the sum of expenditure on other non-admitted patient services and emergency departments.

Emergency departments

The estimated proportions for emergency department expenditure was derived using total expenditure data provided by DOH and the emergency department survey (Appendix 5).

Other non-admitted patient services

The estimated expenditure on other non-admitted patient services was calculated from Aboriginal and Torres Strait Islander patient data collected from hospitals.

Public (psychiatric) hospitals

Estimated expenditure was calculated from the proportion of Indigenous people in public (psychiatric) hospitals.

Services for older people

The estimated expenditure was derived from the Indigenous proportion of people in state-run services for older people.

Patient transport

The estimated Indigenous expenditure on patient transport was based on identified Indigenous-specific expenditure, plus a proportion of mainstream expenditure.

Public health activities

Public health expenditure has been reported using the nine NPHEP activity categories.

For each activity, identified Indigenous-specific expenditure was added to a proportion of mainstream expenditure.

Community health services

For all community health services in South Australia estimated Indigenous expenditure was calculated separately for each program using the same method. Indigenous-specific expenditures were identified and added to a proportion of the estimated expenditure for each mainstream service.

Health research

Estimated expenditure on health research includes all expenditure on health research not defined as public health research. Indigenous-specific expenditures were identified and added to a proportion of the estimated expenditure for each mainstream service.

Health administration (nec)

Expenditure on health administration (nec) includes administration expenditure not reported within public health. Estimated Indigenous expenditure on health administration (nec) was calculated by adding expenditure on Indigenous-specific programs to a proportion of mainstream expenditure.

Other explanatory notes

South Australian expenditures were prepared using a cash accounting basis and do not include depreciation.

Tasmania

Two sets of estimates of state government expenditure on health for Aboriginal and Torres Strait Islander people were provided by the Tasmanian Department of Health and Human Services (DHHS) for this report. The first simply derived Indigenous expenditure estimates according to the Indigenous population share. That method made no attempt to differentiate between the level of usage of specific health goods and services by Indigenous and non-Indigenous Tasmanians. The second set of estimates, which forms the basis of the estimates in this report, used information derived from a number of data systems or surveys that had made some attempt to capture the Indigenous status of clients. Still there appeared to be a high level of uncertainty regarding the Aboriginal and Torres Strait Islander identification within those data collections. Accordingly, caution is urged in the interpretation of these estimates.

Admitted patient services

Total admitted patient expenditure was estimated from total acute-care institutional expenditure using the inpatient fraction (Ifrac) of 72% identified in the Australian Hospital Statistics establishments data for Tasmania in 2001–02 (AIHW 2003a).

An Indigenous proportion of total estimated expenditure was derived using both the Tasmanian provided estimates and those derived from the AIHW hospital costing model (Appendix 5). Tasmania provided the total estimated expenditure on admitted patient services and advice on the under-identification factor should be used in the hospital cost model as it relates to Tasmania. The Tasmanian Department of Health and Human Services Aboriginal Health and Wellbeing Steering Committee advised that no adjustment should be made for Indigenous under-identification in the admitted patient data for Tasmania. The final proportions (Indigenous/non-Indigenous) derived from the hospital costing model for public hospitals and public patients in private hospitals were applied to total reported expenditure on admitted patient services.

Consequently, the estimates of expenditure on hospital services for Aboriginal and Torres Strait Islander people in Tasmania in 2001–02 are considered to be of quite low quality and should be treated with extreme caution. Indigenous Australians, who represent 3.7% of the state's population, accounted for 1.9% of all separations from public hospitals. The

Tasmanian Department of Health and Human Services Aboriginal Health and Wellbeing Steering Committee advised that hospital separations should be used in an un-manipulated form. The Steering Committee supported the redistribution of the 'non-stated' responses in line with the ratio of identified Indigenous and non-Indigenous hospital separations. That, in turn, increased the Indigenous proportion of those separations to 2.05%.

Non-admitted patient services

The estimated expenditure on non-admitted patient services was based on acute-care hospital expenditure, less estimated expenditure on admitted patient services (1–Ifrac=0.28). The estimated Indigenous proportion was calculated applying the results from the emergency department survey (see Appendix 5).

Emergency departments

The estimated proportions for emergency department expenditure were derived using total expenditure data provided by DHHS and the emergency department survey (see Appendix 5).

Other non-admitted patient services

Estimated total expenditure on other non-admitted patient services was calculated from the total non-admitted patient services expenditure less emergency department expenditure. The estimated Indigenous proportion was derived using results from the emergency department survey (see Appendix 5).

Public (psychiatric) hospitals

Estimated expenditure was calculated from public psychiatric hospital cost centres that could be identified. These include:

- the Roy Fagan Centre;
- Mistral Place; and
- the Derwent Valley Community Centre.

Estimated Indigenous expenditure was calculated using the same proportion as applied to community mental health. Tasmania noted that community mental health data had a high incidence of the response 'Indigenous – not further defined', hence estimates should be treated with caution.

Patient transport

Tasmanian Ambulance Services and hospital patient transport were used to derive estimated expenditure on patient transport. No data on Indigenous use of Ambulance Services was available; therefore, the average public hospital proportion of Indigenous patients was used.

Where patient transport expenditure data was collected from hospitals, the hospital proportions of Indigenous patients was used to derive estimated expenditure.

Public health activities

Public health expenditure has been reported using the nine NPHEP categories, in addition DHHS reported an additional category other public health (nec), which has been included as expenditure in other health services (nec).

For all public health activities except breast cancer screening and cervical screening, the Indigenous expenditure was calculated using the Indigenous population proportion.

Estimated Indigenous expenditure on Breast cancer screening was calculated using the proportion of Indigenous women in the target screening age group (50–69).

Estimated Indigenous expenditure on cervical screening was derived using the proportion of Indigenous women in the target screening age group (20–69).

Community health services

Estimated expenditure on community health services is the sum of:

- dental services;
- community mental health;
- alcohol and other drug treatment; and
- other community health.

Dental services

Estimated expenditure on dental services includes:

- Adult Oral Health Services;
- Prosthetic Oral Health Services;
- Children's Oral Health Services; and
- Administration.

Estimated Indigenous expenditure was calculated using the Indigenous population proportion.

Community mental health

The community mental health expenditure estimate was calculated from numerous cost centres. Tasmania reported that data collection for these programs often has a high incidence of the response 'Indigenous – not further defined', hence estimates should be treated with caution.

Alcohol and other drug treatment

Estimated expenditure on alcohol and other drug treatment included expenditure on:

- Alcohol and Drug Services Detoxification Unit;
- Rehabilitation programs; and
- Administration.

Where data on Indigenous status was available the proportion of clients was used to derive expenditure. When no data was available the Tasmanian Indigenous population proportion was used to estimate expenditure.

Other community health

Estimated expenditure on other community health included a wide range of program areas. Where data on Indigenous status was available it has been used to inform the estimated Indigenous/Non-Indigenous split of cost centre expenditure. Where no data on Indigenous status was available the Indigenous population proportion was applied.

Health administration (nec)

Estimated expenditure on health administration represents a proportion of the departmental overheads. The expenditure included as part of these overheads represents 84% of the

departmental total and the dollar amounts listed in this category were therefore discounted to this level before applying the average Indigenous percent from all data collection areas. For two cost-centres within this expenditure category, the State's Indigenous population proportion was applied to determine Indigenous expenditure.

Other health services (nec)

Estimated expenditure on 'public health (nec)' was reported in this category. The estimated Indigenous expenditure was calculated by adding identified Indigenous-specific expenditure to a proportion of mainstream expenditure

Other explanatory notes

Tasmania expenditures were prepared using a cash accounting basis.

Australian Capital Territory

Methodology for estimating Aboriginal and Torres Strait Islander expenditure

ACT Health provided the expenditure estimates for Indigenous and non-Indigenous people for inclusion in the report. ACT Health also provided advice on the level of under-identification to be applied for the hospital cost modelling in respect of admitted patient services.

Acute-care hospitals

The acute-care hospital expenditures have not been adjusted to reflect that an estimated 22% of separations and 12% of emergency department presentations in the ACT public hospitals relate to non-ACT residents. This is thought to have a profound effect on the estimates of per-person expenditures.

Admitted patient services

ACT Health provided estimated total expenditure on admitted patient services and estimated the under-identification factor for admitted patient data to be used in the hospital cost model was 30% (this was similar to the NSW under-identification factor).

Non-admitted patient services

Not all expenditure on non-admitted patient services can be reported for the ACT in this category.

A proportion of estimated expenditure in emergency departments has been reported in this category. The estimated proportions for emergency department expenditure were derived using total expenditure data provided by ACT Health and the emergency department survey (see Appendix 5).

Expenditure on 'other non-admitted patient services' cannot be separated from other community health expenditure. This expenditure is included in the category of other community health expenditure.

Patient transport

The ACT Ambulance Service and The Canberra Hospital (TCH) transport service provided data for total expenditure on patient transport. The Indigenous/Non-Indigenous proportions have been derived from the Emergency Department information System (EDIS) database, using the mode of arrival at hospital to determine costs.

Public health activities

Public health expenditure has been reported using the nine NPHEP categories.

For all public health activities except breast cancer screening and cervical screening, Indigenous expenditure was calculated using the Indigenous proportion of the Australian Capital Territory population.

Estimated expenditure on breast cancer screening was calculated from the breast screening database. The proportion Indigenous expenditure was determined by the proportion of Indigenous women in the target screening age groups (50–69).

Estimated Indigenous expenditure on cervical screening was derived using the number of Indigenous women in the target screening age group (20–69).

Community health services

Estimated expenditure on community health services is the sum of:

- dental services;
- community mental health;
- alcohol and other drug treatment and
- other community health.

Dental services

Indigenous expenditure on dental services was calculated using the Indigenous population proportion.

Community mental health

Estimated expenditure on community mental health was calculated from two areas, ACT mental health and community organisations. Estimated Indigenous expenditure was derived from data held in the Client Care Information System (CCIS) at ACT Health and the National Minium Data Set (NMDS) for community organisations.

Alcohol and other drug treatment

The estimated expenditure on alcohol and other drug treatment was calculated from adding a proportion of mainstream expenditure to identified Indigenous specific expenditure.

The proportion of mainstream expenditure allocated to Indigenous people was derived from ACT Health's Client Care Information Systems (CCSI) and the National Minimum Data Set (NMDS) of community organisations.

The Specific Indigenous expenditure was calculated from three data sources:

- ACT Health;
- community organisations and
- the Gugan Gulwan Indigenous youth centre.

Other community health

Expenditure from ACT Health on other community health includes:

- Intergraded health care;
- Rehabilitation;
- General practice;
- Correctional health;
- Clinical effectiveness;
- Children, youth and women's health; and
- other.

Community organisation expenditure includes:

- Winnunga Nimmityjah Aboriginal health Service;
- Innovative Health –homeless youth (ISHY);
- Community Health Support Program;
- Family Planning; and
- other.

Specific Indigenous expenditure occurred at the Winnunga Nimmityjah Aboriginal health Service. Estimated Indigenous expenditure for ACT Health programs where possible was derived from the CCSI. For all other areas the Territories Indigenous population proportion was used.

Other non-admitted patient services are included in this category of community health.

Health research

Estimated expenditure on Indigenous health was calculated using the Indigenous population proportion.

Health administration (nec)

Health administration has been apportioned across all expenditure categories in accordance with the Commonwealth Grants Commission advice.

Other health services (nec)

Estimated expenditure on aids and appliances was reported in this category. Estimated expenditure on Indigenous people was calculated using the Indigenous proportion of hospital separations from *Australian hospital statistics 2001–02* (AIHW 2003a:136).

Other explanatory notes

ACT Health reported expenditure on an accrual basis.

Northern Territory

Methodology for estimating Aboriginal and Torres Strait Islander expenditure

The Northern Territory Department of Health and Community Services (DHCS) provided expenditure estimates for this section of the report. The methodology for estimating the Indigenous expenditure and proportion is described below.

During 2002, DHCS reviewed and updated its Aboriginal and Torres Strait Islander expenditure methodology. The review explored new information systems in place and new data now available to inform the revised methodology.

Program areas were provided with a list of 2001–02 cost-centre codes and asked to identify all information systems that supported the provision of health services. Programs supported by information systems provided their most recent financial year utilisation statistics. Programs not supported by actual data provided information based on current service utilisation. Where service utilisation was unknown, programs applied the ABS census data for their respective community or district. Territory-wide services applied ABS population data for the Northern Territory.

Consequently, the methodology used by the DHCS to determine Aboriginal and Torres Strait Islander health expenditure remains a combination of actual administration data and estimates of utilisation rates based on population data.

Admitted patient services

Northern Territory advised that no under-identification adjustment was required to admitted patient data for AIHW's cost model.

Public hospitals in the Northern Territory spend a significant amount of resources on non-hospital activities, such as affiliated facility support to:

- Menzies School of Health Research (MSHR);
- Detoxification Unit; Centre for Disease Control;
- remote visits;
- interpreter services;
- Batchelor College,
- Red Cross Services;
- prisons, and
- staff accommodation.

In addition higher infrastructure costs combined with the additional costs associated with remoteness, small population size, and the burden of disease experienced by Indigenous patients, all combine to make the cost of providing hospital services in the Northern Territory expensive.

All estimates of doctor's salaries in acute-care institutions are included in estimates of expenditure on admitted patient services.

Non-admitted patient services

Estimated expenditure on non admitted patient services is the sum of other non-admitted patient service expenditure and emergency department expenditure.

Total estimated expenditure in this category is understated, as some of the services were not costed directly to either emergency departments or other non-admitted patient services, for example, doctor's salaries (see above).

Emergency departments

The estimated proportions for emergency department expenditure were derived using total expenditure data provided by DHCS and the emergency department survey (see Appendix 5).

Other non-admitted patient services

Utilisation data was used to derive estimated Indigenous and non-Indigenous shares of estimated expenditure.

Patient transport

Estimated expenditure was based on utilisation data from the Northern Territory Patient Travel Scheme (PATS).

Public health activities

Public health expenditure has been reported using the nine NPHEP categories; in addition public health (nec) was included under expenditure on 'other health services (nec)'.

Public Health services are currently not fully supported by an information system. The program areas of cervical cancer screening, breast cancer screening, communicable disease control, immunisations and environmental health currently record utilisation information in stand-alone information systems located in their respective areas. However, the majority of information is not currently supported by an Indigenous identifier.

Consequently, the Indigenous ratios for public health services are a mix of utilisation data—actual and determined—and population data. The relevant program managers provided the Indigenous ratio by district. Where actual data were available these were used to inform the ratios; otherwise the methodology was based on the known utilisation of services by the indigenous population in particular districts. However, where a service not targeted at the Indigenous population but provided to all Territorians was identified, and utilisation was unknown, then the population data for the relevant district was applied. If the service or program was provided territory wide, then the population data was applied.

Relatively unique circumstances exist in the Northern Territory, where public health programs are often delivered by health centre workers due to a relative lack of more specialised resources in rural and remote areas. Hence, the delivery of public health programs is often undertaken by health centre workers, including district medical officers, community health nurses, and Indigenous health workers who support these generalist community health teams (AIHW 2004c).

Community health services

Estimated expenditure on community health services is the sum of:

- dental services;
- community mental health;
- alcohol and other drug treatment; and
- other community health.

Dental services

The estimated expenditure on dental services was derived from utilisation data and population data.

Community mental health

A combination of utilisation data and population data was used to derive estimated expenditure on community mental health. In addition a weight factor was used to cover the travel costs associated with services to remote and very remote communities.

Alcohol and other drug treatment

The estimated expenditure on alcohol and other drug treatment was based on utilisation data and population data.

Other community health

Other community health services in the Northern Territory included the provision of both urban and remote primary health care services. In urban areas, utilisation data formed the basis of primary health care service expenditure estimates. In remote areas, a combination of utilisation data, estimates and population data was applied.

Health research

Health research in the Northern Territory is funded by DHCS. The estimated expenditure was split between departmental research and a grant to the Menzies School of Health Research for research and core activities. The division of funding between the department and the school provides the ratio for estimated Indigenous and non-Indigenous expenditure.

Health administration (nec)

Estimated expenditure on health administration has been allocated across all program areas. The expenditure was apportioned according to staffing numbers in each area.

Other health services (nec)

Estimated expenditure on two areas, pharmaceuticals and other public health (nec) have been grouped in this category. The expenditure estimates on these areas were based on utilisation data.

Other explanatory notes

Northern Territory data for 2001–02 was prepared on a cash basis and does not include depreciation.

Appendix 7 Non-government expenditure

Introduction

Definition

The non-government expenditure included in this report relates to expenditures incurred by non-government service providers. In the case of expenditure on medical services and PBS pharmaceuticals it only includes the non-benefit part of the expenditure. For expenditure on all other non-government provided services it includes total expenditure. For example, total expenditure on private hospitals is included as non-government expenditure, even though some of it is assumed to have been indirectly funded by the Australian Government through its 30% rebate on private health insurance contributions. Similarly, purchases of private hospital services by state and territory governments is regarded as government funding of non-government expenditure.

Non-government funding, on the other hand, includes the non-government funding share of all health expenditures, irrespective of whether the related services were provided by government or non-government providers. For example, fees paid by private patients in public hospitals is regarded as non-government funding of expenditure incurred by state and/or territory governments.

Limitations

Estimates of non-government expenditure on health goods and services are problematic. For example, the provision of goods and services by non-government sector providers, such as private hospital services, dental and other professional services, and non-benefit pharmaceuticals are not usually accompanied by any requirement that the levels of use by Indigenous people are identified.

Consequently, data supporting the estimates of many non-government expenditures in respect of Indigenous people is limited. The major exceptions are estimates of co-payments under Medicare and the PBS.

Where possible estimates have been derived from a variety of sources containing Indigenous data; where no such data exists proxy data has been used to model and estimate expenditure. This paucity of supporting data for some of the estimates reported would indicate that care should be exercised when drawing inferences from them.

Data sources

The major sources of non-government funding for health goods and services are:

- Individuals;

- private health insurance;
- providers of compulsory third party motor vehicle insurance cover; and
- providers of workers compensation insurance cover.

The Indigenous proportions of funding provided by these sources, particularly in relation to non-government provided health goods and services, have been calculated using data from the following sources:

- The proportion of Indigenous people with private health insurance as a proportion of all people with private health insurance was applied to funding by private health insurance organisations. This proportion was derived by the AIHW from the National Health Survey (NHS) (ABS 2002b). The NHS data excluded people living in remote areas and those under eighteen years of age.
- The Household Expenditure Survey (HES) (ABS 2000) was used in combination with other Indigenous population characteristics (ABS 2003c) to estimate funding by individuals, compulsory third party motor vehicle insurance payments and workers compensation insurance payments.
- Estimates of Indigenous expenditure have also been derived from a number of other sources. These include:
  - the AIHW's health expenditure database;
  - Medical Benefits Scheme (MBS) and Pharmaceutical Benefits Scheme (PBS) modelling for the Australian Government expenditure;
  - Australian Bureau of Statistics (ABS) survey of private hospitals;
  - ABS estimates of household final consumption expenditure; and
  - other Indigenous population characteristics from Australian Bureau of Statistics data (ABS 2003a).

Methodology

The four major areas of non-government expenditure are detailed below; other areas were derived using similar methods.

Medical services

Estimated expenditure on medical services was calculated from the sum of two components:

- Medicare items; and
- other medical services.

Medicare benefit items that required a co-payment were estimated from two sources: the HES (ABS 2000) and the NHS (ABS 2002b). Data from the HES (ABS 2000) and on Indigenous households' income (ABS 2003c) was used to estimate the Medicare co-payment portion. The Indigenous proportion of all privately insured people was used to estimate the split of private health insurance payments for medical services.

Medical services that did not attract benefits under Medicare were limited to compensable services. The Indigenous proportion of these was estimated using data from the HES (ABS 2000) combined with data on the characteristics of the Indigenous population (ABS 2003c).

Pharmaceuticals

Estimated non-government expenditure on pharmaceuticals has two components:

- benefit-paid pharmaceuticals; and
- non-benefit pharmaceuticals.

Benefit-paid pharmaceuticals include only those prescribed items that actually attracted benefits under either the PBS or the RPBS. The non-benefit pharmaceuticals included expenditure on:

- items listed on the PBS or RPBS for which the total costs are equal to or less than the patient co-payment;
- prescribed medicines dispensed through private prescription; and
- over-the-counter medicines and similar preparations purchased from retail chemists, supermarkets and convenience stores.

Different data sources and methods were used in respect of the two types of expenditure on pharmaceuticals. Different methods were also used in relation to particular sources of funding.

For benefit-paid pharmaceuticals, the estimated Indigenous share of this expenditure was calculated using the Indigenous to non-Indigenous ratio from the PBS benefits expenditure estimates.

The other pharmaceuticals expenditure was estimated from private health insurance contributions, workers compensation insurance, compulsory motor vehicle third party insurance and private expenditure. The Indigenous proportion of people with private health insurance was used to split the funding by private health insurance organisations. The splits for funding by injury compensation insurers (workers compensation and compulsory third party motor vehicle) and private out-of-pocket funding were derived from the HES (ABS 2000) and Indigenous population characteristics (ABS 2003c).

Dental services

Estimated non-government expenditure on dental service has two components:

- dental services that attracted a benefit under Medicare; and
- mainstream dental services.

Expenditure on dental services through Medicare is limited to a small group of items in the Schedule that are identified as dental procedures. Almost all (more than 99%) of estimated dental services expenditure was through the second component, which essentially relates to private dental procedures in dentists' surgeries.

The co-payments on Medicare dental services were estimated using the derived Indigenous and non-Indigenous proportions of MBS benefit paid items.

Funding of dental services by individuals (fees paid); compulsory third party motor vehicle insurance providers; and workers compensation insurers was estimated from the HES (ABS 2000) and Indigenous population characteristics (ABS 2003c).

The split of funding by private health insurance organisations was calculated using the Indigenous proportion of people with private health insurance cover.

Private acute-care hospitals

All estimated expenditure on private hospitals was assumed to have been incurred by the non-government sector. The estimates of expenditure were derived from the ABS private health establishments survey (ABS 2003d). Most of the funding for private hospitals also came from non-government sources—mostly through private health insurance benefits.

Although some of the private hospitals included in the ABS survey might well be classified as stand-alone psychiatric hospitals, no distinction has been made in the estimates of private (psychiatric) hospitals and private (non-psychiatric) hospitals.

Given that the bulk of funding for private hospitals came from private health insurance sources, the estimated Indigenous expenditure on private hospitals was calculated using the Indigenous proportion of people with private health insurance cover.

Appendix 8 Estimation of health-related welfare expenditure

Introduction

An experimental chapter on the expenditure on health-related welfare services for Aboriginal and Torres Strait Islander people has been included in this report (Chapter 8).

The three areas of health-related welfare services examined were:

- services for the aged;
- services for people with a disability; and
- services provided through Aboriginal Community Controlled Health Services (ACCHS).

Data covering the Indigenous status of clients of these health-related welfare services were not always available, or collected in a consistent manner. Where noted, adjustments were made to the data to correct for under- or over-identification of Indigenous Australians in the underlying data. Generally, however, where the data provided to support these estimates included missing or non-responses to the Indigenous identification questions, these were excluded from the estimation processes.

It is also important to recognise that these estimates of health-related welfare expenditures represent expenditure on the met need for such services. The inability of estimates of expenditure to reflect the total need for health-related welfare services was highlighted in the Grants Commission's *Report on Indigenous Funding 2001* (CGC 2001). A further examination and discussion of issues related to unmet need is in *Unmet need for disability services: effectiveness of funding and remaining shortfalls* (AIHW 2002).

Health-related welfare services for older people

Although this part of the report addresses the estimates of expenditure on health-related welfare services for older people it is sometimes impossible to separate these out from expenditures on similar types of services provided to younger people with disabilities. This is particularly the case in respect of Australian Government and non-government funding for services provided in residential care facilities.

The expenditure estimates exclude administration expenses related to state and territory government nursing homes, which are considered to be 'health' expenditures; and their expenditure on transport and other core concessions for older people. Nor do they include expenditure by the Australian Government on high-level residential care services for older people, which is also regarded as a 'health' expenditure.

Apart from the expenditures on services in residential care facilities, which are apportioned between 'health' and 'welfare' expenditure categories according to the care needs of the care recipients, most welfare services that are directed at both older people and people with disabilities are allocated on the basis of the recipients' ages. In the case of services for Aboriginal and Torres Strait Islander people a minimum age of 50 years is used to determine

which of these types of expenditures relate to older people. In the case of non-Indigenous people, the minimum age is 70 years. These are based on the broad aged-based planning criteria used in accessing need for services for older people. Of course, younger people with disabilities often access services that have been provided primarily for older people if an Aged Care Assessment Team determines that such services are the best means of meeting the specific care needs of those people.

Home and Community Care (HACC)

The Home and Community Care (HACC) program provides a range of community-based support such as home nursing, personal care, respite, domestic assistance, meals, transport and home modification (AIHW 2003d). HACC services are directed towards assisting older and frail people with moderate, severe or profound disabilities, younger people with moderate, severe or profound disabilities and the carers of such people. One objective of HACC services has been to prevent premature or inappropriate early admissions to long-term residential care and to promote independence.

Estimated expenditure on HACC services for older people (high-level residential aged care) was calculated using three data sources:

- HACC client characteristics from HACC Minimum Data Set (MDS);
- HACC expenditure by the Australian Government and state and territory governments (DoHA unpublished data); and
- HACC expenditure recurrent-capital split from Department of Finance Budget outcomes.

Apparent discrepancies existed between the HACC MDS Indigenous client population aged 65 and over and the Indigenous population of the same age group for New South Wales and Victoria. In New South Wales, the number of Indigenous clients reported in the HACC MDS statistics was almost twice the total Indigenous population number in that age group. In Victoria, the number of Indigenous clients was 16% more than the total population. (A discussion of this issue can be found in AIHW 2004a:37.) For these two states the number of Indigenous HACC clients was estimated using a combination of HACC MDS data and population data from the other states and territories.

In estimating expenditure on HACC, it was assumed that the cost of providing services to people in remote and very remote areas was, on average, 25% higher than similar services provided in more accessible areas. This weighting was used by the Commonwealth Grants Commission in their calculation of measures of relative need for each type of service (CGC 2003).

Flexible care services

Through the Aboriginal and Torres Strait Islander Aged Care Strategy the DoHA provided funding for a number of flexible aged care services. These offered a mix of aged care assistance, consisting of residential care and Community Aged Care Packages. Many of the services were established in remote areas where no aged care services were previously available.

Flexible care services were jointly funded by both the Australian Government and state and territory governments. State and territory health departments advised that almost all state funding for flexible care services was for health purposes, hence their funding was classified

as health expenditure. The expenditure reported on low-level flexible care services by the Australian Government was treated as health-related welfare expenditure.

Estimates of expenditure on low-level flexible care places and community care provided by Aboriginal and Torres Strait Islander flexible care services was provided by the DoHA. A small component of expenditure was related to Aboriginal and Torres Strait Islander flexible services model grants.

Multipurpose services

Multipurpose services provided a range of services for both Indigenous and non-Indigenous people, mostly via services in rural and remote communities (AIHW 2003d). These were a joint initiative of the Australian Government and state and territory governments (DoHA 2002). There were a small number of services specifically targeted to Indigenous Australians, established under the National Aboriginal and Torres Strait Islander Aged Care Strategy.

The estimated expenditure covers Australian Government low-level care places in Multipurpose services (MPS) and CACP services administered by MPSs. State and territory health departments advised that their expenditures on MPSs was treated as health expenditure.

The Indigenous share of this included expenditure on Indigenous-specific low-level care places in MPSs, and an estimate of their share of the remaining expenditure on low-level care places in mainstream MPSs. Information on the Indigenous use these mainstream MPSs was not available, therefore expenditure was apportioned using the proportions applicable in respect of expenditure on low-level residential aged care for Indigenous and non-Indigenous people.

Community Aged Care Packages (CACP)

Community Aged Care Packages (CACPs) provided home-based service packages that enable older frail people who require low-level care to remain in their own homes. The packages provide an alternative to care in low-level residential aged care facilities for people who wish to, and can safely, be cared for in their own homes.

The two data sources were used to estimate CACP expenditure on Aboriginal and Torres Strait Islander people, there were:

- client characteristics from Aged Community Care Management Information System (ACCMIS) database; and
- CACP unpublished expenditure data from DoHA.

Expenditure was apportioned according to the client characteristics from the ACCMIS database. It was assumed that, on average, the cost of providing CACP services to Indigenous and non-Indigenous people in remote and very remote areas was 25% higher than those provided in more accessible areas. This weighting was used by the Commonwealth Grants Commission in their calculation of measures of relative need for each type of service (CGC 2003).

Low-level residential aged care

People in residential care facilities attracting residential aged care subsidy are categorised according to the level of care they require and receive—not whether they are aged or non-aged residents.

There are eight such categories of care need and, for the purposes of allocating expenditure, the four highest levels of care are regarded as health services for older people (high-level residential aged care) and the remaining four (low-level residential aged care services) as welfare services.

This difference in the relative importance of the residential aged care subsidy in expenditure on health-related services is partially addressed by some Indigenous specific expenditures on residential services operating under the Aboriginal and Torres Straight Islander Aged Care Strategy (ABS & AIHW 2003). The difference is also partially explained by older Indigenous people having a preference to remain within their community (DoHA 2002).

Data on residential care subsidies and number of clients are from Aged Community Care Management Information System (ACCMIS) database (see Appendix 4 for details).

Other

The other category includes a number of smaller programs and grants administered by the DoHA. The allocation of expenditure to Indigenous people through these other programs was based on the proportion of Indigenous expenditure through the other identified programs for older people.

Health-related welfare services for people with a disability

Estimated expenditure on welfare services for people with a disability includes Australian Government administrative costs, but excludes state and territory administrative costs. The estimates also exclude concessions by state and territory governments and high-level residential aged care expenditures, which are considered to be health expenditures.

Commonwealth/State Disability Agreement funded services

Estimated health-related welfare expenditure through six service types were provided through the Commonwealth/State Disability Agreements (CSDA) (Table A8.1).

Table A8.1: Description of Commonwealth/State Disability services, 2001–02.

Service	Description
Accommodation	Accommodation support provides accommodation to people with a disability or assistance for the person with a disability to remain within the existing location.
Community support	Community support services provide the support required for an individual to reside in a non-institutional setting. Examples of these services include counselling, case management and therapy.
Respite	Respite care is also available to provide a short-term break to individuals who provide care to a person with a disability, while providing the disabled person with a positive environment (AIHW 2003b).
Community access	Community access programs provide services that give opportunities for individuals with a disability to enhance their social independence by accessing the services and facilities that are generally available in the community.
Employment	The employment program provides assistance in gaining and retaining employment for people with a disability.
Other	The Other category includes a range of smaller services such as advocacy, staff training and development and other support services that are not included in those described above.

Source: AIHW 2003b.

Client characteristics, obtained from the 2002 CSDA minimum data set, were the principal source for determining the Indigenous proportions of expenditures on accommodation, community support, respite, community access and employment programs. The CSDA data were collected on a single 'snapshot' day. The data included a significant number of 'not stated' responses, which exceeded the reported number of Indigenous consumers. 'Not stated' data were removed from the sample when allocating expenditures to services for Indigenous people and for other consumers. For this reason these expenditure estimates have to be regarded with caution. A newly developed collection was implemented in late 2002 and it is expected that future data from this collection will give a better picture of the services and their users over a full year.

Three data sources were used to estimate expenditure on Commonwealth/State Disability Agreement (CSDA) services. These include:

- Expenditure on these services from SCRCSSP (Steering Committee for the Review of Commonwealth/State Service Provision) (SCRCSSP 2003);
- Client characteristics from Commonwealth/State Disability Agreement Minimum Data Set (CSDA MDS); and
- Australian Government administration expenditure estimated by AIHW based on information in the Department of Family and Community Services (FaCS) annual report (FaCS 2002).

The allocation of expenditure estimates between Indigenous and non-Indigenous people was based on client characteristics from CSDA Minimum Data Set (MDS).

It was assumed that the provision of these services was higher in remote and very remote areas. Therefore a cost weight of 50% was applied in respect of services provided in such areas. This was the weighting used by the Commonwealth Grants Commission in calculating measures of relative need for each type of service (CGC 2003).

The proportion of Indigenous use in the 'other' category was determined from the overall average of the other services for people with disabilities for which data were collected.

Other services

Home and Community Care (HACC)

A similar method of calculating expenditure on HACC services for Indigenous people with a disability was used to that used to estimate HACC services for older people. The difference was the age groups for people with a disability, these were:

- Indigenous age group less than or equal to 50 years of age; and
- non-Indigenous less than or equal to 65 years of age.

Commonwealth Rehabilitation Services (CRS)

Estimated Indigenous expenditure was calculated from two data sources:

- Expenditure on CRS for Indigenous People from FaCS (unpublished data); and
- Total expenditure on CRS from FaCS 2001–02 annual report.

Low-level residential aged care

Estimated expenditure includes low-level residential aged care services for people with a disability.

Estimated expenditure on residential aged care for Indigenous people was based on data on residential care subsidies and client characteristics from Aged Community Care Management Information System (ACCMIS) database. A detailed explanation of the method for estimating this expenditure is included in Appendix 4.

Health-related welfare services through Aboriginal Community Controlled Health Services

Service Activity Reports (SAR) completed by ACCHSs include information on the full-time equivalent staff employed in different occupations and the service location (reclassified to the Australian Standard Geographic Classification (ASGC) Remoteness Areas Classification). The occupation classifications were used to split expenditure between health and health-related welfare services. For some occupations, such as nurses or dentists, all of the services are assumed to have been health services. Whereas for other occupations, such as environmental health workers or drivers, an estimate was made of the proportion of services of a health- or health-related nature based on advice from OATSIH's Workforce, Policy and Planning Section on the likely mix of work undertaken by such staff. On the basis of these analyses, the costs of management and support staff were apportioned between health and health-related services.

Information on the average salaries paid to staff of ACCHS was included in a report by Econtech on costing models for ACCHS (DoHA 2004b). These data indicated variations in salary costs of different occupations by Remoteness Areas, which have been incorporated in our analysis.

The results of the analysis suggested that 7.6% of expenditure in ACCHSs was on health-related welfare services. SAR reporting also provided an indication of the use of ACCHS services by non-Indigenous people—89.1% of services were assumed to be provided to Indigenous people.