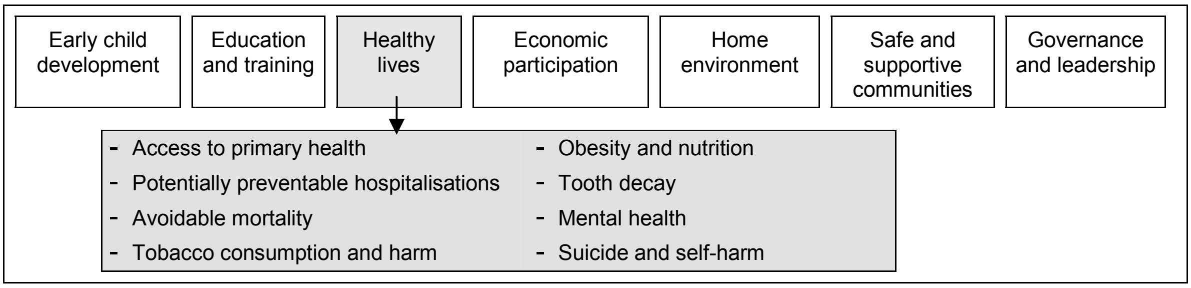
7 Healthy lives

Strategic areas for action



Indigenous people experience very high rates of a variety of physical and mental illnesses, which contribute to poorer quality of life and higher mortality rates. Physical health outcomes can be related to various factors, including a healthy living environment, access to health services, and lifestyle choices. Health risk behaviours, such as smoking and poor diet, are strongly associated with many aspects of socioeconomic disadvantage. Mental health issues can be related to a complex range of medical issues, historical factors, the stressors associated with entrenched disadvantage and drug and substance misuse.

Health outcomes directly affect the quality of people's lives, including their ability to socialise with family and friends and participate in the community, and to work and earn an income. Many COAG targets and headline indicators reflect the importance of healthy lives:

- life expectancy (section 4.1)
- infant mortality (section 4.2)
- disability and chronic disease (section 4.8).

Other COAG targets and headline indicators can be directly influenced by health outcomes:

- employment (section 4.6)
- household and individual income (section 4.9).

Outcomes in the healthy lives strategic area can be affected by outcomes in several other strategic areas for action, or can influence outcomes in other areas:

- early child development (maternal health, birthweight, early childhood hospitalisations, injury and preventable disease, hearing impediments) (chapter 5)
- education and training (school attendance and attainment) (chapter 6)
- economic participation (labour market participation, income support) (chapter 8)
- home environment (overcrowding, poor environmental health, access to functional water, sewerage and electricity) (chapter 9)
- safe and supportive communities (participation in sport, art or community group activities, alcohol, drug and other substance misuse and harm) (chapter 10).
- governance and leadership (engagement with service delivery) (chapter 11).

The indicators in this strategic area for action focus on the key factors that contribute to positive health outcomes (such as access to primary health services), as well as measures of the outcomes themselves:

- access to primary health — primary health care is the first point of contact with the health system and enables prevention, early intervention, case management and ongoing care. It can help address and modify health risk behaviours and contribute to improved health outcomes. This section reports expenditure on health care services for Indigenous people, data on Indigenous people accessing primary health care services, information about the Indigenous health workforce and health infrastructure in discrete Indigenous communities (section 7.1)
- potentially preventable hospitalisations — in many cases, hospital admissions can be prevented if more effective non-hospital care were available, either at an earlier stage in the disease progression or as an alternative to hospital care. Hospitalisations for injury and poisoning may also be preventable, although not necessarily through better primary health care. This section reports data on hospitalisations for potentially preventable chronic and acute conditions, vaccine-preventable conditions, sexually transmitted infections and injury and poisoning (section 7.2)
- avoidable mortality — avoidable mortality counts untimely and unnecessary deaths from diseases for which effective public health, medical and other interventions are available. This section reports avoidable mortality by major causes (section 7.3)
- tobacco consumption and harm — tobacco use is a significant contributor to premature death and ill health among Indigenous people. In addition to long term health risks, tobacco use among low income groups can divert scarce family resources away from beneficial uses. This section reports on tobacco consumption, and tobacco-related hospitalisations and deaths (section 7.4)

- obesity and nutrition — obesity and poor nutrition are significant contributors to poor health outcomes. Obesity is a risk factor for diseases and conditions such as diabetes, heart disease, high blood pressure, osteoarthritis and some cancers. ‘Nutrition’, or healthy eating, can contribute to better health outcomes. This section reports limited available data (section 7.5)
- tooth decay — healthy teeth are an important part of overall good health. Historically, Indigenous people had less tooth decay due to their traditional diet. The current level of tooth decay reflects changed diet, dental hygiene practices and access to dental care. This section reports available data on tooth decay, as well as data on hospitalisations for dental problems (section 7.6)
- mental health — mental health plays an important role in the social and emotional wellbeing of Indigenous people. This section reports available data on the prevalence of psychological distress, treatment rates for mental health related services, death rates for mental and behavioural disorders, information on the mental health of prisoners and juveniles in detention, and the risk of clinically significant emotional and behavioural difficulties in children (section 7.7)
- suicide and self-harm — suicide and self-harm cause great grief in both Indigenous and non-Indigenous communities. Studies suggest that Indigenous suicide is influenced by a complex set of factors relating to history of dispossession, removal from family, discrimination, resilience, social capital and socio-economic status. This section reports on suicide rates and hospitalisation rates for self-harm (section 7.8).

Attachment tables

Attachment tables for this chapter are identified in references throughout this chapter by an ‘A’ suffix (for example, table 7A.1.1). These tables can be found on the Review web page (www.pc.gov.au/gsp), or users can contact the Secretariat directly.

7.1 Access to primary health

Box 7.1.1 **Key messages**

- Expenditure per person on primary health care was 27 per cent higher for Indigenous people than for non-Indigenous people in 2004-05 (table 7.1.2).
- Immunisation rates for one year old Indigenous children (82.7 per cent) were lower than for non-Indigenous children of the same age (91.8 per cent) in 2007. Immunisation rates were similar for all children aged two and six years (table 7.1.3).
- Sixty per cent of Indigenous people reported that they usually went to the same general practitioner or health service. A further 30 per cent reported they usually went to an Aboriginal medical service (AHMAC 2008).
- Indigenous people represent a small proportion (1.0 per cent) of people working in health-related occupations in Australia, and even smaller proportions for occupations such as nurses (0.6 per cent), doctors (0.2 per cent) and dentists (0.2 per cent) (table 7A.1.21).

Indigenous people, like other Australians, experience a variety of physical and mental illnesses. Primary health care services (for example, doctors in private practice and Aboriginal and Torres Strait Islander primary health care services) influence the health status of Indigenous people by detecting and treating illness, managing chronic conditions and managing prevention programs. Access to primary health care can affect outcomes in a range of headline indicators and strategic areas for action, including life expectancy, infant mortality, disability and chronic disease, early child development and growth, substance use and misuse, and functional and resilient families and communities. Poor health can also affect people's educational attainment and ability to work.

Health services can be divided into primary health care services, which include public and community health services and those flowing from a patient-initiated contact (general practitioner consultations, hospital emergency attendances, general practitioner ordered investigations and prescriptions, over the counter medicines) and secondary/tertiary services, which involve a referral within the health system or a hospital admission. Appropriate use of primary health services can reduce the need for secondary/tertiary health services. Section 7.2 includes data on hospitalisations for chronic, acute and vaccine preventable conditions that may be potentially preventable with appropriate primary health care.

From consultations with Indigenous people and health policy makers in the preparation of the 2005 report, there was general agreement that distance is only one aspect influencing access to primary health care and that a more comprehensive measure was required to reflect the barriers faced by Indigenous people including cultural, language and racism barriers. Cutcliffe (2004) reported examples of racism and cultural insensitivity in mainstream health services and found that these were not uncommon experiences for Indigenous people. Paradies (2007) and Paradies, Harris and Anderson (2008) reviewed a range of research that found that a majority of Indigenous people experience racism during their lives. Racism and cultural barriers lead to some Indigenous people not being diagnosed and treated for disease in the early stages, when it is often more easily and effectively treated. Paradies (2007) and Paradies, Harris and Anderson (2008) found that racism (from all sources and not only related to health care) had negative impacts on Indigenous health outcomes.

This indicator includes data on:

- the incidence and prevalence of disease and injury
- expenditure on health care services for Indigenous people in 2004-05
- immunisation rates
- Indigenous people's use of primary health care services
- the Indigenous health workforce.

In addition to data, this section presents case studies of programs to improve primary health care services for Indigenous people (see box 7.1.2). Other examples of successful health care initiatives are included in sections 5.1, 5.3, and 5.5.

Section 11.3, Engagement with service delivery, examines more broadly Indigenous people's use of services, the barriers they face in accessing services and case studies of programs that are improving accessibility. Section 11.3 also contains data on patients discharged from hospital against medical advice.

Box 7.1.2 'Things that work' — improving access to primary health care

The **Kimberley Satellite Dialysis Centre** (WA) is an Aboriginal Community Controlled Health Service run dialysis unit, which provides a culturally safe environment for Aboriginal patients. Attendance and patient acceptance of the service have been excellent. The Centre treats patients on-site in Broome and teaches patients about home-based dialysis so they do not have to attend the clinic so many times a week (C. Hayward pers. comm. 2009). It was a winner of a 2007 National Excellence Award in Aboriginal and Torres Strait Islander Health (DOHA 2007).

(Continued next page)

Box 7.1.2 (continued)

After the Centre opened in 2002, the proportion of Kimberley haemodialysis patients receiving treatment in the region increased from 10 to 65 per cent. These patients were more likely to correctly follow haemodialysis therapy and care guidelines, and had similar age standardised death rates as non-Indigenous patients in WA and the rest of Australia, excluding the NT (Marley et al. 2008).

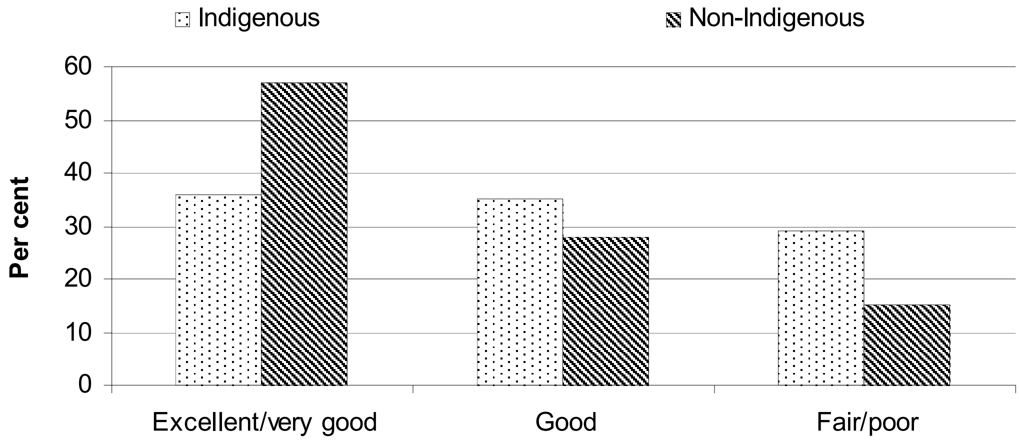
The **Healthy Heart Cardiac Rehabilitation Program** has been provided by the Wuchopperen Health Service in partnership with the Cardiac Rehabilitation Department of Cairns Base Hospital since July 2006. The Australian Medical Association 2007 Indigenous Health Report Card found that this initiative had had a significant positive impact on Indigenous participation in cardiac rehabilitation programs. Close to 100 Indigenous patients had been referred to the Wuchopperen Cardiac Rehabilitation program within a short period of time, with at least half of these referrals more than 200 km from Cairns. Before the program started, participation of Indigenous people in Cardiac Rehabilitation was poor (2–5 per cent). Since the program started, 100 per cent of referrals receive follow up, with 40 per cent of referrals attending the program requiring further investigation and potential surgery. There has been a 21 per cent participation rate in the exercise component and a 26 per cent participation rate in the cardiac education sessions (AMA 2007).

Incidence and prevalence of preventable diseases and injury

The 2004-05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) and the 2004-05 National Health Survey (NHS) collected data on people's self-perceived health status and long term health conditions. The available data do not distinguish between preventable and non-preventable conditions. Section 4.8 contains more information on the burden of disease for Indigenous people.

Administrative data on the incidence and prevalence of disease and injury are difficult to obtain, as some people do not seek treatment and others seek treatment from general practitioners and other primary health care providers who do not provide data to national collections about the conditions treated. Hospitalisation data provide information about the most serious cases of disease and injury. Section 7.2 includes data on hospitalisations for potentially preventable diseases and injury, including chronic, acute, vaccine preventable and sexually transmitted conditions, and injury and poisoning.

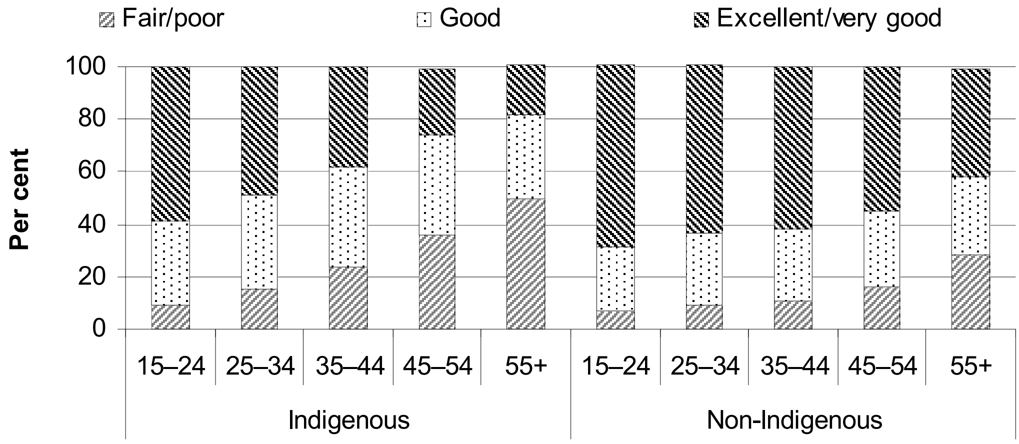
Figure 7.1.1 **Age standardised self-assessed health status, people aged 15 years and over, 2004-05**



Source: Derived from ABS (2006), ABS 2004-05 NATSIHS and ABS 2004-05 NHS; table 7A.1.1.

- In 2004-05, after adjusting for differences in age structure, Indigenous people were almost twice as likely as non-Indigenous people to report their health as fair or poor (figure 7.1.1).
- Non-age-standardised data for 2004-05, show that 43 per cent of Indigenous people aged 15 years and over reported their health as being very good or excellent, 35 per cent reported their health as being good and 22 per cent reported their health as being poor or fair (AHMAC 2008).

Figure 7.1.2 **Self-assessed health status, by age, people aged 15 years and over, 2004-05**



Source: AIHW from ABS (2006), ABS 2004-05 NATSIHS and ABS 2004-05 NHS; table 7A.1.1.

In 2004-05:

- the proportions of both Indigenous and non-Indigenous people rating their health as fair or poor increased with age. However, the gap between Indigenous and non-Indigenous people with fair/poor health increased significantly with age, particularly for people aged 35 years and over (figure 7.1.2)
- the proportions of Indigenous people reporting fair/poor or excellent/very good health was similar across states and territories and remoteness areas (tables 7A.1.3–4)
- Indigenous people's reported health status varied according to other socioeconomic characteristics. Those whose highest level of schooling was year 9 or below were more likely to rate their health as fair or poor compared to those who had completed years 11 or 12. A higher proportion of those who were employed rated their health as excellent or very good. Those in the lowest income quintile were more likely to rate their health as fair or poor than those in the highest quintile (table 7A.1.5).

Table 7A.1.6 includes information on how Indigenous people with different numbers of long term health conditions rated their health.

Access to health care compared to need

The data above show that Indigenous people generally have poorer self-perceived health status than non-Indigenous people. Other sections in this report confirm Indigenous people's poorer health outcomes — 4.1 (life expectancy), 4.2 (young child mortality), 4.8 (disability and chronic disease), 5.1 (maternal health), 5.3 (birthweight), 5.4 (early childhood hospitalisations), 5.5 (injury and preventable disease), 5.7 (hearing impediments), 7.2 (potentially preventable hospitalisations), 7.3 (avoidable mortality), 7.7 (mental health) and 9.2 (rates of diseases associated with poor environmental health).

There is no straightforward measure of Indigenous people's access to primary health care services compared to need. Indigenous people use many health services at a higher rate than non-Indigenous people. However, as Indigenous people's health is poorer than non-Indigenous people's health on a range of measures, Indigenous people could reasonably be expected to make greater use of health services than non-Indigenous people. AHMAC (2008) and AIHW (2009) explored Indigenous people's access to health care compared to need in more detail, comparing people's use of health services with their self-reported health status and number of long term health conditions.

Expenditure on health care services for Indigenous people

Expenditure per person on health services by type of service provides an indication of the relative use of health care services by Indigenous and non-Indigenous people. The most recently published data on health expenditure for Indigenous people are for 2004-05 (AIHW 2008).

It is not always possible to make accurate estimates of health expenditure for Indigenous people and their corresponding service use. For example, the Indigenous status of service users is not always clearly stated or recorded. Data on Indigenous status are often unavailable for privately funded services (although they are available for many publicly funded health services). The scope and definition of health expenditures also have some limitations. Other (non-health) agency contributions to health expenditure, such as those incurred within education departments and prisons are not included. There may also be some inconsistencies across data providers resulting from limitations of financial reporting systems and different reporting mechanisms (AIHW 2008).

Table 7.1.1 compares the total expenditure and expenditure per person on all health care services for Indigenous and non-Indigenous people. Data on expenditure split into primary and secondary/tertiary health care services are shown in table 7.1.2. Some of the health goods or services listed in table 7.1.1 fit entirely within either the primary or secondary/tertiary categories but other services are split between the two categories, as shown in table 7.1.2.

Table 7.1.1 **Total expenditure on health services for Indigenous and non-Indigenous people, by type of health good or service, current prices, Australia, 2004-05**

	Total expenditure ($ million)			*Expenditure per person ($)*		
Health good or service type	*Indigenous*	*Non-Indigenous*	*Indigenous share (%)*	*Indigenous*	*Non-Indigenous*	*Ratio*
Hospitals	1 080.7	27 337.6	3.8	2 213	1 386	1.60
Public hospital[a]	1 048.6	21 042.7	4.7	2 147	1 067	2.01
Admitted patient services	799.4	16 226.8	4.7	1 637	823	1.99
Non-admitted patient services	249.2	4 815.8	4.9	510	244	2.09
Private hospital	32.1	6 295.0	0.5	66	319	0.21
High-level residential care	41.7	6 283.4	0.7	85	319	0.27
Patient transport	103.5	1 369.9	7.0	212	69	3.05
Medical services	164.6	14 483.5	1.1	337	734	0.46
Community health services	497.8	3 052.7	14.0	1 019	155	6.59
Dental and other health practitioners	78.0	7 811.8	1.0	160	396	0.40
Medications	109.4	11 056.4	1.0	224	561	0.40
Aids and appliances	18.6	2 591.4	0.7	38	131	0.29
Public health	88.9	1 350.3	6.2	182	68	2.66
Research	46.0	1 669.0	2.7	94	85	1.11
Health administration (nec)	74.6	2 254.5	3.2	153	114	1.34
Total	**2 304.0**	**79 260.4**	**2.8**	**4 718**	**4 019**	**1.17**

[a] Public hospital services exclude any dental services, community health services, patient transport services, public health and health research undertaken by the hospital. **..** Not applicable.

Source: AIHW 2008, *Expenditures on Health for Aboriginal and Torres Strait Islander Peoples 2004-05*, Cat. no. HWE 40, Health and welfare expenditure series no. 33, AIHW, Canberra; table 7A.1.7.

In 2004-05 across all health services:

- total expenditure on health care for Indigenous people was $4718 per person compared with $4019 per non-Indigenous person (table 7.1.1)
- expenditure per person was lower for Indigenous people on dental services ($160 compared to $396), medical services ($337 compared to $734), medications ($224 compared to $561) and aids and appliances ($38 compared to $131) (table 7.1.1)
- expenditure per person on community health services was 6.6 times greater for Indigenous people than non-Indigenous people ($1019 compared to $155) (table 7.1.1).

Table 7.1.2 Expenditure per person on primary and secondary/tertiary health services for Indigenous and non-Indigenous people, by type of health good or service, current prices, Australia, 2004-05[a, b]

	Primary			*Secondary/tertiary*		
	Expenditure per person ($)			*Expenditure per person ($)*		
Health good or service type	*Indigenous*	*Non-Indigenous*	*Ratio*	*Indigenous*	*Non-Indigenous*	*Ratio*
Hospitals	255	122	2.09	1958	1264	1.55
Admitted patient services	na	na	na	1703	1142	1.49
Non-admitted patient services	255	122	2.09	255	122	2.09
High-level residential care	na	na	na	85	319	.27
Patient transport	106	14	7.63	106	56	1.91
Medical services	285	488	0.58	52	246	0.21
Community health services	1019	155	6.59	na	na	na
Dental services	116	256	0.45	na	na	na
Other health practitioners	22	70	0.31	22	70	0.31
Medications	203	465	0.44	21	96	0.22
Aids and appliances	35	109	0.32	4	22	0.16
Public health	182	68	2.66	na	na	na
Total	**2223**	**1747**	**1.27**	**2248**	**2073**	**1.08**

[a] Excludes expenditure on health administration not elsewhere included and research. [b] Primary health services include public and community health services and those flowing from a patient-initiated contact (general practitioner consultations, hospital emergency attendances, general practitioner ordered investigations and prescriptions, over the counter medicines etc.). Secondary/tertiary services involve a referral within the health system or a hospital admission.

Source: AIHW 2008, *Expenditures on Health for Aboriginal and Torres Strait Islander Peoples 2004-05*, Cat. no. HWE 40, Health and welfare expenditure series no. 33, AIHW, Canberra; table 7A.1.8.

In 2004-05, for health services excluding research and administration:

- expenditure on primary health care for Indigenous people was $2223 per person compared with $1747 per non-Indigenous person (table 7.1.2)
- primary health care expenditure on medical services[1] per Indigenous person was a little over half of the expenditure per non-Indigenous person in 2004-05. For dental services, expenditure per Indigenous person was less than half of the expenditure per non-Indigenous person (table 7.1.2).

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[1] Medical services are listed in the Medical Benefits Schedule and are provided by registered medical practitioners. Most medical services attract benefits under Medicare. They include services provided to private patients in hospitals and those 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 (AIHW 2008).

- expenditure per person on pharmaceuticals for Indigenous people was less than half that for non-Indigenous people ($203 compared to $465) (table 7.1.2)
- expenditure on secondary/tertiary health services was $2248 per Indigenous person and $2073 per non-Indigenous person (table 7.1.2).

Immunisation rates

Immunisation is highly effective in preventing sickness and death from vaccine preventable diseases. The Australian Government provides free childhood vaccines for children up to the age of seven. Burgess (2003) found that since the introduction of vaccination for children in 1932, deaths from vaccine preventable diseases have fallen by 99 per cent despite the Australian population nearly tripling.

Data on immunisation rates for children from the Australian Childhood Immunisation Register (ACIR) are shown in table 7.1.3. Childhood immunisation data are only available for NSW, Victoria, WA, SA and the NT. Indigenous status data are not routinely reported to the ACIR by Queensland, Tasmania or the ACT.

Table 7.1.3 **Vaccination coverage estimates for children, NSW, Victoria, WA, SA and the NT combined, 31 December 2007**[a]

	1 year			*2 years*			*6 years*		
Vaccine	*Indigenous*	*Non-Indigenous*	*Ratio*[c]	*Indigenous*	*Non-Indigenous*	*Ratio*[c]	*Indigenous*	*Non-Indigenous*	*Ratio*[c]
	%	%		%	%		%	%	
Hepatitis B	91.8	94.6	1.0	96.7	96.1	1.0	..	..	..
DTP	83.5	92.3	0.9*	94.0	95.4	1.0	86.1	89.9	1.0
Polio	83.4	92.3	0.9*	93.9	95.4	1.0	86.1	90.0	1.0
HIB	91.2	94.6	1.0	92.2	95.2	1.0	..	..	..
MMR	..	..	..	93.3	94.4	1.0	86.6	89.9	1.0
All vaccines	82.7	91.8	0.9*	90.6	93.2	1.0	85.2	89.3	1.0

DTP = diphtheria, tetanus, pertussis. HIB = *Haemophilus influenzae* type b. MMR = measles, mumps, rubella. * Represents results with statistically significant differences in the Indigenous/non-Indigenous comparisons.

[a] Three-month cohorts, for cohorts born between 1 July and 30 September 2006, 1 July and 30 September 2005, and 1 July and 30 September 2001, respectively. [b] Data from the ACT, Queensland and Tasmania have not been included in this measure because Indigenous status data from these jurisdictions are not routinely reported or transferred to the Australian Childhood Immunisation Register. [c] Ratio — coverage estimate for Indigenous children divided by coverage estimate for non-Indigenous children. **..** Not applicable.

Source: AIHW (2009) derived from ACIR Medicare Australia data; table 7A.1.9.

- In 2007, immunisation rates for one year old Indigenous children (82.7 per cent) were lower than for non-Indigenous children of the same age (91.8 per cent). Immunisation rates for children aged two years and six years were similar for Indigenous and non-Indigenous children (table 7.1.3).

- Between 2001 and 2007, there were no significant changes in the proportions of one year old Indigenous and non-Indigenous children who were fully immunised. Over the same period there was no significant change in the proportion of Indigenous children fully immunised at two years but a significant increase in the proportion of non-Indigenous children. The proportions of both Indigenous and non-Indigenous children who were fully immunised at six years increased significantly (AIHW 2009).
- Data on childhood immunisation rates by State and Territory are shown in tables 7A.2.9–12.

Vaccination against influenza and pneumonia is recommended for Indigenous people aged 50 years and over, Indigenous people aged 15 to 49 years with medical conditions putting them at high risk of disease, and non-Indigenous people aged 65 years and over. Influenza and pneumonia vaccinations for people in these categories are provided free by the Australian Government (AIHW 2009).

Data on immunisation of Indigenous adults aged 50 years and over from the ABS 2004-05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) and immunisation of non-Indigenous adults aged 65 years and over from the ABS 2004-05 National Health Survey (NHS) are shown in table 7.1.4.

Table 7.1.4 **Immunisation rates, Indigenous people aged 50 years and over and non-Indigenous people aged 65 years and over, 2004-05**

	Indigenous		*Non-Indigenous*
	50–64 years	*65 + years*	*65 + years*
		Per cent	
Had influenza vaccination in last 12 months	52	84	73
Had influenza vaccination but not in last 12 months	18	7*	11
Had influenza vaccination but not known if in last 12 months[a]	0*	1**	1*
Never had vaccination for influenza	30	9*	15
Total	**100**	**100**	**100**
Had pneumonia vaccination in last 5 years	30	48	43
Had pneumonia vaccination but not in last 5 years	1*	np	1
Had pneumonia vaccination but not known if in last 5 years[b]	7	np	3
Never had pneumonia vaccination	63	45	53
Total	**100**	**100**	**100**
Total number	**36 900**	**12 200**	**2 430 300**

* Estimate has a relative standard error or 25 to 50 per cent and should be used with caution. ** Estimate has a relative standard error of greater than 50 per cent and is considered too unreliable for general use.

[a] Includes not known if ever had influenza vaccination. [b] Includes not known if ever had pneumonia vaccination.

Source: AIHW (2008), derived from ABS 2004-05 NATSIHS and ABS 2004-05 NHS; table 7A.1.13.

In 2004-05:

- 52 per cent of Indigenous people aged 50–64 years had been vaccinated against influenza in the previous 12 months and 30 per cent had been vaccinated against pneumonia in the previous five years (table 7.1.4)
- 84 per cent of Indigenous people and 73 per cent of non-Indigenous people aged 65 years and over had been vaccinated against influenza in the previous 12 months. Forty-eight per cent of Indigenous people and 43 per cent of non-Indigenous people aged 65 years and over had been vaccinated against pneumonia in the previous five years (table 7.1.4).

Indigenous people accessing primary health care services

Data are available from the ABS 2004-05 NATSIHS on where Indigenous people usually go when they have a health problem. A more detailed presentation of these data was included in the 2007 report. The data compare the use of different primary health care services by Indigenous people in non-remote and remote areas.

- In 2004-05, 91 per cent of Indigenous people reported that they usually went to the same general practitioner or medical service. Sixty per cent of Indigenous people went to a doctor if they had a problem with their health and 30 per cent reported they went to an Aboriginal medical service. Aboriginal medical services were used as the regular source of health care by 15 per cent of Indigenous people in major cities but by 76 per cent in very remote areas. The proportion of Indigenous people using a doctor for their regular health care decreased with remoteness from 80 per cent in major cities to 6 per cent in very remote areas (AHMAC 2008).
- Indigenous people living in remote areas were around four times as likely as those living in non-remote areas to use Aboriginal medical services (66.0 per cent compared with 17.4 per cent) or to go to hospital (16.1 per cent compared with 3.7 per cent) (table 7A.1.14).
- Around two per cent of Indigenous people living in non-remote areas stated that they did not seek health care when they had a health problem, compared with 1.2 per cent in remote areas (table 7A.1.14).

In 2004-05, after taking into account the different age structures of the Indigenous and non-Indigenous populations, the times since Indigenous and non-Indigenous adults had last consulted a general practitioner (GP)/specialist were similar

(7A.1.15). A slightly higher proportion of Indigenous than non-Indigenous adults had visited a GP/specialist in the two weeks prior to the survey (28.7 per cent compared with 25.1 per cent) (table 7A.1.15). A greater proportion of Indigenous than non-Indigenous adults had not consulted a GP/specialist in the past 12 months in 2004-05 (17.8 per cent and 14.5 per cent, respectively) (table 7A.1.15). A higher proportion of Indigenous adults living in remote areas had not consulted a GP/specialist in the past 12 months than Indigenous adults living in non-remote areas, in both 2001 and 2004-05 (table 7A.1.15).

There are various reasons why Indigenous people in remote and non-remote areas did not go to a GP when they had a health problem. More than a third of Indigenous adults living in remote and non-remote areas reported 'personal reasons'[2] for not visiting a GP when they had a health problem (table 7A.1.17). For Indigenous adults living in remote areas in 2004-05, the most commonly reported reason(s) for not going to a GP were logistical[3], more than twice as high as Indigenous adults in non-remote areas (table 7A.1.17).

Table 7A.1.16 compares the length of time since Indigenous and non-Indigenous people last consulted a dentist. A lower proportion of Indigenous than non-Indigenous people had visited a dentist in the two years prior to the survey being completed in 2001 and 2004-05. Further, a greater proportion of Indigenous than non-Indigenous people had not consulted a dentist for two years or more in 2001 and 2004-05. Indigenous people living in remote areas were more likely to have never consulted a dentist compared to Indigenous people living in non-remote areas in 2001 and 2004-05 (table 7A.1.16). Information on dental health outcomes for Indigenous people is included in section 7.6.

Table 7A.1.18 compares the various reasons why Indigenous adults in remote and non-remote areas did not go to a dentist when they had a dental problem. In 2004-05, Indigenous adults in remote areas were twice as likely as those in non-remote areas to report 'logistical reasons'[3] for not going to a dentist (52.9 per cent compared with 26.6 per cent). Indigenous adults in non-remote areas were twice as likely as those in remote areas to report 'cost' as a reason for not seeking dental treatment (33.7 per cent compared with 16.2 per cent).

Data on reasons for not going to 'other health professionals' and to hospital by remoteness are reported in tables 7A.1.19 and section 11.3.

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[2] Personal reasons include: too busy (work, personal or family responsibilities), discrimination, service not culturally appropriate, language problems, dislikes service or health professional, afraid, embarrassed, or felt service would be inadequate.

[3] Logistical reasons includes transport/distance, service not available in area, waiting time too long, or service not available at the time required.

Access to health services in discrete Indigenous communities

The ABS 2006 Community Housing and Infrastructure Needs Survey (CHINS) collected information on the number of Aboriginal primary health care centres and state-funded community health centres located in discrete Indigenous communities.[4] Information was also collected on access to medical professionals and whether any Indigenous health workers had visited or worked within these communities (ABS 2007). Data were collected from a total of 1187 discrete Indigenous communities with a combined population of approximately 92 960 people.

Aboriginal primary health care centres are community-controlled health facilities that provide health care services and support to Aboriginal and Torres Strait Islander people. In 2006, 107 communities (41 450 people) reported that an Aboriginal primary health care centre was located in their community (45 per cent of the total population participating in the 2006 CHINS). Seventy-one per cent of Aboriginal primary health care centres were located in very remote communities, 9 per cent in remote communities and 20 per cent in non-remote communities.

One hundred and four discrete Indigenous communities (7743 people) had an Aboriginal primary health care centre located within 10 kilometres of their community (8 per cent of the total population participating in the 2006 CHINS). However, a larger number of Indigenous communities (417), with an aggregate population of 25 486, reported being 100 kilometres or more from the nearest Aboriginal primary health care centre (27 per cent of the total CHINS population).

Almost half of all the communities located 100 kilometres or more from the nearest Aboriginal primary health care centre were in the NT, followed by 35 per cent in WA.

Indigenous health workers are trained to certificate III, IV or diploma level, and generally provide a first point of contact for Indigenous people accessing health care services. They provide assistance and information on health issues such as alcohol and mental health, diabetes, ear and eye health, sexual health and hospital education. Indigenous health workers also act as liaison officers with other medical professionals. Table 7A.1.20 presents the number and proportion of discrete Indigenous communities that reported having a female or male Indigenous health worker, registered nurse or doctor visit or work within their community in 2006.

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[4] Discrete Indigenous communities are defined by the ABS as geographic locations inhabited by or intended to be inhabited predominantly (greater than 50 per cent of usual residents) by Aboriginal or Torres Strait Islander peoples, with housing or infrastructure that is managed on a community basis.

- A greater proportion of discrete Indigenous communities reported having had a female Indigenous health worker visit or work within their community on a daily basis than a male Indigenous health worker (10.2 per cent compared with 6.3 per cent) (table 7A.1.20).
- Nearly half of the survey population (49 per cent) reported having had a female Indigenous health worker visit or work within their community on a daily basis (table 7A.1.20).
- A greater proportion of discrete Indigenous communities reported having a registered nurse visit or work within their community on a daily basis than a doctor (10.1 per cent compared with 1.2 per cent) (table 7A.1.20). Doctors were more likely than registered nurses to visit or work within a discrete Indigenous community on a weekly to monthly basis (table 7A.1.20).
- Only 1.0 per cent of the CHINS population reported that registered nurses did not frequently visit or work in their community and 2.0 per cent reported that doctors did not frequently visit or work in their community (less than 3-monthly) (table 7A.1.20).

The Indigenous health workforce

Due to cultural differences, language barriers and racism experienced when accessing some mainstream health services, some Indigenous people feel more comfortable seeing Indigenous health professionals and accessing Indigenous-controlled medical services. However, Indigenous people represent a small proportion (1.0 per cent) of people working in health-related occupations in Australia (ABS and AIHW 2008, 7A.1.21). For some particular occupations this proportion is even lower (for example, nurses — 0.6 per cent, medical practitioners/doctors — 0.2 per cent and dentists — 0.2 per cent) (ABS and AIHW 2008, table 7A.1.21). Consequently, many Indigenous people needing health care will be treated by non-Indigenous health professionals. Therefore, it is important that non-Indigenous health professionals treating Indigenous people to have an awareness and respect for Indigenous culture.

There is potential for the number of Indigenous people in occupations such as nursing to increase where Indigenous health workers have opportunities to progressively upgrade their qualifications with further training. The Marr Mooditj Aboriginal Health Training College in WA provides health worker training at certificate III, IV and diploma levels and a bridging course for those wishing to study nursing (Marr Mooditj 2007).

7.2 Potentially preventable hospitalisations

Box 7.2.1 **Key messages**

- In 2006-07, in NSW, Victoria, Queensland, WA, SA and public hospitals in the NT:
  - the Indigenous hospitalisation rate for potentially preventable chronic conditions was 6.4 times the rate for non-Indigenous people (table 7.2.1). The Indigenous hospitalisation rate in 2006-07 was 21.2 per cent higher than the rate in 2004-05 (186.9 compared to 154.2 hospitalisations per 1000 people) (table 7A.2.1)
  - the Indigenous hospitalisation rate for type 2 diabetes (with and without complications) was 5.2 times the rate for non-Indigenous people (table 7.2.2). Complications of diabetes accounted for 88.5 per cent of hospitalisations of Indigenous people for potentially preventable chronic conditions (table 7.2.1)
  - the Indigenous hospitalisation rate for potentially preventable acute conditions was 2.3 times the rate for non-Indigenous people. Hospitalisation rates for vaccine preventable and sexually transmitted diseases were also higher for Indigenous than non-Indigenous people (tables 7.2.3–5).
- Indigenous people were 45.8 times as likely as non-Indigenous people to be hospitalised for injury and poisoning and other external causes in 2005–2007 in NSW, Victoria, Queensland, WA, SA and public hospitals in the NT (table 7.2.6).

Potentially preventable hospitalisations include hospitalisations that could have been prevented if people had received appropriate primary health care, and hospitalisations that result from external causes, such as accidents, assault and poisoning that could potentially have been prevented by other means.

The extent of potentially preventable hospitalisations can indicate whether people are receiving adequate primary health care. In many cases, hospital admissions can be prevented if more effective non-hospital care were available, either at an earlier stage in the disease progression or as an alternative to hospital care (AHMAC 2008). The variation in potentially preventable hospitalisation rates between Indigenous and non-Indigenous people demonstrates considerable potential for improving Indigenous access to non-hospital care.

In addition to data on hospitalisations, this section includes a case study of a successful program working to prevent unnecessary hospitalisations (box 7.2.2).

Box 7.2.2 Things that work —reducing potentially preventable hospitalisations

The **Burns SA** Aboriginal Burns Program brings together government and non-government agencies, Aboriginal and non-Aboriginal organisations and people to address Aboriginal health. The program was developed by the Central Northern Adelaide Health Service and the Children, Youth and Women's Health Service in response to the overrepresentation of Aboriginal people admitted to the South Australian Burns Service.

The Program extends from prevention and pre-hospital care through to acute care and rehabilitation. Burns education and prevention is provided to school children and Aboriginal community members, and clinical burns emergency management training is provided for Aboriginal health workers, nurses and doctors. Appropriate discharge strategies and the delivery of culturally aware training is provided to improve the hospital journey of Aboriginal burns patients and their escorts. Early evaluation of the program indicates that in SA, Aboriginal burns patients admissions to the Burns Service are decreasing (SA Government unpublished).

This section explores preventable illness by looking at hospitalisations for potentially preventable chronic (tables 7.2.1 and 7.2.2) and acute conditions (table 7.2.3), vaccine preventable conditions (table 7.2.4), and infections with a predominantly sexual mode of transmission (table 7.2.5). It also contains data on hospitalisations for injury and poisoning (table 7.2.6).

The availability of hospitalisation data for Indigenous people has significantly increased in the 2009 report compared to the 2007 report. AIHW analysis of the completeness of Indigenous identification in hospital statistics has shown that data from NSW and Victoria now have sufficient identification of Indigenous status. Therefore, data now available for NSW, Victoria, Queensland, WA, SA and the NT. Nevertheless, Indigenous identification in hospitalisation data remains incomplete in most jurisdictions. The AIHW (2005) found that the quality of Indigenous hospitalisation data varied between jurisdictions and hospitals and was poorest in regions where Indigenous people are a small proportion of the population and poor in private hospitals. Tasmania and the ACT are working with the AIHW to improve the quality of their Indigenous hospitalisation data.

Because data for NSW and Victoria only included adequate Indigenous identification for 2004-05 to 2006-07, data from four states and territories (Queensland, WA, SA and the NT) are included in the attachment tables to provide a longer time series from 2001-02 to 2006-07. Hospitalisation data for these four jurisdictions should not be assumed to represent the hospitalisation experience in the other jurisdictions.

In 2006-07, Indigenous people had much higher hospitalisation rates than non-Indigenous people for a range of potentially preventable chronic diseases (diseases that typically persist for at least 6 months) and for complications associated with diabetes (tables 7.2.1 and 7.2.2).

Table 7.2.1 Age standardised hospitalisation rates for potentially preventable chronic conditions, per 1000 people, NSW, Victoria, Queensland, WA, SA and public hospitals in the NT, 2006-07[a, b, c]

		Indigenous	*Non-Indigenous*[d]	*Rate ratio*
Asthma	rate	4.08	1.74	2.34
Congestive cardiac failure	rate	6.29	2.12	2.97
Diabetes complications	rate	165.42	20.81	7.95
Chronic obstructive pulmonary diseases	rate	12.00	2.64	4.54
Angina	rate	5.71	1.86	3.06
Iron deficiency anaemia	rate	1.79	1.27	1.41
Hypertension	rate	0.80	0.30	2.63
Nutritional deficiencies[e]	rate	0.03	0.01	3.93
Total for potentially preventable chronic conditions[f]	**rate**	**186.94**	**29.27**	**6.39**
Total hospitalisations for all conditions	**rate**	**833.08**	**358.06**	**2.33**

[a] Hospitalisation rates are directly age standardised to the Australian population at 30 June 2001. [b] Data are based on State or Territory of usual residence. [c] See table 7A.2.16 for the ICD-10-AM codes used to classify potentially preventable conditions. [d] Non-Indigenous includes hospitalisations of people identified as not Indigenous as well as those with a ‘not stated’ Indigenous status. [e] The Indigenous nutritional deficiencies standardised rate is based on only a small number of hospitalisations and should be used with caution. [f] The total is not the sum of the individual conditions because diabetes complications overlap other categories.

Source: AIHW National Hospital Morbidity Database (unpublished); table 7A.2.1.

For NSW, Victoria, Queensland, WA, SA and public hospitals in the NT:

- hospitalisation rates for Indigenous people with potentially preventable chronic conditions were 6.4 times as high as the rates for non-Indigenous people in 2006-07 (186.94 hospitalisations per 1000 Indigenous people compared to 29.27 hospitalisations per 1000 non-Indigenous people) (table 7.2.1)
- hospitalisation rates for Indigenous people with diabetes complications were 8.0 times as high and for chronic obstructive pulmonary diseases 4.5 times as high as the rates for non-Indigenous people. Hospitalisations for complications of diabetes accounted for 88.5 per cent of hospitalisations for potentially preventable chronic conditions (table 7.2.1)
- hospitalisations for potentially preventable chronic conditions were a higher proportion of all hospitalisations for Indigenous people (22.4 per cent) than for

non-Indigenous people (8.2 per cent), which suggests that inadequate use of, or access to, primary health care services is a major contributor to Indigenous hospitalisation (table 7A.2.1).

- From 2004-05 to 2006-07, hospitalisations for potentially preventable chronic conditions increased every year for Indigenous people (table 7A.2.1). The hospitalisation rate for potentially preventable chronic conditions in 2006-07 was 21.2 per cent higher than the rate in 2004-05 (186.94 hospitalisations per 1000 people compared to 154.2 hospitalisations per 1000 people) (table 7A.2.1).

For Queensland, WA, SA and public hospitals in the NT, for 2001-02 to 2006-07:

- hospitalisation rates for Indigenous people for potentially preventable chronic conditions was 2.6 times as high in 2006-07 as in 2001-02. Hospitalisations for diabetes complications accounted for most of the increase in hospitalisations (tables 7A.2.2–4)
- non-Indigenous hospitalisations for potentially preventable chronic conditions also increased over this period, but, the increase was much lower than that for Indigenous people (82.1 per cent compared with 155.8 per cent) (tables 7A.2.2–4).

Data in table 7.2.2 are different to those relating to diabetes in table 7.2.1. Data in table 7.2.1 show hospitalisation rates for all types of diabetes (Type 1, Type 2 and unspecified) and where diabetes may have been an additional diagnosis (that is, it could be associated with other reasons for going to hospital). Data in table 7.2.2 only include Type 2 diabetes as a principal diagnosis. Thus, the data in table 7.2.2 are more narrowly specified and hospitalisation rates are lower.

Table 7.2.2 **Age standardised hospitalisation rates for Type 2 diabetes as principal diagnosis by complication, per 1000 people, NSW, Victoria, Queensland, WA, SA, and public hospitals in the NT, 2006-07**[a, b, c, d, e]

	Indigenous	*Non-Indigenous*[e]	*Rate ratio*
Circulatory	0.47	0.22	2.09
Renal	2.60	0.22	11.83
Ophthalmic	3.16	1.22	2.59
Other specified	4.75	0.62	7.64
Multiple	3.25	0.45	7.25
No complications	0.14	0.04	3.99
Total[g]	**14.40**	**2.77**	**5.19**

[a] Hospitalisation rates are directly age standardised to the Australian population at 30 June 2001. [b] Figures are based on the ICD-10-AM classification. The codes used were E11.x, where x=2 (renal complications), x=3 (ophthalmic complications, x=5 (peripheral circulatory complications), x=7 (multiple complications), x=8 (unspecified complications), x=9 (without complications), and x=0, 1, 4, 6 (other specified complications). [c] Results for individual complications may be affected by small numbers, particularly for Indigenous people, and should be interpreted with caution. [d] Although same day admission for dialysis is not normally coded with a principal diagnosis of Type 2 diabetes, the data contain a significant number in several jurisdictions. [e] Data are based on State or Territory of usual residence. [f] Non-Indigenous includes hospitalisations identified as not Indigenous as well as those with a 'not stated' Indigenous status. [g] Totals include hospitalisations for unspecified complications.

Source: AIHW National Hospital Morbidity Database (unpublished); table 7A.2.5.

For NSW, Victoria, Queensland, WA, SA and public hospitals in the NT:

- hospitalisations for Indigenous people with Type 2 diabetes as a principal diagnosis were 5.2 times the rates for non-Indigenous people in 2006-07 (14.40 hospitalisations per 1000 Indigenous people compared with 2.77 hospitalisations per 1000 non-Indigenous people) (table 7.2.2)
- hospitalisations for renal (kidney-related) complications of diabetes were 11.8 times as high for Indigenous people as non-Indigenous people (table 7.2.2).
- the hospitalisation rate for complications associated with Type 2 diabetes as a principal diagnosis increased for Indigenous people 40.6 per cent from 2004-05 to 2006-07 (from 10.24 per 1000 people in 2004-05 to 14.40 per 1000 people in 2006-07) (table 7A.2.5)
- the hospitalisation rate for type 2 diabetes also increased for non-Indigenous people between 2004-05 and 2006-07 but more slowly than for Indigenous people (19.9 per cent compared with 40.6 per cent (table 7A.2.5).

Queensland, WA, SA and public hospitals in the NT showed similar patterns for type 2 diabetes over a longer period (2001-02 to 2006-07) (tables 7A.2.6–7).

Table 7.2.3 presents hospitalisation rates for a variety of conditions which cause serious short term illness and could possibly be prevented, or their severity minimised, through access to effective primary health care services.

Table 7.2.3 **Age standardised hospitalisation rates for potentially preventable acute conditions, per 1000 people, NSW , Victoria, Queensland, WA, SA, and public hospitals in the NT, 2006-07**[a, b, c]

	Indigenous	*Non-Indigenous*[d]	*Rate ratio*
Dehydration and gastroenteritis	3.36	2.58	1.30
Pyelonephritis[e]	6.33	2.28	2.77
Perforated/bleeding ulcer	0.43	0.24	1.79
Cellulitis	4.58	1.56	2.93
Pelvic inflammatory disease	0.55	0.24	2.31
Ear, nose and throat infections	3.36	1.57	2.14
Dental conditions	3.95	2.62	1.51
Appendicitis	1.53	1.38	1.11
Convulsions and epilepsy	7.08	1.48	4.79
Gangrene	1.08	0.20	5.35
Total[f]	**32.18**	**14.15**	**2.27**

[a] Hospitalisation rates are directly age standardised using the 2001 Australian population. [b] Data are based on State/Territory of usual residence. [c] See table 7A.2.16 for the ICD-10-AM codes used to classify potentially preventable conditions. [d] Non-Indigenous includes hospitalisations of people identified as not Indigenous as well as those with a 'not stated' Indigenous status. [e]Kidney inflammation caused by bacterial infection. [f] Totals may not equal the sum of the individual conditions due to rounding.

Source: AIHW National Hospital Morbidity Database (unpublished); table 7A.2.8.

For NSW, Victoria, Queensland, WA, SA and public hospitals in the NT:

- hospitalisation rates for Indigenous people with potentially preventable acute conditions were 2.3 times the rates for non-Indigenous people in 2006-07 (32.18 hospitalisations per 1000 Indigenous people compared to 14.15 hospitalisations per 1000 non-Indigenous people) (table 7.2.3).
- hospitalisation rates for Indigenous people with gangrene were 5.4 times as high and for convulsions and epilepsy 4.8 times as high as the rates for non-Indigenous people (table 7.2.3).
- Indigenous and non-Indigenous hospitalisation rates for potentially preventable acute conditions fluctuated from year to year but there was no clear increase or decrease between 2004-05 and 2006-07 (table 7A.2.8). A similar fluctuation with no clear trend is also apparent in data for Queensland, WA, SA and the NT for the six years from 2001-02 to 2006-07 (tables 7A.2.9–11).

Table 7.2.4 presents the hospitalisation rates for influenza and 'other vaccine preventable conditions' from 2004-05 to 2006-07.

Table 7.2.4 **Age standardised hospitalisation rates for vaccine-preventable conditions, per 1000 people, NSW, Victoria, Queensland, WA, SA, and public hospitals in the NT**[a, b, c]

	Indigenous	*Non-Indigenous*[d]	*Rate ratio*
2006-07			
Influenza	0.23	0.08	2.68
Other vaccine preventable conditions	2.32	0.49	4.73
2005-06			
Influenza	0.32	0.12	2.53
Other vaccine preventable conditions	2.49	0.52	4.78
2004-05			
Influenza	0.36	0.10	3.81
Other vaccine preventable conditions	2.35	0.56	4.22

[a] Hospitalisation rates are directly age standardised using the 2001 Australian population. [b] Data are based on State or Territory of usual residence. [c] See table 7A.2.16 for the ICD-10-AM codes used to classify potentially preventable conditions. [d] Non-Indigenous includes hospitalisations of people identified as not Indigenous as well as those with a 'not stated' Indigenous status.

Source: AIHW National Hospital Morbidity Database (unpublished); table 7A.2.12.

For NSW, Victoria, Queensland, WA, SA and public hospitals in the NT:

- hospitalisation rates for influenza and other vaccine-preventable conditions were higher for Indigenous people than non-Indigenous people in all years (table 7.2.4)
- in 2006-07, hospitalisation rates for influenza and other vaccine-preventable conditions for Indigenous people were 2.7 and 4.7 times the non-Indigenous hospitalisation rates for the same conditions (table 7.2.4)
- hospitalisation rates for influenza decreased for both Indigenous and non-Indigenous people between 2004-05 and 2006-07. However, the extent of the reduction in the hospitalisation rate for influenza was greater for Indigenous people, reducing from 0.36 per 1000 people in 2004-05 to 0.23 per 1000 people in 2006-07 (table 7.2.4)
- for 'other vaccine-preventable conditions', the hospitalisation rate for Indigenous people fluctuated but with no apparent trend between 2004-05 and 2006-07, while the non-Indigenous rate decreased slightly (table 7.2.4).

For Queensland, WA, SA and public hospitals in the NT, between 2001-02 and 2006-07, Indigenous hospitalisation rates for influenza and other vaccine preventable conditions were much higher than for non-Indigenous people. Both Indigenous and non-Indigenous hospitalisation rates for influenza declined over the period, while hospitalisation rates for other vaccine-preventable conditions fluctuated (table 7A.2.13).

Table 7.2.5 presents data on hospitalisations for infections with a predominantly sexual mode of transmission. Hospitalisations for sexually transmitted infections may be preventable both by appropriate of primary health care and by the adoption of safe sexual practices.

Table 7.2.5 **Age standardised hospitalisation rates for infections with a predominantly sexual mode of transmission, per 1000 people, NSW, Victoria, Queensland, WA, SA, and public hospitals in the NT, 2006-07**[a, b, c]

	Indigenous	*Non-Indigenous*[d]	*Rate ratio*
Syphilis	0.35	0.03	12.50
Gonococcal infection	0.33	0.01	41.95
Chlamydial infection	0.19	0.02	9.63
Other sexually transmitted diseases	0.48	0.20	2.35

[a] Hospitalisation rates are directly age standardised using the 2001 Australian population. [b] Data are based on State or Territory of usual residence. [c] Includes principal or additional diagnosis based on ICD-10-AM classification. [d] Non-Indigenous includes hospitalisations of people identified as not Indigenous as well as those with a 'not stated' Indigenous status.

Source: AIHW National Hospital Morbidity Database (unpublished); table 7A.2.14.

For NSW, Victoria, Queensland, WA, SA and public hospitals in the NT:

- hospitalisation rates for sexually transmitted infections were greater for Indigenous people than non-Indigenous people in 2006-07 (table 7.2.5)
- hospitalisation rates for Indigenous people with gonococcal infection were 42.0 times as high, for syphilis 12.5 times as high and for chlamydial infections 9.6 times as high as the rates for non-Indigenous people (table 7.2.5)
- for Indigenous people, the hospitalisation rate for syphilis decreased from 2004-05 to 2006-07 (from 0.42 hospitalisations per 1000 people in 2004-05 to 0.35 hospitalisations per 1000 people in 2006-07. Hospitalisation rates for gonococcal infections, chlamydial infections and other sexually transmitted diseases all remained fairly constant over the period (table 7A.2.14).

Similar patterns are apparent for Queensland, WA, SA and public hospitals in the NT, from 2001-02 to 2006-07 — a decrease in hospitalisation rates for syphilis and fluctuations with no apparent trend for other diseases (table 7A.2.15).

Hospitalisations for injury and poisoning

Table 7.2.6 Age standardised hospitalisations of Indigenous people for injury and poisoning and other consequences of external causes, by sex, NSW, Victoria, Queensland, WA, SA, and the NT, July 2005 to June 2007[a]

	Males		*Females*		*Persons*	
External cause	*Rate per 1000*[b]	*Rate ratio*[c]	*Rate per 1000*[b]	*Rate ratio*[c]	*Rate per 1000*[b]	*Rate* ratio[c]
Assault (X85–Y09)	11.2	10.8	11.5	11.1	11.3	11.1
Falls (W00–W19)	9.9	9.4	9.1	8.6	9.6	9.3
Exposure to inanimate mechanical forces (W20–W49)	6.2	6.0	2.8	2.6	4.4	4.3
Complications of medical and surgical care (Y40–Y84)	7.1	6.6	6.8	6.5	6.9	6.7
Transport accidents (V01–V99)	5.1	4.9	2.4	2.2	3.7	3.6
Other accidental exposures	3.8	3.6	2.4	2.2	3.1	3.0
Intentional self-harm ((X60–X84)	2.6	2.4	2.9	2.8	2.8	2.6
Exposure to animate mechanical forces (W50–W64)	2.0	1.9	1.0	0.9	1.5	1.4
Exposure to electric current/smoke/fire/venomous animals and plants/forces of nature (W85–W99, X00–X39)	1.9	1.7	0.9	0.8	1.4	1.3
Accidental poisoning by and exposure to noxious substances (X40–X49)	0.8	0.7	0.9	0.8	0.9	0.8
Other external causes	0.7	0.6	0.6	0.5	0.6	0.6
Total	**51.3**	**50.4**	**41.5**	**40.7**	**46.4**	**45.8**

[a] External causes (ICD-10-AM codes V01–Y98) are based on the first external cause reported where the principal diagnosis was 'injury, poisoning and certain other consequences of external causes' (ICD-10-AM codes S00–T98). Data are based on State or Territory of usual residence. [b] Directly age standardised rate using the Australian 2001 standard population. [c] Ratio Indigenous rate divided non-Indigenous rate, where non-Indigenous includes people of unknown Indigenous status.

Source: AIHW National Hospital Morbidity Database (unpublished); table 7A.2.17.

From 2005 to 2007, in NSW, Victoria, Queensland, WA, SA and the NT:

- Indigenous people were 45.8 times more likely than non-Indigenous people to be hospitalised for injury and poisoning and other consequences of external causes (table 7.2.6)
- assaults and falls were the most common external causes of hospitalisations of Indigenous people. Indigenous people were 11.1 times more likely to be

hospitalised for assault and 9.3 times more likely to be hospitalised for falls than non-Indigenous people (table 7.2.6).

For Queensland, WA, SA and public hospitals in the NT, hospitalisation rates for injury and poisoning and other consequences of external causes increased between 1998-99 and 2006-07 (table 7A.2.18).

7.3 Avoidable mortality

Box 7.3.1 **Key messages**

- For the period 2002–2006 in Queensland, WA, SA and the NT combined:
  - Indigenous females were 3.8 times as likely as non-Indigenous females and Indigenous males were 4.5 times as likely as non-Indigenous males to die from avoidable causes (table 7.3.2)
  - Indigenous people were 4.6 times as likely to die from heart attack, 1.9 times as likely to time from cancer, 17.7 times as likely to die of diabetes, and 2.4 times as likely to die from suicide as non-Indigenous people (table 7.3.3).
- Mortality rates from avoidable causes declined for both Indigenous and non-Indigenous people, and the Indigenous gap decreased between 1998 and 2006 in Queensland, WA, SA and the NT combined (figure 7.3.1).

Avoidable mortality is an important indicator of Indigenous people's health. Reducing avoidable deaths is a key component of improving Indigenous life expectancy (section 4.1). Avoidable mortality sits alongside potentially preventable hospitalisations (section 7.2) as a measure of health outcomes. Avoidable mortality could potentially be improved with better use of health care. However, factors outside the health system also contribute to health and mortality — including socioeconomic factors (education, employment and income) described in parts of chapters 4, 6 and 11; lifestyle factors (substance use, obesity and nutrition — described in sections 7.4, 7.5, 10.3 and 10.4); environmental factors (sections 9.1, 9.2 and 9.3); functional communities (chapter 10) and interactions with the justice system (sections 4.11. 4.12, 10.5 and 10.6).

This section uses data from the Australian Institute of Health and Welfare (AIHW) National Mortality Database to examine avoidable mortality for Indigenous and non-Indigenous people. Avoidable causes of death used to define avoidable mortality in this section are from Page et al. (2006) who identified conditions causing death that were either preventable or treatable.

Avoidable mortality can be due to conditions that could be potentially prevented from occurring at all (such as conditions caused by substance misuse, injury and poisoning and obesity), and amenable conditions where death could be avoided with early diagnosis and effective treatment (such as various cancers) (AHMAC 2008).

Box 7.3.2 **'Things that work' — reducing avoidable mortality**

Heart attack survival rates have improved for Indigenous people in the NT. For Indigenous people in the NT incidence of acute myocardial infarction (AMI) (heart attack)

> … was similar to the national rates in the early 1990s, but increased over subsequent years at a time when the national rate was falling, to be more than the national rate. The increase in incidence was offset by an improvement [in] AMI survival for [the] NT Indigenous population. This improvement was a result of both a reduction of pre-hospital mortality and improved hospitalised survival rates (death rates reduced by 56 per cent and 50 per cent respectively). The change in pre-hospital survival indicates a substantial improvement in the early management of patients, a combination of patients' response to their condition, initial primary health care management and access to hospital care. Tempering this positive outcome, there remains much room for further improvement, with NT Indigenous AMI cases having 44 per cent higher risk of death than non-Indigenous cases … the combination of AMI data demonstrates that the increasing IHD [ischaemic heart disease] death rate among the NT Indigenous population was a result of increased incidence, which has been moderated by improvements in survival. (You et al. 2009, p.301)

Avoidable mortality data included in this section are for people aged 0–74 years. People aged 75 years and over often suffer chronic disease or multiple causes of ill health, which make it difficult to assign a cause of death that can be clearly defined as avoidable or unavoidable (Page et al. 2006).

Table 7.3.1 **Avoidable mortality, age standardised, by State/Territory, people aged 0–74 years, 2002–2006**[a, b, c, d, e, f]

	Indigenous	*Non-Indigenous*	*Ratio*[g]
	per 100 000	*per 100 000*	
Qld	567.3	168.1	3.4
WA	632.6	151.5	4.2
SA	599.6	168.5	3.6
NT	906.3	210.8	4.3
Qld, WA, SA & the NT	**656.3**	**164.5**	**4.0**

[a] Data are reported for Queensland, WA, SA and the NT only. These four states/territories are considered to have adequate levels of Indigenous identification in mortality data. [b] Data are presented in five year groupings because of the small numbers each year. [c] Although most deaths of Indigenous people are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these data are likely to underestimate the Indigenous mortality rate. [d] Deaths are by year of registration and State/Territory of usual residence.[e] The ABS calculated the completeness of identification of Indigenous deaths for the period 2002–2006 using population estimates of 51 per cent for Queensland, 72 per cent for WA, 62 per cent for SA and 90 per cent for the NT. The completeness of Indigenous identification for avoidable deaths may differ from the estimates for all causes. [f] Directly age-standardised using the 2001 Australian standard population. [g] Rate ratio Indigenous: non-Indigenous.

Source: AIHW (2009), *Aboriginal and Torres Strait Islander Health Performance Framework: Detailed Analyses,* Cat. no. IHW 22; table 7A.3.1.

- From 2002 to 2006 after adjusting for the different age structures of the populations, Indigenous people in each of Queensland, WA, SA and the NT had higher death rates from avoidable causes than non-Indigenous people (table 7.3.1).

Table 7.3.2 Avoidable mortality, by age and sex, people aged 0–74 years, Queensland, WA, SA and the NT, 2002–2006[a, b, c, d]

	Males			*Females*		
	Deaths per 100 000[e]			*Deaths per 100 000*[e]		
Age (years)	*Indigenous*	*Non-Indigenous*	*Rate ratio*[f]	*Indigenous*	*Non-Indigenous*	*Rate ratio*[f]
Less than 1	699.7	239.6	2.9	517.3	217.7	2.4
1–4	34.1	15.7	2.2	38.2	10.9	3.5
5–14	15.1	5.9	2.6	12.5	4.4	2.9
15–24	150.7	55.8	2.7	68.7	19.8	3.5
25–34	325.5	74.9	4.3	135.2	25.4	5.3
35–44	606.5	98.5	6.2	330.3	51.1	6.5
45–54	1066.6	196.9	5.4	616.5	116.1	5.3
55–64	1891.1	476.0	4.0	1271.3	261.8	4.9
65–74	3808.0	1313.8	2.9	2699.7	716.8	3.8
Total[g, h]	**812.1**	**214.1**	**3.8**	**519.1**	**115.0**	**4.5**

[a] Data are reported for Queensland, WA, SA and the NT only. These four states/territories are considered to have adequate levels of Indigenous identification in mortality data. The completeness of identification of Indigenous deaths can vary by age. [b] Data are presented in five year groupings because of the small numbers each year. [c] Although most deaths of Indigenous people are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these data are likely to underestimate the Indigenous mortality rate. [d] Deaths are by year of registration and State/Territory of usual residence. [e] Rates per 100 000 population. Total rates have been directly age-standardised using the 2001 Australian standard population. [f] Rate ratio Indigenous: non-Indigenous. [g] Totals exclude those aged 75 years and over and those for whom age was not stated. [h] Directly age-standardised using the 2001 Australian standard population.

Source: AIHW (2009), *Aboriginal and Torres Strait Islander Health Performance Framework: Detailed Analyses,* Cat. no. IHW 22; table 7A.3.2.

In the period 2002–2006 in Queensland, WA, SA and the NT:

- Indigenous females were 4.5 times as likely and Indigenous males were 3.8 times as likely as non-Indigenous females and males to die from avoidable causes (table 7.3.2)
- Indigenous males and females of all ages had higher death rates from avoidable causes than non-Indigenous people (table 7.3.2)
- the ratio of Indigenous avoidable deaths over non-Indigenous deaths was greatest for people aged between 25 and 64 years, where the Indigenous avoidable mortality rate was between 4.0 and 6.5 times the non-Indigenous rate (table 7.3.2).

Table 7.3.3 **Avoidable mortality, by cause of death, people aged 0–74 years, Queensland, WA, SA and the NT, 2002–06**[a, b, c, d, e, f]

Cause of death	*Indigenous*	*Non-Indigenous*	*Ratio*[g]
	per 100 000	*per 100 000*	
Ischaemic heart disease	149.7	32.7	4.6
Cancer	115.2	60.8	1.9
Lung cancer[h]	47.0	21.3	2.2
Diabetes	94.5	5.3	17.7
Suicide	26.3	11.1	2.4
Road traffic injuries	26.3	8.2	3.2
Alcohol-related disease	37.1	4.1	9.0
Selected invasive bacterial and protozoal infections	27.2	3.6	7.6
Cerebrovascular disease	36.5	9.8	3.7
Chronic obstructive pulmonary disease	39.2	8.0	4.9
Nephritis and nephrosis	27.0	1.6	16.4
Violence	9.0	0.9	10.0
Birth defects	5.9	2.7	2.2
Complications of perinatal period	4.2	1.4	3.1
Rheumatic and other valvular heart disease	10.7	0.5	22.7
Other avoidable[i]	47.6	13.6	3.5
Total avoidable	**656.3**	**164.5**	**4.0**

[a] Data are reported for Queensland, WA, SA and the NT only. These four states/territories are considered to have adequate levels of Indigenous identification in mortality data. [b] Data are presented in five year groupings because of the small numbers each year. [c] Although most deaths of Indigenous people are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these data are likely to underestimate the Indigenous mortality rate. [d] Deaths are by year of registration and State/Territory of usual residence. [e] Different causes of death may have levels of completeness of identification that differ from the all-cause under-identification (coverage) estimates. [f] Directly age-standardised using the 2001 Australian standard population. [g] Rate ratio Indigenous: non-Indigenous. [h] Data for lung cancer are a subset of data for all cancers presented in this table. [i] Other avoidable includes: tuberculosis; hepatitis, HIV/AIDS, viral pneumonia and influenza, thyroid disorders, illicit drug disorders, epilepsy, hypertensive heart disease, aortic aneurism, obstructive uropathy and prostatic hyperplasia, deep vein thrombosis with pulmonary embolism, asthma, peptic ulcer disease, acute abdomen/appendicitis/intestinal obstruction/cholecystitis/lithiasis/pancreatitis/hernia, chronic liver disease, falls, fires/burns, accidental poisoning, drowning. For a full list of ICD10 codes see Page et al. (2006).

Source: AIHW (2009), *Aboriginal and Torres Strait Islander Health Performance Framework: Detailed Analyses,* Cat. no. IHW 22; table 7A.3.3.

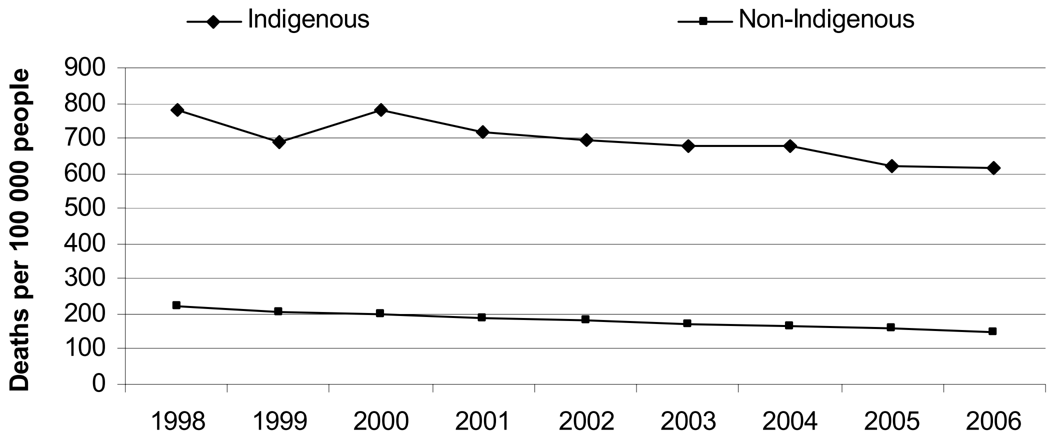
Chronic diseases and injury (including suicide) cause the greatest proportion of avoidable deaths for Indigenous people and are amenable to both prevention and treatment. The greatest reductions in excess deaths could be achieved by reducing deaths from chronic disease and injury.

In 2002 to 2006 in Queensland, WA, SA, and the NT:

- Indigenous people had higher death rates than non-Indigenous people for all of the avoidable causes listed in table 7.3.3

- Indigenous people were 4.6 times as likely to die from ischaemic heart disease (heart attack) than non-Indigenous people (table 7.3.3)
- Indigenous people were 1.9 times as likely to die from cancer than non-Indigenous people (table 7.3.3).
- Indigenous people were 17.7 times as likely to die of diabetes than non-Indigenous people (table 7.3.3)
- Indigenous people were 2.4 times as likely to die from suicide than non-Indigenous people (table 7.3.3).

Figure 7.3.1 **Age-standardised avoidable mortality rates, people aged 0–74 years, Queensland, WA, SA and the NT**



[a] Rates have been directly age-standardised using the 2001 Australian standard population. [b] Rates exclude deaths of people for whom Indigenous status was not stated.

Source: AIHW (2009), *Aboriginal and Torres Strait Islander Health Performance Framework: Detailed Analyses,* Cat. no. IHW 22; table 7A.3.4.

Between 1998 and 2006, in Queensland, WA, SA and the NT combined:

- mortality rates from avoidable causes declined for both Indigenous and non-Indigenous people (figure 7.3.1)
- The gap between Indigenous and non-Indigenous death rates from avoidable causes decreased from 557.1 per 100 000 in 1998 to 465.6 per 100 000 in 2006 (figure 7.3.1).

7.4 Tobacco consumption and harm

Box 7.4.1 **Key messages**

- In 2004-05, half of Indigenous Australians aged 18 years and over reported that they were current smokers (table 7A.4.10). This figure had not changed significantly since 1995 (table 7A.4.7). It remains twice that of the non-Indigenous population (figure 7.4.1).
- Hospitalisation rates related to tobacco use were consistently higher for Indigenous people than for non-Indigenous people in 2006-07 (table 7.4.1).

Studies have found that smoking tobacco increases the risk of numerous cancers, heart and vascular diseases, and depression (AHMAC 2006, 2008; Cunningham et al. 2008; Pasco et al. 2008). Among Indigenous people, tobacco use is the leading risk factor contributing to disease and death (Vos et al. 2007). This section examines patterns of tobacco use and its related harm, including hospitalisations and deaths related to tobacco use. A 2001 review highlighted the problem of tobacco use among Aboriginal and Torres Strait Islander people and identified a lack of evidence on the effectiveness of tobacco control initiatives in Indigenous communities (Ivers 2001, 2003). In 2008, a National Indigenous Tobacco Control Research Roundtable was held. A roundtable report was published which identified research questions and approaches to guide assessment of priorities (CEITC 2008). Programs that have been effective in reducing tobacco use among Indigenous people are discussed in box 7.4.2.

Tobacco use is often associated with other lifestyle related health risk factors, such as excessive alcohol drinking and poor diet. ABS (2006) found that long term risky/high risk drinkers (both males and females) were more likely to be current smokers than those who drank at a low risk level. The effects of alcohol are often worsened by other risk factors, such as smoking and poor diet (NHMRC 2001). See section 10.3 for alcohol consumption and harm.

According to WHO (2004), tobacco and poverty are inextricably linked world wide. Higher incomes and less disadvantage in a range of other areas are associated with being a non-smoker (Thomas et al. 2008).

In addition to the long term health risks, low income groups (such as Indigenous families and communities) are also affected by the financial strain of tobacco use. Expenditure on tobacco can divert scarce family resources away from other needs, such as housing, nutrition and health care (Briggs, Lindorff and Ivers 2003).

Recently published data from the AIHW 2007 National Drug Strategy Household Survey (NDSHS) suggest that, in 2007, Indigenous people were more likely than non-Indigenous people to smoke (34.1 per cent compared with 19.0 per cent) (AIHW 2008; table 7A.4.1). The NDSHS provides comparable data from 2001–2007 on a person's smoking status (never smoked, ex-smoker, smoker) and the average number of cigarettes smoked per week by current smokers (table 7A.4.1). Care should be taken in interpreting these data due to the small size of the Indigenous sample (fewer than 500 respondents) in the NDSHS.

Box 7.4.2 **'Things that work' — reducing tobacco use**

The Maningrida (NT) **'Smoke-busters'** campaign involved the establishment of an Aboriginal steering group of non-smoking community elders and the appointment of a community-based public health officer. The public health officer was responsible for training a non-smoking community-based tobacco support worker and reorienting tobacco cessation services to improve access and support clients through tailored counselling and nicotine replacement therapy (Burgess et al. 2008).

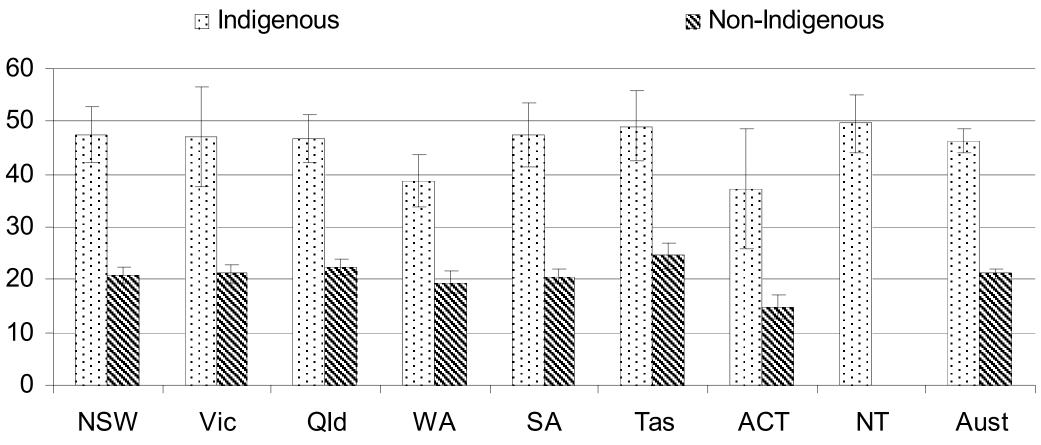
The Menzies School of Health Research evaluated the program and found:

- tobacco consumption declined by 8 per cent over a six-month period
- community awareness increased on issues such as the dangers of tobacco, second hand smoke, strategies to stop smoking, and non-smokers rights (particularly the benefits of not smoking near children)
- children were more aware of their right to a smoke-free environment (Burgess et al. 2008).

Tobacco consumption

Rates of current daily smokers is a performance measure in the National Indigenous Reform Agreement (COAG 2009). The ABS 2004-05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) and the 2004-05 National Health Survey (NHS) collected data on current daily adult smokers. Current daily smokers are people who smoked one or more cigarettes (or pipes or cigars) per day at the time of interview.

Figure 7.4.1 **Current daily smokers aged 18 years or over, age standardised, 2004-05**[a, b, c]



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[a] This refers to smoking of tobacco, including manufactured (packet) cigarettes, roll-your-own cigarettes, cigars and pipes, but excludes chewing tobacco and smoking of non-tobacco products. Current daily smokers refers to people who smoked one or more cigarettes (or pipes or cigars) per day at the time of interview. [b] The sample size in the NT was considered too small to produce reliable non-Indigenous estimates for the NT in the ABS 2004-05 NHS, but NT records in the survey have been attributed appropriately to national estimates. [c] Error bars represent 95 per cent confidence intervals around each estimate (see chapter 2 for more information).

Source: ABS 2004-05 NATSIHS and NHS (unpublished); table 7A.4.8.

After adjusting for age, in 2004-05:

- Indigenous adults were more than twice as likely as non-Indigenous adults to be current daily smokers (46.3 per cent compared to 21.1 per cent) (figure 7.4.1 and table 7A.4.5).
- Across all states and territories, and remoteness areas, rates of current daily smokers were higher for Indigenous people than non-Indigenous people (figure 7.4.1; table 7A.4.5).
- Non-age-standardised data show that, in 2004-05, half of Indigenous adults smoked daily (table 7A.4.10) and the prevalence of smoking in Indigenous adults was high across all age groups (although lower after 55 years of age) (table 7A.4.9).
- There has been no apparent decline in smoking among Indigenous adults from 1995 to 2004-05 (tables 7A.4.6-7).

The 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) will provide information on current daily adult smokers. The NATSISS results are expected to be available from late 2009.

Tobacco related hospitalisations and deaths

Tobacco smoking is the primary cause of premature and preventable death and disease for all people in Australia. There is a strong causal relationship between tobacco consumption and multiple chronic diseases, including coronary heart disease, stroke and chronic respiratory tract diseases. Smoking in pregnancy can lead to miscarriage, stillbirth or premature birth (Graham et al. 2007). See section 5.1 for rates on mothers reporting smoking during pregnancy.

Data on hospitalisations related to tobacco use reported for this indicator are sourced from the AIHW National Hospital Morbidity Database. These data only cover tobacco related illnesses resulting in admission to a hospital. Further, data are only available for conditions directly attributable to tobacco and do not include most conditions where tobacco may be a contributing factor but where the link is not direct and immediate.

The availability of hospitalisation data for Indigenous people has significantly improved in the 2009 report compared with the 2007 report. AIHW analysis of the quality of Indigenous identification in hospital statistics has shown that the quality of data from NSW and Victoria has improved and data are now available for NSW, Victoria, Queensland, WA, SA and the NT. Nevertheless, Indigenous identification in hospitalisation data remains incomplete in most jurisdictions. The AIHW (2005) found that the quality of Indigenous hospitalisation data varied between jurisdictions and hospitals. Tasmania and the ACT are working with the AIHW to improve the quality of their Indigenous hospitalisation data.

Most hospitalisation data used in this section are for six jurisdictions: NSW, Victoria, Queensland, WA, SA, and the NT. These data have sufficient levels of Indigenous identification for 2004-05 to 2006-07. Longer time series data for Queensland, WA, SA and the NT from 2001-02 to 2006-07 are included in attachment table 7A.4.2. Hospitalisation data for these four jurisdictions should not be assumed to represent the hospitalisation experience in the other jurisdictions.

Non-Indigenous data from the AIHW include hospitalisations of people with a ‘not stated’ Indigenous status as well as those identified as non-Indigenous.

Table 7.4.1 Age standardised hospitalisations related to tobacco use in NSW, Victoria, Queensland, WA, SA and public hospitals in the NT, 2006-07 (per 1000 population)[a, b, c, d, e]

	Males		*Females*		*People*	
	Indigenous	*Non-Indigenous*	*Indigenous*	*Non-Indigenous*	*Indigenous*	*Non-Indigenous*
NSW	4.3	1.4	4.2	0.8	4.2	1.1
Victoria	1.4	1.2	6.8	0.7	4.1	0.9
Queensland	2.1	0.7	1.1	0.4	1.6	0.5
WA	2.8	1.3	2.7	0.7	2.7	1.0
SA	4.0	1.1	7.6	1.7	5.7	1.4
NT (public hospitals only)	8.2	5.7	4.6	1.1	6.2	3.3
Total	**3.7**	**1.2**	**3.5**	**0.8**	**3.6**	**1.0**

[a] The hospital separation rates (per 1000 population) were directly age standardised to the Australian population as at 30 June 2001. [b] A hospitalisation is the discharge, transfer, death or change of episode of care of an admitted patient (see glossary for a detailed definition). [c] Principal diagnoses of hospitalisations are based on codes of the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification (ICD-10-AM). [d] Non-Indigenous data include separations where Indigenous status was not reported. [e] Data are based on state of usual residence.

Source: AIHW National Hospital Morbidity Database (unpublished); table 7A.4.3.

In 2006-07, for NSW, Victoria, Queensland, WA, SA and public hospitals in the NT:

- the rate of hospitalisations related to tobacco use for Indigenous people was almost 4 times as high as that for non-Indigenous people (3.6 per 1000 for Indigenous people compared with 1.0 per 1000 for non-Indigenous people) (table 7.4.1)
- the hospitalisation rate for Indigenous males was three times as high as for non-Indigenous males (3.7 per 1000 for Indigenous males compared with 1.2 per 1000 for non-Indigenous males); and Indigenous females had a rate more than four times as high as non-Indigenous females (3.5 per 1000 for Indigenous females compared with 0.8 per 1000 for non-Indigenous females)
- over the period 2004-05 to 2006-07, hospitalisation rates related to tobacco use for both Indigenous and non-Indigenous people remained stable (table 7A.4.3).

Between the 1970s and 1990s, in the NT, Indigenous mortality for lung and other smoking-related cancers more than doubled (Cunningham et al. 2008). No comparable Indigenous and non-Indigenous data on smoking related deaths are available for inclusion in this report.

7.5 Obesity and nutrition

Box 7.5.1 **Key messages**

- In non-remote areas in 2004-05, 30.9 per cent of Indigenous adults were obese and, after adjusting for differences in the age structure of the two populations, Indigenous adults were twice as likely to be obese as non-Indigenous adults (table 7.5.2).
- In non-remote areas in 2004-05, after adjusting for age, similar proportions of Indigenous and non-Indigenous people aged 12 years and over were eating the recommended usual daily intake of vegetables; 45 per cent of Indigenous people were eating the recommended usual daily intake of fruit compared with 54 per cent of non-Indigenous people, and 71 per cent of Indigenous people usually consumed whole milk compared with 45 per cent of non-Indigenous people (figure 7.5.1).

Obesity and nutrition is a new indicator in the revised indicator framework endorsed by COAG for the 2009 report. Addressing issues of obesity (and nutrition) can contribute to the achievement of COAG's life expectancy target. The National Indigenous Reform Agreement (COAG 2009) includes obesity — body mass index as an indicator. This section includes data on body mass index (BMI) and dietary behaviours.

Public health nutrition is designated a national health priority area for Australia, and Indigenous nutrition is the subject of a national strategy and action plan, the *National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan 2000–2010*[5] (National Aboriginal and Torres Strait Islander Nutrition Working Party 2001).

Among Indigenous people, high body mass is the second leading risk factor contributing to disease and death (Vos et al. 2007). Body fat distribution for Indigenous people is significantly different to that for non-Indigenous people. Indigenous people have a naturally lighter build than non-Indigenous people (O'Dea 2008). Having a lighter build means Indigenous people have a tendency for central obesity and a greater concentration of fat around their stomach means an increased risk of developing certain chronic diseases such as type 2 diabetes and heart disease (O'Dea 2008; Piers et al. 2003). See section 4.8 for rates of disability and chronic disease.

O'Dea (2008) found that a traditional Indigenous lifestyle can protect against obesity and chronic diseases. A 1982 study involving Indigenous people returning

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[5] Approved by the Australian Health Ministers Conference August 2001.

to traditional country showed that after just seven weeks there were improvements in risk factors for type 2 diabetes and cardiovascular disease (O'Dea 1984). See section 10.2 for more information on access to traditional lands.

Regular exercise and an intake of fibre-rich foods, such as fruit and vegetables, can have a protective effect against obesity related diseases (AMA 2005; NHMRC 2003a). Section 10.1 provides more information on participation in organised sport, arts or community group activities. Good nutrition is important during pregnancy (see section 5.1, Maternal health) because pathways to chronic diseases can begin in utero (O'Dea 2008; WHO 2005). Low birthweight (see section 5.3) is associated with a higher risk of central obesity, type 2 diabetes, kidney failure, high blood pressure, and heart disease in later life. Good nutrition is also important for infant and childhood growth and development and for establishing healthy habits for life (ARACY 2008; Tomkins 2001; WHO 2008).

Studies have found links between obesity and factors such as poverty and diet (WHO 2008; Harrison et al. 2007). (Section 4.9 provides more information on individual incomes.) Poverty is a key driver of food choice within remote Aboriginal communities, where the cost of fresh food is typically high. The 2006 Queensland Healthy Food Access Basket (HFAB) survey found that extra expenditure was needed to purchase basic healthy food by families living in outer regional, remote and very remote areas compared to those living in major cities and inner regional centres (Queensland Health 2006). In 2006, in Queensland, the price of fruit, vegetables and legumes was 20.6 per cent higher in very remote locations than in major cities (Queensland Health 2006).

Box 7.5.2 provides an example of a program that has improved nutrition and health outcomes for Indigenous people.

Box 7.5.2 **‘Things that work’ — improving nutrition**

The **Outback Stores** model in remote and very remote communities has improved food availability and food security in the communities, enhanced health outcomes, increased awareness of healthy food, provided employment, and supported the long term sustainability of the community store as a business enterprise.

For people living in remote communities and outstations, the local store is often the only source for food and other basic commodities. A study on community stores by the Desert Knowledge Cooperative Research Centre found that the Outback Stores model operates successfully in remote and very remote communities. In the three communities included in the study, respondents indicated that the availability and quality of fresh foods increased since Outback Stores managed the community stores. Prices were also reported to have fallen for fresh food products. In one community, the health worker commented that children were healthier and that the incidence of a nutrition-related disease in children had decreased in the past year (Ferguson, Rola-Rubzen and McGregor 2009).

Obesity

Obesity is most commonly measured using the body mass index (BMI). The BMI is calculated using the formula weight (kg) divided by the square of height (m). BMI values are grouped according to World Health Organization and National Health and Medical Research Council (NHMRC) guidelines (WHO 2000; NHMRC 2003a). Among adults, a person with a BMI of 25 to less than 30 is considered overweight, while a BMI of 30 or more is considered obese (table 7.5.1).

Table 7.5.1 **Body mass index categories for adults in Australia**

Category	*BMI range (kg/m2)*
Underweight	Less than 18.5
Normal range	20.0 to less than 25.0
Overweight	25.0 to less than 30.0
Obese	30.0 and greater

Source: WHO (2000); NHMRC (2003a).

The ABS 2004-05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) collected self-reported height and weight information from Indigenous people and, using the BMI formula, grouped them into BMI ranges as defined in table 7.5.1.

Table 7.5.2 Body mass index groups for people aged 18 years and over, by age, non-remote areas, 2004-05 (per cent)[a]

	18–24	*25–34*	*35–44*	*45–54*	*55+*	*Total non-age-standardised*	*Total age standardised*[b]
Indigenous							
Underweight	7.4	3.9	4.1[c]	3.2*[d]	2.3	4.4	3.8*
Normal range	49.4*	37.6*	31.0*	28.0*	24.1*	35.5	32.1*
Overweight	25.1	29.4*	28.1*	32.1*	34.2*	29.2	30.5*
Obese	18.0*	29.1*	36.8*	36.7*	39.4*	30.9	33.6*
Non-Indigenous							
Underweight	6.5	2.7	2.0	1.2*	2.2	2.6	2.6*
Normal range	61.9*	47.9*	41.6*	38.1*	39.0*	43.9	44.0*
Overweight	24.0	33.7*	36.8*	38.2*	39.1*	35.5	35.5*
Obese	7.5	15.7*	19.6*	22.5*	19.8*	17.9	17.9*
Rate ratio[c]							
Underweight/ Normal range	0.8	0.8	0.8	0.8	0.6	..	0.8
Overweight/ Obese	1.4	1.2	1.2	1.1	1.2	..	1.2

* Represents results with statistically significant difference in Indigenous and non-Indigenous comparisons.

[a] Proportions exclude those for whom BMI was unknown (39 583 or 15 per cent for Indigenous and 1 175 132 or 8 per cent for non-Indigenous). [b] Directly age standardised proportions using the 2001 Australian population. [c] The rate ratio is calculated by dividing the Indigenous rate by the non-Indigenous rate. [d] Estimate has a relative standard error of between 25 per cent and 50 per cent and should be used with caution. .. Not applicable.

Source: ABS 2004-05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) and National Health Survey (NHS) cited in AIHW (2009); table 7A.5.1.

- In non-remote areas in 2004-05, 30.9 per cent of Indigenous adults were obese and after adjusting for age:
  - Indigenous adults were 1.2 times as likely as non-Indigenous adults to be overweight/obese
  - 33.6 per cent of Indigenous adults had a BMI greater than 30 (which is considered obese) compared with 17.9 per cent of non-Indigenous adults, and the overall proportion of Indigenous adults who were overweight or obese was 64.1 per cent compared with 53.4 per cent of non-Indigenous adults
  - around one third (32.1 per cent) of Indigenous adults were in the normal BMI range compared with 44.0 per cent of non-Indigenous adults (table 7.5.2).
- In 2004-05, overweight and obese Indigenous men and women had higher rates of smoking and short-term risky/high risk alcohol consumption than overweight and obese non-Indigenous men and women (ABS 2008). Section 7.4 provides more information on tobacco consumption and harm and section 10.3 provides more information on alcohol consumption and harm.

- Generally, for both Indigenous and non-Indigenous adults, obesity levels increased with age (table 7A.5.1).
- Between 2001 and 2004-05, the proportion of Indigenous adults who were overweight or obese did not change significantly (59 per cent in 2001 and 60 per cent in 2004-05) (AIHW 2009).
- There are no current data on the prevalence of obesity among Indigenous children.

Nutrition

The NHMRC's Australian dietary guidelines recommend eating a wide variety of nutritious food and drinking plenty of water. This means eating plenty of vegetables, legumes and fruits, cereals, lean meat, fish, poultry, milks, yoghurts, cheeses (reduced-fat varieties should be chosen, where possible) (NHMRC 2003a). The guidelines also recommend limiting consumption of saturated fat, salt, alcohol and sugars (NHMRC 2003a).

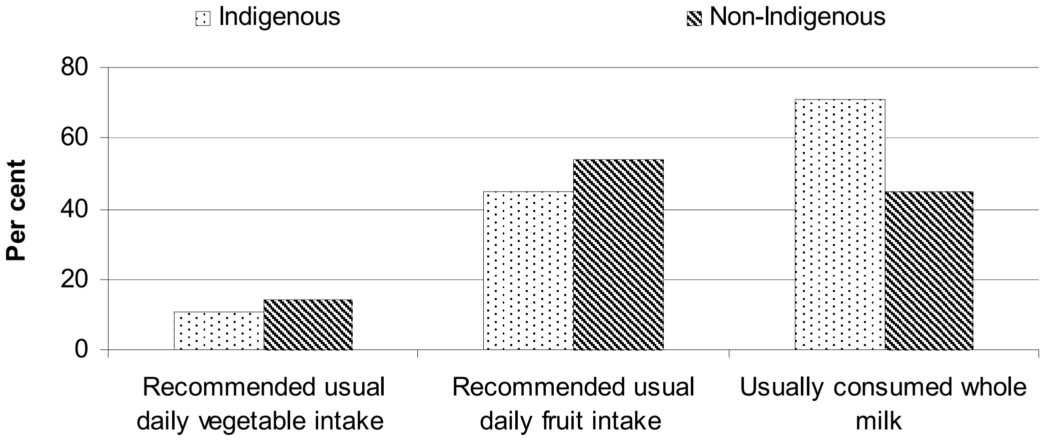
Insufficient fruit and vegetable consumption contributed to 3.5 per cent of the total burden of disease in Indigenous people in 2003 (Vos et al. 2007). Poor nutrition increases the risk of obesity-linked diseases such as cancer, diabetes and heart attack, and compromises children's development (AHMAC 2008; Tomkins 2001).

For adults, the NHMRC's Australian dietary guidelines recommend a minimum of five serves of vegetables and two serves of fruit per day (NHMRC 2003a). For children, the daily food consumption guidelines for fruit and vegetable intake recommend one serve of fruit and two serves of vegetables for children aged 4–7 years, one serve of fruit and three serves of vegetables for children aged 8–11 years and three serves of fruit and three serves of vegetables for adolescents aged 12–18 years (NHMRC 2003b).

The Western Australian Aboriginal Child Health Survey, conducted in 2000-01, found that an estimated 70 per cent of Aboriginal children were reported to usually eat fresh fruit every day, but that most Aboriginal children were not even approaching the recommended vegetable intake, and for the majority this was not because fresh vegetables were unavailable (Zubrick et al. 2004). In 2004-05, in non-remote, areas 24 per cent of Indigenous children aged 12–14 years met the recommended daily fruit intake and 59 per cent met the recommended daily vegetable intake (ABS and AIHW 2008). Twenty per cent of Indigenous children aged 15–17 years met the daily recommended fruit intake and 61 per cent met the recommended daily vegetable intake (ABS and AIHW 2008). There was no statistically significant difference in the proportion of Indigenous and non-Indigenous children who met the daily fruit and vegetable consumption guidelines (ABS and AIHW 2008).

Survey data provide information on consumption of recommended daily vegetable and fruit intake and whole milk consumption, but data for Indigenous and non-Indigenous people are for non-remote areas only. Dietary behaviours by remoteness for Indigenous people can be found in table 7A.5.5, but are not disaggregated by recommended usual daily intake of vegetables and fruit.

Figure 7.5.1 **Dietary behaviours for people aged 12 years and over, non-remote areas, age-standardised, 2004-05**[a, b]



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[a] The National Health and Medical Research Council's (NHMRC) Australian dietary guidelines recommend a minimum of five serves of vegetables and two serves of fruit per day (NHMRC 2003a). [b] The NHMRC's Australian dietary guidelines for adults has been applied to adolescents aged 12–18 years. For adults, the NHMRC's Australian dietary guidelines recommend a minimum of five serves of vegetables and two serves of fruit per day (NHMRC 2003a). For adolescents aged 12–18 years, the daily food consumption guidelines for fruit and vegetable intake recommend three serves of fruit and three serves of vegetables (NHMRC 2003b).

Source: ABS 2004-05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) and ABS 2004-05 National Health Survey (NHS) cited in AIHW (2009); table 7A.5.2.

- After adjusting for age, in 2004-05, in non-remote areas:
  - similar proportions of Indigenous and non-Indigenous people were eating the recommended usual daily intake of vegetables
  - 45 per cent of Indigenous people were eating the recommended usual daily intake of fruit compared with 54 per cent of non-Indigenous people
  - 71 per cent of Indigenous people usually consumed whole milk compared with 45 per cent of non-Indigenous people (figure 7.5.2).
- Between 2001 and 2004-05, the dietary behaviours of Indigenous people did not change significantly (table 7A.5.3).

More data by age groups can be found in attachment table 7A.5.2. The 2008 ABS National Aboriginal and Torres Strait Islander Social Survey (NATSISS) will provide information on child nutrition. The NATSISS results are expected to be available from late 2009.

- The cost of fresh food can be high in remote areas, which may make fruit and vegetables less accessible to Indigenous people. In remote areas, in 2004-05:
  - 15 per cent of Indigenous people had no daily vegetable intake compared with 2 per cent of Indigenous people in non-remote areas
  - 20 per cent of Indigenous people had no daily fruit intake compared with 12 per cent in non-remote areas (table 7A.5.5).

7.6 Tooth decay

Box 7.6.1 **Key messages**

- The proportion of adults with untreated tooth decay was significantly higher for Indigenous than for non-Indigenous people across all age groups for 2004–2006 (figure 7.6.5).
- Potentially preventable hospitalisations for dental conditions were higher for Indigenous people than non-Indigenous people from 2004-05 to 2006-07 (figure 7.6.6).

Healthy teeth are an important part not only of oral health, but of overall health and wellbeing. The prevention and early treatment of tooth decay is central to the maintenance of healthy teeth. Unless treated early, tooth decay may result in pain, infection and destruction of soft tissue in the mouth. This may contribute to the development or exacerbation of other diseases. In addition, eating difficulty or pain may lead to modification of eating habits and subsequent nutritional problems. Poor dental health can affect speech and language development, as well as school attendance and performance, self-esteem, employment and social wellbeing (NACOH 2004).

Indigenous children generally have more decay than non-Indigenous children, and that decay is less likely to have been treated (AHMAC 2008). The prevalence of untreated tooth decay is also significantly higher among Indigenous adults than among non-Indigenous adults (AIHW 2009; Roberts-Thomson and Do 2007). The need to improve access to appropriate and affordable dental health services among Indigenous people is reflected in one of seven specific action areas in *Healthy Mouths Healthy Lives: Australia's National Oral Health Plan 2004–2013*

(NACOH 2004). The plan emphasises the need for services that are culturally appropriate and accessible, in order to address inequities in oral health.

Factors in the prevention of tooth decay include diet, dental hygiene and environmental factors, such as water fluoride levels. Access to dental services is also a factor in prevention, as well as in the treatment of tooth decay (AHMAC 2008).

Historically, traditional diets of Indigenous people were associated with low levels of tooth decay. A marked rise in the consumption of food and drinks containing high levels of sugar and other refined carbohydrates over recent decades — particularly in remote communities and among children — has occurred at the same time as an increase in levels of tooth decay among Indigenous people (Jamieson, Armfield and Roberts-Thomson 2007; NACOH 2004).

Preventative oral health behaviours such as tooth brushing and flossing are developed mainly through education and modelling by adults in the home environment, and/or education outside the home (for example, in schools) (Jamieson, Armfield and Roberts-Thomson 2007). Among Indigenous children, levels of preventative oral health behaviours are relatively low. A survey of children in remote Indigenous communities found that fewer than 20 per cent brushed their teeth (Jamieson, Armfield and Roberts-Thomson 2007). Of children aged five years or under, fewer than five per cent brushed their teeth.

Regular dental check-ups are an important element in both prevention and early treatment of tooth decay. A national survey of adult oral health conducted between 2004 and 2006 found that Indigenous adults were less likely than non-Indigenous adults to have visited a dentist in the last five years (Spencer and Harford 2007). Cost, geographic and cultural barriers to accessing dental services are experienced by Indigenous Australians. For example, the national survey found that Indigenous adults were 1.6 times more likely to have foregone recommended dental treatment due to cost than non-Indigenous adults (Spencer and Harford 2007).

Box 7.6.2 **'Things that work' — Dental care services**

The Wuchopperen Health Service provides care to approximately 20 000 Aboriginal and Torres Strait Islander people in and around Cairns (far north Queensland). In response to a severe, long-term shortage of dentists and waiting lists of more than a year for basic dental care prior to 2005, the **'Filling the Gap' Indigenous Dental Program** was developed. The privately funded program supplies volunteer dental health professionals from around Australia to Wuchopperen's Oral Health Care

(Continued next page)

Box 7.6.2 (continued)

Unit, and operates as a partnership between Wuchopperen, the community it serves, the 'Filling the Gap' Steering Committee, and dental volunteers. It commenced operation in January 2006.

The program, evaluated by the University of NSW's Muru Marri Indigenous Health Unit for the period January 2006 to November 2007, was found to greatly improve access to services:

- 24 weeks of service were provided by 20 volunteer dentists in 2006
- 55 weeks of service were provided by 40 volunteer dentists in 2007, in addition to 15 weeks provided by other dental health professionals and dental students
- services were provided to 1088 patients, including 133 new patients, in 2006
- services were provided to 1485 patients, including 163 new patients, in 2007
- community members were confident to use the service and accepted the turnover of dental volunteers, in part because:
  - the dental unit is part of the community's own health service
  - the long-term Indigenous Practice Manager and Dental Assistants provide continuity and support culturally appropriate, effective communication between volunteers and patients
  - the program was able to recruit highly skilled dental volunteers because it provided professional and personal satisfaction as well as a car and accommodation making it an attractive working holiday (Jackson Pulver et al. 2009).

The **SA Dental Service Aboriginal Liaison Program** was established in late 2005 to improve oral health outcomes for Aboriginal and Torres Strait Islander people through improving access to dental care. Five Aboriginal Liaison Officers are working with local Aboriginal Health Services and Aboriginal communities to develop sustainable pathways for referring clients to dental services and to increase knowledge about oral health care. One of the barriers to care identified was the two-year waiting list for general dental care at community dental clinics. Aboriginal people attending diabetes camps in the Northern Adelaide suburbs during 2007-08 received an oral health assessment. Of the 142 Aboriginal people who received an oral health assessment 133 were identified as needing a dental visit. Of those people, 96 began a course of care in 2008 (SA government unpublished).

The **Great Southern Aboriginal Health — Dental Health Program** in WA was developed to improve the dental health of children and the access to dental services of 0–4 year olds. The program comprises tooth brushing programs in the Noongar pre-schools and playgroups in the towns of Albany, Mount Barker, Tambellup, Gnowangerup, Katanning and Kojonup (which has reached 62 per cent of Aboriginal children aged 3–5 years); dental health checks and treatment for 0–4 year olds; which

(Continued next page)

Box 7.6.2 (continued)

enables community initiatives to improve oral health by improving diet and personal dental care; and cultural awareness programs for dentists and dental students.

The success of the program is underpinned by its response to needs identified by the community, the collaboration between key support groups, and the willingness of the local dentist to bulk bill or charge a minimal fee (WA unpublished 2008).

Data are presented for Indigenous children and adults. Children's data are from the Child Dental Health Survey, conducted by State and Territory School Dental Services. Statistically reliable Indigenous data were available for NSW, SA and the NT only (Jamieson, Armfield and Roberts-Thomson 2007).

National adult data are from the National Survey of Adult Oral Health, conducted between 2004 and 2006.

Indigenous children's dental health in NSW, SA and the NT

Data are reported for tooth decay among Indigenous and non-Indigenous children in metropolitan and rural/remote areas of NSW, SA and the NT combined. The most recent data available are from the Child Dental Health Survey (CDHS) and are for the calendar years 2000 (NSW), 2003 (SA) and 2002 (NT).[6] Of the 326 099 children examined, 10 743 (3.2 per cent) were Indigenous (Jamieson, Armfield and Roberts-Thomson 2007).

CDHS data are available only for children who are both enrolled in, and attend, the School Dental Service (SDS) (Jamieson, Armfield and Roberts-Thomson 2007). Dental health attitudes and school attendance affect SDS enrolment and attendance. Eligibility criteria, such as age, may vary across jurisdictions (AIHW 2008).

Three measures of tooth decay in children by Indigenous status and geographical location are reported:

- mean number of teeth affected by decay
- proportion of children with no tooth decay
- mean proportion of decayed teeth that are untreated.

The mean (average) number of teeth affected by decay reflects how effectively tooth decay is prevented (figure 7.6.1).

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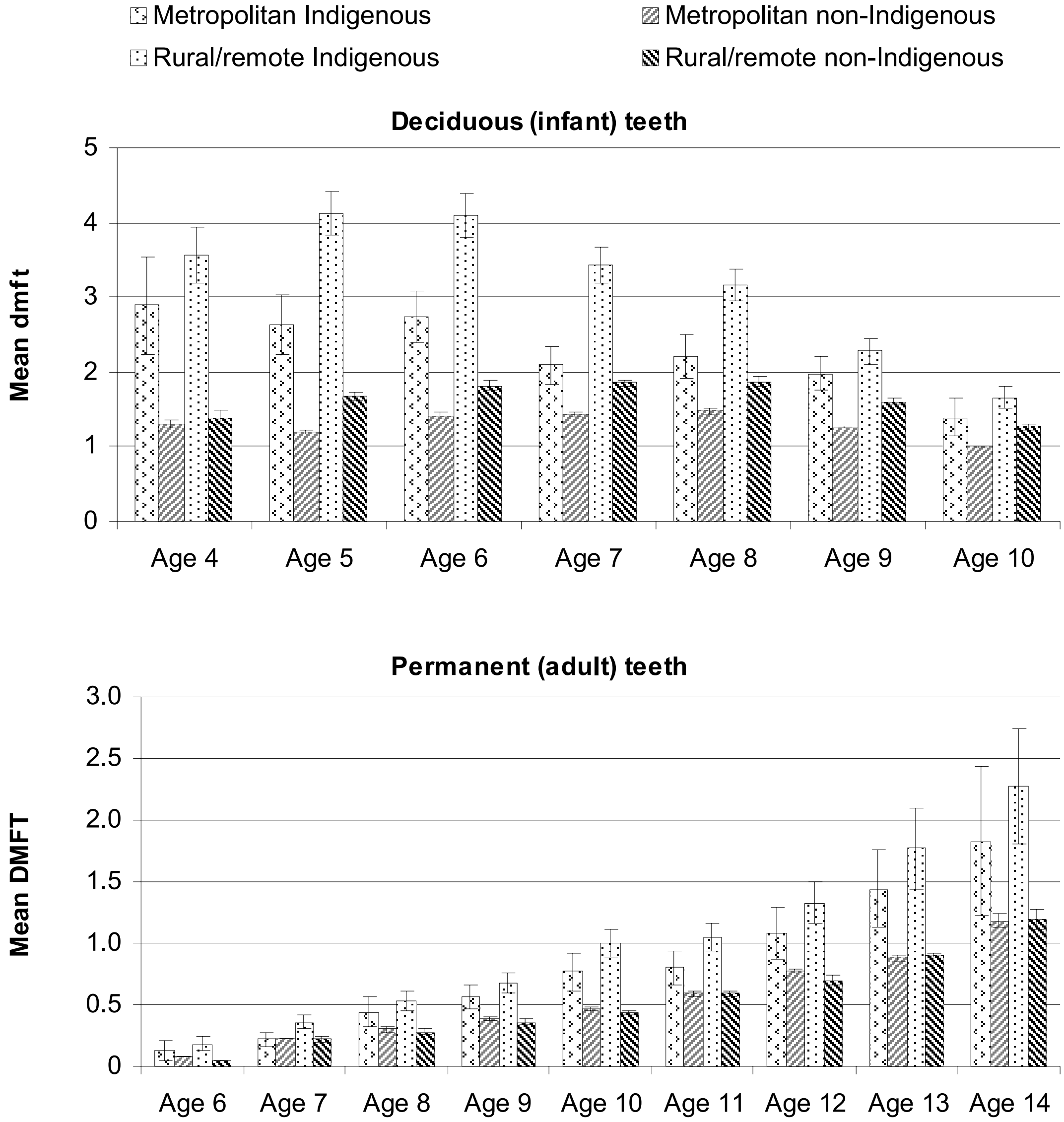
[6] Additional data for SA and the NT were reported in the 2007 report, and are provided in tables 7A.6.7–7A6.11.

Figure 7.6.1 **Mean number of teeth affected by decay, by age and location, NSW, SA and the NT, selected years between 2000 and 2003**[a, b, c]



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[a] Geographical locations are based on the Rural, Remote and Metropolitan Areas (RRMA) classification. Data for rural and remote areas have been combined. [b] dmft=d+m+f and refers to deciduous (infant) teeth, where: d=number of untreated decayed teeth; m=number of missing teeth; f=number of filled teeth. Uppercase letters denote permanent (adult) teeth. [c] Error bars represent 95 per cent confidence intervals around each estimate and are computed by multiplying the standard error by 1.96 (see chapter 2 for more information).

Source: Jamieson, Armfield and Roberts-Thomson (2006); tables 7A.6.1 and 7A.6.2.

Between 2000 and 2003 in NSW, SA and the NT:

- the mean number of decay-affected deciduous (infant) teeth was significantly higher for Indigenous children than for non-Indigenous children across all ages (from 4 to 10 years) and in both metropolitan and rural/remote areas — in some age groups, more than twice as high (figure 7.6.1)

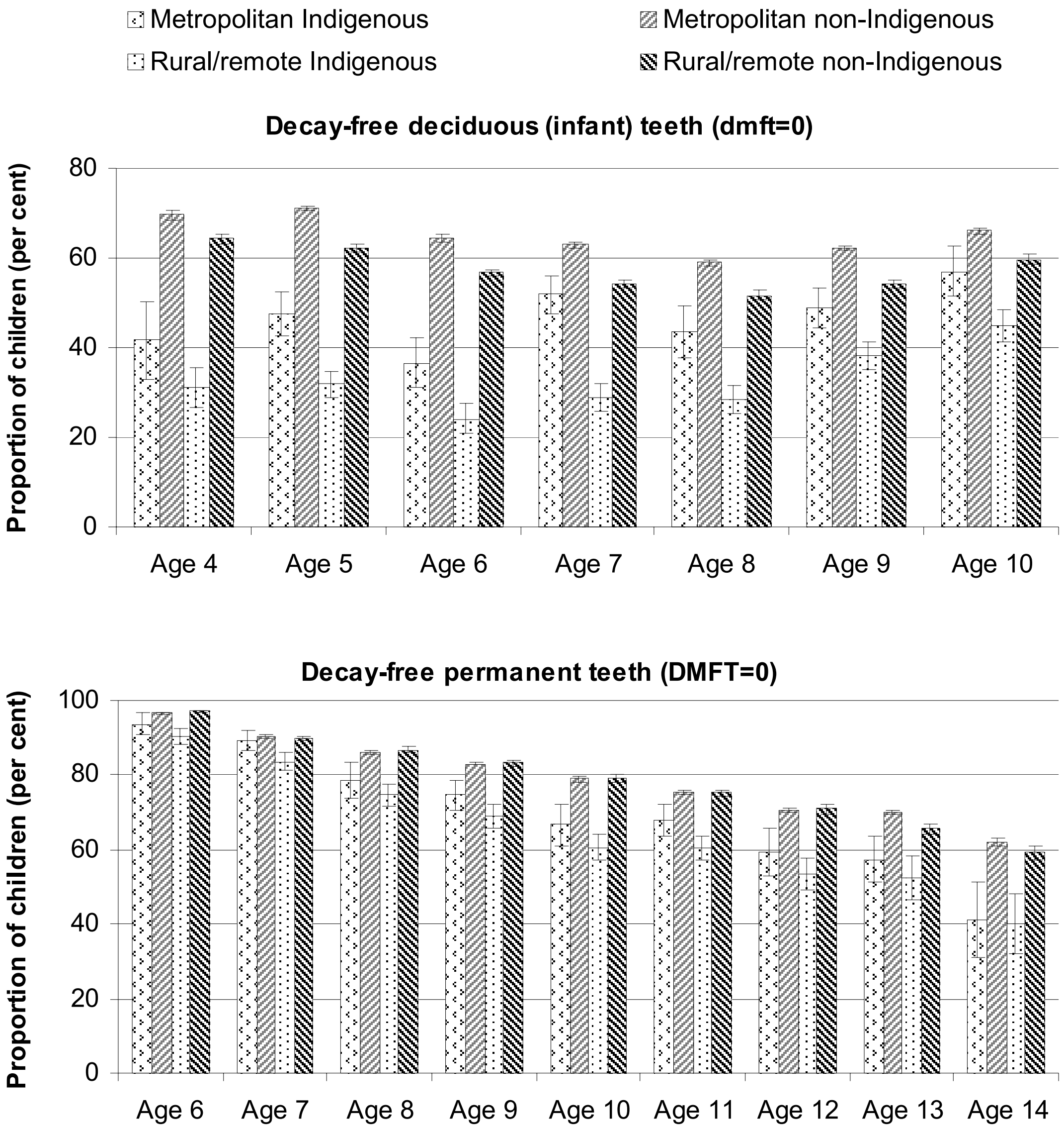
- levels of deciduous tooth decay were higher in rural/remote than in metropolitan areas for Indigenous children
- levels of deciduous tooth decay were higher for Indigenous children in metropolitan areas than for non-Indigenous children in both metropolitan and rural/remote areas (figure 7.6.1)
- the mean number of decay-affected permanent (adult) teeth was significantly higher for Indigenous children than for non-Indigenous children across all ages (from 6 to 14 years) in rural/remote areas, and across most ages in metropolitan areas (figure 7.6.1).

The proportion of children with teeth free of decay is a measure of how effectively tooth decay is prevented (figure 7.6.2).

Between 2000 and 2003:

- the proportion of children with decay-free deciduous (infant) teeth was lower for Indigenous children than for non-Indigenous children, across all age groups (from 4 to 10 years) and in both metropolitan and rural/remote areas (figure 7.6.2)
- the proportion of children with decay-free permanent (adult) teeth was lower for Indigenous children than for non-Indigenous children across all age groups (from 6–14 years) in rural/remote areas (figure 7.6.2)
- the proportion of children with decay-free permanent (adult) teeth was lower for Indigenous children than for non-Indigenous children in metropolitan areas for children aged 8–14 years (figure 7.6.2).

Figure 7.6.2 **Children with decay-free teeth by location and age, NSW, SA and the NT, selected years between 2000 and 2003**[a, b, c]



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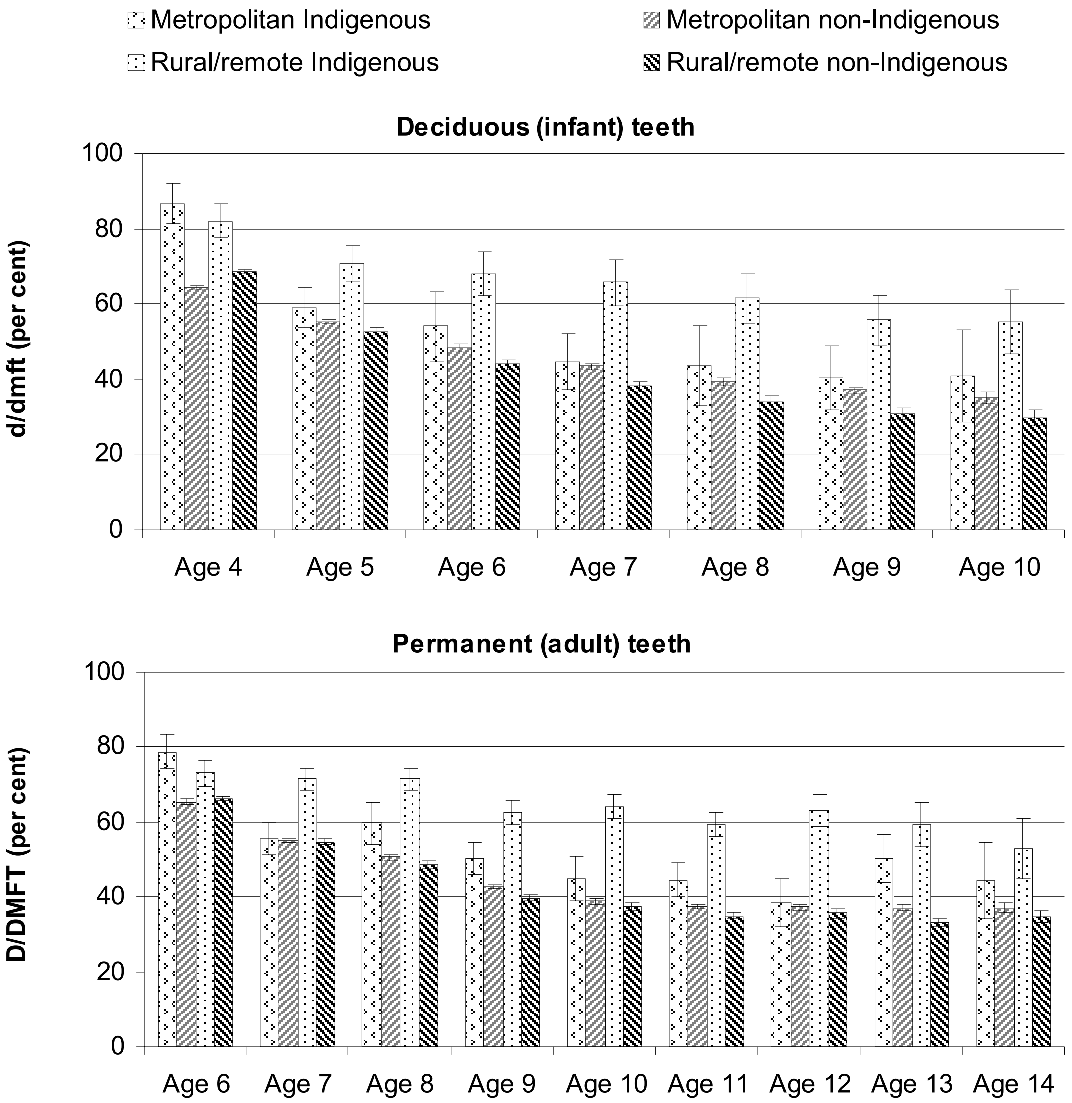
[a] Geographical locations are based on the Rural, Remote and Metropolitan Areas (RRMA) classification. Data for rural and remote areas have been combined. [b] dmft=d+m+f and refers to deciduous (infant) teeth, where: d=number of untreated decayed teeth; m=number of missing teeth; f=number of filled teeth. Uppercase letters denote permanent (adult) teeth. [c] Error bars represent 95 per cent confidence intervals around each estimate and are computed by multiplying the standard error by 1.96 (see chapter 2 for more information).

Source: Jamieson, Armfield and Roberts-Thomson (2006); tables 7A.6.1 and 7A.6.2.

The proportion of decay-affected teeth that are untreated provides a measure of unmet need for dental services. Where more decay-affected teeth have been treated (extracted or filled), treatment services may be more accessible. Where the proportion of decayed teeth that are untreated is high, access to services may be more difficult. Figure 7.8.3 contains data are presented for Indigenous and non-Indigenous children in metropolitan and rural/remote areas (figure 7.6.3).

Figure 7.6.3 **Proportion of untreated decay-affected teeth, NSW, SA and the NT, selected years between 2000 and 2003**[a, b, c, d]



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[a] Geographical locations are based on the Rural, Remote and Metropolitan Areas (RRMA) classification. Data for rural and remote areas have been combined. [b] dmft=d+m+f and refers to deciduous (infant) teeth, where: d=number of untreated decayed teeth; m=number of missing teeth; f=number of filled teeth. Uppercase letters denote permanent (adult) teeth. [c] The proportion of decay-affected teeth that are untreated is computed as the number of untreated decayed teeth (d) divided by the total number of decayed teeth (dmft). [d] Error bars represent 95 per cent confidence intervals around each estimate and are computed by multiplying the standard error by 1.96 (see chapter 2 for more information).

Source: Jamieson, Armfield and Roberts-Thomson (2006); tables 7A.6.1 and 7A.6.2.

Between 2000 and 2003:

- the proportion of decayed deciduous (infant) teeth that were untreated was significantly higher for Indigenous children than for non-Indigenous children across all ages (from 4 to 10 years) in rural/remote areas and for four-year-olds in metropolitan areas (figure 7.6.3)

- the proportion of decayed permanent (adult) teeth that were untreated was higher for Indigenous children than for non-Indigenous children across all ages (from 6–14 years) in rural/remote areas, and for children aged 6, 8, 9, 11 and 13 years in metropolitan areas (figure 7.6.3)
- in several age groups, particularly in rural/remote areas, more than 50 per cent of decay-affected teeth in Indigenous children were untreated.

A study of the oral health of 831 Indigenous children in remote communities in all jurisdictions was conducted between 2000 and 2003 (Jamieson, Armfield and Roberts-Thomson 2007; tables 7A.6.3 and 7A.6.4). Results were compared with CDHS data for Indigenous children in all areas of NSW, SA and the NT (figure 7.6.4).

Between 2000 and 2003:

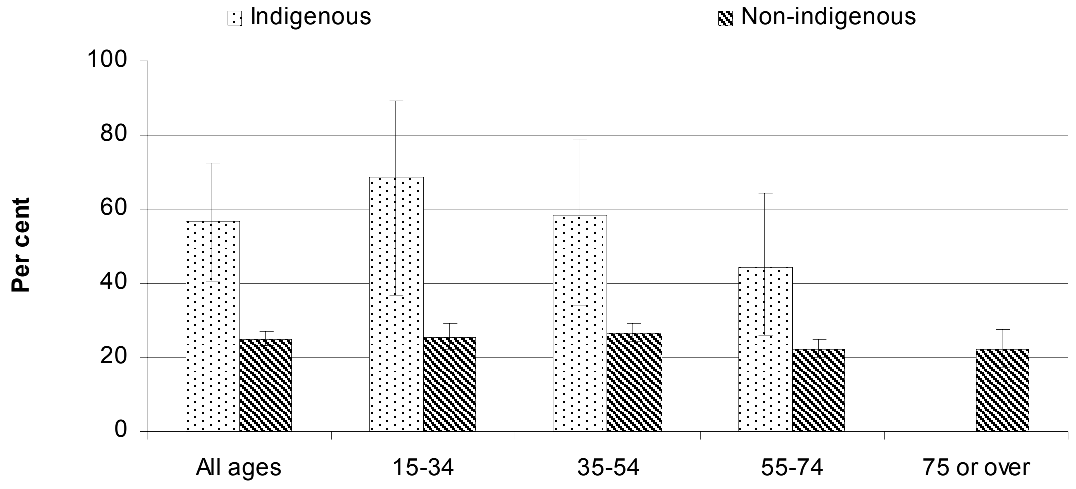
- The proportion of six year old Indigenous children with deciduous teeth affected by decay was higher in remote communities across Australia, than in all areas of NSW and SA (table 7A.6.4)
- For both six and 12 year olds, the proportion of Indigenous children with teeth affected by decay in remote communities across Australia was similar to that in all areas of the NT (table 7A.6.4).

Indigenous adults’ dental health

Adult dental health data are from the National Adult Oral Health Survey, conducted between 2004 and 2006. Of 14 123 people aged 15 years or over who participated in telephone interviews, 229 were Indigenous (AIHW 2009). Of 5505 people who also underwent an oral examination, 87 were Indigenous (Slade, Spencer and Roberts-Thomson 2007).

The proportion of the population with untreated tooth decay is a measure of unmet need for treatment (figure 7.6.5). A lower proportion is suggestive of better access to dental treatment services.

Figure 7.6.4 **Proportion of the population with untreated tooth decay, 2004–2006**[a]



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[a] Error bars represent 95 per cent confidence intervals around each estimate (see chapter 2 for more information).

Source: Roberts-Thomson, K.F. and Do, L. (2007); table 7A.6.5.

- The proportion of people aged 15–54 years with untreated tooth decay was more than twice as high for Indigenous people than non-Indigenous people (figure 7.6.4).
- The average number of teeth affected by decay, a measure of prevention, was similar for Indigenous and non-Indigenous adults (table 7A.6.5).

Potentially preventable hospitalisation for dental conditions

Hospitalisation may be required to treat complications arising from preventable dental conditions such as untreated tooth decay (AIHW 2009).

In the two year period July 2004 to June 2006 there were 65 633 hospitalisations for dental problems in NSW, Victoria, Queensland, WA, SA and the NT combined. Of these, 2495 (3.8 per cent) were for Indigenous people (AIHW 2009).

In 2005-06, 54 per cent of admissions of Indigenous people for diseases of the oral cavity, salivary glands and jaw were for treatment of tooth decay (ABS and AIHW 2008).

Figure 7.6.5 **Potentially preventable hospitalisations for dental conditions**[a, b, c, d, e]

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[a] Hospitalisation rates are directly age standardised using the 2001 Australian population. [b] Data are based on State/Territory of usual residence. [c] Separations for which care type was reported as newborn with no qualified days, and records for hospital boarders and posthumous organ procurement have been excluded. [d] Includes ICD-10-AM codes K02, K03, K04, K05, K06, K08, K09.8, K09.9, K12 and K13. [e] Non-Indigenous includes hospitalisations identified as 'not Indigenous' as well as those with a 'not stated' Indigenous status.

Source: AIHW National Hospital Morbidity Database (unpublished); table 7A.6.6.

- Potentially preventable hospital admissions for dental conditions were higher for Indigenous people than for non-Indigenous people from 2004-05 to 2006-07 (figure 7.6.5).

Data on hospitalisation rates for Indigenous and non-Indigenous children for dental procedures in 2002-03 were reported in the 2007 OID Report (SCRGSP 2007) and are provided in attachment tables 7A.6.12–7A.6.15.

7.7 Mental health

Box 7.7.1 **Key messages**

- Indigenous people had higher treatment rates for mental health issues in community clinics, residential care facilities and hospitals compared with non-Indigenous people in 2005-06 (table 7.7.1).
- 'Life stress events' have been identified as the factor most strongly associated with a high risk of clinically significant emotional or behavioural difficulties in Aboriginal children (Zubrick et al. 2005). In WA, in 2000-01, more than one in five Aboriginal children aged 0–17 years were living in families that had been exposed to 7 to 14 major life stress events, such as death, incarceration, violence and severe hardship, in the previous 12 months (Silburn et al. 2006).

The Indigenous view of health, including mental health, is holistic — 'health does not just mean the physical wellbeing of the individual but refers to the social, emotional and cultural wellbeing of the whole community' (Swan and Raphael 1995, p. 7). However, this indicator focuses on the mental health of individuals as data on the mental wellbeing of Indigenous communities are not available.

Mental health data, in combination with other health data presented in this report, provide a comprehensive picture of Indigenous health. This indicator includes data on the:

- prevalence of psychological distress
- treatment rates for mental health related services (including hospitals, community mental health care clinics, and doctors)
- death rates for mental and behavioural disorders
- mental health of prisoners and juveniles in detention
- risk of clinically significant emotional and behavioural difficulties in Aboriginal children.

Within the mental health domain, diverse views exist and terms are used in different ways. This report uses terms that are consistent with the *National Mental Health Plan 2003–2008* (Australian Health Ministers 2003). Broadly, mental health is defined as an individual's ability to negotiate the daily challenges and social interactions of life without experiencing undue emotional or behavioural incapacity (DHAC and AIHW 1999). Mental health encompasses a spectrum from:

- mental wellbeing (a person may have diminished cognitive, emotional and/or social abilities, but not to the extent that the criteria for a mental illness are met)

- mental illness (a diagnosable illness that significantly interferes with an individual's cognitive, emotional and/or social abilities (DHA 2002)).

Mental wellbeing problems are distinct from mental illness, although the two interact and influence each other:

- Mental wellbeing covers a broad range of problems which can be the result of domestic violence, substance misuse, physical health problems, incarceration, family breakdown and social disadvantage (AHMAC 2004). For Indigenous, people there are also broader social and historic issues, such as forced separation or forced relocation, which influence mental wellbeing (Blair, Zubrick and Cox 2005; Procter 2005).
- Mental illness includes anxiety and depression, post traumatic stress, suicidal ideation and self-harm behaviour, as well as psychotic disorders, affective disorders, and organic and degenerative disorders (DHA 2002). Suicide and self-harm are explored in more detail in section 7.8. Mental illness clearly impacts upon and can contribute to the wellbeing of individuals, families and communities.

Co-occurrence of depression and anxiety along with substance use are risk factors for suicide in all age groups (Harris and Barraclough 1997; Moscicki 1997; Rajkumar and Hoolahan 2004). A number of studies have found that the use of inhalants is a particular mental health concern among young Indigenous people (James 2004; NT Select Committee on Substance Abuse 2004, 2007; Siegel 2003). More information on substance use is included in sections 10.3 and 10.4.

Mental health is designated a national health priority area for Australia, and Indigenous mental health is the subject of a national strategy and action plan, the *National Strategic Framework for Aboriginal and Torres Strait Islander Health* (NATSIHC 2003) and the *National Strategic Framework for Aboriginal and Torres Strait Islander Mental Health and Social and Emotional Wellbeing 2004–2009* (NATSIHC 2004). Box 7.7.2 provides examples of programs that have been successful in improving Indigenous mental health and wellbeing.

Box 7.7.2 **‘Things that work’ — improving mental wellbeing**

The school-based **Family Wellbeing Program** was included in the 2007 report. The program was piloted in primary schools in Hope Vale and Wujul Wujul in far north Queensland. The program aimed to develop the analytical and problem solving skills of the students, to enhance psychosocial development and, in particular, to build personal identity and to encourage students to recognise their future potential.

A program evaluation noted the significant social and emotional growth for the participating students. Other outcomes included greater ability to think for oneself and set goals, less teasing and bullying in the school environment, and enhanced friendships and social relatedness (Tsey et al. 2005). On the basis of these findings, Apunipima and James Cook University worked with Queensland Department of Education, Training and the Arts to develop a curriculum focusing on the family wellbeing empowerment principles for Year 7 students over a school term. This led to the establishment of the Making My Way Through unit within the Cape York Bound for Success Education Strategy. This strategy is aimed at preparing remote area primary students for transition to high school away from home (Queensland unpublished).

The **Aboriginal Mental Health Worker Training Program** in NSW aims to develop the Aboriginal mental health workforce and increase the education, retention and representation of Aboriginal people in specialist mental health service delivery. At the end of their training, the graduates are fully qualified Aboriginal mental health professionals in mainstream mental health services. Ten trainee positions were offered in 2006-07 and another nine positions will be offered in 2008-09. This will increase the number of Aboriginal Mental Health Workers in NSW to 70 — in addition to the 15 Aboriginal Mental Health Workers in Aboriginal Community Controlled Health Services.

In late 2007, an evaluation by the Cooperative Research Centre for Aboriginal Health found that the program is building a sustainable workforce by coordinating work and study for the trainees within a system of peer support, supervision and mentoring (Harrison and Watson 2009).

Prevalence of psychological distress

The ABS 2004-05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) collected data for the first time on mental wellbeing. The 2007 report included detailed findings on these data. Some of the findings from the NATSIHS reveal that in 2004-05:

- after adjusting for age, 26.6 per cent of Indigenous adults had experienced a high to very high level of psychological distress compared with 13.1 per cent of non-Indigenous adults (table 7A.7.1)[7]
- in almost all age groups Indigenous people were twice as likely as non-Indigenous people to have experienced high to very high levels of distress. For 18–24 year olds, Indigenous people were 1.6 times as likely as non-Indigenous people to have experienced high to very high levels of distress (table 7A.7.3).

More data on psychological distress, positive mental wellbeing and psychological distress according to selected health characteristics (such as alcohol consumption) by State and Territory, by sex, by age groups and remoteness areas can be found in attachment tables 7A.7.4–17.

Treatment rates in mental health related services

This section reports information on the use of mental health services such as hospitals, doctors, emergency departments and community clinics. Table 7.7.1 includes 2005-06 treatment rates in mental health related services (except for general practitioners) and 2006-07 treatment rates by general practitioners and hospitals.

Treatment rates are not comparable across mental health services. The rates presented in table 7.7.1 are derived from survey data and various administrative data sets. See tables 7A.7.42, 7A.7.45 and 7A.7.51–54 for more information.

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[7] The 2004-05 NATSIHS included five Kessler 10 (K10) questions. The Kessler 10 (K10) is a 10-item questionnaire which provides a measure of psychological distress based on questions about the level of anxiety and depressive symptoms in the most recent four-week period.

Table 7.7.1 **Treatment rates in mental health related services**[a]

	Unit	*Indigenous*	*Non-Indigenous*[b]	*Rate ratio*[c]
2005-06				
General practitioners[d]	crude rate (per 100 encounters)	na	na	na
Emergency departments in public hospitals	% of total mental health related occasions[e]	5.0	96.5	..
Community mental health service[f]	rate (per 1000 population)[g]	531.7	270.3	2.0
Residential mental health care service[e]	rate (per 10 000 population)[g]	1.9	1.1	1.7
Hospitalisations[h]	rate (per 1000 population)[g]	24.7	13.9	1.8
2006-07				
General practitioners[d]	crude rate (per 100 encounters)	17.6	10.6	1.5
Hospitalisations[h]	rate (per 1000 population)[g]	25.4	14.1	1.8

[a] Treatment rates are not comparable across mental health services. Rates are derived from survey data and various administrative data sets. See tables 7A.7.42, 7A.7.45 and 7A.7.51 – 54 for more detail. [b] Includes non-Indigenous patients and patients for whom Indigenous status was 'not stated' [c] The rate ratio is calculated by dividing the Indigenous rate by the non Indigenous rate. [d] Classified according to ICPC-2 codes: P01–P13, P15–P20, P22–P25, P27–P29, P70–P82, P85–P86, P98–P99. ICPC-2 = International Classification of Primary Care, 2nd edition, Oxford. [e] Includes emergency department occasions of service that had a principal diagnosis based on ICD-10-AM codes F00–F99 or the equivalent ICD-9-CM codes. ICD–10–AM = International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification. ICD-9-CM = International Classification of Diseases, Ninth Revision, Clinical Modification. [f] These data should be interpreted with caution due to likely under identification of Indigenous people. [g] Rates were directly age standardised. [h] Data are reported for NSW, Victoria, Queensland, WA, SA and public hospitals in the NT. Hospitalisation rates are for all mental and behavioural disorders (ICD–10–AM codes F00–F99). **na** Not available. .. Not applicable.

Source: AIHW (Australian Institute of Health and Welfare) 2008, *Mental Health Services in Australia 2005–06*, Cat. no. HSE 56, Canberra; AIHW 2009, *Measuring the Social and Emotional Wellbeing of Aboriginal and Torres Strait Islander Peoples*, Cat. no. IHW 24, Canberra; tables 7A.7.42, 7A.7.45 and 7A.7.51 – 54.

In 2005-06:

- 5.0 per cent of mental health related emergency department visits were by Indigenous people (for comparative purposes, 4.3 per cent of emergency department visits for all causes were by Indigenous people) (table 7A.7.52)
- after adjusting for age, Indigenous people were twice as likely to be treated by a community mental health service as non-Indigenous people (531.7 and 270.3 per 1000 population respectively) (table 7A.7.53)
- after adjusting for age, Indigenous people had a slightly higher rate of residential care episodes than non-Indigenous people (1.7 and 1.1, respectively) (table 7A.7.54).

Table 7.7.1 also includes 2006-07 treatment rates for general practitioners and hospitals.

- In 2006-07, Indigenous people had a higher rate of mental health related general practitioner encounters than non-Indigenous people (17.6 per cent compared with 10.6 per cent) (table 7.7.1).

The general practitioner data are based on a small sample of general practitioner encounters involving Indigenous Australians. A much larger sample, which produces more reliable results, can be achieved by combining data for a five year period. Combined financial year data for 2002-03 to 2006-07 show that:

- after adjusting for age, the rate of mental health related problems managed by general practitioners was similar for Indigenous and non-Indigenous people (table 7A.7.51)
- Indigenous patients were around three time as likely as non-Indigenous patients to have alcohol misuse, drug abuse and tobacco misuse managed by a general practitioners (AIHW 2009).

After adjusting for age, for NSW, Victoria, Queensland, WA, SA and public hospitals in the NT:

- the hospitalisation rate ratio for mental and behavioural disorders was the same in 2005-06 and 2006-07, that is, Indigenous people were 1.8 times as likely to be hospitalised for mental and behavioural disorders as non-Indigenous people (table 7.7.1)
- from 2004-05 to 2006-07, in NSW, Victoria, Queensland, WA, SA and public hospitals in the NT, the hospitalisation rate for mental and behavioural disorders for both Indigenous and non-Indigenous people remained stable (tables 7A.7.39, 7A.7.42, 7A.7.45).

More hospital data by sex and age groups, for 2004-05 to 2006-07 in NSW, Victoria, Queensland, WA, SA and public hospitals in the NT can be found in tables 7A.7.39–7A.7.50. Longer time series data for Queensland, WA, SA and the NT from 2001-02 to 2006-07 are included in the attachment tables 7A.7.18–7A.7.38. Hospitalisation data for these four states and territories should not be assumed to represent the hospitalisation experience in the other jurisdictions.

Death rates for mental and behavioural disorders

Table 7.7.2 Average annual deaths from mental and behavioural disorders, 2003−2007 (per 100 000 population)[a, b, c]

	Under 25	*25–34*	*35–44*	*45 and over*
Indigenous				
NSW	–	2.0	10.1	36.7
Queensland	–	7.8	11.8	25.7
WA	1.0	1.9	17.7	72.4
SA	–	–	28.7	41.3
NT	–	9.7	20.3	108.3
Non-Indigenous[e]				
NSW	0.2	1.1	2.1	56.4
Queensland	0.1	0.8	1.0	42.8
WA	0.1	0.8	1.2	42.2
SA	0.1	0.7	1.2	65.2
NT	–	–	1.6	24.1

ICD–10 = International Classification of Diseases, 10th Revision.

[a] These data are based on ICD–10 codes F00–F99. [b] Care should be taken when using these data as the rates are based on a small number of deaths. [c] Denominators used in the calculation of rates for the Indigenous population are from ABS 2004, *Experimental Estimates and Projections, Aboriginal and Torres Strait Islander Australians*, Cat. no. 3238.0 (low series). There are no comparable population data for the non-Indigenous population. Denominators used in the calculation of rates for comparison with the Indigenous population have been derived by subtracting Indigenous population estimates/projections from total estimated resident population and should be used with care, as these data include population units for which Indigenous status were not stated. [d] Data on deaths of Indigenous people are affected by differing levels of coverage of deaths identified as Indigenous across states and territories. Care should be exercised in analysing these data, particularly in making comparisons across states and territories and between the Indigenous and non-Indigenous data. [e] Non-Indigenous includes deaths with a 'Not stated' Indigenous status. – Nil or rounded to zero.

Source: ABS *Causes of Death, Australia,* Cat. no. 3303.0 (unpublished); table 7A.7.61.

- For NSW, Queensland, WA, SA and the NT, in 2003–2007, death rates for mental and behavioural disorders were highest for both Indigenous and non-Indigenous people aged 45 years and over (table 7.7.2).
- In 2003–2007, for those jurisdictions for which data are available, death rates for mental and behavioural disorders were higher for Indigenous people aged 25–44 years than non-Indigenous people (except in SA for people aged 25–34 years) (table 7.7.2).
- From the data available in 2003–2007, compared to non-Indigenous rates, mental and behavioural disorders accounted for:
  - 2.4 times as many deaths as expected in NSW
  - 2.1 times as many deaths as expected in Queensland
  - 4.1 times as many deaths as expected in WA

- 2.4 times as many deaths as expected in SA
- 6.0 times as many deaths as expected in the NT (table 7A.7.64).

More data on death rates for mental and behavioural disorders by age and gender can be found in tables 7A.7.55–64.

Mental health of prisoners and juveniles in detention

Prisoners

Data on the health of prisoners (including mental health) in Australia is sporadic, inconsistent and incomplete (AIHW 2001; AMA 2006). Comprehensive Indigenous prisoners' health data (including mental health) are almost nonexistent.

No comparable Indigenous and non-Indigenous data on rates of mental illness and emotional or mental health problems among prisoners are available for inclusion in this report. From the few Australian and international surveys that have been conducted on prisoner health, the common finding is that prisoners have high rates of mental illness and emotional or mental wellbeing problems (ABS 1998; ABS 2008; Brooke et al. 1996; Butler 1997; Butler and Allnutt 2003; Butler and Milner 2003; Fazel and Danesh 2002; Hockings et al. 2002; Victorian Department of Justice 2003). These surveys do not take into account how the prison environment influences the mental health of prisoners.

The 2007 report included findings from a WA study on prisoner health and mental health (Hobbs et al. 2006). The study found that rates of hospital admissions for mental disorders were approximately twice as high for Indigenous male prisoners and three times as high for Indigenous female prisoners as in the Indigenous population of WA (Hobbs et al. 2006). The high prevalence of mental health problems in prisoners highlighted in the study by Hobbs et al. (2006) is consistent with studies of prisoners in the United Kingdom (Brooke et al. 1996).

The Australian Institute of Criminology (AIC) National Deaths in Custody Program (NDICP) database collects information on the prevalence of mental illness reported among people who die in custody. There were 1344 deaths recorded between 1990 and 2006. Information on the prevalence of mental illness was available in 525 cases (AIC NDICP unpublished). Of these, there were 257 deaths in custody of people with a mental illness and 48 (18.7 per cent) were Indigenous deaths (AIC NDICP unpublished). Indigenous prisoners comprised 23.6 per cent of the prisoner population in 2006 (table 4A.12.5).

Possible future sources of data include:

- a census conducted over a period of two weeks every two years, of people entering prisons and their characteristics. The development work of the census is being undertaken by the Prisoner Health Information Group (AIHW 2006)
- a research project, conducted in Queensland, that collected information on the prevalence of mental illness and disorders such as anxiety, depression and post traumatic stress disorder among Indigenous people in custody (Queensland Government unpublished).

Juveniles in detention

There is no systematic collection of data on the health status of juveniles in detention. Research shows that juvenile detainees are at high risk of suffering mental health problems (BMA 2006; Kessler 2002; Vermeiren 2003). No comparable Indigenous and non-Indigenous data on the rates of mental illness and emotional or mental health problems of juveniles in detention are available for inclusion in this report. The 2007 report included findings from two NSW health surveys that examined the mental health of young people in custody and on community orders (Fasher et al 1997; Kenny et al. 2006; NSW Department of Juvenile Justice 2003).

Some of the findings from the NSW surveys include:

- in 2003, 88 per cent of young people in custody reported mild, moderate or severe symptoms consistent with a clinical mental disorder; 33 per cent reported high or very high psychological distress (implying that they may have a greater than 50 per cent chance of an anxiety or depressive disorder). Population norms suggest that between 11 per cent and 12 per cent of the general population have high to very high scores on the K-10 (NSW Department of Juvenile Justice 2003)[8]
- between 2003 and 2005, 25 per cent of young people serving community orders had experienced a high to very high level of psychological distress. Young people on community orders reported fewer mental health issues and fewer suicide or self-harm attempts than young people in custody (Kenny et al. 2006).[9]

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[8] A total of 319 young people were eligible to participate in the survey. Of this group, 242 young people in custody were surveyed, 102 of whom were Indigenous (42 per cent).

[9] Indigenous juveniles comprised 20 per cent of the young people surveyed.

Risk of clinically significant emotional and behavioural difficulties in Aboriginal children

The mental wellbeing of children is intimately connected to the emotional and physical wellbeing of their parents (BMA 2006). Risk factors for vulnerability to both mental and physical illness are often transmitted across generations in the absence of interventions to break the cycles of vulnerability (BMA 2006).

There is a paucity of data to describe the mental health and wellbeing of Indigenous children. The 2007 report included findings from the Western Australian Aboriginal Child Health Survey (WAACHS). The WAACHS, conducted in 2000-01, collected data on emotional and behavioural difficulties in Aboriginal children. Some of the findings from the WA study include:

- Indigenous children in remote communities had better mental health than children living in Perth, suggesting that growing up in very remote communities, where adherence to traditional culture and ways of life are strongest, may be protective against emotional and behavioural difficulties in Aboriginal children (Zubrick et al. 2005)
- life stress events were the factor most strongly associated with high risk of clinically significant emotional or behavioural difficulties in Aboriginal children (Zubrick et al. 2005). Families of Aboriginal children report extraordinary levels of stress from events including, death, incarceration, violence and severe hardship. Over one in five Aboriginal children aged 0–17 years (22 per cent) were living in families that had been exposed to 7–14 major life stress events in the 12 months prior to the survey (Silburn et al. 2006).

7.8 Suicide and self-harm

Box 7.8.1 **Key messages**

- Suicide death rates were higher for Indigenous people (between 10.9 and 42.2 per 100 000 population) than non-Indigenous people (between 8.3 and 15.1 per 100 000 population) in NSW, Queensland, WA and SA and the NT in 2003–07 (figure 7.8.1). Indigenous people aged 25–34 had particularly high suicide rates (between 26.0 and 100.4 per 100 000 people) (figure 7.8.2).
- Suicide rates were significantly higher for Indigenous males (between 19.4 and 76.4 per 100 000) than for non-Indigenous males (between 13.3 and 24.4 per 100 000), and for Indigenous females (between 6.7 and 17.1 per 100 000) than non-Indigenous females (between 3.5 and 5.0 per 100 000) (figure 7.8.3).
- The hospitalisation rate for non-fatal intentional self-harm (age standardised) was higher for Indigenous people (3.5 per 1000) than non-Indigenous people (1.4 per 1000) in 2006-07 (table 7.8.1). There was a slight increase in hospitalisations of Indigenous people for self-harm between 2004-05 and 2006-07 (figure 7.8.4).

Suicide and self-harm cause great grief in both Indigenous and non-Indigenous communities. Studies investigating suicide in Indigenous communities have been undertaken in NSW and the ACT (Tatz 1999), North Queensland (Hunter et al. 2001; Hunter and Harvey 2002), the NT (Measey et al. 2006; Parker and Ben-Tovim 2001) and extensive cross cultural, comparative research carried out in SA in Adelaide's state housing areas (Radford et al. 1991, 1999; Brice 1994).

Many studies (Elliott Farrelly 2004; Hunter et al. 2001; Hunter and Harvey 2002; Parker and Ben-Tovim 2001; Tatz 1999) have suggested that there are significant differences in suicidal behaviour not only between the Indigenous and non-Indigenous populations, but also between different Indigenous communities. This indicates that Indigenous suicide is influenced by a complex set of factors relating to history of dispossession and intergenerational trauma, removal from family, discrimination, resilience, social capital and socio-economic status.

Radford et al. (1999) found high reported attempted suicide levels in non-Aboriginal sole parents living in public housing in Adelaide that were slightly higher than for their Aboriginal equivalents in the same areas — which was associated for both groups with past abuse experience as well as housing and other social and economic issues.

Studies have found that Indigenous suicides appear to occur in clusters, and that the victims may share common age groups, genders and methods

(Elliott-Farrelly 2004). Non-Indigenous suicides also appear to occur in clusters (Marsden 2001). Suicide frequently occurs in communities that have experienced similar losses in the past, and where 'lifestyles of risk' are common. Suicide is often impulsive, and may be preceded by interpersonal conflicts (Hunter et al. 2001; Tatz 1999).

Evidence indicates that suicide is most common among young Indigenous men, while suicide attempts seem to be more prevalent for Indigenous women (Elliott-Farrelly 2004).

A study on self-harming behaviour among young Indigenous people (Hunter 1993) found that those who had attempted suicide reported a high level of anxiety and depression. Other researchers have found that mental and behavioural disorders are often associated with an increased risk of self-harm, as is alcohol and substance abuse (Swan and Raphael 1995; Vicary and Westerman 2004). However, other researchers have disputed the purported relationship between mental illness and Aboriginal suicide (Tatz 1999; Reser 1991, cited in Elliott-Farrelly 2004). Section 7.7 of the report presents data on mental health and sections 10.3 and 10.4 of the report presents data on alcohol and drug and other substance abuse.

Environmental, sociocultural and economic risk factors have also been associated with a higher rate of suicide. Relevant family factors may include having parents who are substance dependent, have been imprisoned, or have violent tendencies, particularly if this translates into family violence.

Evidence suggests that intergenerational trauma is a risk factor for Indigenous suicide. This trauma leads to, and results in, poor parenting skills, lack of positive role models, disintegration of family and cultural life, a lack of support networks, and alcohol and substance abuse. Young people growing up in these circumstances have had diminished access to identity-forming structures which help the transition from childhood to adolescence into adulthood and provide a young person, particularly males, with positive role models and coping behaviours in times of conflict (Proctor 2005).

Qualitative research of Indigenous young people in the East Kimberley (Wunan 2008) found that low self esteem, being a victim of sexual abuse and untreated depression were all factors in Indigenous youth suicide. Feelings of hopelessness, loss of culture and discrimination were also associated with suicides by Indigenous young people. Other research in the Kimberley Region found that Aboriginal adolescents were four times more likely (than non-Aboriginal adolescents) to report that a family member had committed suicide (29 per cent to 8 per cent) (Ralph, Hamaguchi and Cox 2006).

Canadian research has found evidence that the presence of certain socio-cultural factors in discrete Indigenous communities, such as efforts to secure land rights, evidence of some community control over education, policing and health significantly reduced the risk of youth suicide in those communities (Chandler and Lalonde 2008).

Unemployment and poor long-term job prospects are considered risk factors for suicide, particularly in regional and remote areas, where a substantial proportion — 67.9 per cent in 2006 — of Indigenous people live (appendix 3, table A.2). Section 4.6 presents data showing the higher unemployment rates and lower labour force participation rates of Indigenous compared to non-Indigenous people.

Programs exist to prevent suicide and mitigate community risk factors. For example, following three suicide clusters between the mid 1980s and mid 1990s, the Yarrabah community in Queensland developed a set of strategies for suicide prevention, intervention, aftercare and life promotion. More information is contained in box 7.8.2.

Box 7.8.2 **'Things that work' — Suicide prevention**

The **Yarrabah Family Life Promotion Program** (Queensland), established in 1995 is facilitated by the locally-controlled Community Council and Primary Health Care service, and external resources engaged by the community. Life promotion strategies seek to mitigate community risk factors, through training community members in crisis intervention and counselling, a crisis centre and crisis line, one-on-one grief and loss counselling, and family and men's support groups. Other measures include information for suicide survivors, families of suicide victims, and people who self-harm, workshops on parenting and relationships and the promotion of sport, recreation and cultural activities. Numbers of suicides and incidents of self harm have fallen, as have hospital presentations for accidental trauma and police interventions for alcohol-related problems.

Community ownership of the problem and the solution was fundamental in the success of the Yarrabah program. The community 'identified the reclamation of 'spirit' or responding to the experience of hopelessness, as fundamental to the achievement of health improvement'. While the apparent lack of structure of the program had sometimes been a barrier when applying for funding, formal structure may work to inhibit community engagement where community ownership has not already been established. The program is ongoing with two Life Promotion Officers. One position is currently filled and the second program needs to be recruited due to a vacancy (Baird, Mick-Ramsamy and Percy 1998; Clapham 2004, pp. 68–72, 126–7; Hunter et al. 2001; Mitchell 2000, p. 22; Mitchell 2005, pp. 16–18).

(Continued next page)

Box 7.8.2 (continued)

The Koori Kids Wellbeing Project in Shoalhaven, NSW, is part of the National Suicide Prevention Strategy, funded by the Australian Government Department of Health and Ageing. This project provides a promotion, prevention and early intervention approach to mental health support and suicide prevention for Aboriginal children aged between 3–12 years. There are five key components in the Koori Kids Wellbeing Program. These are:

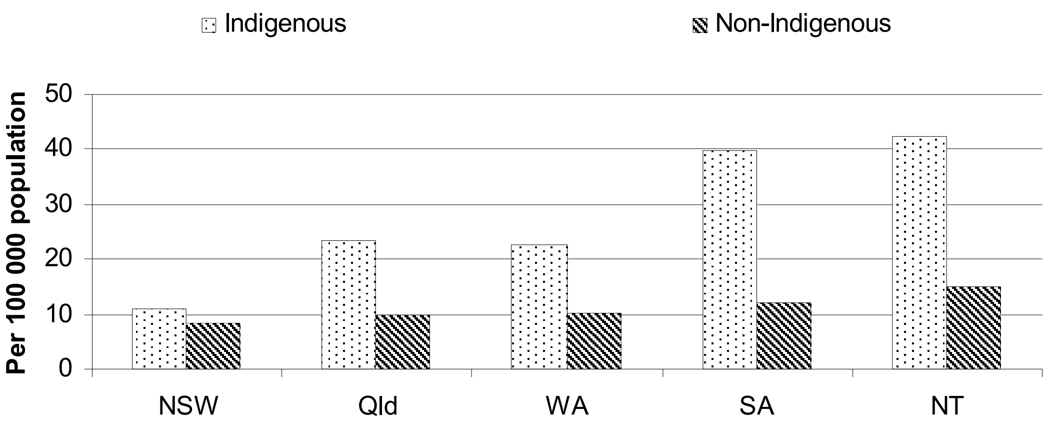
- cultural awareness; programs in primary schools focussing on building cultural identity and pride
- Aussie Optimism — mental health education in classrooms
- individual counselling and psychological support for children with emotional and behavioural difficulties
- parenting education and support
- staff support and training for Aboriginal education officers and other school, health and welfare staff with a focus on child protection, child mental health, Aboriginal mental health and cultural competency.

The Koori Kids project has approximately 60 individual clients but sees up to 200 children per week through parenting, group and classroom education. The project is under constant demand as the area it covers consists of a population of about 100 000, including nearly 1000 Aboriginal children of primary school age. It provides services that are flexible to the community's needs (Australian Government, unpublished).

In SA, **LivingWorks**, offers two suicide intervention programs, which have been delivered to the Indigenous community since 2007. ASIST (Applied Suicide Intervention Skills Training) is a two day workshop and SafeTALK (Suicide Alertness for Everyone — Tell, Ask, Listen, KeepSafe) is a half day workshop for caregivers. LivingWorks programs train a range of people in the community to be able to intervene with someone at risk of suicide.

Feedback from participants, which is collected after each training program, has indicated that SafeTALK and ASIST are effective tools in building capacity to intervene with someone at risk of suicide. An internal program evaluation completed in June 2008 found that the LivingWorks courses help to break down the stigma and taboo surrounding suicide and provide participants with a range of resources, strategies and support to keep people safe. This is consistent with the international body of evidence relating to the initiative. International information on the program is available at http://www.livingworks.net (SA Government, unpublished).

Figure 7.8.1 **Average annual intentional self-harm (suicide) deaths indirectly age standardised rate per 100 000, 2003–07**[a, b, c, d, e]



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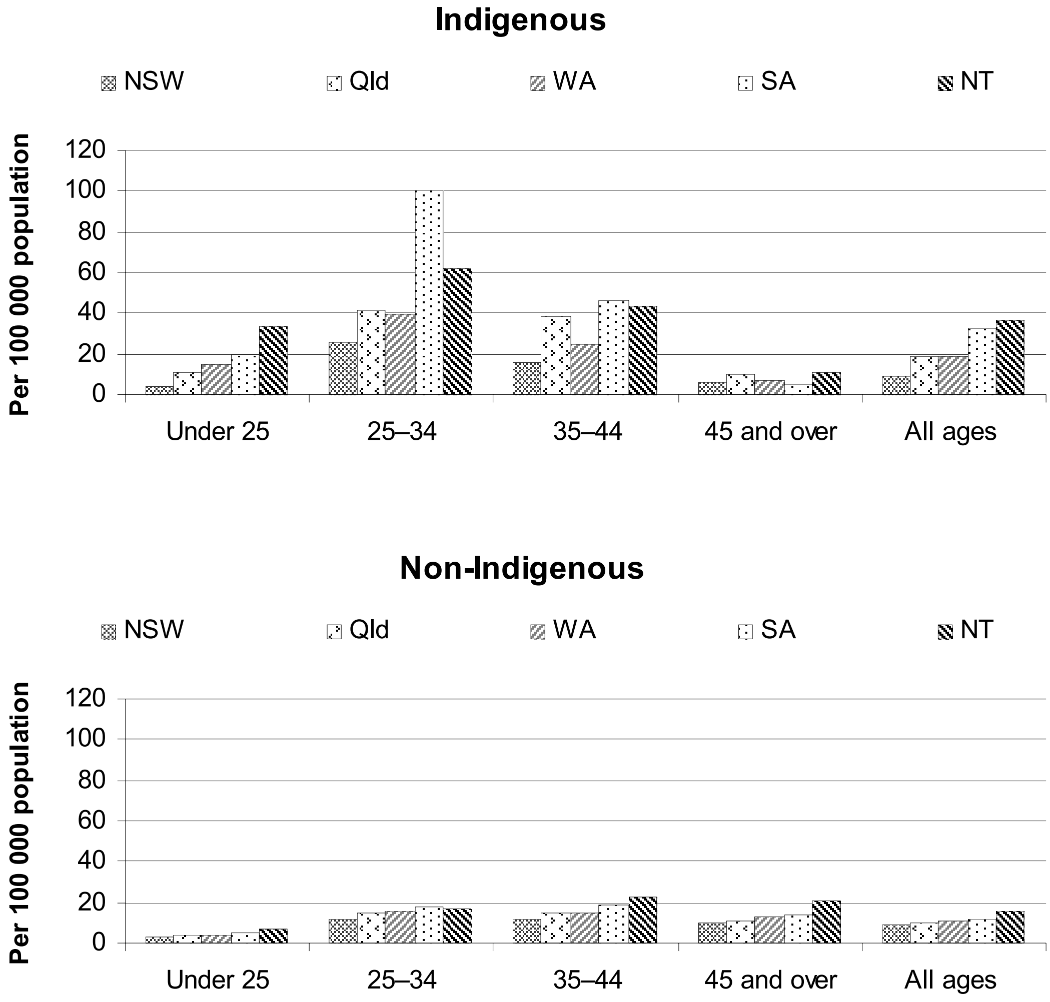
[a] Data on deaths of Aboriginal and Torres Strait Islander Australians are affected by differing levels of coverage of deaths identified as Indigenous across states and territories. Care should be exercised in analysing these data, particularly in making comparisons across states and territories and between Indigenous and non-Indigenous data. [b] Data on Indigenous causes of death are not available separately from the ABS for Victoria, Tasmania and the ACT due to a combination of comparatively small numbers and relatively low coverage of Indigenous deaths. [c] Deaths from intentional self-harm are defined as causes of death with ICD 10 codes X60–X84, Y87.0. [d] Data are subject to a degree of uncertainty and apparent differences in mortality estimates between jurisdictions may not be statistically significant. [e] Calculations of rates for the Indigenous population are based on ABS Experimental Projections, Aboriginal and Torres Strait Islander Australians (low series, 2001 base). There are no comparable population data for the non-Indigenous population. 'Non-Indigenous' includes deaths with 'Not stated' Indigenous status. Calculations of rates for the non-Indigenous population are based on data derived by subtracting Indigenous population projections from total population estimates and should be used with care.

Source: ABS *Causes of Death, Australia*, Cat. no. 3303.0 (unpublished); table 7A.8.1.

- Suicide death rates were higher for Indigenous people (between 10.9 and 42.2 per 100 000 population) than non-Indigenous people (between 8.3 and 15.1 per 100 000 population) in NSW, Queensland, WA and SA and the NT between 2003 and 2007 (figure 7.8.1). Non-age-standardised data are included in table 7A.8.3.

Figure 7.8.2 Average annual intentional self-harm (suicide) death rate by age, 2003–07[a, b, c, d, e, f, g]

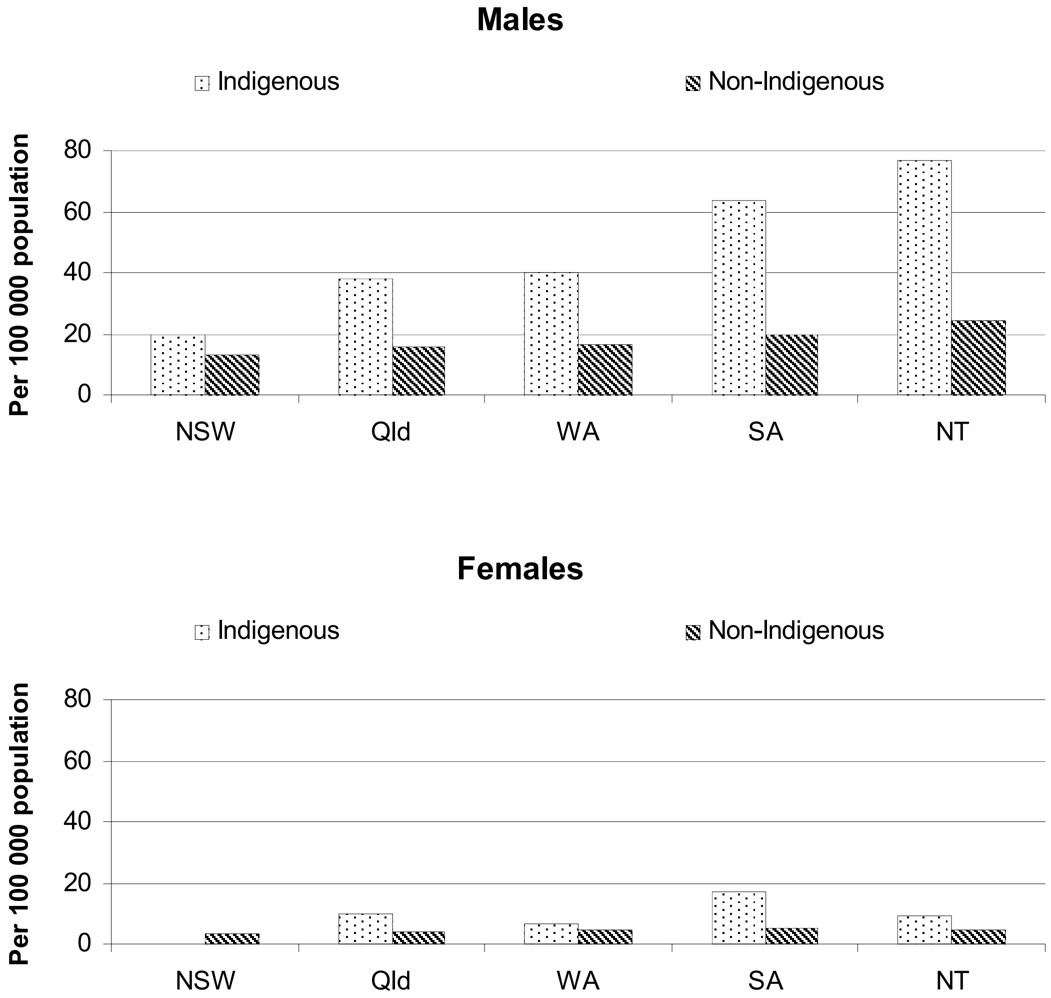


[a] Rates are crude rates. [b] All ages includes age not stated. [c] Data on deaths of Aboriginal and Torres Strait Islander Australians are affected by differing levels of coverage of deaths identified as Indigenous across states and territories. Care should be exercised in analysing these data, particularly in making comparisons across states and territories and between Indigenous and non-Indigenous data. [d] Data on Indigenous causes of death are not available separately from the ABS for Victoria, Tasmania and the ACT due to a combination of comparatively small numbers and relatively low coverage of Indigenous deaths. [e] Deaths from intentional self-harm are defined as causes of death with ICD 10 codes X60–X84, Y87.0. [f] Data are subject to a degree of uncertainty and apparent differences in mortality estimates between jurisdictions may not be statistically significant. [g] Calculations of rates for the Indigenous population are based on ABS Experimental Projections, Aboriginal and Torres Strait Islander Australians (low series, 2001 base). There are no comparable population data for the non-Indigenous population. 'Non-Indigenous' includes deaths with 'Not stated' Indigenous status. Calculations of rates for the non-Indigenous population are based on data derived by subtracting Indigenous population projections from total population estimates and should be used with care.

Source: ABS *Causes of Death, Australia*, Cat. no. 3303.0 (unpublished); table 7A.8.2.

- Suicide death rates varied by age group in 2003–07, with Indigenous people aged 25–34 having particularly high suicide rates (between 26.0 and 100.4 per 100 000 people) (figure 7.8.2).

Figure 7.8.3 **Average annual suicide death rates by sex, indirectly age standardised rate, 2003–07[a, b, c, d, e]**



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[a] Data on deaths of Aboriginal and Torres Strait Islander Australians are affected by differing levels of coverage of deaths identified as Indigenous across states and territories. Care should be exercised in analysing these data, particularly in making comparisons across states and territories and between Indigenous and non-Indigenous data. [b] Data on Indigenous causes of death are not available separately from the ABS for NSW (for females), Victoria, Tasmania and the ACT due to a combination of comparatively small numbers and relatively low coverage of Indigenous deaths. [c] Deaths from intentional self-harm are defined as causes of death with ICD 10 codes X60–X84, Y87.0. [d] Data are subject to a degree of uncertainty and apparent differences in mortality estimates between jurisdictions may not be statistically significant. [e] Calculations of rates for the Indigenous population are based on ABS Experimental Projections, Aboriginal and Torres Strait Islander Australians (low series, 2001 base). There are no comparable population data for the non-Indigenous population. 'Non-Indigenous' includes deaths with 'Not stated' Indigenous status. Calculations of rates for the non-Indigenous population are based on data derived by subtracting Indigenous population projections from total population estimates and should be used with care.

Source: ABS *Causes of Death, Australia*, Cat. no. 3303.0 (unpublished); tables 7A.8.1.

In the period 2003–07, after taking into account the different age structures of the two populations, in the five states and territories for which data are available:

- suicide rates for Indigenous males were significantly higher (between 19.4 and 76.4 per 100 000) than those for non-Indigenous males (between 13.3 and 24.4 per 100 000) (figure 7.8.3)
- suicide death rates were also higher for Indigenous females (between 6.7 and 17.1 per 100 000) than non-Indigenous females (between 3.5 and 5.0 per 100 000) (figure 7.8.3)
- suicide death rates were higher for males than females for non-Indigenous people (figure 7.8.3)
- suicides as a proportion of all deaths were higher for Indigenous people than for non-Indigenous people (2.4 to 6.7 per cent compared to 1.2 to 4.7 per cent) (table 7A.8.4).

Data on suicides for the period 2001-05 (which were published in the 2007 report) are available in the attachment tables for this section (tables 7A.8.7–10).

Measey et al. (2006) conducted a study of NT suicides between 1981 and 2002, using data from ABS death registrations and the NT's Coroner's office. In the article, the authors' advise caution must be exercised in making any generalisations from their findings, given small numbers, the unusual age distribution of the NT population, the relatively high proportion of Indigenous people in the NT, and the high proportion of the NT population living in remote and very remote areas. They found that:

- the age-adjusted rate of suicide in the NT has been higher than the national rate since 1996, and is rising
- between 1981 and 2002:
  - the incidence of Indigenous suicide had increased since low levels in the early 1980s and had become an increasing problem
  - averaged over the whole period, Indigenous and non-Indigenous rates were similar but Indigenous suicide rates had risen rapidly and were now significantly higher than non-Indigenous rates
  - the suicide rate for Indigenous males rose by 800 per cent while the rate for non-Indigenous males rose by 30 per cent
  - the overall rate of suicide by Indigenous males increased by an annual average of 17.4 per cent, while the Indigenous females rate increased by an annual average of 25.8 per cent
  - amongst Indigenous people, males aged 25–44 years had the highest suicide rate, and males aged 10–24 had the second highest rate

- analysis of data from the Top End[10] between 2000 and 2002 found:
  - a history of diagnosed mental illness (including depression) in 49 per cent of all suicides
  - use of alcohol around the time of death in 56 per cent of all cases, and drug use in a further 16 per cent of all cases
  - 41 per cent of all suicides were by unemployed people.

Table 7.8.1 **Age standardised non-fatal hospitalisations for intentional self-harm, NSW, Victoria, Queensland, WA, SA, and public hospitals in the NT, 2006-07[a, b]**

	Number of hospitalisations				*Age standardised hospitalisation rate* [c]	
	Indigenous	*Non-Indigenous*	*Not stated*	*Total*	*Indigenous*	*Non-Indigenous* [d]
Males	690	10 334	258	11 282	3.2	1.1
Females	881	16 645	320	17 846	3.7	1.7
All people	1 571	26 982	578	29 131	3.5	1.4

[a] Non-fatal refers to records where the end of hospitalisation was not equal to 'Died'. Intentional self-harm refers to hospitalisations with at least one external cause reported in X60–X84, based on the ICD-10 classification. [b] Data based on state of usual residence. [c] The rates per 1000 population were directly age standardised using the 2001 Australian standard population. [d] Includes hospitalisations where Indigenous status was recorded as non-Indigenous or not stated.

Source: AIHW National Hospital Morbidity Database (unpublished); table 7A.8.5.

In 2006-07:

- the age standardised non-fatal hospitalisation rate for intentional self-harm was higher for Indigenous people (3.5 per 1000) than non-Indigenous people (1.4 per 1000) (table 7.8.1)
- Indigenous females (3.7 per 1000) had a higher age standardised hospitalisation rate for self-harm than Indigenous males (3.2 per 1000). Non-Indigenous females also had a higher age standardised hospitalisation rate for self-harm than non-Indigenous males (1.7 and 1.1, respectively) (table 7.8.1).

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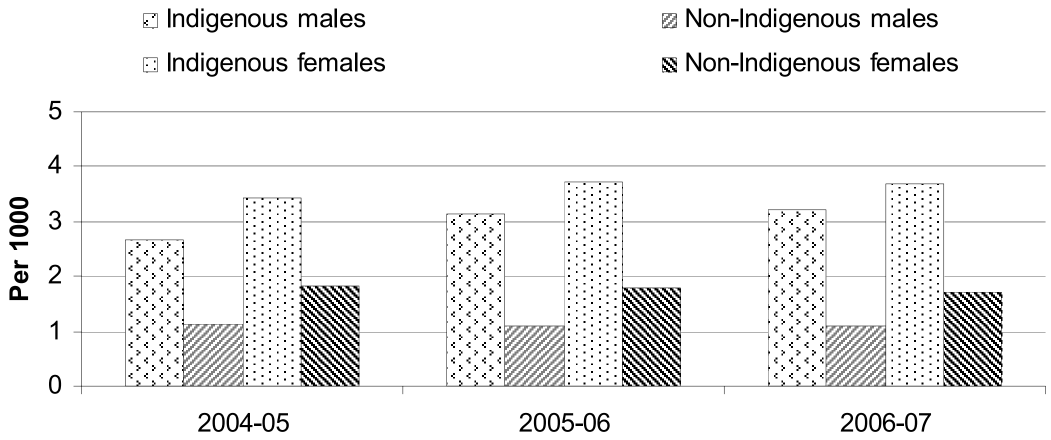
[10] The Top End refers to the northern part of the NT.

Figure 7.8.4 **Age standardised non-fatal hospitalisations for intentional self-harm, NSW, Victoria, Queensland, SA, WA, and public hospitals in the NT**[a, b, c, d, e]



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[a] Non-fatal refers to records where the hospitalisation was not equal to 'Died'. Intentional self-harm refers to hospitalisations with at least one external cause in X60–X84, based on the ICD-10 classification. [b] The rates per 1000 population were directly age standardised using the 2001 Australian standard population. [c] Indigenous data are reported for NSW, Victoria, Queensland, WA, SA and the NT only. These six jurisdictions are considered to have the highest level of accuracy of Indigenous identification, although the level of accuracy varies by jurisdiction and hospital. [d] Data based on state of usual residence. [e] Includes hospitalisations where Indigenous status was unknown.

Source: AIHW National Hospital Morbidity Database (unpublished); table 7A.8.5.

- Between 2004-05 and 2006-07, age standardised hospitalisation rates for intentional self-harm increased slightly for Indigenous males and females and did not change much for non-Indigenous males and females, but it is not possible to discern any trends (figure 7.8.4).
- Numbers of Indigenous non-fatal hospitalisations for intentional self-harm are small and changes in rates over time must be interpreted with caution. A longer time series of hospitalisations for intentional self-harm from 2001-02 to 2006-07 for Queensland, WA, SA and the NT showed fluctuations in rates for Indigenous and non-Indigenous males and females, but with no discernible trend (table 7A.8.6).

7.9 Future directions in data

Tobacco consumption and harm

There are limited data on current daily adult Indigenous smokers. This report and previous reports (2005 and 2007) use data on current daily adult smokers from ABS surveys. The report, *Drug Use among Aboriginal and Torres Strait Islander Peoples: an Assessment of Data Sources* (AIHW 2006) suggested many ways to improve current collections of data on substance use. Some of the suggested improvements are outlined in section 10.7.

The 2008 NATSISS will provide updated information on this topic, with data available from late 2009.

Obesity and nutrition

There are no current data on the prevalence of obesity among Indigenous children, and only limited data are available on their dietary behaviours. The proposed Longitudinal Study of Indigenous Children (LSIC) may collect data on BMI and nutrition.

The 2008 ABS National Aboriginal and Torres Strait Islander Social Survey (NATSISS) included questions on child nutrition. The NATSISS results are expected to be available from late 2009. The 2008 ABS NATSISS did not collect BMI data or information on adult nutrition. The 2010-11 ABS National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) will again provide information on BMI and nutrition for Indigenous people.

Mental health

There are few data from which to draw conclusions about the scope, prevalence and burden of mental health problems in Indigenous people (especially for vulnerable groups of the Indigenous population, such as prisoners, juveniles in detention and children). The key challenges are to improve existing collections, such as improving reporting for rural/remote areas, and to expand data collection instruments, such as Indigenous specific surveys and longitudinal studies of Indigenous children, to incorporate mental health modules. One of the potential benefits of the Juvenile Justice National Minimum Data Set is the possible links with other social and health related data (AIHW 2004).

7.10 References

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