



Australian Government

Aboriginal and Torres Strait Islander **Health Performance Framework**

2014 Report



Figure 1

Aboriginal and Torres Strait Islander Health Performance Framework (HPF) Performance Measures



Aboriginal and Torres Strait Islander Health Performance Framework 2014 Report

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The artwork used for the report has been derived from the Aboriginal and Torres Strait Islander Health Plan artwork created by Gilimbaa.

Artwork Story

The Creation spirit shaped and formed this country, the rivers, and the mountains from the desert to the coast, imparting the Law to each and every one. Navigating by land and sea, we are the Custodians of this place – it nurtures us, sustains us, provides for us and heals us. We are connected, we are one.

Our ancestors protect and guide us, teaching us the ways of the past, strengthening our knowledge of Culture and directing our pathways, working together towards a brighter future.

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Executive Summary

Improvements	Concern
Chronic disease—two-thirds of the health gap There has been a significant decline in the mortality rate for Indigenous Australians (16%) and a significant narrowing of the gap with non-Indigenous Australians (15%) between 1998 and 2013. Circulatory disease mortality rates for Indigenous Australians declined by 40% between 1998 and 2012 and the gap narrowed. Circulatory disease was the most common cause of death for Indigenous Australians (25%) during 2008–12. Kidney disease death rates (while only 3% of Indigenous deaths) also declined by 40% between 2006 and 2012 and the gap narrowed. Risk factors Indigenous smoking rates declined significantly by 7 percentage points (from 51% to 44%) between 2002 and 2012–13 for those aged 15 years and over. Child and maternal health There was a significant decline in the mortality rate for Indigenous children aged 0–4 years (31%) and a significant narrowing of the gap between 1998 and 2013. The low birthweight rate declined by 9% between 2000 and 2011 for babies born to Indigenous mothers, and the gap narrowed. Smoking during pregnancy declined for Indigenous mothers between 2005 and 2011 (from 54% to 50%). Health system Medicare services claimed by Indigenous Australians have doubled over the last decade, including increases in health assessments, chronic disease management items and overall GP care. The Indigenous rate of Medicare GP services claimed is now higher than the non-Indigenous rate. Since 2010, 8.8 million scripts have been issued under the PBS Co-payment Measure to Indigenous Australians. Episodes of care delivered by Australian Government funded Indigenous primary health care organisations increased from 1.2 million in 1999–2000 to 3.1 million in 2012–13, partly reflecting expansion in the sector. Social determinants Between 2008 and 2012–13, the gap in the Year 12 or equivalent attainment rate for those aged 20–24 years has narrowed by 11.6 percentage points and the 2020 COAG target is currently on track. There have also been improvements in overcrowding, homelessness and home ownership over the last decade.	Health In 2012–13, nearly half (47%) of Indigenous Australians aged 18 years and over had a disability or restrictive long-term health condition. The life expectancy of Indigenous Australians has improved slightly in recent years but progress will need to accelerate if the target is to be met by 2031. Cancer death rates for Indigenous Australians have increased by 11% between 2006 and 2012, while rates for non-Indigenous Australians have declined (5%). There has been no improvement in the mortality rate due to diabetes or injury (including suicide and transport accidents). In 2012–13, 11% of Indigenous adults had diabetes (3 times the non-Indigenous rate) and 61% of those with diagnosed diabetes had high blood sugar levels indicating that the condition was not well managed. The incidence rate of end stage kidney disease for Indigenous Australians is 7 times the rate for non-Indigenous Australians. Risk factors In 2012–13, 44% of Indigenous Australians aged 15 years and over reported being a current smoker, 2.5 times the non-Indigenous rate. Over the last decade smoking rates in very remote areas (56%) have not improved. In 2012–13, 66% of Indigenous Australians aged 15 years and over were overweight or obese. In 2012–13, 20% of Indigenous adults had high blood pressure and most (79%) did not know that they had the condition. Child and maternal health In 2011, 12.6% of babies born to Indigenous mothers were low birthweight, twice the non-Indigenous rate. In 2011, 50% of Indigenous women smoked during pregnancy, 4 times the non-Indigenous rate. Health system In 2012–13, 21% of Indigenous Australians reported having problems accessing dentists, 14% doctors, 9% counsellors, 9% other health professionals and 6% hospitals. Indigenous Australians had lower rates of hospitalisations with a procedure recorded compared with non-Indigenous Australians, lower rates of elective surgery and waited longer for elective surgery. Discharge from hospital against medical advice was 8 times the non-Indigenous rate in the two years to June 2013. Social determinants There has been no progress on the employment target since 2008. Achievements in reading, writing and numeracy remain below the corresponding proportions for all students. In 2012–13, 43% of Indigenous adults were in the bottom quintile of equivalised household incomes compared with 17% of non-Indigenous adults. In 2011, 28% of homeless Australians were Indigenous.

Key Findings

This is the fifth report against the *Aboriginal and Torres Strait Islander Health Performance Framework* (HPF)—see Figure 1. The HPF monitors progress in Aboriginal and Torres Strait Islander health outcomes, health system performance and the broader determinants of health. The health of Aboriginal and Torres Strait Islander peoples is improving for a number of measures, although there remain many areas where further concerted effort will be needed to achieve improvements in health outcomes.

Between the 2006 and 2011 censuses there was a 30% increase in the estimated Indigenous Australian population, which has led to a major reworking of all of the trends involving population rates. The other key feature of this report is that it includes updates for the new national health survey results for 2012–13 (the previous HPF report was only able to use data from the 2004–05 survey). Data for all jurisdictions have now been included for hospital data (the last HPF report only included data from NSW, Victoria, Qld, WA, SA and the NT). Data quality limitations and the small size of many estimates affect our ability to effectively monitor Indigenous health and the performance of the health system (see Technical Appendix).

Council of Australian Governments (COAG) Targets

In 2008, COAG set six targets on closing the gap between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians in the areas of health, education and employment. In 2014, COAG introduced a new target to close the gap in school attendance in 5 years. Current assessment of progress against these targets shows:

- Indigenous life expectancy and mortality rates have improved slightly, but progress will need to accelerate if the target is to be met by 2031.
- The 2013 child mortality rate was higher than the rate in 2012. Indigenous child death rates declined by 31% and the gap narrowed (by 35%) over the longer term from 1998.
- The 2013 target for Indigenous four year olds in remote communities to have access to early childhood education was not met (85% enrolled in 2013 compared with the required benchmark of 95%).
- The baseline data for the new school attendance target will be released in 2015.
- There has been no overall progress on the target to halve the gap in reading and numeracy achievements for Indigenous students by 2018.
- On a positive note, the target to halve the gap in Year 12 attainment by 2020 is on track.
- There has been no progress on the employment target since 2008.

Figure 2 shows that while long-term Indigenous mortality rates are declining, the rate of change will need to accelerate to reach the target.

Figure 3 shows the rate of progress against the child mortality target.

Tier 1: Health Status and Outcomes

Improvements

Mortality

- Analysis of mortality rates between 1998 and 2013 shows a significant decline in the Aboriginal and Torres Strait Islander mortality rate (16%) and a significant narrowing of the gap with non-Indigenous Australians (15%) for people living in jurisdictions with adequate data quality (NSW, Qld, SA, WA and the NT combined). These trends have been amended following the release of revised Indigenous population estimates based on the 2011 Census. They are subject to data quality issues (see Technical Appendix).

Avoidable mortality

- There was a significant decline in Indigenous deaths due to avoidable causes, down 27% between 1998 and 2012, and a narrowing of the gap. An NT study of avoidable mortality between 1985 and 2004 found major declines in conditions amenable to medical care, but only marginal change for potentially preventable conditions such as lung cancer, chronic liver disease and car accidents (Li et al. 2009).

Circulatory disease

- Circulatory disease death rates—the most common cause of death for Indigenous Australians—declined by 40% between 1998 and 2012. This rate of decline was faster than for non-Indigenous Australians and the gap narrowed. A study of acute myocardial infarction in the NT between 1992 and 2004 found an improvement in survival for Aboriginal people both prehospital and post-hospital admission, despite an increase in incidence of this disease over this period (You et al. 2009).

Kidney disease

- Kidney disease death rates decreased significantly from 2006 to 2012 (by 40%) for Indigenous Australians and the gap has also narrowed with non-Indigenous Australians. There has also been a slowing in incidence of Indigenous Australians with end stage renal disease, with no increase detected between 1996 and 2012 for females and persons (although there was an increase for Indigenous males).

Respiratory disease

- Respiratory disease death rates decreased significantly from 1998 to 2012 (by 27%) for Indigenous Australians and the gap has also narrowed.

Infant and child mortality

- There was also a significant decline in the mortality rate for Indigenous children aged 0–4 years (31%) and a significant narrowing of the gap (35%) between 1998 and 2013. There was a 64% decline in the mortality rate for Indigenous infants and a significant narrowing of the gap (83%) between 1998 and 2012.

Low birthweight

- The low birthweight rate declined by 9% between 2000 and 2011 for babies born to Aboriginal and Torres Strait Islander mothers, and the gap narrowed (for singleton births excluding multiple births).

Continuing concern

Chronic disease accounts for two-thirds of the health gap between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians.

- The majority (70%) of Indigenous deaths in 2008–12 were due to chronic diseases (e.g. circulatory disease, cancer, diabetes, respiratory disease, kidney disease).
- During 2008–12 the leading causes of Indigenous deaths were circulatory disease (25%); neoplasms (including cancer) (20%); external causes (including suicide and transport accidents) (15%); endocrine, metabolic and nutritional disorders (including diabetes) (9%); and respiratory diseases (8%).
- In 2012–13, 20% of Indigenous adults had measured high blood pressure and most (79%) did not know that they had the condition.

Cancer

- The gap between the two populations for deaths due to cancer is widening. There has been an 11% increase in cancer death rates for Indigenous Australians and a 5% decline for non-Indigenous Australians between 2006 and 2012. It will take 10–20 years for the reductions in Indigenous smoking rates to flow through to improvements in cancer deaths. Research has found disparities in stage of diagnosis and treatment (including lower rates of surgery, chemotherapy and radiotherapy) and lower survival rates for Indigenous Australians.

Diabetes

- There has been no improvement in the mortality rate due to diabetes between 1998 and 2012.
- In 2012–13, 11% of Indigenous adults had diabetes (3 times the non-Indigenous rate). Of those with diagnosed diabetes, 61% had high blood sugar levels indicating that the condition was not well managed, while 14% did not know they had the condition.

Kidney disease

- The incidence of Indigenous Australians with end stage renal disease was 7 times the rate for non-Indigenous Australians in 2010–12. In the 2012–13 Health Survey, 18% of Indigenous adults had blood/urine test results showing signs of kidney problems (infection, acute or chronic condition) and 89% of these people did not have a diagnosed chronic condition.

Injury

- External causes such as suicide and transport accidents accounted for 15% of Indigenous deaths in 2008–12. Indigenous Australians died from suicide and transport accidents at 1.9 and 2.5 times the rate of non-Indigenous Australians respectively. There has been no improvement between 1998 and 2012 in Indigenous death rates due to external causes and no significant changes in suicide rates.
- Hospitalisation rates for injury and poisoning were the second most common reason for hospital admissions for Indigenous Australians, 1.8 times the rate for non-Indigenous Australians.

Disability

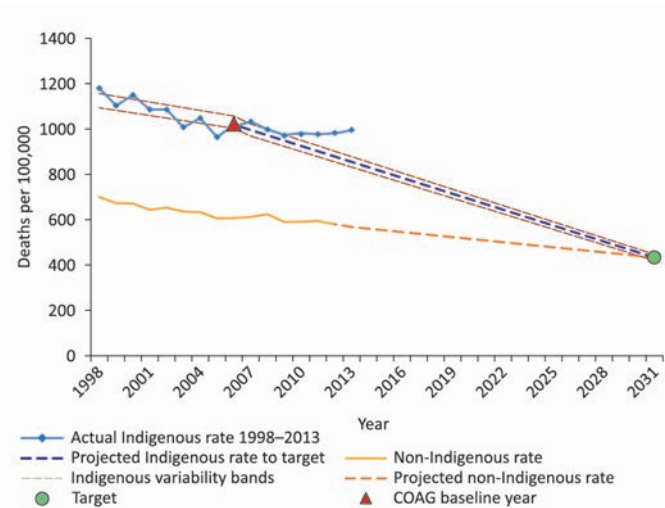
- In 2012–13, nearly half (47%) of Indigenous Australians aged 18 years and over had a disability or restrictive long-term health condition. For all age groups combined, 36% of Indigenous Australians had a disability or restrictive long-term health condition, 1.5 times the non-Indigenous rate. Approximately 10% of Indigenous Australians (all age groups) had a profound/severe/moderate core activity limitation, 1.6 times the non-Indigenous rate.

Low birthweight

- In 2011, 12.6% of babies born to Indigenous mothers had low birthweight, twice the non-Indigenous rate. Analysis of these data has found a strong relationship between smoking during pregnancy and low birthweight. For Indigenous mothers, the percentage of low birthweight births was highest for those in the 35 years and over age group (19%) and between 12% and 13% for the other age groups (including teenagers).

Figure 2

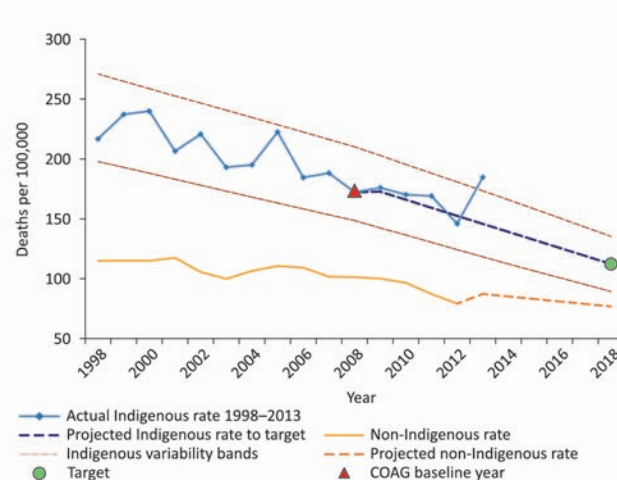
Total mortality rates by Indigenous status, NSW, Qld, WA, SA and the NT, 1998 to 2031



Source: ABS and AIHW analysis of National Mortality Database

Figure 3

Child mortality rates by Indigenous status, NSW, Qld, WA, SA and the NT, 1998 to 2018



Source: ABS and AIHW analysis of National Mortality Database

Tier 2: Determinants of Health

Improvements

Smoking

- There has been a significant decline in smoking rates for Indigenous Australians aged 15 years and over between 2002 and 2012–13 (7 percentage points), which includes a significant improvement since 2008. The 15–17 year age group had the largest decline (from 33% to 19%).
- For those who continue to smoke, there has been a decline in the average number of cigarettes smoked daily (from 15 in 2008 to 13 in 2012–13), although there is no safe level of smoking.
- There has also been a decline between 2005 and 2011 in the rate of smoking for Indigenous women during pregnancy (from 54% to 50%).

Education

- Between 2008 and 2012–13, the gap in the Year 12 or equivalent attainment rate for Indigenous Australians aged 20–24 years has narrowed by 11.6 percentage points and the COAG target to halve the gap by 2020 is currently on track (Australian Government 2015).
- In 2012–13, 43% of Aboriginal and Torres Strait Islander peoples aged 20–64 years reported they either had a Certificate III or above or were studying; a 17 percentage point increase from 2002. In 2011–12, 67% of non-Indigenous Australians aged 20–64 years reported they had either a Certificate III or above or were studying.

Housing

- The rate of homelessness among Indigenous Australians fell by 14% between 2006 and 2011 (AIHW 2014q). Nationally, between 2004–05 and 2012–13, the proportion of Indigenous Australians living in overcrowded households declined by 4.5 percentage points (from 27.2% to 22.7%) and the gap narrowed. Between 2002 and 2012–13 there was also a 3 percentage point increase in home ownership among Indigenous Australians.

Continuing concern

Employment

- There has been little change in Indigenous employment rates since 2008 and the target to halve the gap within a decade is not on track.

Education

- Between 2008 and 2014, the proportion of Indigenous students at or above the National Minimum Standards in reading and numeracy has shown no statistically significant improvement nationally in any of the eight measures (Years 3, 5, 7 and 9 in reading and numeracy).
- Between 1996 and 2012 there was an 8 percentage point increase in higher education completions by Indigenous students; however this increase was at a slower rate than for other Australians and the gap has widened.

Housing

- In 2012–13, 23% of Indigenous Australians lived in overcrowded households, 5 times the non-Indigenous rate.
- In 2011, Indigenous Australians were 14 times as likely as non-Indigenous Australians to be experiencing homelessness (AIHW 2014q).
- The proportion of Indigenous households with structural problems and poor access to working facilities increased from 17% in 2008 to 22% in 2012–13.

Smoking

- In 2012–13, 44% of Aboriginal and Torres Strait Islander peoples aged 15 years and over reported being a current smoker, 2.5 times the non-Indigenous rate. There has been no improvement in very remote areas between 2002 and 2012–13.
- In 2011, 50% of Indigenous women smoked during pregnancy, 4 times the non-Indigenous rate.
- In 2012–13, an estimated 57% of Aboriginal and Torres Strait Islander children aged 0–14 years lived in households with a current daily smoker, compared with 26% of non-Indigenous children.

Physical activity

- In 2012–13, 38% of Aboriginal and Torres Strait Islander adults in non-remote areas had undertaken a sufficient level of physical activity in the previous week (at least 150 minutes over 5 or more sessions a week).

Nutrition

- In 2012–13, 42% of Indigenous Australians aged 15 years and over reported eating the recommended intake of fruit and 5% for vegetables. These rates were lower than for non-Indigenous Australians (ratio of 0.9 for fruit and 0.8 for vegetables).
- In 2012–13, 78% of Indigenous children aged 2–14 years met the recommended fruit intake and 16% the recommended vegetable intake.
- Indigenous Australians were 7 times as likely as non-Indigenous Australians to go without food due to financial constraints in the previous 12 months.

Overweight and obesity

- In 2012–13, 66% of Indigenous Australians aged 15 years and over were overweight or obese. For obesity, Indigenous rates were 1.6 times those for non-Indigenous Australians.

Risky/high risk alcohol consumption

- In 2012–13, 26% of Indigenous Australians aged 15 years and over had abstained from drinking alcohol in the 12 months prior to the survey, 54% exceeded the single occasion guidelines in the last 12 months and 18% the lifetime risk guidelines. There have been no significant changes in risky drinking since 2001.

Substance use

- In 2012–13, 53% of Indigenous Australians aged 15 years and over reported never having used drugs and other substances, 23% reported using substances in the last 12 months and a further 23% reported having used substances but not in the last 12 months.

Low income and the distribution of income

- In 2012–13, 43% of Indigenous adults were in the bottom quintile of equivalised household incomes compared with 17% of non-Indigenous adults. In comparison, only 6% were in the top quintile compared with 22% of non-Indigenous adults.

Community safety

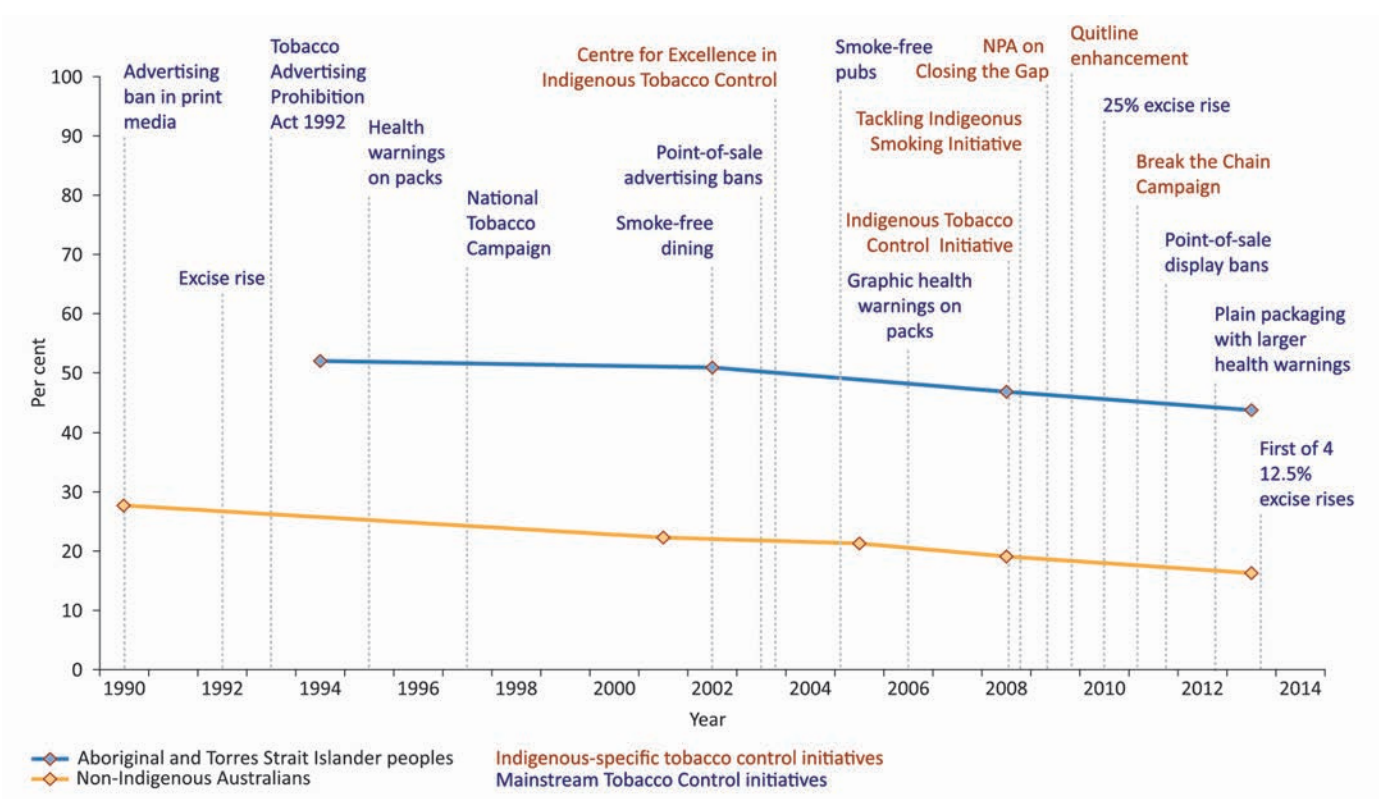
- Aboriginal and Torres Strait Islander peoples are more likely to experience exposure to violence, child abuse and neglect, and contact with the criminal justice system than other Australians. The gap continues to widen for contact with the criminal justice system. In 2013, the Indigenous imprisonment rate was 13 times the rate for non-Indigenous Australians and has increased by 68% since 2000.

Transport

- The 2011 Census found that Indigenous households were less likely than other households to have access to a motor vehicle (81% compared with 91%). In 2011, 46% of Indigenous households in very remote areas did not have access to motor vehicles compared with 8% of other households in very remote areas. In major cities the rate was 16% for Indigenous households and 10% for other households.
- In 2012–13, transport/distance was a reason why 16% of Indigenous Australians reported they did not access health services when they needed to. Transport/distance was a more commonly reported reason for not accessing care in remote areas (22%) than in non-remote areas (15%).

Figure 4

Smoking prevalence rates for people 15 years and over by Indigenous status and key tobacco control measures implemented in Australia since 1990





Tier 3: Health System Performance

Improvements

Chronic disease detection and management

There has been a significant increase in a range of Medicare services claimed by Aboriginal and Torres Strait Islander peoples since the introduction of the Indigenous chronic disease initiatives in 2009–10:

- Trend analysis shows a statistically significant increase in health assessments for Indigenous Australians between July 2009 and June 2014—the rate has nearly tripled. The rate of change has accelerated since 2009–10 (see Figure 5).
- This is also true for GP management plans and team care arrangements. In the five years from 2009–10 to 2013–14, Medicare services claimed by Indigenous Australians for these items have doubled. Rates per 1,000 in the population are now higher for these services for Indigenous Australians than for non-Indigenous Australians.
- There has been a significant increase in GP Medicare items claimed by Indigenous Australians between 2003–04 and 2013–14. The Indigenous rate is now higher than the non-Indigenous rate (see Figure 6).

The national Key Performance Indicators monitor the performance of over 200 Australian Government-funded Indigenous primary health care organisations against the key process of care and health outcome performance indicators. In 2013–14, around 28,000 regular clients of these organisations had Type 2 diabetes. In the six months to December 2013, 49% of these clients had their blood glucose levels tested, with 33% reporting a blood sugar result in the recommended range (the same as in December 2012); and 64% had their blood pressure assessed, with 44% reporting a result in the recommended range (up from 42% in December 2012).

Access to prescription medicines

- Up to 30 June 2014, 280,885 eligible Aboriginal and Torres Strait Islander patients benefited from the Closing the Gap Pharmaceutical Benefits Scheme (PBS) Co-payment Measure and over 99% of pharmacies have participated in the measure. A prescription volume of 8.8 million has been dispensed since the measure commenced in July 2010.

Increased availability of Indigenous-specific services

- Australian Government Indigenous-specific health programme expenditure increased from \$115 million in 1995–96 to \$693 million in 2012–13, a growth in real terms of 292%. The episodes of care delivered through Aboriginal and Torres Strait Islander primary health care services have more than doubled (from 1.2 million in 1999–2000 to 3.1 million in 2012–13).

Usual source of care

- Having a usual primary care provider is associated with good communication between the patient and provider, greater trust in the health care provider, improved preventive care and better health outcomes. Statistics from 2012–13 indicate that 86% of Indigenous Australians had a usual place to go for health problems/advice.

- In 2012–13, most Aboriginal and Torres Strait Islander people aged 15 years and over in non-remote areas who saw a GP or specialist in the previous 12 months, reported the doctor always or usually: listened carefully to them (89%); showed respect to them (89%); and spent enough time with them (85%). The 2012–13 Patient Experience Survey provides comparable data for the total Australian population: GP listened (89%); showed respect (93%); and spent enough time (88%) (SCRGSP 2013).

Antenatal care

- The proportion of Indigenous women accessing antenatal care at least once during pregnancy increased in NSW, Qld and SA combined between 1998 and 2011. In 2011, 99% of Indigenous women accessed antenatal care at least once during their pregnancy.

Immunisation coverage for children

- Immunisation rates are high for Indigenous children. By 2 years of age, coverage rates were close to those for other Australian children (91.4% of Indigenous children compared with 92.2% for other children) in December 2013. By 5 years of age the Indigenous rate (92.8%) was slightly higher than for other children (91.7%).

Continuing concern

Barriers to accessing health care

- In 2012–13, 30% of Aboriginal and Torres Strait Islander peoples reported that they needed to, but didn't, go to a health care provider in the previous 12 months. This varied by type of service with 21% not going to a dentist, 14% to a doctor, 9% to a counsellor, 9% to other health professionals and 6% to hospital when needed. Indigenous Australians living in non-remote areas (32%) were more likely to report not seeking care when needed than those living in remote areas (22%).
- Cost was a major barrier to accessing care for over one-third (36%) of Indigenous Australians, particularly dentists (43%) and other health professionals (35%). For doctors, logistical reasons such as waiting times (22%) and transport/distance (14%) were commonly reported barriers as well as disliking service/being embarrassed or afraid (14%) or being too busy (30%). In remote areas, logistical reasons such as waiting times, availability of services and transport were a more commonly reported reason for not accessing care (54%) than in non-remote areas (37%). In 2012–13, 12% of Indigenous Australians reported deferring treatment due to cost (ranging from 8% in SA to 21% in the ACT) (SCRGSP 2015).
- Selected potentially preventable hospitalisation rates for Aboriginal and Torres Strait Islander peoples were 3 times the non-Indigenous rate during the period July 2011 to June 2013.
- Aboriginal and Torres Strait Islander peoples had lower rates of hospitalisations with a procedure recorded compared with non-Indigenous Australians, and they also had lower rates of elective surgery.
- Discharge from hospital against medical advice was 8 times the rate for Indigenous Australians compared with non-Indigenous Australians.

Aboriginal and Torres Strait Islander health workforce

- In 2011, 1.6% of the Indigenous Australian population was employed in health-related occupations compared with 3.4% of the non-Indigenous population. In 2011, the occupations with the largest gap between Indigenous and non-Indigenous Australians were nurses, medical practitioners and allied health professionals. Between 1996 and 2011 the rate of Indigenous Australians employed in the health workforce increased from 96 per 10,000 to 155 per 10,000.
- Aboriginal and Torres Strait Islander peoples are also under-represented in training for various health professions. Improving participation in training for health professions is a key priority across a broad range of disciplines including medicine, nursing, allied health and Aboriginal health workers.
- The supply of GPs was not uniform across the country, being greater in major cities (426 FTE per 100,000 population) than in remote/very remote areas (257 FTE per 100,000).

Antenatal care

- Antenatal care for Indigenous women occurs later and less frequently than for non-Indigenous women. In 2011, half of Indigenous mothers had their first antenatal session in the first trimester of pregnancy, compared with 66% of non-Indigenous mothers.

Private health insurance cover

- In non-remote areas, 20% of Indigenous Australians were covered by private health insurance. The most common reason that Indigenous Australians did not have private health insurance was that they could not afford it (72%).

Lower rates of private health insurance contribute to reduced access to services, in particular dental, allied health, specialist services and private hospitals. In the two years to June 2013, 7% of hospitalisations with a procedure recorded for Indigenous Australians occurred in private hospitals compared with 53% for non-Indigenous Australians.

Access to prescription medicines

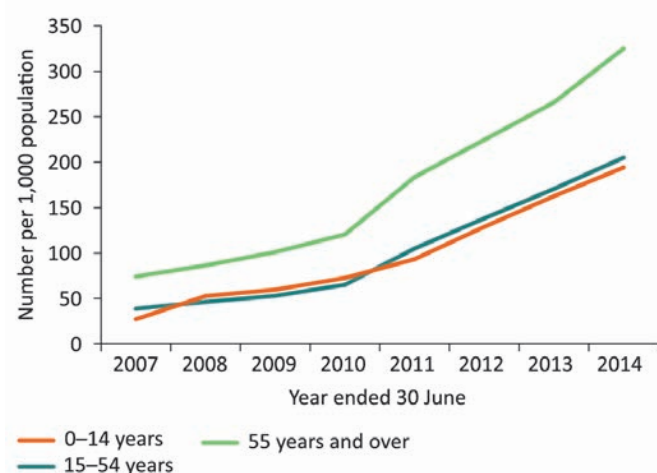
- Between 2001–02 and 2010–11, average expenditure on pharmaceuticals per Aboriginal and/or Torres Strait Islander person rose from 33% to 44% of the amount spent per non-Indigenous person (\$369 compared with \$832 in 2010–11). Note: this includes government expenditure plus out-of-pocket expenses. Estimates from 2010–11 do not yet fully capture the impact of the Closing the Gap PBS Co-payment Measure that commenced in July 2010.

Access to health care

- In 2012–13, 44% of Aboriginal and Torres Strait Islander peoples reported accessing health care in the previous two weeks (or 12 months for hospital admissions). This rate is lower than expected given the greater burden of illness experienced by Aboriginal and Torres Strait Islander peoples.
- A study of Indigenous Australians with diabetes living in remote NT communities found that those who visited primary care 2–11 times per year had lower rates of death and hospitalisation than those who visited less than twice a year. Preventing one hospitalisation for diabetes was cheaper (\$248 for those with medium use, \$739 for complicated cases) than the cost of one hospitalisation (\$2,915)(Thomas, SL et al. 2014).

Figure 5

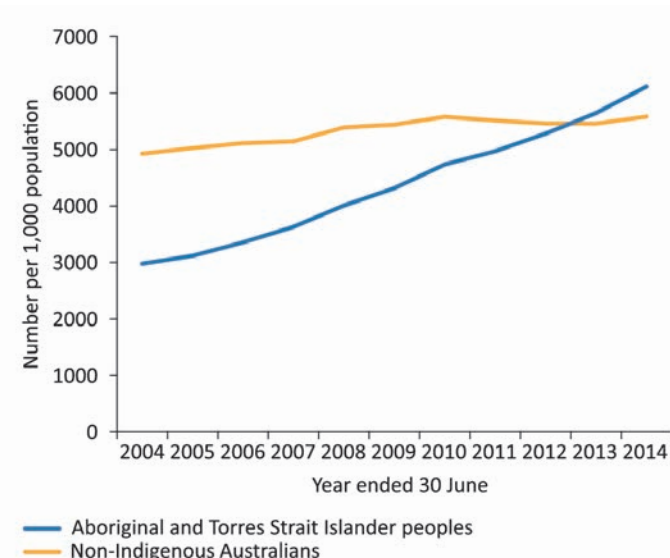
MBS health assessment claim rates, by selected age groups, Indigenous Australians, 2006–07 to 2013–14



Source: AIHW analysis of Medicare Australia data

Figure 6

Age-standardised rates of GP services claimed through Medicare, by Indigenous status, 2003–04 to 2013–14



Source: Medical Benefits Division, Department of Health

Life course

There is a substantial body of evidence that the experience of the child in utero, at the time of birth and in infancy and childhood has the potential to impact on health throughout life (Eades 2004; Barker 1993; Power et al. 2013). The WHO (2000) recommends a life course approach to health acknowledging that there are critical periods of growth and development in utero, early infancy, during childhood and adolescence that impact on social and cognitive skills, habits, coping strategies and physical health. These then interact with biological factors, social experiences and risk behaviour to either attenuate or exacerbate long-term risks to health (Cable 2014). Family-centred primary health care approaches move beyond providing care to the individual patient, to seeing them as embedded in a family and taking a life course approach (Griew et al. 2007). Studies have identified that Aboriginal and Torres Strait Islander concepts of family are important to consider (Lohoar et al. 2014) and that engaging with Aboriginal and Torres Strait Islander patients and families in a respectful and culturally competent way is a key success factor for preventative health and health care service delivery (Griew et al. 2007). Working collaboratively with and learning from Aboriginal and Torres Strait Islander patients, families, interpreters, cultural mentors, Aboriginal health workers and other co-workers has also been identified as critical (NHMRC 2005). These approaches aim to support people to proactively manage their health across the life course.

Maternal health and parenting

Maternal health is one of the priority areas of reform identified by Australian governments. Antenatal care provides opportunities to address health risks and support healthy behaviours throughout pregnancy and into the early years of childhood. Access to antenatal care is high for Indigenous women, and similar to that for non-Indigenous women, but often occurs later in the pregnancy and less frequently. Compared with women who received care in the first trimester, women who received no antenatal care were 3 times as likely to have a pre-term or low-weight baby and 6–7 times as likely to have a pregnancy that resulted in perinatal death, regardless of Indigenous status.

Smoking increases the risk of adverse events in pregnancy (such as miscarriage, ectopic pregnancy, pre-term labour and antepartum haemorrhage), and is also associated with poor perinatal outcomes (such as low birthweight), and respiratory illnesses (such as bronchitis or pneumonia) during the child's first year of life (see measure 2.21). In 2011, Aboriginal and Torres Strait Islander mothers were 4 times as likely to smoke during pregnancy as non-Indigenous mothers. Smoking rates for Indigenous mothers were similar across geographic areas and age groups. For non-Indigenous mothers, rates were higher in younger age groups. Smoking during pregnancy for both Indigenous and non-Indigenous mothers is associated with higher prevalence of pre-term birth and a higher proportion of low birthweight babies. Smoking is also associated with a higher rate of perinatal deaths, which occur for Indigenous mothers at 1.2 times the rate of non-Indigenous mothers (see measure 1.21). Reducing smoking continues to be a priority.

For Aboriginal and Torres Strait Islander mothers, the percentage of low birthweight births was highest for those in the 35 years and over age group (19%) and 12–13% for the other age groups (including teenagers). However, teenage pregnancies can have other impacts such as on education and employment opportunities.

Childhood (0–14 years)

Improving the health, social and environmental factors of babies and young children is likely to have positive flow-on effects for the remainder of the life cycle. By the age of three years, the brain has reached 90% of its adult size and many of the neural pathways have developed (MCEEDYA 2010). Programmes that target the first six to eight years of life are more successful at improving developmental outcomes than later interventions (Harrison et al. 2012). There are strong associations between the quality of care a child receives during the early years and physiological impacts leading to disease susceptibility, future vulnerability and resilience (Mitchell et al. 2014).

The Longitudinal Study of Indigenous Children (Wave 3) found that most Indigenous children (77%) were not at high risk of developing clinically significant behavioural problems, while 23% were at high risk (LSIC 2012). In Wave 4 of this study the main risk factors for social and emotional difficulties were having a close family member arrested, in jail or having problems with the police; being cared for by someone other than their regular carer for at least a week; and children being scared by other people's behaviour (LSIC 2013). Indigenous children who experienced three or more major life events (such as death/illness of a family member, moving house/housing problems, carer returning to job/study, new baby) had higher social and emotional difficulties scores (DSS 2014). In the 2001–02 WA Aboriginal Child Health Survey, 26% of Indigenous children aged 4 to 11 years were at high risk of clinically significant behavioural problems compared with 17% of non-Indigenous children (De Maio et al. 2005). Those children living in families with poor parenting/family functioning (e.g. poor communication and decision making, poor emotional support, limited time spent together) were twice as likely to be at risk of emotional and behavioural difficulties (Zubrick et al. 2005).

Research supports the importance of the amount of speech directed to infants in the development of vocabulary and communication skills (Weisleder et al. 2013). In this study, one toddler heard more than 12,000 words of child-directed speech words over the course of a 10 hour day, while another only heard 670. Infants who experienced more child-directed speech became more efficient in processing familiar words in real time and had larger vocabularies by the age of 24 months. Socio-economic status alone did not determine the quality of the child's language experience.

Analysis of the 2008 Social Survey has found an association for Indigenous Australians between strong cultural attachment and positive outcomes on a range of socio-economic indicators including health status, education and employment (Dockery 2011). Providing children with a positive sense of themselves facilitates a strong foundation in resilience (Eades 2004). In the 2001–02 Western Australia Aboriginal Child Health Survey, those children who reported experiences of racism in the previous 6 months were more than twice as likely to be at high risk of emotional and behavioural difficulties as those who had not experienced racism (Zubrick et al. 2005). Exposure to racial discrimination during school years is a key health risk factor in the development of depressive symptoms in young people (Priest et al. 2014). Interventions to address exposure to racism within childhood and adolescence are an opportunity to foster resilience throughout life-stages (Bodkin-Andrews et al. 2014).

The measure of community functioning (see measure 1.13) finds that in 2008 the majority of Indigenous children aged 0–14 years attended a cultural event in the last 12 months

(70%), 42% of 3–14 year olds spent time with an Indigenous elder, 76% slept well and 74% of children aged 4–14 years spent at least 60 minutes every day being physically active. Informal learning activities were undertaken with most children aged 0–14 years (94%).

In 2009–13, the mortality rate for Aboriginal and Torres Strait Islander children aged 0–4 years was 1.9 times the non-Indigenous rate (169 per 100,000 compared with 89 per 100,000). The leading causes of death for Indigenous infants were conditions originating in the perinatal period (see measure 1.20) while injury accounted for over half (53%) of the deaths in the 1–4 year old group. Injury was also the leading cause of death for Indigenous 5–14 year olds (50%).

Immunisation is highly effective in reducing illness and death caused by vaccine-preventable diseases. As at December 2013, immunisation coverage was high for Indigenous children, and by 2 years of age, the immunisation coverage (91.4%) was similar to other Australian children (92.2%) (see measure 3.02). Gaps in immunisation still exist for 1 year olds (86% coverage for Indigenous 1 year olds compared with 90% for others).

Ear disease (particularly middle ear infections) is significantly higher for Indigenous children aged 0–14 years (approximately twice the rate for non-Indigenous children in 2012–13 self-reported survey data). The rate of myringotomy procedures in hospital (an incision in the eardrum to relieve pressure caused by excessive build-up of fluid) was 1.8 per 1,000 for both Indigenous and non-Indigenous patients (AIHW 2014f). In 2013–14, wait times for surgery were slightly longer for Indigenous patients (58 days) compared with other Australian patients from public hospital waiting lists (54 days) (AIHW 2014g). In 2008–13, GPs managed ear problems for Indigenous children aged 0–14 years at similar rates to other Australian children (107 compared with 101 per 1,000 encounters). The current rate of GP management may still be below what is needed given the higher prevalence of ear disease.

In the 2008 National Indigenous Eye Health Survey, 1.5% of Aboriginal and Torres Strait Islander children had low vision and 0.2% blindness. Trachoma rates are very high in some Indigenous communities. In 2012, data on trachoma in children in 204 at-risk communities in NT, SA, WA and Qld combined found that 25% of communities screened had endemic trachoma (over 5% of children with active trachoma).

Data on dental health show that a higher proportion of Indigenous children had decayed, missing or filled teeth

compared with non-Indigenous children in each age group 5 to 15 years (see measure 1.11). Dental disease in childhood is readily treated but Aboriginal and Torres Strait Islander children do not have ready access to dental care with cost and geography being significant barriers. In 2008, most Indigenous children in the 5–15 years age group (71%) reported cleaning their teeth once or twice per day.

In the two years to June 2013, hospitalisation rates for respiratory disease (see measure 1.04) for Indigenous children aged 0–4 years were 1.7 times the rate for non-Indigenous children. Between 2004–05 and 2012–13 there has been a significant increase (23%) in hospitalisation rates for Indigenous children for respiratory disease and an increase in the difference in rates with non-Indigenous children.

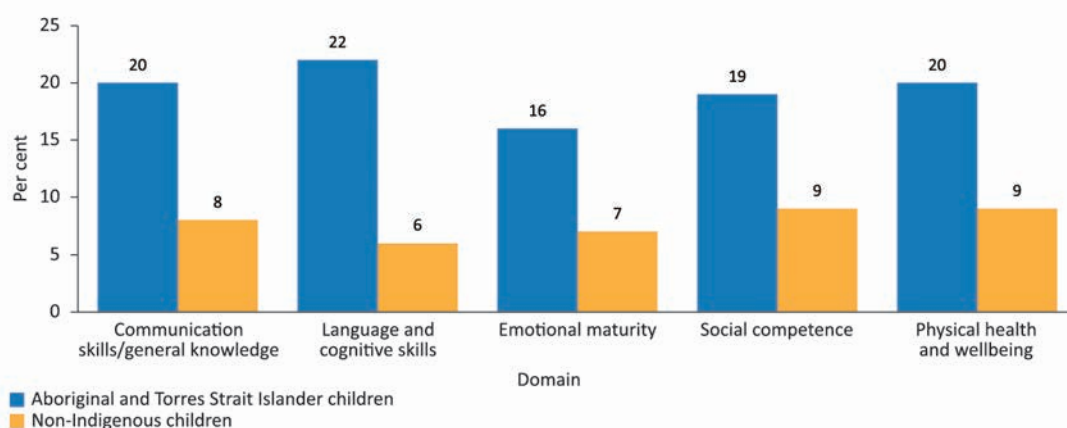
In 2012–13, a much higher proportion of Aboriginal and Torres Strait Islander children aged 0–14 years lived in households with a regular smoker (57%) compared with non-Indigenous children (26%), particularly households where smoking occurs indoors (28% and 12%). The proportions have fallen from 68% in 2004–05 to 57% in 2012–13, but the disparities remain in comparison with non-Indigenous children.

The Australian Early Development Census (AEDC) is a measure of children's development in the first year of school with teacher assessments across five domains—physical health and wellbeing; social competence; emotional maturity; language and cognitive skills; and communication skills and general knowledge. As with all assessments the AEDC has its limitations. Indigenous children were twice as likely as non-Indigenous children to be developmentally vulnerable on at least one domain of the AEDC in 2012. This rose to 3 times as high in very remote areas (63% of Indigenous children compared with 20% of non-Indigenous children)(Cabinet 2014).

The proportion of Aboriginal and Torres Strait Islander students achieving the reading, writing and numeracy benchmarks in Years 3, 5, 7 and 9 remain below the corresponding proportions of non-Indigenous students. The proportions of Indigenous students achieving literacy and numeracy benchmarks remain lower for students living in remote and very remote areas. This relationship was also evident for non-Indigenous students, but was much less marked, resulting in a much larger gap between Indigenous and non-Indigenous results in remote areas than in metropolitan areas.

Figure 7

Percentage of Australian children 'developmentally vulnerable', by domains of the Australian Early Development Census and Indigenous status, 2012



Source: Commonwealth of Australia (2014)

Adolescent and youth health (15–24 years)

Young people in this age group do not use primary health care services frequently; however, the lifestyle factors leading to chronic diseases in later life are often established in this age group. Studies have found that empowering families and communities to work with youth on preventative health and to develop a positive sense of themselves are important in providing a strong foundation for long and healthy lives (Eades 2004; Williamson et al. 2010).

In 2012–13, the age group least likely to be consuming adequate serves of fruit and vegetables were those aged 18–24 years; however, the highest levels of physical activity were among Indigenous Australians in this age group. Over the last decade, the 15–17 year age group had the largest decline in smoking rates (33% to 19%). An Australian 12-month longitudinal study examined the predictors of change in adolescent smoking behaviour across three analytic models based on data from Years 7–10 (Mazanov et al. 2008). Results suggest that for males, the frequency of risk-taking behaviour and a male best friend who was a smoker were effective predictors of smoking behaviour changes, while for females the key predictor was whether at least one parent was a smoker. In 2008, 23% of Indigenous school students aged 12–15 years reported smoking in the last 12 months and 12% were current smokers. Approximately 5% of total students were current smokers. Around 27% of Indigenous students had never consumed alcohol while 23% had consumed alcohol in the past week. Around 23% of Indigenous students reported they had used illicit substances with cannabis being the most common (20%) (White et al. 2009).

In 2008 two-thirds (66%) of Aboriginal and Torres Strait Islander people aged 15–34 years recognised their homelands, 63% had attended a cultural event in the last 12 months, 78% had friends they could confide in, 89% felt able to have a say with family and friends most or all the time, and 96% had contact with family or friends outside of the household at least once per week. The majority of Indigenous young people had participated in sport or social activities in the preceding three months (90%). Most young people felt safe at home during the day (93%) and after dark (77%). In 2012–13, 69% of Indigenous youth aged 15–24 years had no disability or long-term health condition.

Education is a key factor in improving health and wellbeing. The pathways between education and health are complex and are interrelated with employment, income, psycho-social resources such as a sense of control, and practical skills that allow individuals to better manage their health (Griew et al. 2007). Over time there have been improvements in the proportion of Indigenous students remaining in school to Year 10 and Year 12, although Indigenous retention rates remain lower than for other students (see measure 2.05). The Vocational Education and Training (VET) sector also provides large numbers of Aboriginal and Torres Strait Islander peoples with non-school education training opportunities. During 2012, there were approximately 9,600 course completions in the VET sector by Indigenous Australians aged 15–24 years, representing 7% of the Aboriginal and Torres Strait Islander population in this age group, compared with 8% for other Australians. In 2012–13, 60% of Indigenous Australians aged 15–24 were not studying compared with 40% of non-Indigenous Australians of the same age; and 60% of

Indigenous youth aged 17–24 years were not fully engaged in study or work, 2.4 times the non-Indigenous rate (25%). Rates ranged from 52% in major cities to 84% in very remote areas.

Aboriginal and Torres Strait Islander youth experience a number of challenges compared with non-Indigenous Australian youth including higher rates of high/very high levels of psychological distress (comparisons are for 18–24 year olds) (see measure 1.18), and lower levels of employment (see measure 2.07). Aboriginal and Torres Strait Islander youth had higher rates of contact with the criminal justice system (see measure 2.11). In 2012–13, Indigenous youth were 14 times as likely as non-Indigenous youth to be under supervision in the youth justice system. Disproportionate representation of Indigenous youth in contact with the justice system impacts on a range of areas including physical health and the social and emotional wellbeing of families and communities (see measure 1.18).

In the 15–24 year age group, males made up 69% of deaths during the period 2008–12. For Indigenous Australians, suicide and transport accidents were the leading cause of death in this age group. For non-Indigenous Australians in this age group, the leading causes of death were transport accidents followed by suicide. The Indigenous suicide rate was 5 times the non-Indigenous rate and transport accidents 2.4 times (ABS 2014f).

Adults (25–54 years)

For Indigenous Australians in the 25–34 year age group, external causes (including suicide and transport accidents) were the leading cause of death. Rates were higher for Indigenous Australians than non-Indigenous Australians for deaths due to external causes (3.3 times for suicide, 3.5 times for transport accidents) (ABS 2014f). Premature mortality from chronic diseases, such as circulatory disease, cancer, diabetes and respiratory diseases is also a major concern for Indigenous Australians aged 25–34; mortality rates due to ischaemic heart disease were 10.5 times those of non-Indigenous Australians in the same age group.

In the 35–54 year age groups chronic disease was the leading cause of death. In 2008–12, premature mortality rates from chronic disease (before the age of 75 years) were higher for Indigenous Australians than non-Indigenous Australian (2.7 times) in the jurisdictions with adequate data (NSW, Qld, SA, WA and NT combined). Rates for Indigenous Australians were highest in the NT (816 per 100,000) and lowest in NSW (334 per 100,000). In the 35–44 years age group in the NT, Indigenous mortality rates from chronic disease were 13.5 times the non-Indigenous rate (529 compared with 39 per 100,000). In 2012–13, after adjusting for differences in the age structure of the two populations, Indigenous adults were 1.2 times as likely to have high measured blood pressure as non-Indigenous adults. For Indigenous Australians, rates started rising at younger ages and the largest gap was in the 35–44 year age group.

While hospitalisations for injury reflect hospital attendances for a condition rather than the extent of the problem in the community, injury was the second most common reason for Indigenous Australians being hospitalised after dialysis. Hospitalisation rates for injury peaked in the early adult age groups and have had a much greater impact on the young and middle-aged when compared with non-Indigenous hospitalisations for injury, which reflects higher rates of falls for elderly people.

Over the longer term there has been a significant increase in Indigenous employment; however, there has been no progress on the employment target since 2008. In 1994, 38% of the Indigenous working age population (aged 15–64 years) were employed (SCRGSP 2014a). This increased to a peak of 54% in 2008 and then fell to 48% in 2012–13. Between 2008 and 2012–13 there has been an increase of 6.9 percentage points in the employment gap between Indigenous and non-Indigenous working age (up from 21.2 to 28.1 percentage points). The Indigenous unemployment rate is currently 21%, which is 4 times the non-Indigenous unemployment rate of 5%. In 2008, many Indigenous Australian adults were seeking to improve their knowledge, skills and qualifications, with 33% intending to study in the future. Indigenous Australians in the 45–54 year age group were more likely to recognise their homelands or traditional country than those in the 18–24 year age group (75% compared with 60%).

55 years and older

The role of leadership in supporting healthy families and communities is important and better measurement of this is needed. Leadership is a theme within the measure of community functioning (see measure 1.13) used to describe strong vision and direction from Elders (both male and female) in family and community and strong role models who make time to listen and advise.

Home ownership increased with age, from 28% in the 18–24 year age group to 45% in the 55 years and over age group in 2011. These rates are below those for non-Indigenous home ownership (84% of those aged 55 years and over).

Higher education statistics for 2012 show that for those aged 55 years and over, university completion rates per 100 in the population were the same for both Indigenous and non-Indigenous Australians.

Those in the 55 years and over age group had the highest rate of reporting their health as 'fair' or 'poor' (45% for Indigenous Australians and 24% for non-Indigenous Australians). A study in NSW has confirmed the need for appropriate mental health services and disability support services for older Aboriginal people (Gubhaju et al. 2013).

National prevalence of dementia in the Australian Indigenous population is not yet available; however, estimates in the NT suggest a much higher prevalence and incidence of dementia and a younger onset of the disease when compared with non-Indigenous Australians (Li et al. 2014; Radford et al. 2014). Older people with a reduced degree of functional capacity require a range of services. Aged care is usually provided in combination with basic medical services, prevention, rehabilitation or palliative care services. The age for accessing the *Home and Community Care Program* has been adjusted to take account of the younger age at which Indigenous Australians may begin to suffer from serious chronic illness.

Social Determinants

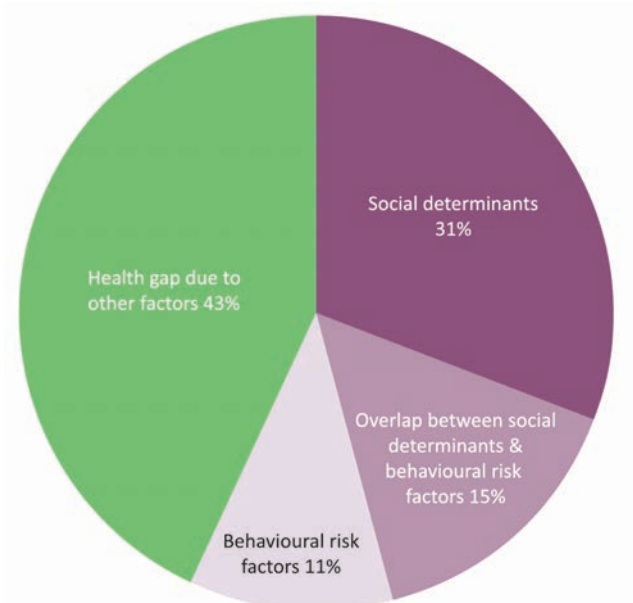
The origins of health behaviours are located in a complex range of environmental socio-economic, family and community factors. 'Inequities in health, avoidable health inequalities, arise because of the circumstances in which people grow, live, work, and age, and the systems put in place to deal with illness. The conditions in which people live and die are, in turn, shaped by political, social, and economic forces' (Commission on Social Determinants of Health 2008). Studies have found that between one-third and one-half of the health gap between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians is associated with differences in socio-economic status such as education, employment and income (Booth et al. 2005; DSI Consulting 2009).

In 2012–13, an estimated 43% of Indigenous adults had incomes in the bottom 20% of equivalised gross weekly household Australian incomes. Those Indigenous Australians in the bottom income quintile were less likely to have completed Year 12 (15%) than those in the top two income quintiles (45%). Those in the top income quintiles were more likely than those in the bottom income group to be employed (91% compared with 15%) and less likely to smoke (67% compared with 44%). Those in the lowest income group were more likely than those in the highest groups to be unable to raise \$2,000 in a week for something important (77% compared with 17%), have days without money for basic living expenses (55% compared with 17%) and to live in an overcrowded household (23% compared with 3%).

A recent study in the NT of life expectancy at birth for Indigenous and non-Indigenous Australians using data from the period 1986 to 2005 found that socio-economic disadvantage was the leading risk factor accounting for one-third to one-half of the gap in life expectancy between Indigenous and non-Indigenous Australians (Zhao et al. 2013a). The AIHW analysed data from the 2004–05 Health Survey and found that selected social determinants such as education, employment status, overcrowding and household income together with risk factors explained up to 46% of the health gap between Indigenous and non-Indigenous Australians (AIHW 2014d).

Figure 8

Proportion of the health gap explained by social determinants and behavioural risk factors



Source: Australia's Health 2014 (AIHW 2014d)

Connectedness to family and community, land and sea, culture and identity have been identified as integral to 'health' from an Aboriginal perspective (NAHASWG 1989). Analysis of 2008 Social Survey data found a clear association between cultural attachment and positive socio-economic outcomes and wellbeing (Dockery 2011).

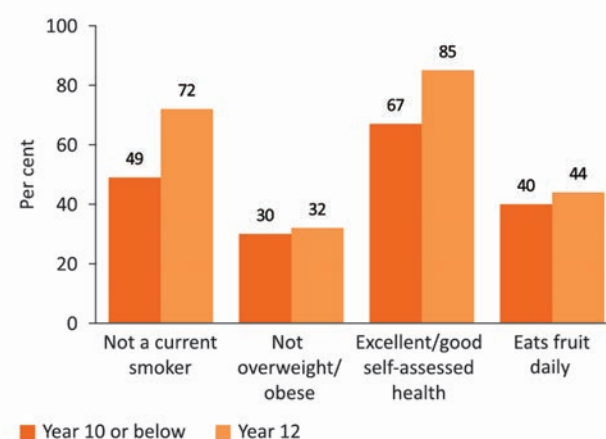
Social determinants and health risk behaviours

Evidence from general population studies shows that modifiable risk factors act, in various combinations, to increase the risks for adverse health outcomes such as ischaemic heart disease, stroke, diabetes and some cancers. Health behaviours also affect biological risk factors such as high body mass, high cholesterol levels and hypertension. Other health behaviours such as infant breastfeeding, adequate diet and physical exercise have a protective impact on health.

Figure 9 shows that a higher proportion of Aboriginal and Torres Strait Islander peoples who complete Year 12 are not daily smokers (72%) compared with those whose highest year of schooling was Year 10 or below (49%). Similarly, those who were employed were more likely not to smoke (63%) than those who were unemployed (40%) (see Figure 10).

Figure 9

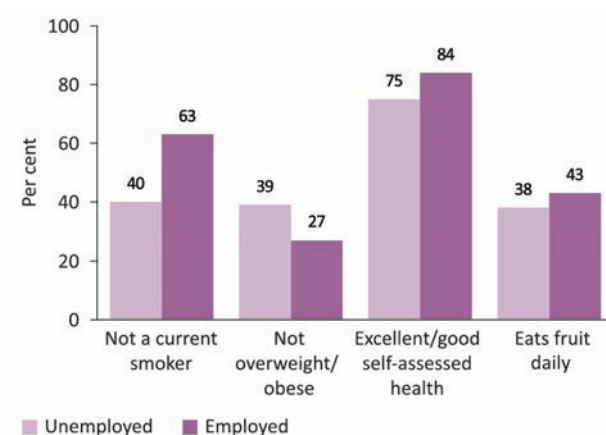
Relationship between highest year of school completed and health risk factors, Indigenous adults, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 10

Relationship between employment and risk factors, Indigenous adults, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS



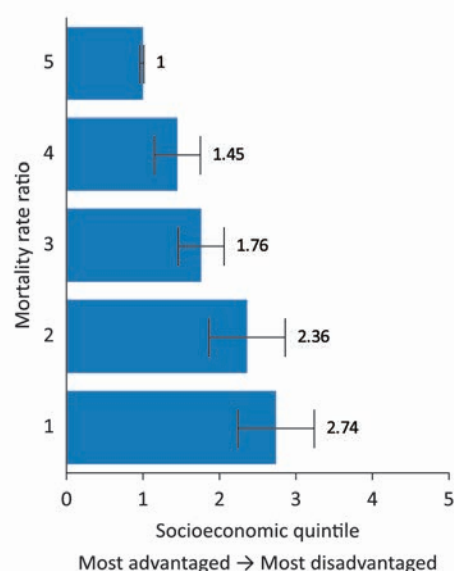
In 2012–13, 38% of Indigenous adults in non-remote areas reported levels of physical activity sufficient to meet the recommended guidelines. Indigenous adults who had completed Year 12 were 1.5 times as likely to have done sufficient physical activity compared with those who left school at Year 9 or below (44% compared with 29%). In 2012–13, 26% of Indigenous Australians aged 15 years and over abstained from alcohol in the last 12 months.

Social determinants and health outcomes

A multivariate analysis of the 2004–05 Health Survey found that selected social determinants and risk factors combined explained up to 46% of the gap in health outcomes between Indigenous and non-Indigenous Australians. Key factors were household income, education and employment (AIHW 2014d). The relationships are complex and mediated by interactions with other factors. A study of the NT population found a relationship between mortality/morbidity and socio-economic quintile (Zhao et al. 2013b).

Figure 11

Mortality rate ratios by socio-economic quintiles, NT



Source: Zhao et al. 2013

Relationships between individual social determinants and health outcomes are evident. Further multivariate analysis will be undertaken once the detailed results of the 2012–13 Health Survey have been released to researchers. In 2012–13, rates of high blood pressure (measured and/or self-reported) were higher for Indigenous Australians who completed school before Year 10 (38%) compared with those who completed Year 12 (18%). Rates were also higher for those living in the most socio-economically disadvantaged areas (28%) compared with those in the most advantaged areas (22%). Rates of diabetes were also higher for those in the most socio-economically disadvantaged areas (16%) compared with advantaged areas (9%) and also for those who finished school in Year 9 or below (23%) compared with Year 12 (7%). High/very high psychological distress levels were also associated with lower income, lower educational attainment and unemployment.

In 2012–13, 46% of Indigenous Australians in the highest household income quintiles reported very good/excellent health status, compared with 32% of those in the lowest quintile. Approximately 49% of those who had completed Year 12 reported good/excellent health status, compared with 29% of those who had completed Year 9 or below. Those who were employed were more likely to report very good/excellent health (46%) than those unemployed (40%) (see measure 1.17).

Aboriginal and Torres Strait Islander peoples in the highest income quintiles were less likely than those in the lowest income quintile to visit casualty /outpatients in the last 2 weeks.

Health as a determinant of social outcomes

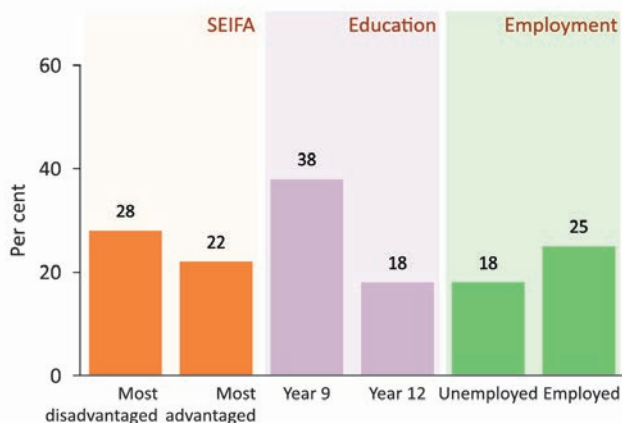
A wide range of literature has shown evidence of the influence of health on educational participation and attainment. In the US, children with developmental disabilities have been shown to have twice the number of school days lost as other children, while childhood disability is estimated to cause 24 million days lost from school each year (Boyle et al. 1994; Newacheck et al. 1998). In Australia, analysis of health surveys and social surveys have found an association between health and education. In 2012–13, 20% of Indigenous children aged 5–14 years had days away from school in the last 2 weeks due to illness/injury. Analysis by the AIHW using 2004–05 Health Survey and 2008 Social Survey data has found that the odds of an Indigenous Australian child aged 5–17 years with poor self-assessed health status currently studying were one-fifth that of an Indigenous child with excellent self-assessed health status (odds ratio of 0.225) (see HPF Detailed Analysis). Analysis of the Longitudinal Study of Indigenous children has found that 83% of Indigenous children with better health attended school at least 80% of the time compared with 65% of the time for children with poorer health (DSS 2014).

Illness, injury and disability are the main reason people leave the workforce in Australia, aside from reaching retirement (ABS 2013i). Results from analysis of the HILDA survey show that the probability of being employed for men with poor self-reported health was lower than those with good health (Cai et al. 2007). Analysis by the Australian Bureau of Statistics has found that a range of chronic illnesses, such as arthritis, asthma, cancer, diabetes and heart disease, negatively impact on labour force participation (ABS 2014k). Analysis of the 2004–05 Health Survey found significant associations between most measures of health (self-assessed health, having circulatory conditions, diabetes, arthritis, disability) and employment outcomes for Indigenous Australians. For example, Indigenous Australians aged 15–64 who reported poor or fair self-assessed health were less likely to be working full-time than those not in the labour force (odds ratios of 0.110 and 0.305, respectively). Similarly, people with disability were less likely to be working full-time (odds ratio of 0.154) (see HPF Detailed Analysis for details).

After adjusting for education levels, geographic dispersion and self-assessed health status, the gap in labour force participation between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians drops by two-thirds (ABS 2014k)—see figure 16.

Figure 12

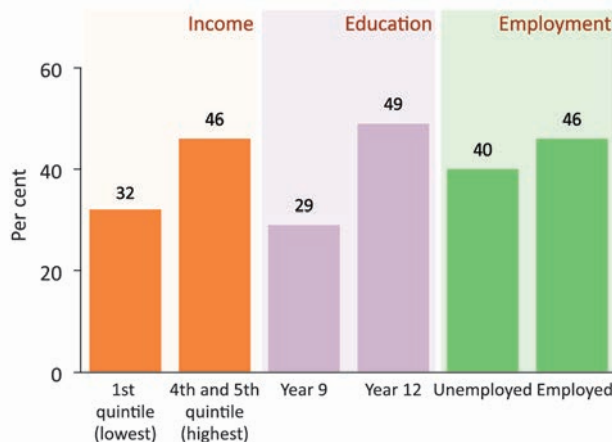
Relationship between high blood pressure and social factors, Indigenous Australians, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 13

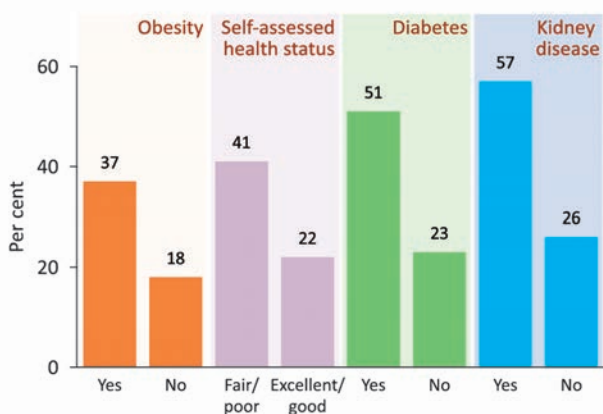
Relationship between excellent/very good self-assessed health and social factors, Indigenous Australians, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 14

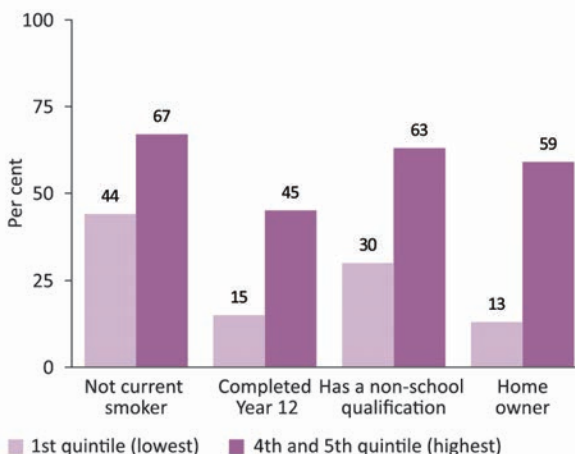
Relationship between high blood pressure and selected health outcomes, Indigenous Australians, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 15

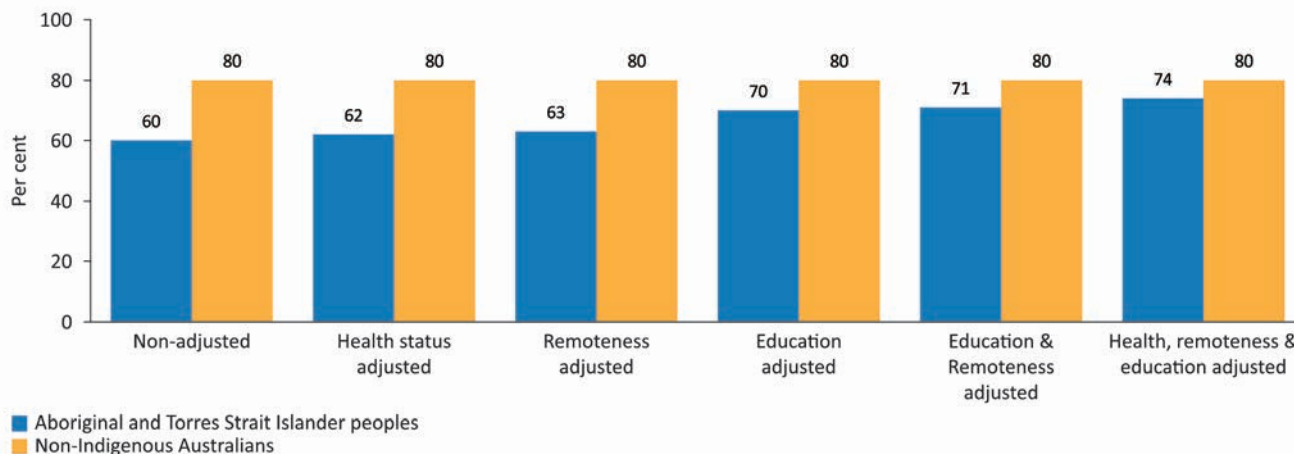
Relationship between income and determinants of health, Indigenous adults, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 16

Standardised labour force participation rates by Indigenous status, persons aged 15–64 years, 2012–13



Source: ABS (2014k)

Racism and discrimination

The link between self-reported perceptions or experiences of racism and poorer physical and mental health is well established (Kelaher et al. 2014; Ferdinand et al. 2013). There are a number of pathways from racism to ill-health, including: reduced access to societal resources such as education, employment, housing and medical care; inequitable exposure to risk factors including stress and cortisol dysregulation affecting mental health (anxiety and depression); immune, endocrine, cardiovascular and other physiological systems; and injury from racially motivated assault (see Figure 17). Longitudinal and cross-sectional studies both nationally and internationally have found a strong association between experiences of racism and ill-health and psychological distress, mental health conditions, and risk behaviours such as substance use (Paradies 2007; Gee et al. 2009; Paradies et al. 2014). Chronic exposure to racism leads to excessive stress, which is an established determinant of obesity, inflammation and chronic disease (Egger et al. 2014). Analysis of the 2012–13 Health Survey found that Indigenous Australians with high/very high levels of psychological distress were 1.3 times as likely to report having circulatory disease and 1.8 times as likely to report having kidney disease.

In the 2012–13 Health Survey, 16% of Indigenous Australians reported that they were treated badly in the previous 12 months because they are Aboriginal or Torres Strait Islander. Other studies have found self-reported experiences of racism among Aboriginal and Torres Strait Islander peoples range from 16%–97% depending on the aspects of racism researched (Paradies 2011). A study of 755 Aboriginal Victorians reported that nearly all respondents (97%) had experienced at least one incident they perceived as racist in the preceding 12 months, with 35% reporting experiencing an incident within the past month (Ferdinand et al. 2013). A recent survey to gain insight into discriminatory attitudes and beliefs of non-Indigenous Australians (aged 25–44 years) towards Indigenous Australians

(Beyond Blue 2014) found a general lack of awareness of what behaviour is considered discriminatory, along with widespread belief that behaviours such as employment discrimination are considered an ‘unconscious act’ by the perpetrator. Key findings include:

- Discrimination is commonly witnessed, with 40% seeing others avoid Indigenous Australians on public transport and 38% witnessing verbal abuse of Indigenous Australians.
- Almost a third (31%) witnessed employment discrimination against Indigenous Australians and 9% admit they themselves discriminate in this context.
- One in four (25%) do not agree that discrimination has a negative personal impact for Indigenous Australians.
- More than half (56%) believe that being an Indigenous Australian makes it harder to succeed.
- Many believe it is acceptable to discriminate, with 21% admitting they would move away from an Indigenous Australian if they sat nearby, and 21% would watch an Indigenous Australian’s actions when shopping.

Ferdinand et al. (2013) found two-thirds (67%) of Indigenous Australians who participated in their survey reported being spat at or having something thrown at them, and 84% reported being sworn at or verbally abused. The research also found that about a third (29%) of respondents experienced racism in health settings, 35% in housing, 42% in employment and 67% in shops.

Research and survey results indicate a common response to experiencing racism is to subsequently avoid similar situations: 35% of those who reported in the 2012–13 Health Survey that they had been treated badly, said they usually responded to discrimination by avoiding the person or situation. This holds implications across health (Kelaher et al. 2014), education (Priest et al. 2014), and employment sectors (Biddle, Nicholas et al. 2013).

Figure 17

Pathways between racism and ill-health, with cross-references to measures within the Aboriginal and Torres Strait Islander Health Performance Framework



Source: Adapted from Paradies et al. (2013)

Demographic context

The estimated resident Aboriginal and Torres Strait Islander population of Australia as at 30 June 2011 was 669,881 people (ABS 2013e). Using population projections for 2014, Indigenous Australians represent 3% of the Australian population, although this proportion varies from region to region—from 30% of the population of the Northern Territory to 0.9% of the population of Victoria (see Table 1) (ABS 2014g).

When the data are analysed as a proportion of the Indigenous population, the projected results for 2014 show that, 31% of all Aboriginal and Torres Strait Islander peoples lived in NSW, 29% lived in Qld, 13% in WA and 10% in the NT (see Figure 18) (ABS 2014g).

In 2011, around 79% of Indigenous Australians lived in regional and metropolitan areas. While only 14% of Indigenous Australians lived in very remote areas, they made up a large proportion of Australians living in very remote areas (45%) (see Table 2).

The age structure of the Aboriginal and Torres Strait Islander population is significantly younger than the non-Indigenous population (see Figure 19). In 2011, the median age for Indigenous Australians was 22 years compared with 38 years for non-Indigenous Australians. In 2011, 36% of Indigenous Australians were aged 0–14 years compared with 18% of non-Indigenous Australians. The younger age structure also represents a tremendous opportunity. With well-designed and competently delivered antenatal care and early childhood programmes, along with effective timely interventions helping

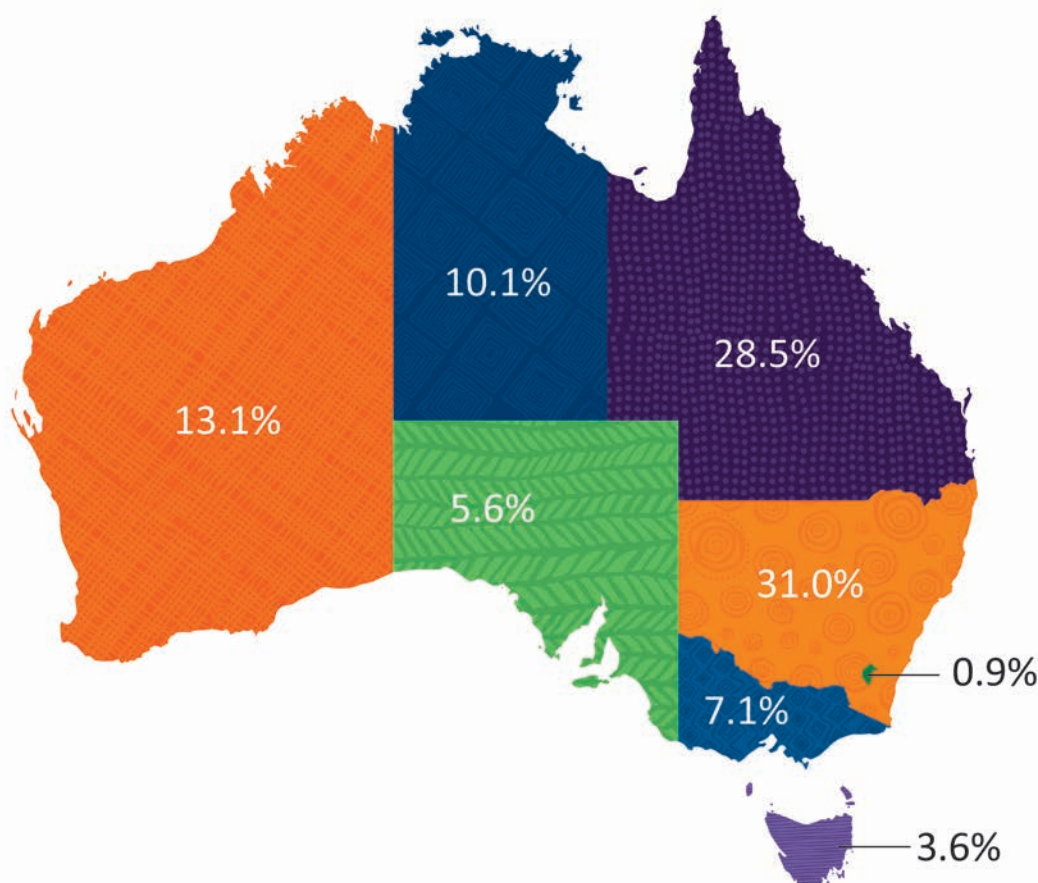
young adults to adopt healthy lives, there is an opportunity to reduce the gap in long-term health outcomes. While it is vital that the focus is on ensuring improvement of health for Aboriginal and Torres Strait Islander peoples across their life course, it is important to take account of demographic composition in planning for resource requirements and service delivery for Aboriginal and Torres Strait Islander peoples.

While the Indigenous population is young relative to the non-Indigenous population, it is also gradually ageing. In 2011, 36% of the Indigenous population was aged under 15 years, down from 38% in 2006. This is projected to decrease further to 32% in 2026. The share of the Indigenous population that is of workforce age (15–64 years) has risen from 58.6% in 2006 to 60.7% in 2011, and is projected to increase slightly to 61.2% in 2026. In contrast, the total Australian working age population (aged 15–64 years) was estimated to be 66.9% of the total population in 2012. This is projected to decrease to 63.6% by 2026.

The proportion of Indigenous people aged 65 years and over has increased from 3.0% in 2006 to 3.4% in 2011 and is projected to almost double from 2011 to 2026 to 6.4%. A gradual demographic shift in the age profile of the Indigenous population will also have implications for service delivery particularly for services aimed at older Indigenous Australians including aged care and planning for diseases such as cancer. The total Australian population aged 65 years and over was estimated to be 14.2% of the total population in 2012. This is projected to increase to 17.7% by 2026.

Figure 18

Aboriginal and Torres Strait Islander population by state and territory, 2014



Source: ABS population projections based on the 2011 Census (ABS 2014g)

**Table 1**

Projected population by jurisdiction and Indigenous status, 2014

	Number of Indigenous population by jurisdiction	Indigenous population % by jurisdiction ^(a)	Number of total population by jurisdiction ^(b)	Indigenous population as % of jurisdiction population
New South Wales	220,902	31.0	7,493,619	2.9
Victoria	50,983	7.1	5,828,969	0.9
Queensland	203,045	28.5	4,760,693	4.3
Western Australia	93,778	13.1	2,596,719	3.6
South Australia	39,800	5.6	1,690,973	2.4
Tasmania	25,845	3.6	515,823	5.0
Australian Capital Territory	6,707	0.9	390,080	1.7
Northern Territory	72,251	10.1	244,005	29.6
Australia*	713,589	100.0	23,524,055	3.0

a) See Figure 18

b) Indigenous plus non-Indigenous

* Australia total includes 'other Territories'

Source: ABS population projections (Series B) based on the 2011 Census (ABS 2014g)

ABS 2014, Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001 to 2026, ABS Cat. No. 3238.0, Canberra

Table 2

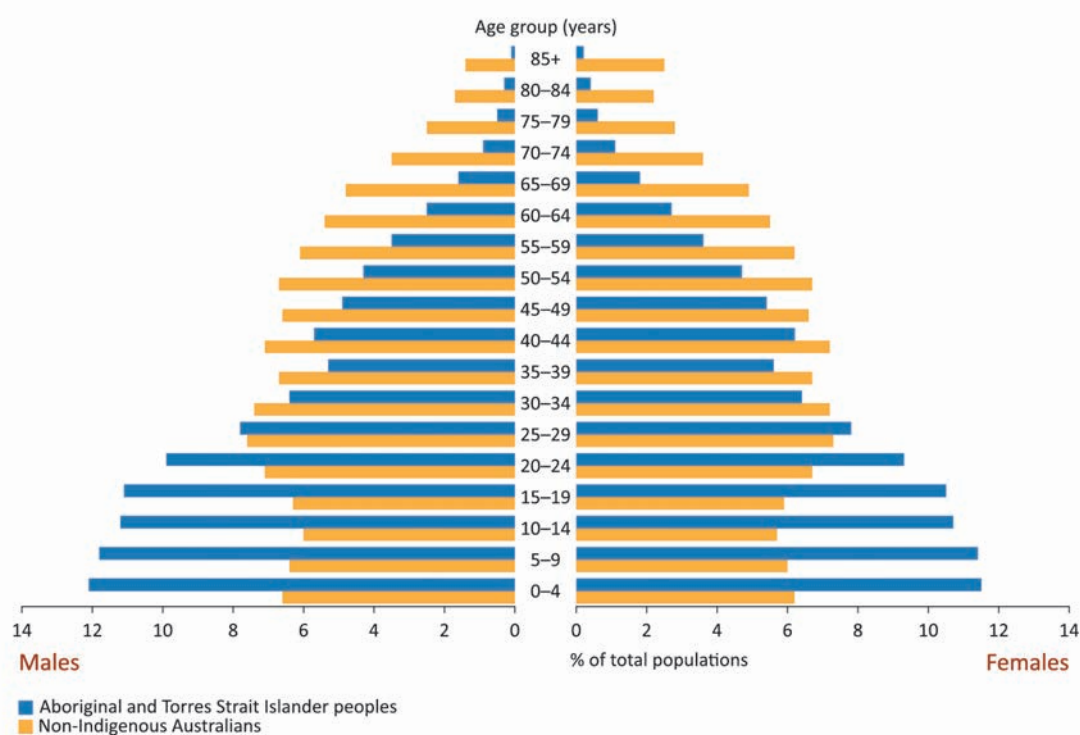
Estimated resident population by remoteness area and Indigenous status, 2011

	Number of Indigenous Australians	Indigenous as % of total population	Indigenous as % of total Indigenous population
Major cities	233,146	1.5	34.8
Inner regional	147,683	3.6	22.0
Outer regional	146,129	7.2	21.8
Remote	51,275	16.3	7.7
Very remote	91,648	45.1	13.7
Australia*	669,881	3.0	100.0

Source: ABS population estimates based on 2011 Census (ABS 2013)

Figure 19

Age distribution of Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians, by sex, 2014 (projections)



Source: ABS population projections based on the 2011 Census (ABS 2014g)

Policies and strategies

The *Aboriginal and Torres Strait Islander Health Performance Framework* is used to inform policy development and monitor progress in Indigenous health. An effective, efficient and equitable health system is an essential component for any whole-of-government effort to address the health of Aboriginal and Torres Strait Islander peoples. In addition, action is required in areas such as education, employment, safety and housing to achieve sustainable health gains.

The existing six Closing the Gap targets were agreed by the Council of Australian Governments (COAG) in 2008:

- closing the life expectancy gap within a generation by 2031 (see measure 1.19)
- halving the gap in mortality rates for Indigenous children under five within a decade by 2018 (see measure 1.20)
- ensuring all Indigenous four year olds in remote communities have access to early childhood education within five years by 2013
- halving the gap for Indigenous students in reading, writing and numeracy within a decade by 2018 (see measure 2.04)
- halving the gap for Indigenous Australians in Year 12 attainment or equivalent attainment rates by 2020 (see measure 2.05)
- halving the gap in employment outcomes between Indigenous and non-Indigenous Australians within a decade (see measure 2.07).

In May 2014, COAG agreed to a new five-year target of closing the gap between Indigenous and non-Indigenous school attendance by 2018.

The Australian Government is investing \$4.8 billion in the Indigenous Advancement Strategy (IAS) to replace more than 150 individual programmes with five streamlined programmes:

- jobs, land and economy
- children and schooling
- safety and wellbeing
- culture and capability
- remote Australia strategies.

The IAS will support the Government's priorities of getting children to school, adults into jobs and making communities safer. The Government will work in partnership with Aboriginal and Torres Strait Islander people in implementing the IAS. Communities will be at the centre of the design and delivery of local solutions to meet local needs.

The Australian Government *Indigenous Australians' Health Programme* commenced on 1 July 2014, consolidating four existing funding streams (primary health care base funding, child and maternal health programmes, *Stronger Futures in the Northern Territory* and the *Aboriginal and Torres Strait Islander Chronic Disease Fund*). The aim of this programme is to improve the focus on local health needs, deliver the most effective outcomes, and better support efforts to achieve health equality between Indigenous and non-Indigenous Australians.

Chronic disease programmes provided through the *Indigenous Australians' Health Programme* include nationwide tobacco reduction and healthy lifestyle promotion activities, a care coordination and outreach workforce based in Medicare Locals and Aboriginal Community Controlled Health Organisations

and GP, specialist and allied health outreach services serving urban, rural and remote communities.

Additionally, the Australian Government provides GP health assessments for Aboriginal and Torres Strait Islander people under the MBS, along with follow-on care and incentive payments for improved chronic disease management, and cheaper medicines through the PBS. These programmes assist better chronic disease prevention and management by primary health care services.

The *National Aboriginal and Torres Strait Islander Health Plan 2013–2023* provides a long-term, evidence-based policy framework as part of the overarching COAG approach to Closing the Gap in Indigenous disadvantage. The key goal of the Health Plan is that 'Aboriginal and Torres Strait Islander peoples have the right to live a healthy, safe and empowered life with a strong and healthy connection to culture and country'. The objectives of the Health Plan will be supported by the successful implementation of the IAS through early childhood initiatives and measures to address the underlying social determinants of poor health. The Health Plan also builds on other governments' plans and strategies which support better health outcomes for Aboriginal and Torres Strait Islander people, including the COAG *National Indigenous Reform Agreement* and the previous *National Strategic Framework for Aboriginal and Torres Strait Islander Health 2003–13*.

- The *NSW Aboriginal health plan 2013–2023*, incorporates six strategic directions underpinned by principles of strong partnerships (see www.health.nsw.gov.au/aboriginal/Documents/aboriginal-health-plan-2013-2023.pdf).
- In SA, the *Aboriginal Health Care Plan 2010–2016* identifies six priorities for comprehensive action by SA Health based on the burden of disease and population profile and sets a framework for the Regional Aboriginal Health Improvement Plans (see www.sahealth.sa.gov.au/wps/wcm/connect/829485804451c671811f8d23cd3dffc/Aboriginal+HC+Plan+1010.pdf?MOD=AJPERES&-CACHEID=829485804451c671811f8d23cd3dffc).
- In Victoria the *Koolin Balit: Strategic Directions for Aboriginal Health 2012–2022*, builds on the *Victorian Health Priorities Framework 2012–2022*. Whole-of-government strategies are outlined in the *Victorian Aboriginal Affairs Framework 2013–2018* (see www.health.vic.gov.au/aboriginalhealth/).
- In WA, the *Aboriginal Health strategic policy approaches* include promoting Aboriginal health as everyone's business, addressing broader social and structural determinants and culturally secure best practice across WA Health. The *WA Aboriginal Health and Wellbeing Framework 2015–2030* outlines the way forward for Aboriginal health services and programmes for the next 15 years (see www.aboriginal.health.wa.gov.au/home/).
- In the NT, an *Aboriginal Health Framework* is scheduled to be released in 2015.
- The Queensland Government is developing an investment strategy that will outline strategies for closing the life expectancy gap and sustaining health outcomes for Aboriginal and Torres Strait Islander Queenslanders. Consistent with this, *The Queensland Plan* identifies a number of targets and goals relating to improving Aboriginal and Torres Strait Islander health.
- ACT Health is working on the development of the *ACT Aboriginal and Torres Strait Islander Health Plan 2014–2019*.

Figure 20

How progress in the key priorities of the Health Plan could be monitored through the Health Performance Framework



Background

This is the fifth report against the *Aboriginal and Torres Strait Islander Health Performance Framework* (HPF)—see Figure 1.

In this report Aboriginal and Torres Strait Islander peoples are also referred to as Indigenous Australians.

The HPF comprises three tiers:

Tier 1—Health status and outcomes

Measures the prevalence of health conditions including disease or injury, human function, life expectancy and wellbeing, and deaths.

Tier 2—Determinants of health

Measures the determinants of health including socio-economic factors, environmental factors and health behaviours.

Tier 3—Health system performance

Measures health system performance including effectiveness, responsiveness, accessibility, continuity, capability and sustainability.

The HPF covers the entire health system, including Indigenous-specific services and programmes, and mainstream services. It includes performance measures across the full continuum, from inputs, processes, outputs, and intermediate outcomes to final outcomes.

Detailed Analysis

The detailed statistical analysis, including state-specific reports that underpin the analysis in this report, are available on the Australian Institute of Health and Welfare website at www.aihw.gov.au/indigenous/publications.cfm. For this report, specific citations are included where the data comes from a report/research article and all of the other data are found in the Detailed Analysis.

Data limitations

The statistics in this report are the latest available but some are several years old and therefore may not reflect the impact of recent action.

There are well-documented problems with the quality and availability of data about Aboriginal and Torres Strait Islander health. These limitations include the quality of data on all key health measures—including mortality and morbidity, uncertainty about the size and composition of the Aboriginal and Torres Strait Islander population, and a paucity of available data on other health issues such as access to health services (see the Technical Appendix for details). The following should be noted when interpreting the data analysis:

Under-identification

- Under-identification of Aboriginal and Torres Strait Islander people is the main issue in most administrative data collections. Under-identification is a major problem in hospital and mortality data collections, particularly for some states and territories.

- The under-identification of Aboriginal and Torres Strait Islander people in administrative data collections is due to various factors, including:
 - whether the question about Indigenous status is asked in the first instance
 - issues about consistency in the way the question is asked and recorded
 - differing responses by the person involved depending on the situation.
- Decisions on which data to include have been based on the most recent evaluations (see the Technical Appendix). Work is underway to improve data quality. In future, some measures will have more comprehensive data available.

Coverage by jurisdictions

- Due to the under-identification issues described above, for some data collections the analysis has been limited to jurisdictions where better data quality is known to exist. Some measures presented in this report are based on an analysis of data for selected jurisdictions only. For example, mortality data are currently only published for NSW, Qld, SA, WA and the NT.

Uncertainty in Indigenous population estimates

- Measuring the size of the Indigenous population is not easy. The Aboriginal and Torres Strait Islander Census population estimate has varied considerably over the last two decades with a 30% increase in the estimate between 2006 and 2011. Cohort analysis from one Census to the next show that these changes are not entirely due to demographic factors such as births, deaths, migration and immigration. The population is used as the basis of rate calculations and trends have all been updated for this report based on the new 2011 Census estimates—therefore historical estimates have changed from the previous HPF report.

Inconsistencies in the Indigenous status question

- A standard Indigenous status question has been developed and endorsed nationally (AIHW 2010d). However, the standard question and categories are still not used in data collections across all jurisdictions. For example, in the national perinatal data, Indigenous status is currently based on the mother (missing 30% of babies with an Indigenous father and non-Indigenous mother). Data on the Indigenous status of the baby is available for reporting from the 2012 collection year.



Tier 1 Health Status and Outcomes

Health conditions

- 1.01 Low birthweight
- 1.02 Top reasons for hospitalisation
- 1.03 Injury and poisoning
- 1.04 Respiratory disease
- 1.05 Circulatory disease
- 1.06 Acute rheumatic fever and rheumatic heart disease
- 1.07 High blood pressure
- 1.08 Cancer
- 1.09 Diabetes
- 1.10 Kidney disease
- 1.11 Oral health
- 1.12 HIV/AIDS, hepatitis and sexually transmissible infections

Human function

- 1.13 Community functioning
- 1.14 Disability
- 1.15 Ear health
- 1.16 Eye health

Life expectancy and wellbeing

- 1.17 Perceived health status
- 1.18 Social and emotional wellbeing
- 1.19 Life expectancy at birth

Deaths

- 1.20 Infant and child mortality
- 1.21 Perinatal mortality
- 1.22 All causes age-standardised death rates
- 1.23 Leading causes of mortality
- 1.24 Avoidable and preventable deaths





1.01

Low birthweight

Why is it important?

Low birthweight (newborns weighing less than 2,500 grams) is associated with premature birth or restricted foetal growth. Low birthweight infants are at a greater risk of dying during their first year of life, and are prone to ill-health in childhood and the development of chronic disease as adults (OECD 2011; Scott 2014). Children with extremely low birthweight (less than 1,000 grams) are also more likely to have psycho-social problems, difficulties at school, and, when they become teenagers, lower achievement on intellectual measures, particularly arithmetic (AIHW 2011d).

Low birthweight is associated with an increased risk of Type 2 diabetes and high blood pressure (AIHW 2011d; Zhang et al. 2013), higher mortality from cardiovascular and kidney diseases in adulthood (White et al. 2010), respiratory diseases in both childhood and adulthood (Hoy et al. 2010), and obesity (Scott 2014).

Risk factors for low birthweight include maternal smoking; socio-economic disadvantage; the weight, age and nutritional status of the mother; excessive alcohol consumption during pregnancy; the number of babies previously born to the mother; poor antenatal care; illness during pregnancy; multiple births; and the duration of pregnancy (see measure 2.21) (AIHW 2011d; Eades et al. 2008; ABS & AIHW 2008; Khalidi et al. 2012).

Findings

Perinatal data for 2011 show that low birthweight was twice as common among babies born to Aboriginal and Torres Strait Islander mothers as among those born to a non-Indigenous mother (12.6% compared with 6%). Over the period 2000 to 2011, excluding multiple births, there was a significant decline in the low birthweight rate among babies born to Indigenous mothers (9%) and there was a narrowing of the gap (for jurisdictions with adequate quality data for trends: NSW, Vic, Qld, WA, SA and NT). The Indigenous low birthweight rate was higher in remote areas (14.5%) than non-remote (12%) (counter to the gradient for non-Indigenous mothers). The low birthweight rate for Indigenous Australians was highest in the NT (16.5%) and lowest in Qld (11.1%).

Most low birthweight babies were born pre-term (67% for babies born

to Indigenous mothers and 71% for non-Indigenous mothers). The rate of low birthweight births that were full-term was higher for Indigenous mothers compared with non-Indigenous mothers (33% and 29% respectively). The mean birthweight for infants born to Aboriginal and Torres Strait Islander mothers in 2011 was 3,189 grams compared with 3,374 grams for infants born to other Australian mothers.

A multivariate analysis of perinatal data for the period 2009–11 indicates that, excluding pre-term and multiple births, 51% of low birthweight births to Indigenous mothers were attributable to smoking, compared with 19% for other Australian mothers (see Detailed Analysis). After adjusting for age differences and other factors, it was estimated that if the smoking rate among Indigenous pregnant women was the same as it was for other Australian mothers, the proportion of low birthweight babies could be reduced by 26%. A study in Qld found that, after excluding pre-term and multiple births, 76% of Aboriginal and Torres Strait Islander mothers who gave birth to a low birthweight baby reported smoking during pregnancy (Khalidi et al. 2012).

For Indigenous mothers, the percentage of low birthweight births was highest for those in the 35 years and over age group (19%) and between 12% and 13% for the other age groups (including teenagers). For non-Indigenous mothers, rates were highest among those aged 35 years and over and those under 20 years. There was a gradient by remoteness for low birthweight babies born to Indigenous mothers but, taking account of other factors in the multivariate analysis, remoteness was not significant.

The National Health Performance Authority reported that the percentage of low birthweight babies born to Aboriginal and Torres Strait Islander women varied across regions, ranging from 18% in Gippsland (Vic) to 7% in Frankston-Mornington Peninsula (Vic) (NHPA 2014).

In December 2013, national Key Performance Indicators data from Australian Government-funded Indigenous primary health care organisations, showed 13% of Indigenous babies with a recorded birthweight had low birthweight—similar to national results (AIHW 2014w).

International rate comparisons should be treated with caution because of differences in methods used to classify and collect data, and the quality and reliability of data in each country. In

New Zealand, 2012 data indicates the proportion of babies born with low birthweight was higher for Maori mothers than other mothers (6.8% compared with 5.8%). Similarly, in Canada, 7% of mothers of Inuit inhabited regions had babies of low birthweight compared with 6% of all mothers (2004–08). In 2012, the proportion of low birthweight babies among American Indian and Alaska Native mothers was 7.6% compared with 8.0% for other American mothers. In Canada, high birthweight was the bigger issue among Aboriginal peoples, linked with maternal diabetes (Smylie et al. 2010). Perinatal data show that in 2012, 1.6% of babies born to Indigenous Australian mothers were of high birthweight (4,500 grams and over), as were 1.7% of babies born to all Australian mothers (AIHW 2014e).

Implications

Recent trends in low birthweight are promising but to continue making gains there needs to be intensified focus on reducing smoking during pregnancy and increasing early and regular access to antenatal care. Analysis of the perinatal data items included in the multivariate analysis suggests that the largest potential improvements in low birthweight outcomes for Aboriginal and Torres Strait Islander mothers will result from lowering rates of smoking during pregnancy.

Perinatal data also indicates that the earlier a woman first accesses antenatal care, the likelihood of having a baby with low birthweight decreases (see measure 3.01). Research confirms that appropriate antenatal care and a healthy environment for the mother can improve the chances that the baby will have a healthy birthweight (Herceg 2005). Maternal nutrition is also an area where more work is needed (Lucas et al. 2014). While improvements in health services such as antenatal and acute care for pregnant women are important to reduce the occurrence of pre-term delivery and improve foetal growth during pregnancy, the reasons for premature delivery are not well understood.

Australian governments are investing in a range of initiatives aimed at improving child and maternal health.

The Department of Health is coordinating development of *National Evidence-Based Antenatal Care Guidelines* (Module 2) on behalf of all Australian governments. Module 1 of the Guidelines (published March 2013)



covered the first trimester of pregnancy. Module 2 will cover care in the second and third trimesters. The Guidelines have been developed with input from the Working Group for Aboriginal and Torres Strait Islander Women's Antenatal Care to provide culturally appropriate guidance and information for the health needs of Aboriginal and Torres Strait Islander pregnant women and their families.

The 2014–15 Federal Budget provides funding of \$94 million over three years from July 2015, for the *Better Start to Life* approach. This includes:

- \$54 million to increase the number of sites providing *New Directions: Mothers and Babies Services* from 85 to 136. These services provide Indigenous

families with access to antenatal care; practical advice and assistance with parenting; and health checks for children.

- \$40 million to expand the *Australian Nurse–Family Partnership Program (ANFPP)* from 3 to 13 sites. The ANFPP aims to improve pregnancy outcomes by helping women engage in good preventive health practices, support parents to improve their child's health and development and help parents develop a vision for their own future, including continuing education and finding work.

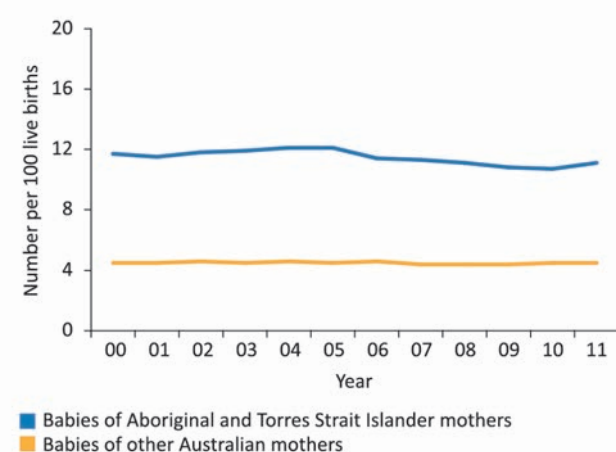
The 2014–15 Federal Budget also commits \$25.9 million in 2014–15 for a new *Indigenous Teenage Sexual and Reproductive Health and Young Parent*

Support measure. Implemented by states and territories, these services will provide information to young people to make informed decisions about their reproductive health and health behaviours during pregnancy.

In SA, the *Aboriginal Family Birthing Program* (a partnership model between Aboriginal Maternal Infant Care Workers and midwives) supports Aboriginal women and their families through pregnancy, childbirth and up to 4 weeks postnatally. Since its inception in 2004, SA has seen a slow decrease in low birthweight rates and in the proportion of Aboriginal mothers smoking during pregnancy.

Figure 1.01-1

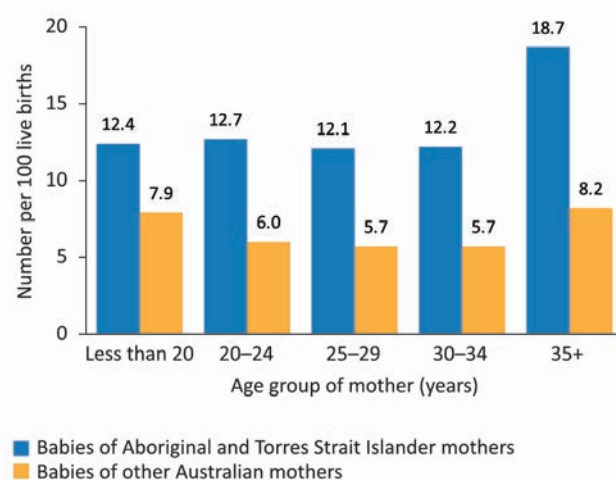
Low birthweight among liveborn singleton babies, by Indigenous status of mother, (NSW, Vic, Qld, WA, SA and NT), 2000 to 2011



Source: AIHW/NPESU analysis of National Perinatal Data Collection

Figure 1.01-3

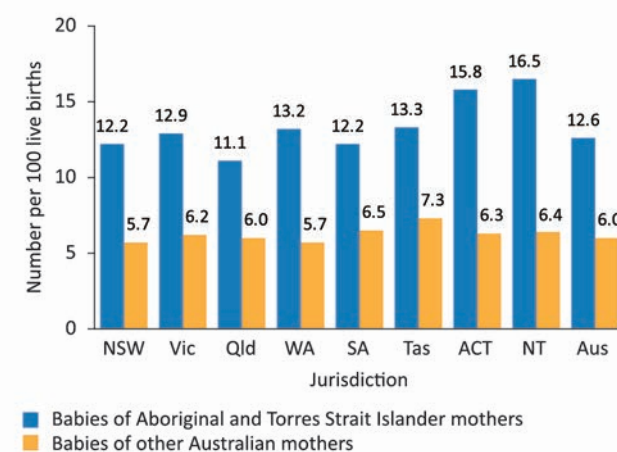
Low birthweight babies per 100 live births, by maternal age and Indigenous status, 2011



Source: AIHW/NPESU analysis of 2011 National Perinatal Data Collection

Figure 1.01-2

Low birthweight babies per 100 live births, by Indigenous status of mother and state/territory of residence, 2011

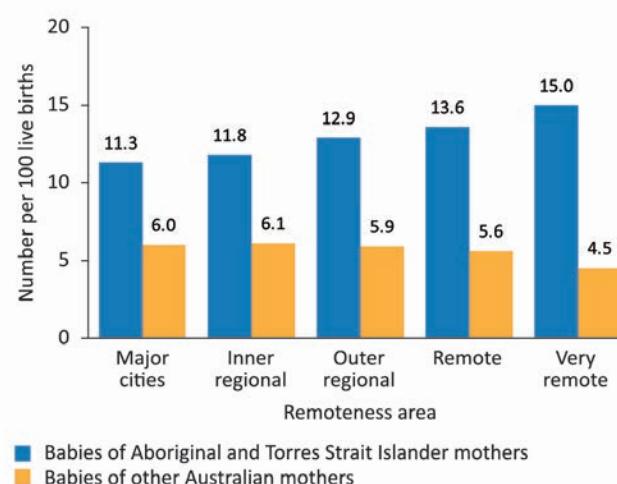


Note: ACT and Tas proportions are based on small numbers

Source: AIHW/NPESU analysis of 2011 National Perinatal Data Collection

Figure 1.01-4

Low birthweight babies per 100 live births, by Indigenous status of mother and remoteness, 2011



Source: AIHW/NPESU analysis of 2011 National Perinatal Data Collection



1.02

Top reasons for hospitalisation

Why is it important?

Hospitalisation rates indicate two main issues: the occurrence in a population of serious acute illnesses and conditions requiring admitted patient hospital treatment, and the access to and use of hospital admitted patient treatment by people with such conditions. Hospitalisation rates for a particular disease do not directly indicate the level of occurrence of that disease in the population. For diseases that usually do not cause an illness that is serious enough to require admission to hospital, a high level of occurrence will not be reflected in a high level of hospitalisation. Hospitalisation rates are based on the number of hospital episodes rather than on the number of individual people who are hospitalised. A person who has frequent hospitalisations for the same disease is counted multiple times in the hospitalisation rate for that disease. For example, each kidney dialysis treatment is counted as a separate hospital episode, so that each person receiving 3 dialysis treatments per week contributes approximately 150 hospital episodes per year. Therefore, it is especially important to separate hospitalisation rates for dialysis from rates for other conditions. Each hospitalisation involves a principal diagnosis (i.e. the problem that was chiefly responsible for the patient's episode of care) and additional diagnoses where applicable (i.e. conditions or complaints either coexisting or arising during care). This report focuses on the principal diagnosis for each hospitalisation. Analysis of additional diagnoses is available from www.aihw.gov.au. Rates of hospitalisation are also impacted by the availability of primary care services (see measure 3.07) and other alternative services.

Findings

During the two years to June 2013, there was an estimated 453,000 hospital separations for Aboriginal and Torres Strait Islander peoples (excluding dialysis). After adjusting for differences in the age structure of the two populations, Indigenous Australians were hospitalised at 1.3 times the non-Indigenous rate.

Hospital episodes of care involving dialysis accounted for 44% of all hospitalisations for Aboriginal and Torres Strait Islander peoples (compared with 12% for non-Indigenous Australians). The hospitalisation rate for dialysis among Indigenous Australians was 10 times the rate of non-Indigenous Australians (see measure 1.10). Among Indigenous Australians, injury and poisoning was the second leading cause of hospitalisation (7%), followed by pregnancy and childbirth (6%), diseases of the respiratory system (6%) and diseases of the digestive system (5%).

Among Indigenous Australians, the highest hospitalisation rates were in the NT and WA (506 and 493 per 1,000 population) and the lowest in Tasmania (208 per 1,000 population). The difference between Indigenous and non-Indigenous hospitalisation rates was highest in the NT (248 per 1,000 population) followed by WA (148 per 1,000 population). Hospitalisation rates for Indigenous Australians were highest in remote areas (622 per 1,000), lower in very remote areas (471 per 1,000) and lowest in major cities (319 per 1,000). For non-Indigenous Australians, rates were similar across geographic areas (around 319–344 per 1,000) except in very remote areas where rates were lower (280 per 1,000). The largest gaps between rates for the two populations were in remote and very remote areas.

Hospitalisation rates for Aboriginal and Torres Strait Islander peoples increased significantly over both the long term (1998–99 to 2012–13 for Qld, WA, SA and the NT combined) and the short term (2004–05 to 2012–13 for NSW, Vic, Qld, WA, SA and the NT combined). Over the short term, rates increased faster for Indigenous Australians compared with non-Indigenous Australians, resulting in an increase in the difference between Indigenous and non-Indigenous hospitalisation rates.

Hospitalisations were higher for Aboriginal and Torres Strait Islander peoples across all age groups below 65 years. The difference was greatest in the 45–54 age group (difference of 149 separations per 1,000 population) and smallest among children aged 5–14 years (difference of 11 separations per 1,000 population). Hospitalisation rates for Indigenous Australians were highest in the 65 years and over age group. However, Indigenous rates were lower than non-Indigenous rates in this age group.

Implications

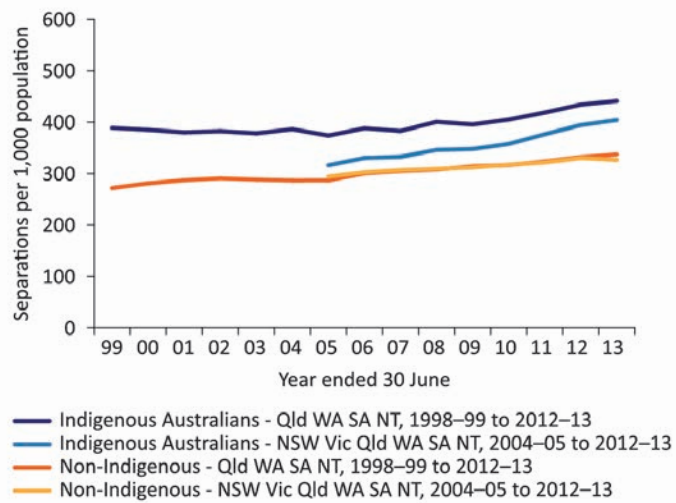
In the two-year period to June 2013, there were approximately 334,300 hospital episodes for Aboriginal and Torres Strait Islander peoples for dialysis treatment. Dialysis episodes for Aboriginal and Torres Strait Islander peoples reflect the very high and rising number of Aboriginal and Torres Strait Islander peoples with kidney failure, and the low number of Aboriginal and Torres Strait Islander patients who receive kidney transplants (see measure 1.10). Excluding dialysis, the greatest differences between hospitalisation rates for Indigenous and non-Indigenous Australians are for episodes of care due to injury and for respiratory conditions.

The 30% higher overall hospitalisation rate for Aboriginal and Torres Strait Islander peoples is less than expected given the much greater occurrence of disease and injury and much higher mortality rates in this population (see measure 1.22). Until the incidence of many health problems is reduced, hospitalisation rates for Aboriginal and Torres Strait Islander peoples will not decrease. Reductions in hospitalisations will eventually occur through concerted action to reduce the incidence and prevalence of the underlying conditions, and in preventing or delaying complications, through primary health care.

The *Indigenous Australians' Health Programme*, which commenced 1 July 2014, aims to assist in reducing avoidable hospitalisations of Aboriginal and Torres Strait Islander peoples by preventing and managing chronic disease through expanded access to and coordination of comprehensive primary health care. Achievement of the objectives of this programme will be influenced and supported by the successful implementation of other Indigenous-specific initiatives including early childhood reforms, broader health system changes, improvements in identifying Indigenous patients and measures to address the underlying social determinants of poor health.

**Figure 1.02-1**

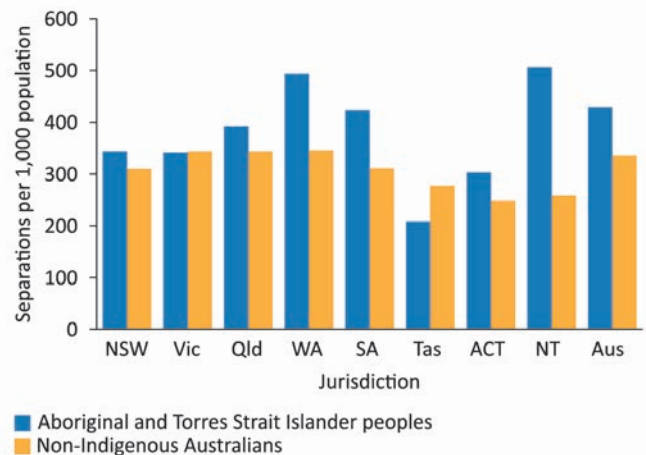
Age-standardised hospitalisation rates (excluding dialysis) by Indigenous status, 1999 to 2013



Source: AIHW analysis of National Hospital Morbidity Database

Figure 1.02-2

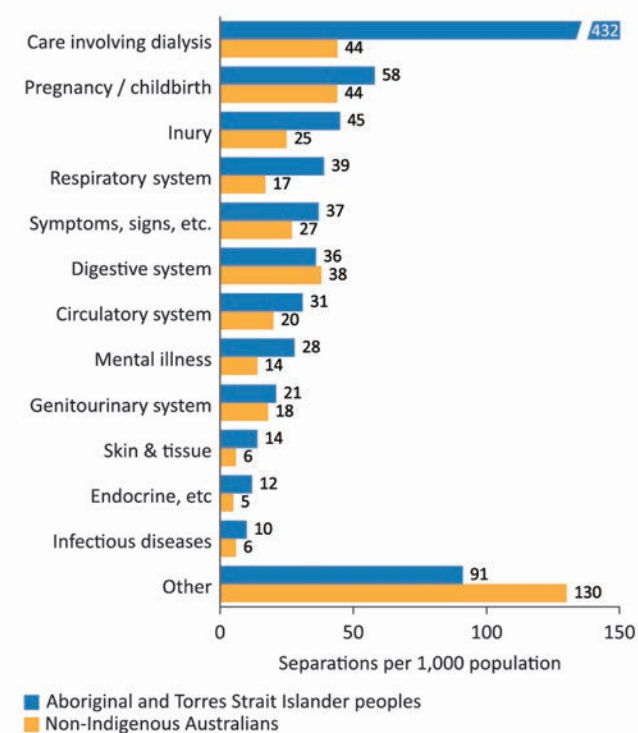
Age-standardised hospitalisation rates (excluding dialysis) by state/territory and Indigenous status, July 2011-June 2013



Source: AIHW analysis of National Hospital Morbidity Database

Figure 1.02-3

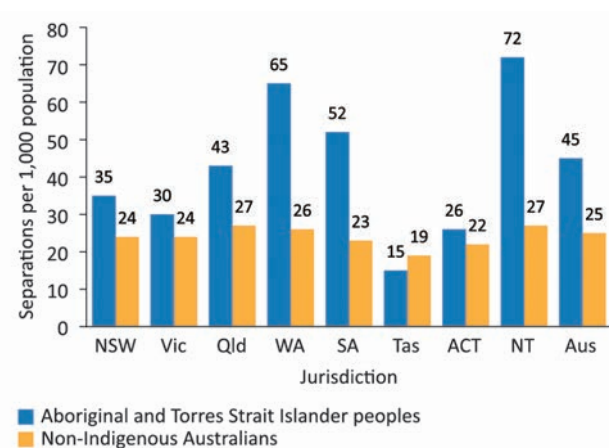
Age-standardised hospitalisation rates by principal diagnosis and Indigenous status, Australia, July 2011-June 2013



Source: AIHW analysis of National Hospital Morbidity Database

Figure 1.02-4

Age-specific hospitalisation rates (excluding dialysis) by Indigenous status, Australia, July 2011-June 2013



Source: AIHW analysis of National Hospital Morbidity Database



1.03

Injury and poisoning

Why is it important?

Injury and poisoning is responsible for 15% of the health gap between Indigenous and non-Indigenous Australians (Vos et al. 2007). Injuries can cause long-term disability and disadvantage including reduced opportunities in education and employment, communication impairment and burden on caregivers (Stephens et al. 2014). Evidence shows that acquired brain injury (from substance misuse or external trauma) leading to cognitive impairment is associated with contact with the criminal justice system (Haysom et al. 2014).

Findings

Over the period 2008–12, in the five jurisdictions with adequate data for reporting (NSW, Qld, WA, SA and the NT combined), the third most common cause of death among Indigenous Australians was external causes (injury and poisoning). Rates for Indigenous males were twice the rate for females. There has been no significant change since 1998. Indigenous Australians died from external causes at twice the non-Indigenous rate. The most common external causes of Indigenous mortality were intentional self-harm (561 deaths), followed by transport accidents (452 deaths), accidental poisoning (196 deaths) and assault (189 deaths). Indigenous Australians died from intentional self-harm (suicide) and transport accidents at 1.9 and 2.5 times the rate of non-Indigenous Australians respectively. Indigenous Australians died from assault at 7 times the non-Indigenous rate.

Based on the 2012–13 Health Survey, 19% of Indigenous Australians had experienced injuries in the 4 weeks prior to the survey. Among Indigenous Australians who were injured, the most common events causing injury were falls (45%) and hitting or being hit by something (19%). The main types of injuries were open wounds (35%) and bruising (28%). Action was taken by 46% of those injured with 18% attending a community clinic or hospital. Of those who had their injuries treated, 11% were injured while under the influence of alcohol/drugs (for those aged 15 years and over). Of those with a long-term health condition, 27% reported that it was as a result of injury or an accident. In 2012–13, 7% of Indigenous Australians

aged 15 years and over experienced stress due to a serious accident, 1.8 times the non-Indigenous rate.

Hospitalisations for injury reflect hospital attendances for the condition rather than the extent of the problem in the community. Injury was the second most common reason for hospitalisation for Indigenous Australians (54,079 separations) in the two years to June 2013 (after hospitalisations for dialysis). The hospitalisation rate for injury among Indigenous Australians was 1.8 times the non-Indigenous rate. For non-Indigenous Australians, hospitalisation rates for injury were much higher for those aged 65 years and over than in younger age groups. This reflects higher rates of falls for elderly people. There was a different pattern for Indigenous Australians: injury had a greater impact on the young and middle-aged; and rates peaked in early adult age groups. Rates varied across jurisdictions, with the highest rates in WA and the NT.

Hospitalisation rates for injury among Indigenous Australians have increased by 32% since 2004–05 in the six jurisdictions with adequate data for trend reporting (NSW, Vic, Qld, WA, SA and the NT combined). Rates increased faster for Indigenous Australians compared with non-Indigenous Australians, resulting in an increase in the difference between Indigenous and non-Indigenous rates.

Assault was the leading cause of injury requiring hospitalisation for Indigenous Australians and was responsible for 20% and 27% of injury hospitalisations for males and females respectively in the two years to June 2013. After adjusting for age differences between the two populations, hospitalisation rates for injuries caused by assault were much higher for Indigenous men (8 times as high) and women (32 times) than for non-Indigenous men and women. Rates of hospitalisation for assault for Indigenous Australians were highest in remote (28 per 1,000) and very remote areas (23 per 1,000) and lowest in major cities and inner regional areas (both 4 per 1,000). Indigenous Australians are also more likely to be re-admitted to hospital as a result of interpersonal violence than other Australians (Berry et al. 2009; Meuleners et al. 2008). Hospitalisation rates for Indigenous Australians for other causes of injury are between 1 and 2.6 times as high as those for non-Indigenous Australians. Other leading causes of injury include accidental falls (19%), exposure

to inanimate mechanical forces (12%), complications of medical care (12%) and transport accidents (9%).

Henley & Harrison (2013), found that between 2005–06 to 2009–10, 60% of transport-related fatal injuries among Indigenous Australians involved car occupants and 26% involved pedestrians. Indigenous Australians were 3.3 times as likely as non-Indigenous Australians to die of a transport-related injury as a car occupant.

Based on a survey of GPs collected from April 2008 to March 2013, injuries accounted for 5% of all problems managed by GPs among Indigenous patients. The rate of injuries managed per 1,000 GP encounters was similar between Indigenous Australians (66 per 1,000 encounters) and other Australians (65 per 1,000 encounters). The most common injuries managed for both populations were musculoskeletal and skin injuries.

Implications

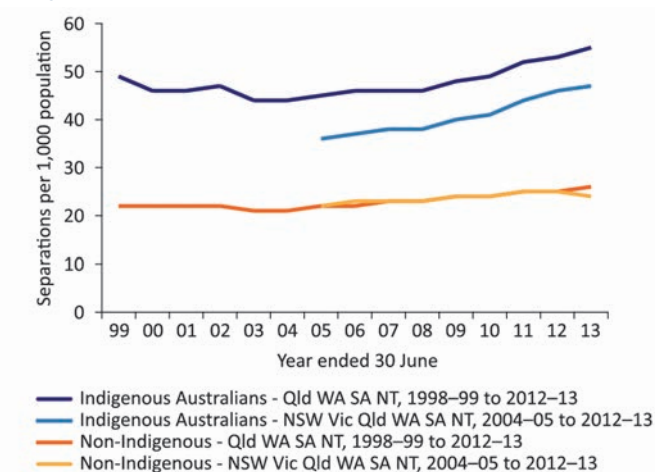
Among Indigenous Australians, intentional self-harm is the leading cause of death from external causes, followed by transport accidents. The relatively high rates of intentional self-harm highlight the need for interventions focused on social and emotional wellbeing (see measure 1.18). Assault is the most important injury prevention issue in relation to hospitalisations, followed by falls. Alcohol and substance use has been found to be a factor in suicide deaths (Robinson et al. 2011) and transport accidents (West et al. 2014) as well as assault (Mitchell 2011).

There is a need to ensure that injury prevention efforts are evidence based, relevant and address systemic issues that reduce people's capacity to make health-enhancing choices (Anderson 2008; Berger et al. 2009; Berry et al. 2009).

An objective of the *National Road Safety Strategy 2011–2020* is to ensure Indigenous Australians have substantially improved access to graduated driver licensing and to vehicles with high safety ratings. As a priority, the strategy calls for the implementation of programmes that help Indigenous learner drivers gain more driving practice and for road safety education programmes that are locally relevant and culturally appropriate.

**Figure 1.03-1**

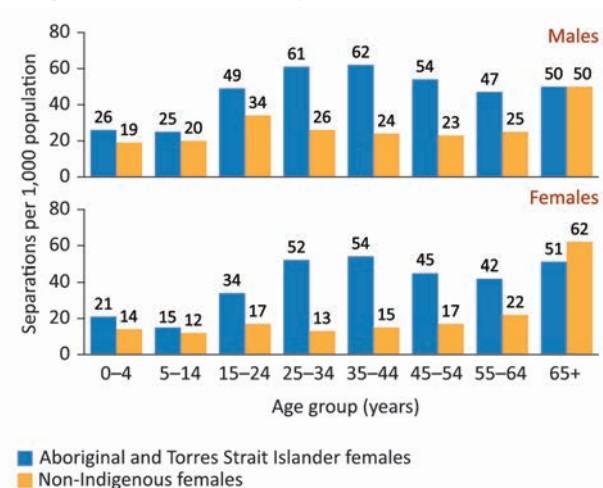
Age-standardised hospitalisation rates for injury and poisoning, by Indigenous status, 1998–99 to 2012–13



Source: AIHW analysis of National Hospital Morbidity Database

Figure 1.03-2

Age-specific hospitalisation rates for injury and poisoning, by Indigenous status and sex, July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database

Table 1.03-1

Age-standardised hospitalisations for external causes of injury and poisoning for Aboriginal and Torres Strait Islander peoples by sex and cause, July 2011–June 2013

External Cause:	Males			Females			Persons		
	%	Rate ^(a)	Ratio	%	Rate ^(a)	Ratio	%	Rate ^(a)	Ratio
Assault	19.5	9.5	8.0*	26.7	10.1	32.4*	22.7	9.8	13.0*
Falls	19.7	10.5	1.4*	18.9	9.4	1.1*	19.3	10.0	1.2*
Exposure to inanimate mechanical forces	15.3	6.3	1.4*	8.7	2.9	1.9*	12.4	4.6	1.5*
Complications of medical and surgical care	10.0	6.8	1.4*	14.7	7.5	1.7*	12.1	7.2	1.6*
Transport accidents	10.6	4.4	1.3*	6.0	2.0	1.2*	8.5	3.2	1.2*
Intentional self-harm	5.1	2.5	2.9*	10.1	3.6	2.3*	7.3	3.0	2.5*
Other accidental exposures	7.0	3.3	1.0*	5.3	2.1	1.1*	6.2	2.7	1.0*
Exposure to animate mechanical forces	5.4	2.3	2.2*	2.8	1.0	1.9*	4.3	1.6	2.0*
Exposure to electric current/smoke/fire/animals/nature	3.5	1.5	2.3*	2.7	0.9	2.5*	3.1	1.2	2.3*
Accidental poisoning/exposure to noxious substances	2.2	1.0	2.3*	2.5	0.9	2.4*	2.3	0.9	2.4*
Other external causes	1.7	0.8	3.1*	1.7	0.7	3.0*	1.7	0.7	3.1*
Total	100.0	49.0	1.7*	100.0	41.0	1.9*	100.0	45.0	1.8*

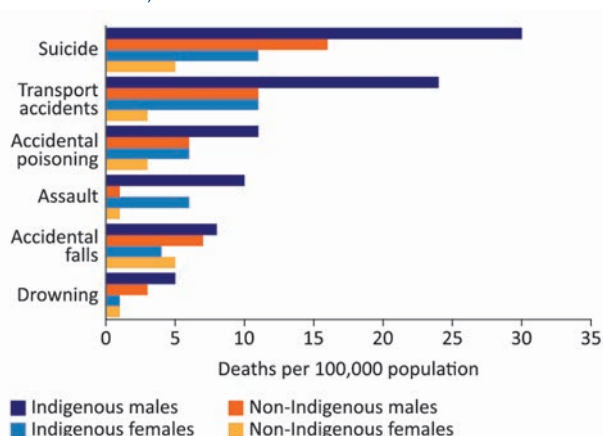
Note: Per 1,000 persons, directly age-standardised using the Australian 2001 standard population.

* Represents results with statistically significant differences in the Indigenous/other comparisons at the $p < .05$ level.

Source: AIHW analysis of National Hospital Morbidity Database

Figure 1.03-3

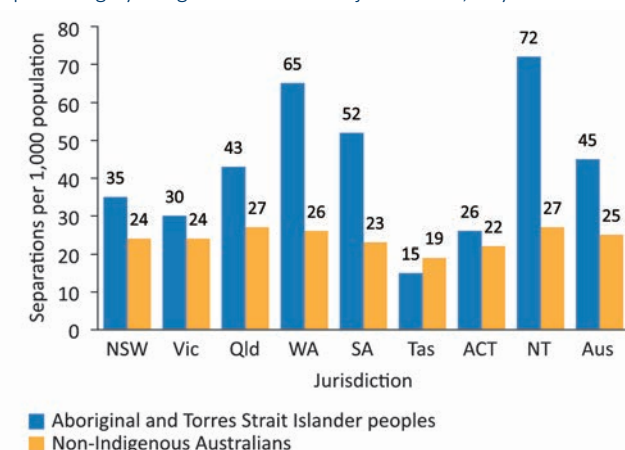
Age-standardised death rates for external causes, by Indigenous status and sex, 2008–12



Source: ABS and AIHW analysis of National Mortality Database

Figure 1.03-4

Age-standardised hospitalisations for external causes of injury and poisoning by Indigenous status and jurisdiction, July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database



1.04

Respiratory disease

Why is it important?

Aboriginal and Torres Strait Islander peoples experience considerably greater mortality and morbidity from respiratory diseases such as asthma, chronic obstructive pulmonary disease (COPD), pneumonia and invasive pneumococcal disease than other Australians. Chronic respiratory diseases were responsible for 9% of the total disease burden among Indigenous Australians in 2003. COPD and asthma caused 43% and 38% of this burden respectively. The burden from chronic respiratory diseases in Indigenous Australians occurred at a rate 2.5 times that of the total Australian population (Vos et al. 2007).

High rates of pneumonia are associated with factors such as respiratory diseases, poor living conditions, malnutrition and smoking and alcohol misuse (Lim et al. 2014; Grau et al. 2014). Young children and those in older age groups are most at risk. Indigenous children in the NT have rates of radiologically confirmed pneumonia that are among the highest in the world (O'Grady et al. 2010).

Asthma can impact on physical functioning and attendance at school and work. It commonly coexists with other chronic conditions and is often associated with low socio-economic status and poorer quality of life. The mortality rate due to asthma in Australia is high on an international scale. Deaths due to asthma occur in all age groups, but the risk of dying from asthma increases with age. Asthma is more common among Indigenous Australians and they are at greater risk of dying from asthma than other Australians.

COPD is a serious lung disease that mainly affects older people and is associated with smoking, environmental pollutants and/or childhood infectious diseases (AIHW 2014n). Currently, 44% of Indigenous Australians aged 15 years and over smoke, 2.5 times the non-Indigenous rate. This is higher in remote areas (53%) than non-remote areas (41%) (see measure 2.15). COPD is characterised by chronic obstruction of lung airflow that interferes with breathing. Previous studies have found that among Indigenous Australians aged 55 years and over hospitalised for COPD, cancer is a commonly associated condition (AIHW 2011b).

Findings

Between 2008 and 2012, respiratory disease caused 888 deaths among Indigenous Australians in NSW, Qld, WA, SA and the NT combined (8% of Indigenous deaths). This was around twice the non-Indigenous rate. For respiratory deaths among Indigenous Australians, 53% were attributed to COPD, 4% to asthma and 19% to pneumonia and influenza. There has been a significant decline in respiratory disease mortality rates among Indigenous Australians since 1998, and also a significant decline in the gap.

Self-reported data on respiratory diseases is available from the 2012–13 Health Survey. In 2012–13, 31% of Indigenous Australians reported long-term respiratory diseases that had lasted 6 months or more. The most commonly reported respiratory condition was asthma (18%) followed by chronic sinusitis (8%) and COPD (4%). Asthma has increased since 2004–05 from 15% of the Indigenous population to 18% in 2012–13. Indigenous females reported higher rates of respiratory diseases (34%) than males (28%). Indigenous Australians living in non-remote areas reported higher rates (35%) than those in remote areas (18%). Rates varied by jurisdiction from 13% in the NT to 44% in the ACT. There was also an increase with age, ranging from 21% for 0–14 year olds to 43% in the 45–54 year group. After adjusting for differences in the age structure of the two populations, Indigenous Australians were 2.5 times as likely to report COPD and 1.9 times as likely to report asthma as non-Indigenous Australians.

Although hospitalisation statistics reflect separations from hospital rather than the prevalence or incidence of diseases in the community, they are a measure of the occurrence of conditions requiring acute care. Between July 2011 and June 2013, there were 42,209 hospitalisations for respiratory disease among Indigenous Australians (10% of Indigenous hospitalisations excluding dialysis). After adjusting for differences in the age structure of the two populations, the hospitalisation rate for respiratory disease was 2.4 times as high for Indigenous Australians as it was for non-Indigenous Australians. The greatest differences occurred in the older (65 years and over, and 55–64 years) age groups. Young children (0–4 years) had the second highest hospitalisation rates for Indigenous Australians (79 per 1,000), and the highest rates for non-Indigenous Australians (46 per 1,000).

Hospitalisation rates for respiratory diseases were lowest in Tasmania (13 per 1,000) and highest in the NT (67 per 1,000). Rates in remote areas were more than 3 times the rates in major cities for Indigenous Australians but rates were similar across areas for non-Indigenous Australians. Since 2004–05, there has been a 16% increase in respiratory disease hospitalisation rates in the six jurisdictions with adequate data for trend reporting (NSW, Vic, Qld, WA, SA and the NT combined). Rates for Indigenous children aged 0–4 years increased by 23% over the same period.

In the period July 2011 to June 2013, COPD (29%) was the most common type of respiratory disease for which Indigenous Australians were hospitalised. This was followed by pneumonia (23%) and asthma (11%). The greatest differences between the two populations were for COPD and pneumonia.

In the period 2011–13 there were 745 notifications of invasive pneumococcal disease for Indigenous Australians, representing 14% of all cases notified that year.

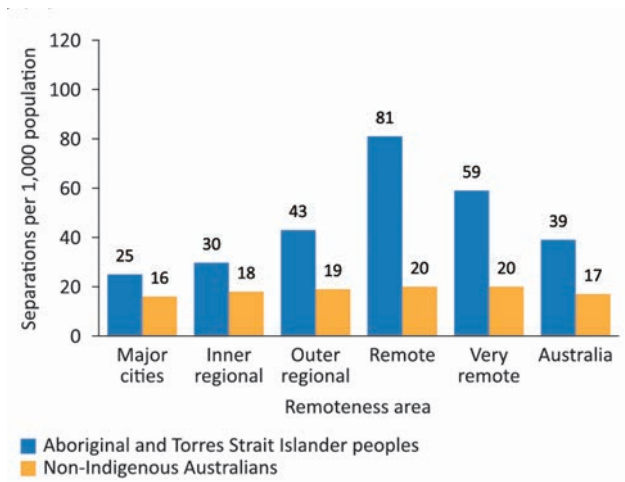
Implications

While mortality rates for respiratory disease among Indigenous Australians have fallen, hospitalisation rates have increased in recent years and self-report data suggests a much higher prevalence of respiratory disease among Indigenous Australians compared with non-Indigenous Australians. Initiatives addressing smoking, immunisation, living conditions, overcrowding, chronic disease and access to health care are likely to contribute to improvements in respiratory disease.

The *Indigenous Australians' Health Programme*, which commenced 1 July 2014, (consolidating primary health care base funding, child and maternal health programmes, *Stronger Futures in the Northern Territory* and the *Aboriginal and Torres Strait Islander Chronic Disease Fund*) focuses on local needs to support prevention and management of diseases including respiratory disease (see Policies and Strategies section). Additionally, the Australian Government provides GP health assessments, follow-on care and incentive payments for improved chronic disease management for Indigenous Australians under the MBS, along with cheaper medicines through the PBS.

**Figure 1.04-1**

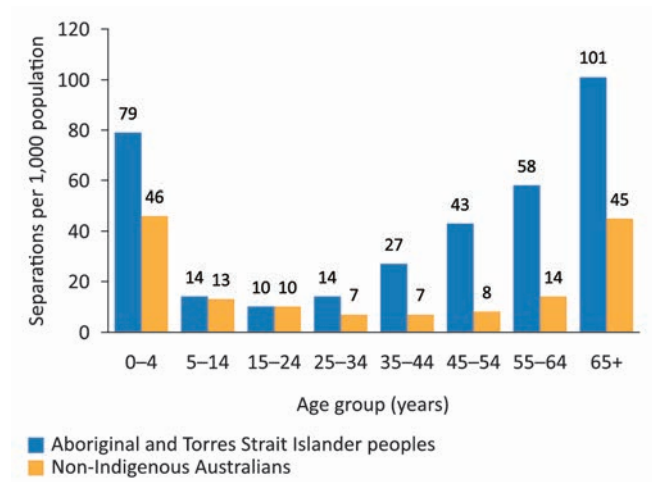
Age-standardised hospitalisation rates for respiratory disease by Indigenous status and remoteness, July 2011–June 2013.



Source: AIHW analysis of National Hospital Morbidity Database

Figure 1.04-2

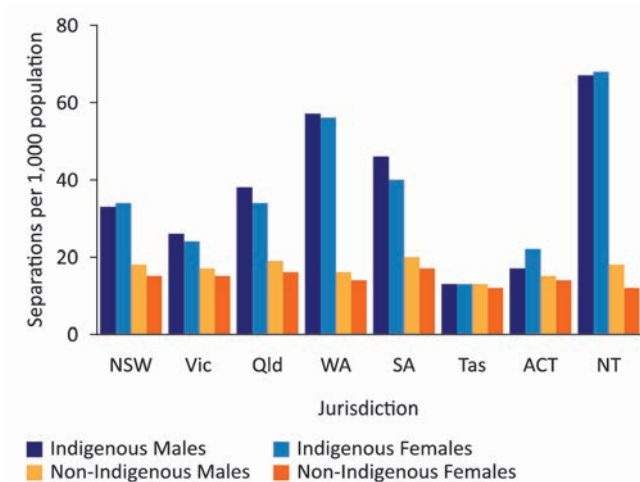
Age-specific hospitalisation rates for respiratory disease, by Indigenous status, July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database

Figure 1.04-3

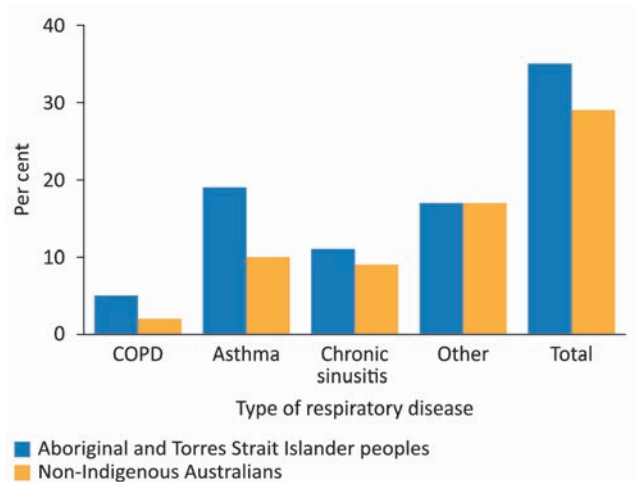
Age-standardised hospitalisation rates for respiratory disease, by Indigenous status, sex, and jurisdiction, July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database

Figure 1.04-4

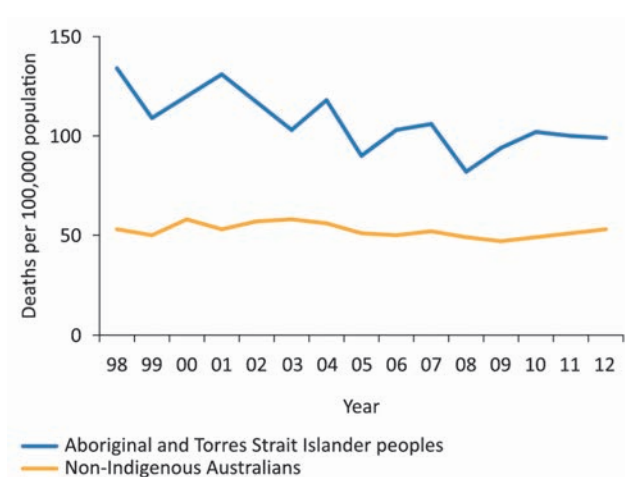
People reporting respiratory disease (age-standardised), by Indigenous status, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.04-5

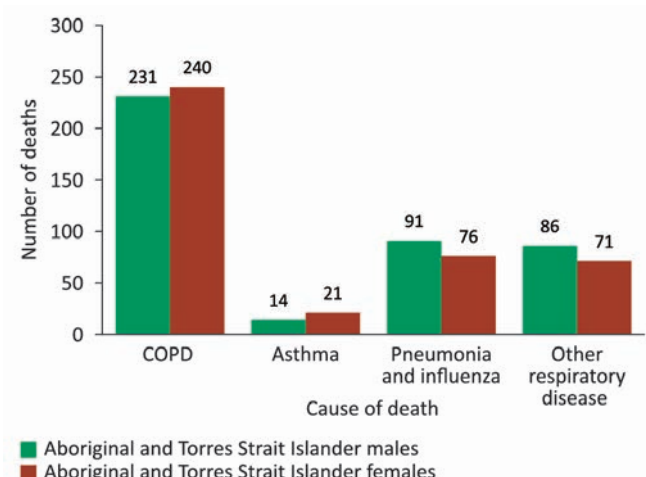
Age-standardised mortality rates, respiratory diseases, by Indigenous status, NSW, Qld, WA, SA & NT, 1998 to 2012



Source: ABS and AIHW analysis of National Mortality Database

Figure 1.04-6

Deaths of Indigenous Australians by type of respiratory disease, by sex, NSW, Qld, WA, SA and the NT, 2008–12



Source: ABS and AIHW analysis of National Mortality Database



1.05

Circulatory disease

Why is it important?

Circulatory disease is a major cause of morbidity and mortality among Australians. In recent decades, Australian mortality rates from circulatory disease have fallen, due to reduced smoking; improved management of high blood pressure and heart disease; and improved treatments for heart attack and stroke. However, increasing levels of obesity and diabetes threaten to slow or reverse these improvements.

Circulatory disease is more common among Indigenous Australians and tends to occur at much younger ages (Katzenellenbogen et al. 2014; Bradshaw et al. 2010). Circulatory disease accounts for 17% of the burden of disease in Indigenous Australians (Vos et al. 2007) and 25% of mortality (see measure 1.23). Smoking levels are high among Indigenous adults, although there has been a significant reduction in recent times (see measure 2.15). Risk factors such as physical inactivity, obesity, diabetes and high blood pressure are more prevalent among Indigenous Australians than non-Indigenous Australians. Low socio-economic status is associated both with greater risk of developing circulatory disease and with lower chance of receiving appropriate treatment (Beard et al. 2008; Cunningham 2010).

Findings

In 2008–12, circulatory disease was the leading cause of death among Indigenous Australians (25% of deaths), with an age-standardised death rate 1.5 times that of non-Indigenous Australians. The leading causes of Indigenous circulatory disease deaths were ischaemic heart disease (55%), followed by cerebrovascular causes such as stroke (17%). There has been a 40% decline in circulatory disease deaths among Indigenous Australians between 1998 and 2012 and a significant narrowing of the gap between Indigenous and non-Indigenous Australians. A study in the NT between 1992 and 2004 found an increase in incidence of acute myocardial infarction and at the same time an improvement in survival both prior to and after hospital admission (You et al. 2009).

Based on self-reported data from the 2012–13 Health Survey, 13% of Indigenous Australians had a circulatory condition.

This is a significant increase from 11% in 2001. Rates increased with age and 23% of those aged 25 years and over reported the condition. After adjusting for differences in the age structure of the two populations, Indigenous Australians were 1.2 times as likely to report having circulatory disease as non-Indigenous Australians. Circulatory diseases commenced at younger ages for Indigenous Australians. The greatest disparities were in the 25–54 year age groups. This disease was more common in Indigenous women (14%) than men (11%).

Indigenous Australians living in remote areas reported higher rates of circulatory disease than those in non-remote areas (18% compared with 11%). Wang et al. (2013) reported that the lifetime risk of developing heart disease among Indigenous Australians in a remote region was as high as one in two.

Analysis of the 2012–13 Health Survey found that diabetes and kidney disease were common comorbidities for circulatory disease. Around 45% of Indigenous Australians aged 15 years and over reporting diabetes (and 47% of those who reporting kidney disease) also reported having circulatory diseases. Indigenous Australians were also more likely to report having circulatory disease if they lived in the most disadvantaged areas (20%) compared with most advantaged areas (10%) and if they completed schooling to Year 9 (27%) compared with those who completed Year 12 (12%). Indigenous adults who were obese had higher rates (26%) than those who were not obese (14%).

Based on a survey of GPs from April 2008 to March 2013, approximately 8% of problems managed by GPs among Aboriginal and Torres Strait Islander peoples were circulatory conditions. After adjusting for differences in the age structure of the two populations, rates for the management of hypertension and cardiac check-ups were similar to those for other Australians, yet the management rate for ischaemic heart disease was nearly twice as high.

For the two years to June 2013, after adjusting for differences in the age structure of the two populations, the circulatory disease hospitalisation rate for Indigenous Australians was 1.5 times that of non-Indigenous Australians. Hospitalisation rates were higher for Indigenous males (18 per 1,000) than Indigenous females (15 per 1,000). Since 2004–05, there has been a 12% increase in hospitalisations for circulatory disease

in the six jurisdictions with adequate data for trend reporting (NSW, Vic, Qld, WA, SA and the NT combined). Rates among non-Indigenous Australians remained static over this period, resulting in an increase in the difference between Indigenous and non-Indigenous rates. Ischaemic heart disease was the most common type of circulatory disease resulting in hospitalisation for Indigenous Australians (40%) followed by pulmonary and other heart diseases (31%). Diabetes and kidney disease were common comorbidities with hospitalisation rates for Indigenous Australians 7.3 times the rate for other Australians when all three diseases are present (AIHW 2014j). In 2012, Indigenous Australians aged 25 years and over had an age-standardised incidence rate of heart attacks twice that of other Australians (995 compared with 408 per 100,000) (SCRGSP 2015).

Indigenous Australians were nearly half (0.6 times) as likely to receive coronary angiography and revascularisation procedures (see measure 3.06). This disparity in therapeutic procedures has been well documented (Cunningham 2002). According to one study of the NT, Indigenous Australians were less likely to receive in-patient cardiac rehabilitation, prescription of statins on discharge, and were more likely to die in the two years after discharge (Brown 2010). Randall et al. (2013) reported that over the period 2000 to 2008, Indigenous Australians in NSW had a 37% lower rate of revascularisation in the 30 days after admission with myocardial infarction compared with non-Indigenous Australians. This disparity was largely explained by the hospital of admission (hospitals in regional and rural areas had lower revascularisation rates for all patients), a higher comorbidity burden and lower rates of private health insurance. In a separate study, the same research group found that patients admitted to smaller more remote hospitals without onsite angiography had increased risk of short-term and long-term mortality (Randall et al. 2012).

Implications

Circulatory disease problems were managed by GPs at similar rates for Indigenous Australians and other Australians. Hospitalisation rates for circulatory disease were higher among Indigenous Australians but they were less likely to receive coronary procedures when in hospital than non-Indigenous Australians. High rates of mortality due to circulatory disease indicate a failure in the areas of prevention, diagnosis and



early detection, early treatment, chronic disease management, treatment and rehabilitation.

A study in the NT of avoidable mortality for Indigenous Australians between 1985 and 2004 found improvements in conditions amenable to medical care but marginal improvement for conditions responsive to preventative measures. The study noted the reduction of deaths from stroke was consistent with improved drug therapies and intensive care, dedicated stroke units and surgical procedures (Li et al. 2009).

The *Indigenous Australians' Health Programme*, which commenced 1 July 2014, provides chronic disease prevention and management through comprehensive primary health care and outreach specialist and allied health services (see Policies and Strategies section).

Under the Health and Hospitals Fund 2011 Regional Priority Round, more than

\$6 million is being provided in the NT to establish an Integrated Cardiac Network Service. This service will link Darwin, Alice Springs, Tennant Creek, Katherine and Gove as well as well-equipped cardiac care outreach and rehabilitation services to diagnose and manage coronary disease, rheumatic heart disease, arrhythmias, and heart failure.

The *National Recommendations for the Better Cardiac Care for Aboriginal and Torres Strait Islander People Post-Forum Report*, May 2014, focuses on five priority areas, including: early cardiovascular risk assessment and management; timely diagnosis of heart disease and heart failure; guideline-based therapy for acute coronary syndrome; optimisation of health status and provision of ongoing preventive care; and strengthening the diagnosis, notification and follow-up of rheumatic

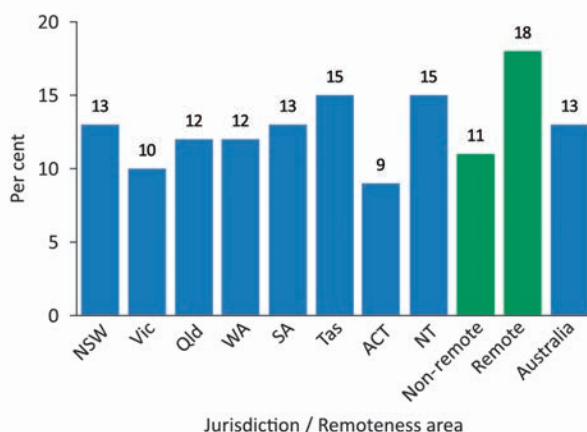
heart disease. These recommendations will be tested through pilots in some jurisdictions over the coming years.

The Australian Government-funded ESSENCE project 'essential service standards' articulates what elements of care are necessary to reduce disparity in access and outcomes for circulatory disease. In addition, the Australian Government funds the Lighthouse project, which aims to drive systemic change in the acute care sector to improve care and outcomes for Indigenous Australians experiencing acute coronary syndrome.

Approaches that are culturally competent, family-centred, and encourage partnerships with Indigenous Australians to work collaboratively across the continuum of prevention and care, have been identified as key points for success (NHMRC 2005).

Figure 1.05-1

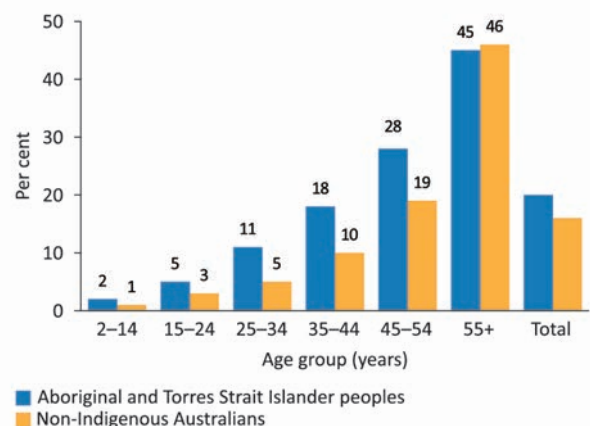
Self-reported circulatory disease, Indigenous persons (2 years and over), by jurisdiction and remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.05-2

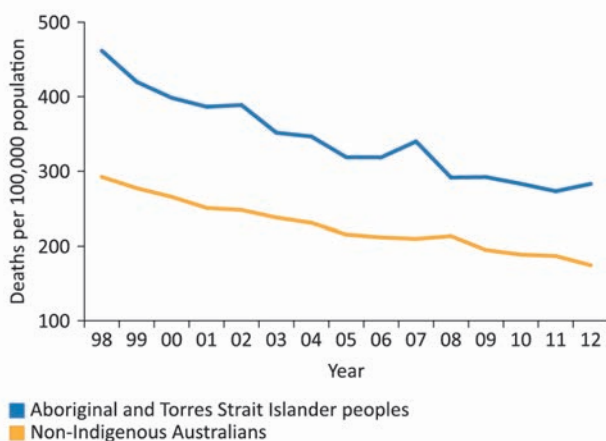
Self-reported heart and circulatory disease, by age and Indigenous status, 2012–13



Note: Total is age-standardised
Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.05-3

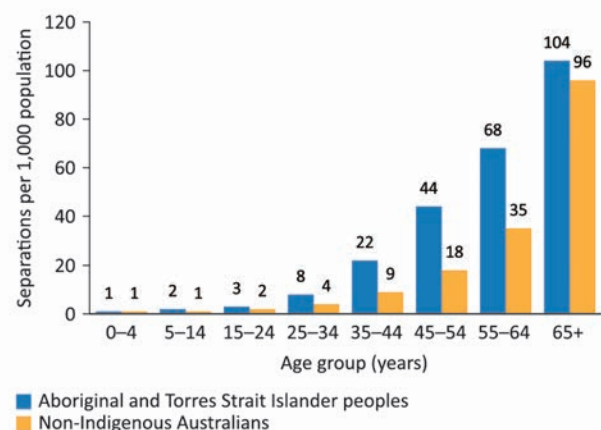
Age-standardised death rates for circulatory disease, by Indigenous status, 1998 to 2012



Source: ABS and AIHW analysis of National Mortality Database

Figure 1.05-4

Age-specific hospitalisation rates for circulatory disease, by Indigenous status, July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database



1.06

Acute rheumatic fever and rheumatic heart disease

Why is it important?

Acute rheumatic fever (ARF) is a disease caused by an autoimmune reaction to an infection with the bacterium group A streptococcus (GAS). ARF is a short illness, but can result in permanent damage to the heart—rheumatic heart disease (RHD). A person who has had ARF once is susceptible to repeated episodes, which can increase the risk of RHD. Following an initial diagnosis of ARF, patients require long-term treatment, including long-term antibiotic treatment to avoid further infections that may damage the heart (AIHW 2013g; RHD Australia 2012). Heart surgery may be required to repair heart valve damage resulting from RHD.

ARF and RHD are associated with environmental factors such as poverty and poor living conditions. ARF and RHD are now rare diseases in populations with good living conditions and easy access to quality medical care (Parnaby et al. 2010). Aboriginal and Torres Strait Islander peoples will remain at risk of ARF/RHD while socio-economic disadvantage and barriers to accessing health care persist.

Rheumatic Heart Disease Control Programme registers have been established in the NT, Qld and WA with SA currently under development. The NT RHD register has been operating in the Top End since 1997 and in Central Australia since 2001 and currently provides the strongest source of data on ARF and RHD. Comparisons between jurisdictions should not be made because registers are at different stages of coverage and completion. A number of smaller, geographically limited studies have also been conducted.

Findings

Acute rheumatic fever

In the period 2010–13, there were 743 new or recurrent cases of ARF in the NT, WA and Qld combined. The majority (approximately 94%) were for Aboriginal and Torres Strait Islander peoples. ARF is largely restricted to older children and young adults: among Aboriginal and Torres Strait Islander peoples, 52% of cases occurred in children aged 5–14 years, with a further 27% in the 15–24 years age group. Recorded rates of ARF for Indigenous Australians were 1.2 per 1,000 in the NT, 0.6 per 1,000 in WA

and 0.3 per 1,000 in Qld. In the NT, the rate has nearly doubled between 2006 and 2013, although this change is not statistically significant.

ARF is not exclusively a disease associated with remote areas. A small study of 26 hospitalisations for ARF to a paediatric hospital in Sydney between 2000 and 2008 found that the majority of these cases were Pacific Islander and Aboriginal and Torres Strait Islander children from suburban Sydney. The authors found that 69% of the children with this disease were from families in the 2 most disadvantaged quintiles of socio-economic advantage/disadvantage. Additionally, barriers to timely diagnosis were identified in 81% of children, including delayed presentation and delayed referral (Smith et al. 2011).

Rheumatic heart disease

In December 2013, there were 1,474 Aboriginal and Torres Strait Islander people recorded as having RHD in the NT, and 305 in WA. The corresponding figure for Qld was 921 as at July 2014. The prevalence rate of RHD in Indigenous Australians was 20.6 per 1,000 in the NT, 4.5 per 1,000 in Qld and 3.3 per 1,000 in WA. Females comprised 65% of Indigenous Australians in the NT with RHD. After adjusting for differing population age structures, the prevalence of RHD was 39 times as high among Indigenous Australians as it was among other residents of the NT and 206 times higher for Indigenous Australians in Queensland. Data for other Australians is not currently available from the WA register.

Between 2006 and 2013 there was a 41% decline in new registrations of RHD among Indigenous Australians in the NT. There was an increase in new registrations of RHD in WA between 2010 and 2013 though this is likely to be at least in part due to an increase in improved diagnosis and registration.

A recent audit of control programmes in far North Queensland and the Kimberley region of WA found that 1 in 5 patients with RHD had been prescribed an anti-coagulant, 55% had received a specialist review within recommended timeframes, 61% had a timely echocardiogram and 22% had undergone valve surgery. Of patients who were recommended benzathine penicillin secondary prophylaxis, only 18% received more than 80% of scheduled doses in the 12 months prior (Rémond et al. 2013).

Indigenous Australians were hospitalised for ARF/RHD at rates of around 7 times that of other Australians (0.6 per 1,000 compared with 0.1 per 1,000 for non-Indigenous Australians in the period 2011–12 to 2012–13). Rates were highest in the NT (2.7 per 1,000) and lowest in NSW (0.2 per 1,000). Between 2007–08 and 2009–10 rates of hospitalisation for Indigenous Australians were highest in the 10–14 year age group whereas for other Australians rates increased with age and were highest in the 65 years and over group. Indigenous Australians hospitalised for ARF/RHD were less likely than other Australians to have had at least one heart valve procedure performed (28% compared with 49%) (AIHW 2013g).

Implications

Rates of ARF and RHD among Indigenous Australians are among the highest in the world and large inequalities exist between Indigenous and other Australians (AIHW 2013g).

Interventions that focus on improving housing, socio-economic circumstances and health care will be important for preventing and managing these conditions.

Improved access to appropriate treatment for pharyngitis/tonsillitis is likely to reduce the rate of ARF. While it has been suggested that GAS skin infections may be a risk factor for ARF, particularly in Australia, there is currently insufficient evidence to justify recommending skin health programmes exclusively for the prevention of ARF. More research is needed on the association between GAS skin infections and ARF (RHD Australia 2012).

There is considerable scope for the secondary prevention of ARF/RHD through the implementation of disease registers and control programmes, education of patients and their families, treatment with penicillin prophylaxis, and regular clinical review and access to specialists and hospital care.

The Better Cardiac Care for Aboriginal and Torres Strait Islander People project is an initiative of the Australian Health Ministers' Advisory Council and is currently being led by NSW Health. One of the priority areas identified for this work includes strengthening the diagnosis, notification and follow-up of RHD.

The Essential Service Standards for Equitable National Cardiovascular Care for Aboriginal and Torres Strait Islander people (ESSENCE) project



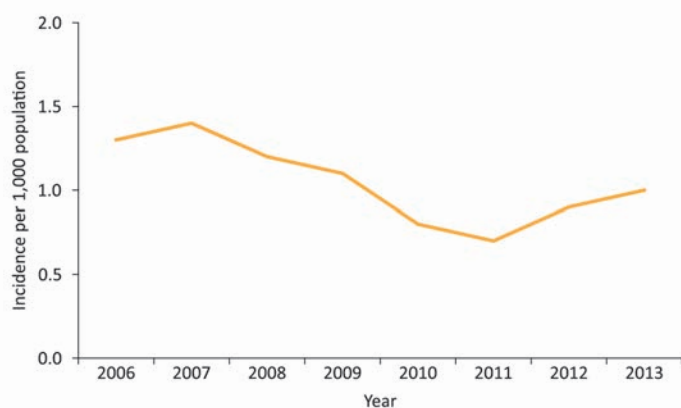
developed 'essential service standards', defining elements of care and service delivery that should be accessible to all people with, or at risk of CVD, regardless of their location, ethnicity, economic circumstances or gender. The standards articulate what elements of care are necessary to reduce disparity in access and outcomes for five critical cardiovascular conditions, including RHD. ESSENCE II follows the completion of ESSENCE I in 2012 and is developing and piloting a primary health cardiovascular care resource kit (due for completion April 2015) and a set of key performance indicators.

RHD registers are a central element of secondary disease prevention programmes to prevent recurrence of ARF and reduce the occurrence or severity of RHD. Control programmes improve case detection, and are the most effective way of improving compliance to treatment regimes and supporting clinical follow-up of people with RHD. The Australian Government is currently providing funding for register and control programmes in the NT, WA, Qld and SA, and a National Coordination Unit, RHDAustralia. Under the *Rheumatic Fever Strategy* (RFS) funding is provided to help improve the detection and diagnosis of ARF and RHD, and improve

access to the antibiotic injections that prevent repeated attacks of ARF. The RFS provides funding of \$11.6 million over four years (2012–13 to 2015–16) for state-based register and control programmes, and \$2.6 million over three years (2012–13 to 2014–15) for the National Coordination Unit (NCU). The NCU supports the state-based programmes to operate in accordance with best practice clinical guidelines, develops national education, training and self-management resources, and is developing a performance monitoring system to improve the collection of data and reporting on incidence and prevalence.

Figure 1.06-1

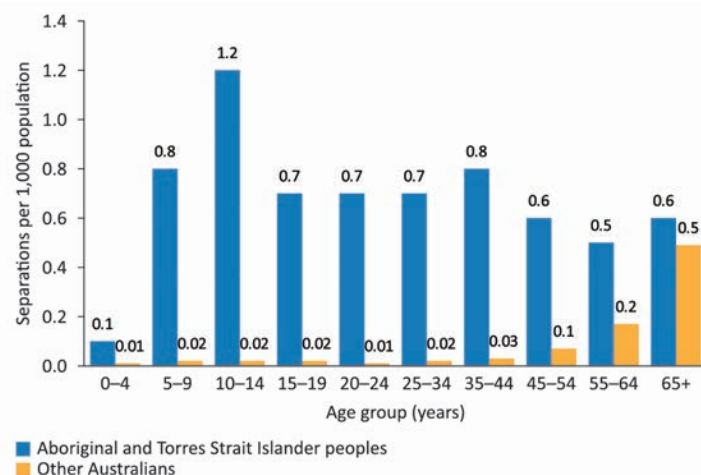
Rate of new rheumatic heart disease registrations for Aboriginal and Torres Strait Islander peoples, Northern Territory 2006 to 2013



Source: AIHW analysis of Northern Territory Rheumatic Heart Disease Program Register

Figure 1.06-2

Hospitalisations with a principal diagnosis of acute rheumatic fever or rheumatic heart disease, by age and Indigenous status, 2007–08 to 2009–10



Source: National Hospital Morbidity Database (AIHW 2013g)



1.07

High blood pressure

Why is it important?

High blood pressure, also referred to as hypertension, is a major risk factor for stroke, coronary heart disease, heart failure, kidney disease, deteriorating vision and peripheral vascular disease leading to leg ulcers and gangrene.

The National Heart Foundation of Australia defines high blood pressure as a systolic blood pressure greater than 140 mmHg and/or diastolic pressure greater than 90 mmHg and/or patient receiving medication for high blood pressure (NHF 2010). Major risk factors for high blood pressure include increasing age, poor diet (particularly high salt intake), obesity, excessive alcohol consumption, and insufficient physical activity (AIHW 2011c; WHO 2013). A number of these risk factors are more prevalent among Indigenous Australians (see measures in Health Behaviours).

A study of Indigenous Australians living in urban WA found that, after controlling for other cardiovascular risk factors, those with high blood pressure were twice as likely to die or be hospitalised due to a cardiovascular event (Bradshaw et al. 2009). It is estimated that high blood pressure is responsible for 6% of the health gap between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians (Vos et al. 2009; Vos et al. 2007).

While for some people, the propensity to develop high blood pressure appears to be inherited, it can often be prevented or controlled by leading an active and healthy life, remaining fit, avoiding obesity and diabetes and, if necessary, taking regular medication (Semlitsch et al. 2013; Bunker 2014; NHF 2010). For those with high blood pressure, treatment with long-term medication can reduce the risk of developing complications, although, not necessarily to the levels of unaffected people (AIHW 2011c). Reducing the prevalence of high blood pressure is one of the most important means of reducing serious circulatory diseases, which are the leading cause of death among Indigenous Australians (see measure 1.23).

Findings

Based on both measured and self-reported data from the 2012–13 Health Survey, 27% of Indigenous adults had high blood pressure. Rates increased with age and were higher in remote areas (34%) than non-remote areas (25%).

Twenty per cent of Indigenous adults had current measured high blood pressure. Of these adults, 21% also reported diagnosed high blood pressure. Most Indigenous Australians with measured high blood pressure (79%) did not know they had the condition; this proportion was similar among non-Indigenous Australians. Therefore, there are a number of Indigenous adults with undiagnosed high blood pressure who are unlikely to be receiving appropriate medical advice and treatment. The proportion of Indigenous adults with measured high blood pressure who did not report a diagnosed condition decreased with age and was higher in non-remote areas (85%) compared with remote areas (65%). In 2012–13, 10% of Indigenous adults reported they had a diagnosed high blood pressure condition. Of these, 18% did not have measured high blood pressure and therefore are likely to be managing their condition.

Indigenous males were more likely to have high measured blood pressure (23%) than females (18%). The survey showed that an additional 36% of Indigenous adults had pre-hypertension (blood pressure between 120/80 and 140/90 mmHg). This condition is a signal of possibly developing hypertension requiring early intervention.

In 2012–13, after adjusting for differences in the age structure of the two populations, Indigenous adults were 1.2 times as likely to have high measured blood pressure as non-Indigenous adults. For Indigenous Australians, rates started rising at younger ages and the largest gap was in the 35–44 year age group.

Analysis of the 2012–13 Health Survey found a number of associations between socio-economic status and measured and/or self-reported high blood pressure. Indigenous Australians living in the most relatively disadvantaged areas were 1.3 times as likely to have high blood pressure (28%) as those living in the most relatively advantaged areas (22%). Indigenous Australians reporting having completed schooling to Year 9 or below were 2.1 times as likely to have high blood pressure (38%) as those who completed Year 12 (18%). Additionally, those with obesity were 2 times as likely to have high blood pressure (37% vs 18%). Those reporting fair/poor health were 1.8 times as likely as those reporting excellent/very good/good health to be have high blood pressure (41% vs 22%). Those reporting having

diabetes were 2.2 times as likely to have high blood pressure (51% vs 23%), as were those reporting having kidney disease (57% vs 26%).

One study in selected remote communities found high blood pressure rates 3–8 times the general population (Hoy et al. 2007).

Most diagnosed cases of high blood pressure are managed by GPs or medical specialists. When hospitalisation occurs it is usually due to cardiovascular complications resulting from uncontrolled chronic blood pressure elevation. During the two years to June 2013, hospitalisation rates for hypertensive disease were 2.4 times as high for Aboriginal and Torres Strait Islander peoples as for non-Indigenous Australians. Among Aboriginal and Torres Strait Islander peoples, hospitalisation rates started rising at younger ages with the greatest difference in the 55–64 year age group. This suggests that high blood pressure is more severe, occurs earlier, and is not controlled as well for Indigenous Australians. As a consequence, severe disease requiring acute care in hospital is more common.

GP survey data collected from April 2008 to March 2013 suggest that high blood pressure represented 4% of all problems managed by GPs among Indigenous Australians. After adjusting for differences in the age structure of the two populations, rates for the management of high blood pressure among Indigenous Australians were similar to those for other Australians.

In December 2013, Australian Government-funded Indigenous primary health care organisations provided national Key Performance Indicators data on around 28,000 regular clients with Type 2 diabetes. In the six months to December 2013, 64% of these clients had their blood pressure assessed and 44% had results in the recommended range (AIHW 2014w).

Implications

The prevalence of measured high blood pressure among Indigenous adults was estimated as 1.2 times as high as for non-Indigenous adults and hospitalisation rates were 2.4 times as high, but high blood pressure accounted for a similar proportion of GP consultations for each population. This suggests that Indigenous Australians are less likely to have their high blood pressure diagnosed and less likely to have it well controlled given the



similar rate of GP visits and higher rate of hospitalisation due to cardiovascular complications.

Research into the effectiveness of quality improvement programmes in Aboriginal and Torres Strait Islander primary health care services has demonstrated that blood pressure control can be improved by a well-coordinated and systematic approach to chronic disease management (McDermott et al. 2004). Identification and management of hypertension requires access to primary health care with appropriate systems for the identification of Aboriginal and Torres Strait Islander clients and systemic approaches to health assessments and chronic illness management.

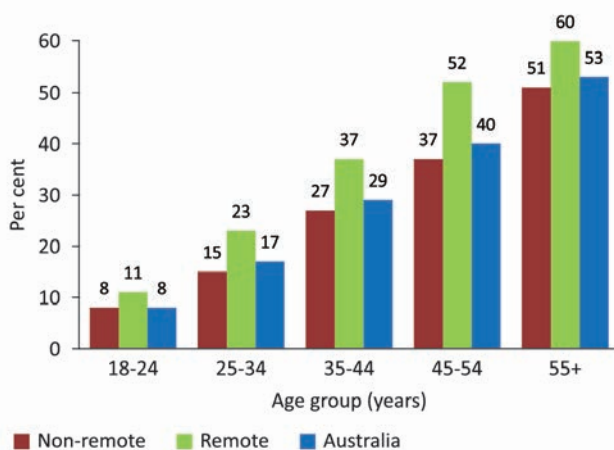
The *Indigenous Australians' Health Programme*, which commenced 1 July 2014, provides for better chronic disease prevention and management through expanded access to and coordination of comprehensive primary health care. Initiatives provided through this programme include nationwide tobacco reduction and healthy lifestyle promotion activities, a care coordination and outreach workforce based in Medicare Locals and Aboriginal Community Controlled Health Organisations and GP, specialist and allied health outreach services serving urban, rural and remote communities, all of which can be used to diagnose and assist Indigenous Australians with high blood pressure. Additionally, the

Australian Government provides GP health assessments for Indigenous Australians under the MBS, of which blood pressure measurement is one key element, with follow-on care and incentive payments for improved management, and cheaper medicines through the PBS.

The Australian Government-funded ESSENCE project 'essential service standards' articulates what elements of care are necessary to reduce disparity for Indigenous Australians for high blood pressure. This includes recommendations focusing on primary prevention through risk assessment, awareness and early identification and secondary prevention through medication.

Figure 1.07-1

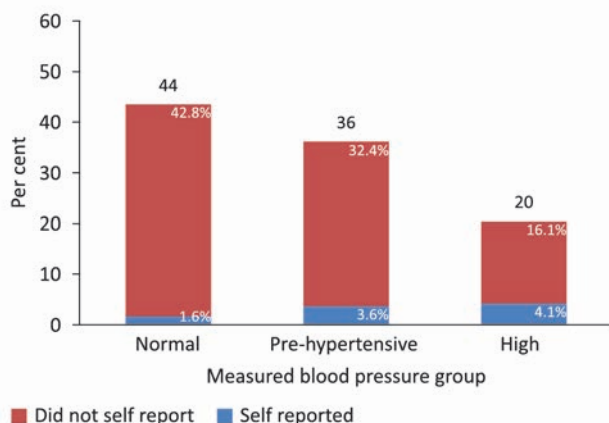
Aboriginal and Torres Strait Islander people with measured/self-reported high blood pressure by age and remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.07-2

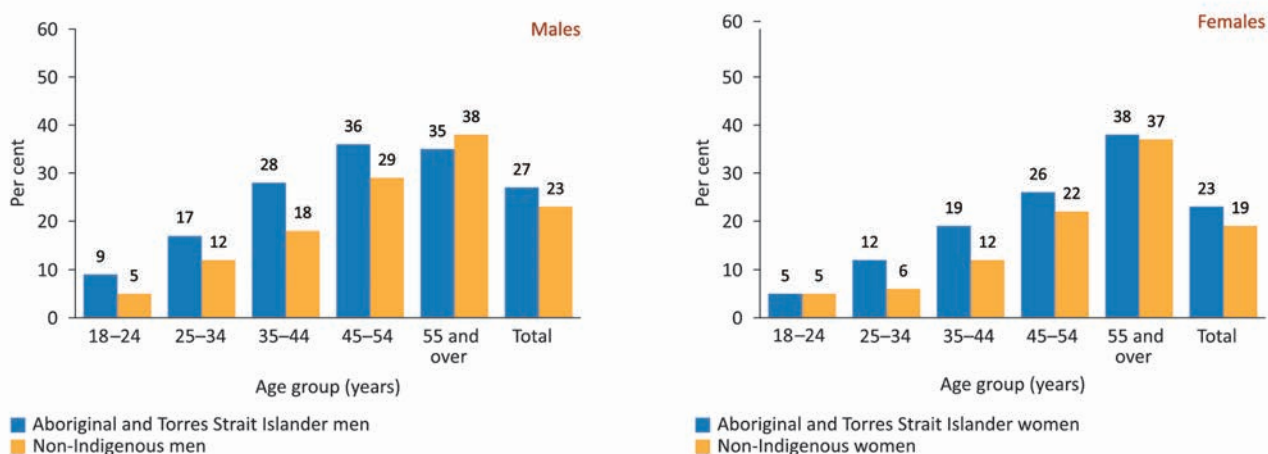
Percentage of Aboriginal and Torres Strait Islander people 18 years and over with normal, pre-hypertensive, and high measured blood pressure, by those who did and did not self-report having high blood pressure, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.07-3

Measured high blood pressure, by Indigenous status, age and sex, 2011–13



Note: Total is age-standardised.

Source: ABS and AIHW analysis of 2012–13 AATSIHS



1.08

Cancer

Why is it important?

Cancer was responsible for 8% of the total disease burden for Aboriginal and Torres Strait Islander peoples in 2003 (Vos et al. 2007). Cancer is a group of diseases in which abnormal cells proliferate and spread. These cells can form a malignant tumour that can invade and damage the area around it and spread to other parts of the body through the bloodstream or the lymphatic system. If the spread of these tumours is not controlled, they may result in death. The effectiveness of treatment and survival rates can vary between different cancers and patients.

Risk factors for high fatality cancers remain prevalent in the Aboriginal and Torres Strait Islander population, including smoking, risky drinking and poor diet (Condon et al. 2003). Indigenous Australians have a higher incidence of fatal, screen-detectable and preventable cancers and are diagnosed at more advanced stages, and often with more complex comorbidities (Cunningham et al. 2008). Compared with non-Indigenous Australians diagnosed with the same cancer, Indigenous Australians are doubly disadvantaged because they are usually diagnosed later with more advanced disease, are less likely to have treatment, and often have to wait longer for surgery than non-Indigenous patients (Hall et al. 2004; Valery et al. 2006).

Findings

Over the period 2005–09, in the four jurisdictions with data of adequate quality (NSW, Qld, WA and the NT combined), cancer incidence was slightly lower for Aboriginal and Torres Strait Islander peoples (408 per 100,000) than for non-Indigenous Australians (440 per 100,000). Cancer incidence among Aboriginal and Torres Strait Islander peoples varied by cancer type. Compared with non-Indigenous Australians, rates for lung cancer and cervical cancer were higher and rates for bowel cancer and breast cancer were lower. Based on cancers diagnosed in 1999–2007, the mean age of diagnosis was lower for Indigenous males and females compared with non-Indigenous males and females for all cancer types examined. Followed to the end of 2010, the crude cancer survival rate for Indigenous Australians over this period was lower for both Indigenous males (34%) and females (46%) compared with non-Indigenous

males (48%) and females (56%). A study of cancer registry data in NSW found a large number of cases with missing Indigenous status. Once these cases were imputed, an additional 12–13% of cancer cases were identified for Indigenous Australians (Morrell et al. 2012).

Cancer was the second leading cause of death among Indigenous Australians, accounting for 20% of deaths, during the period 2008–2012, in NSW, Qld, WA, SA and the NT combined. Over this period, cancers of the digestive organs (including bowel) and respiratory organs (including lung) were the most common causes of cancer death among Indigenous Australians (29% and 26% respectively).

In 2008–12, after adjusting for differing population age structures, Indigenous Australians were 1.3 times as likely to die from cancer as non-Indigenous Australians. Cancer was the third leading cause of the gap in death rates between Indigenous and non-Indigenous Australians (12% of the gap). The largest gaps between the two populations were in cancers of the respiratory organs, particularly bronchus and lung cancer, followed by cancers of the digestive organs. Over the period 2006 to 2012, there has been a significant increase in cancer death rates for Indigenous Australians (11%) and a significant decline for non-Indigenous Australians (5%); therefore the gap in cancer deaths between the two populations widened.

Research suggests that survival rates among non-Indigenous patients are up to 50% greater than those for Aboriginal and Torres Strait Islander patients within the first 12 months of diagnosis, dropping to a similar survival rate 2 years after diagnosis. There was no evidence that the rate of five year survival varied by remoteness or socio-economic status for Indigenous Australians (Cramb et al. 2012). Analysis of 1991–2006 data found that Indigenous women had, after adjusting for diagnostic period and socio-demographic factors, a risk of death from breast cancer 68% higher than other women with breast cancer (Cancer Australia 2012). A study on cancer survival in children found that Indigenous children were 1.6 times as likely to die within 5 years of diagnosis as other children and this remained significant following adjustment for place of residence, socio-economic disadvantage and cancer group. Stage of diagnosis was similar for both groups of children (Valery et al. 2011).

After adjusting for differences in the age structure of the two populations, GP survey data collected from April 2008 to March 2013 suggest that Indigenous Australians were less likely to have cancer managed as a problem by GPs compared with other Australians (17 per 1,000 encounters compared with 26 per 1,000 encounters).

Data from the 2012–13 Health Survey suggests that around 5,600 Indigenous Australians (1%) had cancer.

Implications

The lower survival rate for Indigenous Australians from some cancers may be partly explained by factors such as lower likelihood of receiving treatment, later diagnoses, comorbidities, and greater likelihood of being diagnosed with cancers where the prospect of successful treatment and survival is poorer (Cunningham et al. 2008; Supramaniam et al. 2011).

A study in WA (Thompson et al. 2011) made several recommendations to improve cancer outcomes for Aboriginal people. These include community education, establishment or improvement of support systems such as transport and accommodation, and changes to the health system to improve communication and care coordination.

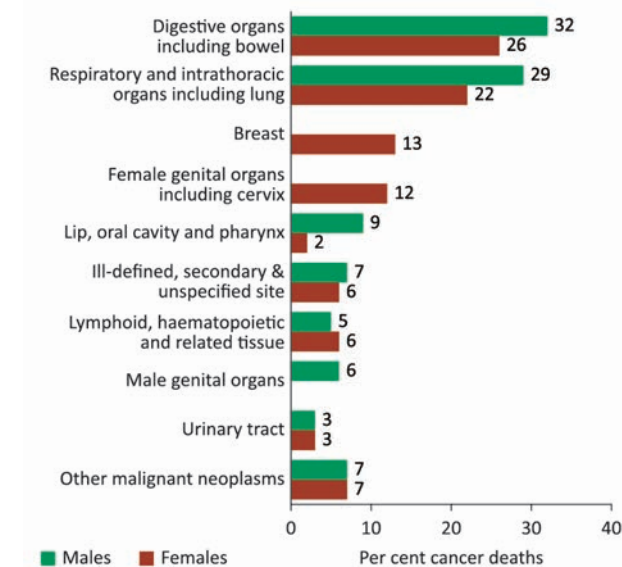
Cancer Australia aims to reduce the impact of cancer, address disparities and improve outcomes for people affected by cancer. Cancer Australia's work is underpinned by a model for engaging Indigenous communities including: evidence translation, community engagement, collaboration and capacity building, message repetition and sustainability. Cancer Australia has a focus on raising awareness of risk factors, symptoms and the importance of early detection.

Communication activities to support the Human Papillomavirus (HPV) Vaccination Program include specific components for Aboriginal and Torres Strait Islander communities. This includes distribution of tailored resources to schools, as well as targeted public relations activities and social media engagement.

The *Tackling Indigenous Smoking* Programme supports smoking cessation (see measure 2.15)

**Figure 1.08-1**

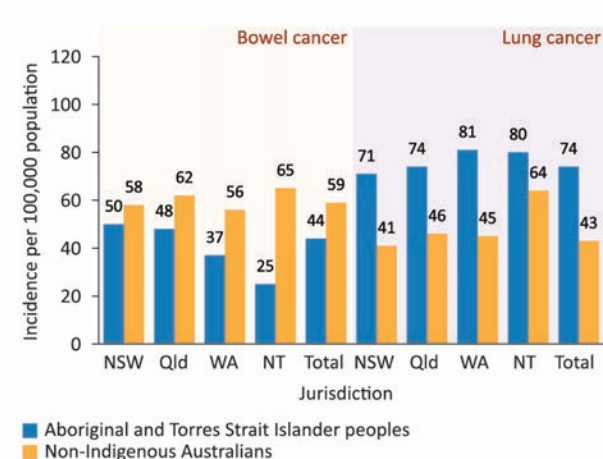
Proportion of deaths by cancer type, Indigenous Australians, by sex, NSW, Qld, WA, SA and the NT, 2008–12



Source: ABS and AIHW analysis of ABS Mortality Database

Figure 1.08-3

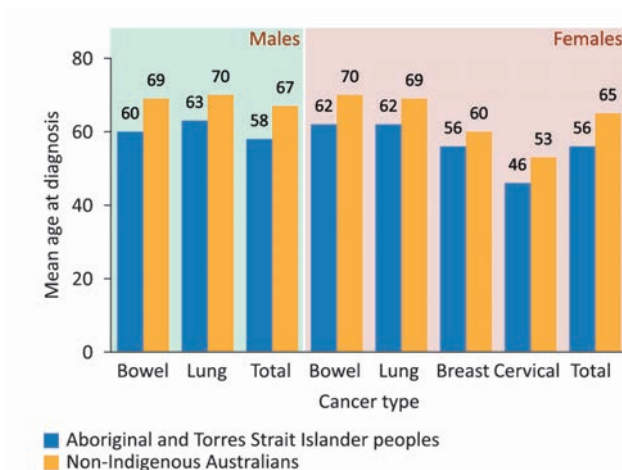
Age-standardised incidence of bowel and lung cancer by state and territory and Indigenous status, NSW, Qld, WA and the NT, 2005–09



Source: AIHW Australian Cancer Database 2010

Figure 1.08-5

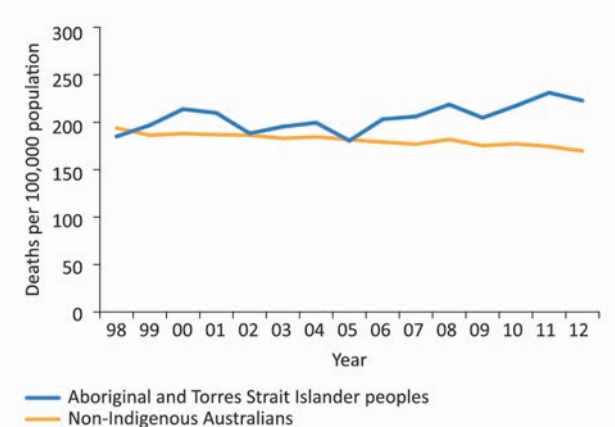
Mean age at diagnosis, selected cancers by Indigenous status and sex, WA, Qld, NSW, and the NT, 1999–2007



Source: AIHW Australian Cancer Database 2007

Figure 1.08-2

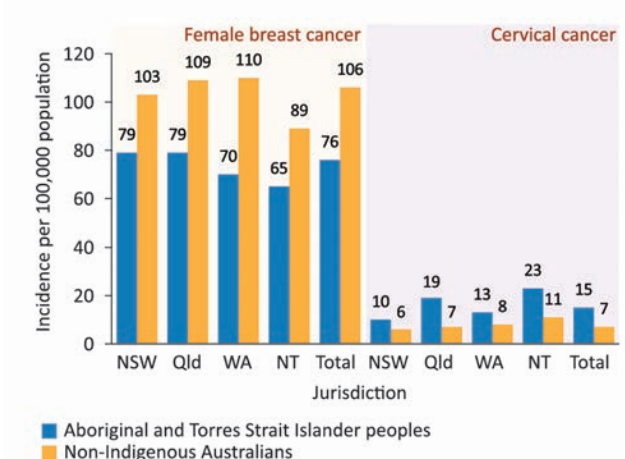
Age-standardised mortality rates for cancer, by Indigenous status, NSW, Qld, WA, SA and the NT, 1998 to 2012



Source: ABS and AIHW analysis of ABS Mortality Database

Figure 1.08-4

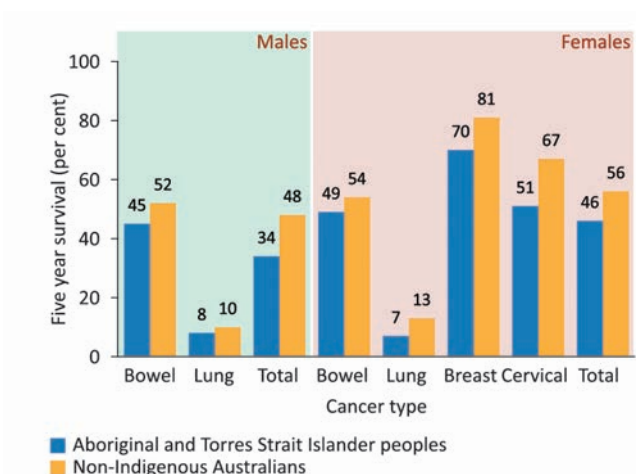
Age-standardised incidence of breast and cervical cancer in females by state and territory and Indigenous status, NSW, Qld, WA and the NT, 2005–09



Source: AIHW Australian Cancer Database 2010

Figure 1.08-6

Five-year crude survival for selected cancers by Indigenous status and sex, WA, Qld, NSW and the NT, 1999–2007 followed to the end of 2010



Source: AIHW Australian Cancer Database 2007



1.09

Diabetes

Why is it important?

Diabetes is a long-term (chronic) condition in which blood glucose levels become too high because the body produces little or no insulin, or cannot use insulin properly. Over many years, high blood glucose levels can damage various parts of the body, especially the heart and blood vessels, eyes, kidneys and nerves, resulting in permanent disability, mental health problems, reduced quality of life and premature death (AIHW 2008a). High blood glucose levels can cause complications for both the mother and baby during pregnancy.

Diabetes is responsible for 12% of the health gap between Indigenous and non-Indigenous Australians (Vos et al. 2007). Diabetes rates are higher among Indigenous Australians than non-Indigenous Australians in every socio-economic status group (Cunningham 2010).

There are several forms of diabetes. The most common form is Type 2, which accounted for 85% of all diabetes in Australia in 2011–12 (ABS 2012a). Type 2 diabetes is a significant contributor to morbidity and mortality for Aboriginal and Torres Strait Islander peoples. It is more common in people who are physically inactive, have a poor diet, and are overweight or obese (AIHW 2008a). Other factors such as heredity, low birthweight, intra-uterine factors and excessive alcohol consumption are also associated with increased risk.

Type 1 diabetes, the most common form of diabetes in children, is generally thought to be rare among Aboriginal and Torres Strait Islander peoples although misclassification problems with Type 2 diabetes make this difficult to ascertain (AIHW 2002).

Findings

The 2012–13 Health Survey included blood tests for measuring diabetes prevalence. In 2012–13, 11% of Indigenous Australians aged 18 years and over had diabetes. After adjusting for age differences in the two populations, this was more than 3 times as high as for non-Indigenous Australians. This comprised 9.6% of Indigenous adults with known diabetes and 1.5% with diabetes newly diagnosed by the blood test results, suggesting that approximately 14% of cases of

diabetes were previously undiagnosed. Indigenous adults were twice as likely to have undiagnosed diabetes as non-Indigenous adults. In addition, 5% of Indigenous Australians had blood test results showing impaired fasting plasma glucose, which means they were at high risk of developing diabetes, which was 1.8 times the non-Indigenous rate.

Of those Indigenous adults with known diabetes, 61% had blood test results suggesting the condition was not being managed effectively. This was 1.4 times as high as non-Indigenous Australians (44%). Half (53%) of Indigenous Australians with diabetes also had signs of chronic kidney disease (see measure 1.10).

Measured rates of diabetes for Indigenous adults were more than double in remote areas (21%) compared with non-remote areas (9%). Newly diagnosed diabetes was 5 times as high in remote as non-remote areas (4.8% compared with 0.9%). Rates of diabetes were highest in the NT (19%) and lowest in Qld (8%). Indigenous men and women had similar rates of diabetes (10% compared with 12%). Among Indigenous Australians, diabetes problems started in younger age groups than for non-Indigenous Australians. Higher rates of diabetes were evident from 35 years onwards and by 55 years and over, one-third of Indigenous Australians had diabetes.

There was a statistically significant relationship between the prevalence of diabetes and selected social determinants of health and risk factors such as socio-economic status, educational attainment, weight, and blood pressure.

In 2005–07, Aboriginal and Torres Strait Islander mothers were more likely to experience pre-existing diabetes affecting pregnancy (3 to 4 times the non-Indigenous rate) and to develop gestational diabetes mellitus (GDM) (twice the non-Indigenous rate). Indigenous mothers with preexisting diabetes were more likely to deliver pre-term (32%), compared with Indigenous mothers with GDM (14%) and Indigenous mothers without diabetes (13%) (AIHW 2010b).

Of Indigenous Australians in non-remote areas self-reporting diabetes, 69% had a blood test to check for diabetes control in the last 12 months and 68% had their feet checked in the last 12 months. In addition, 30% of Indigenous Australians with diabetes in non-remote and remote areas combined were using insulin, 64% were taking medicine/tables and 80%

had taken lifestyle action relating to diet, weight loss and exercise.

The prevalence of diabetes among Indigenous Australians in selected remote communities was 5 to 10 times as high as in the general community (Hoy et al. 2007; Kondalsamy-Chennakesavan et al. 2008; Zhao et al. 2008). A NSW study of young people aged 10–18 years found the incidence rate of diabetes for Indigenous children was 6 times the rate for non-Indigenous children (Craig et al. 2007). An analysis of the Fremantle Diabetes Study found diabetes prevalence for Aboriginal people to be more than double the rate for non-Indigenous Australians, with average age at diagnosis 14 years younger (Davis et al. 2007). An 11 year prospective cohort study of 686 Indigenous Australians in a remote NT Indigenous community found that half of Indigenous men and 70% of Indigenous women were at risk of developing diabetes by age 60 (Wang et al. 2010a).

A survey of GPs from April 2008 to March 2013 showed that 5% of all problems managed by GPs among Indigenous Australians were for diabetes. Type 2 diabetes accounted for 94% of all diabetes problems managed among Indigenous Australians. After adjusting for differences in the age structure of the two populations, GPs managed diabetes problems among Indigenous patients at 2.8 times the rate for other Australian patients.

In the two years to June 2013, rates of hospitalisations with a principal diagnosis of diabetes were 4.2 times as high for Indigenous Australians as for non-Indigenous Australians. Around 61% of hospitalisations for diabetes among Indigenous Australians were for Type 2 diabetes, 17% for Type 1 diabetes and a further 21% for diabetes during pregnancy. Hospitalisation rates were higher among those living in remote areas (11 per 1,000 in remote areas and 10 per 1,000 in very remote areas) than those in major cities (4 per 1,000). Complications of diabetes such as lower limb amputations have been found to be more common among Indigenous Australians than non-Indigenous Australians (Health WA 2008).

During the period 2008–12, 8% of Indigenous deaths were due to diabetes, and death rates from diabetes were 6 times the non-Indigenous rate. Diabetes was the second leading cause of the gap in death rates behind circulatory disease. There has been no improvement



in death rates from diabetes for Indigenous Australians over the last 15 years. Often, it is not diabetes itself that directly leads to death and as a result the complication is listed as the cause of death (AIHW 2014k). In 2008–12, in NSW, Qld, WA, SA and the NT there were 2,344 deaths among Indigenous Australians where diabetes was listed as an associated cause of death.

Implications

Diabetes is more common among Aboriginal and Torres Strait Islander peoples than other Australians, as measured by blood tests as part of the Health Survey and GP consultations. Hospitalisations and death rates for diabetes are both high, pointing to possible issues in secondary prevention.

Challenges for decision makers include maintaining a policy emphasis on primary

prevention (nutrition, physical activity, smoking, alcohol, early detection) while implementing strategies to achieve effective secondary prevention (such as primary care including allied health, and blood sugar control) and appropriate acute care to treat serious complications as they arise. Aboriginal and Torres Strait Islander peoples do not constitute a homogeneous group with respect to socio-economic status or diabetes prevalence (Cunningham 2010). Family centred approaches that support the knowledge base for effective self-management are recommended (NHMRC 2005; Griew et al. 2007).

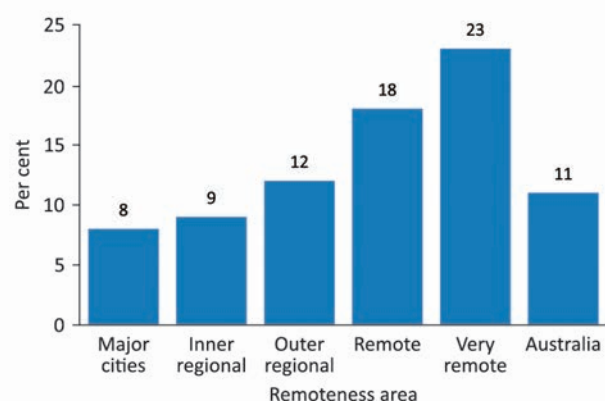
The Diabetes Care Project pilot commenced on 1 July 2011, testing new models of health care arrangements for people with Type 1 and Type 2 diabetes. The pilot is currently in the evaluation stage. The results from the pilot will be

used to inform future policy development for the management of chronic disease.

The *Indigenous Australians' Health Programme*, which commenced 1 July 2014, provides diabetes prevention and management through comprehensive primary health care and initiatives such as nationwide tobacco reduction and healthy lifestyle promotion activities, a care coordination and outreach workforce based in Medicare Locals and Aboriginal Community Controlled Health Organisations and GP, specialist and allied health outreach services serving urban, rural and remote communities. Additionally, the Australian Government provides GP health assessments for Indigenous Australians under the MBS, of which blood pressure measurement is one key element, along with follow-on care and incentive payments for improved management, and cheaper medicines through the PBS.

Figure 1.09-1

Proportion of Indigenous adults with diabetes by remoteness, 2012–13



Source: ABS analysis of 2012–13 AATSIHS

Figure 1.09-2

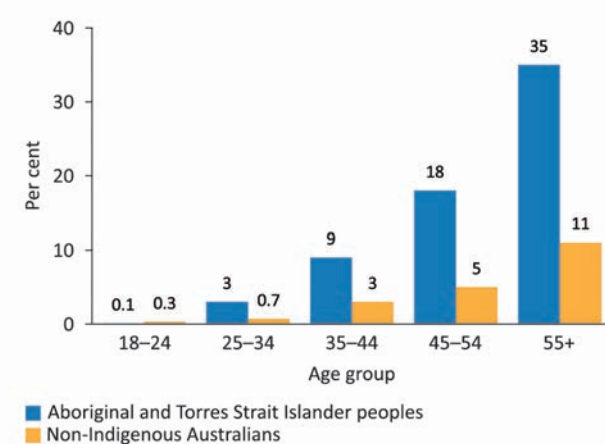
Proportion of Indigenous Australians with diabetes by selected jurisdictions, 2012–13



Source: ABS analysis of 2012–13 AATSIHS

Figure 1.09-3

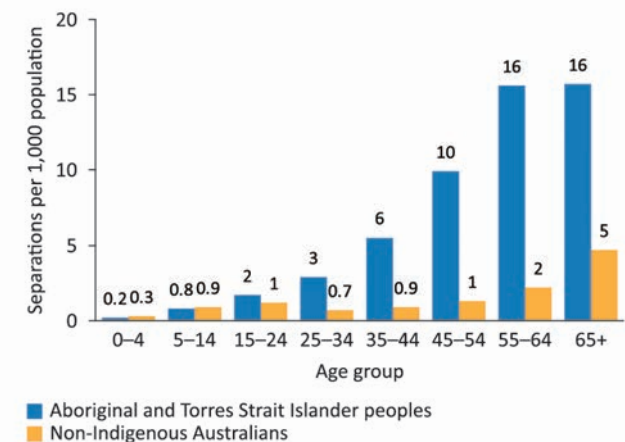
Proportion of adults with diabetes, by Indigenous status and age, 2012–13



Source: ABS analysis of 2012–13 AATSIHS

Figure 1.09-4

Age-specific hospitalisation rates for diabetes, by Indigenous status, July 2011–June 2012



Source: AIHW analysis of National Hospital Morbidity Database



1.10

Kidney disease

Why is it important?

The kidneys can be permanently damaged by various acute illnesses or by progressive damage from chronic conditions such as elevated blood pressure and long-standing high blood sugar levels (untreated diabetes). If the kidneys cease functioning entirely (known as end stage kidney disease, or kidney failure), waste products and excess water build up rapidly in the body. This can cause death within a few days or weeks unless a machine is used to filter the blood several times per week (kidney dialysis) or a new kidney is provided by transplant. Kidney failure was estimated to contribute 5% of the burden of disease for Indigenous Australians (Vos et al. 2007).

Indigenous Australians have very high levels of end stage kidney disease (ESKD) due to a range of risk factors (White et al. 2010). Among non-Indigenous Australians, ESKD usually occurs in older age, but for Indigenous Australians, it occurs more frequently in the middle adult years. (White et al. 2010). Fewer Indigenous patients receive kidney transplants, so most must have dialysis three times a week for the rest of their lives, impacting quality of life and social and emotional wellbeing (McDonald et al. 2006; Devitt et al. 2008; AIHW 2014d).

Findings

Based on the 2012–13 Health Survey, nearly one in five (18%) Indigenous Australian adults had blood/urine test results showing signs of kidney problems (infection, acute or chronic condition) (ABS 2014a). The majority of these showed signs of being in Stage 1 (12%) with very few in Stages 4–5 (1%). Of those with signs of kidney disease, 89% did not have a diagnosis for chronic kidney disease. The prevalence of signs of kidney disease among Indigenous Australians began at a much earlier age than for non-Indigenous Australians, with rates steadily increasing from the age of 18, whereas rates for non-Indigenous Australians begin to climb from the age of 55. After adjusting for age differences in the two populations, Indigenous adults were twice as likely as non-Indigenous to have signs of kidney disease (3 times for Stage 1 and around 5 times for Stages 4–5). Among Indigenous Australians, rates for signs of kidney disease were highest in very remote areas (37%) compared with 12% in major cities.

In 2012–13, 38% of Indigenous Australians with kidney problems also had diabetes. Indigenous Australians with high blood pressure were twice as likely to have kidney problems as those with normal blood pressure (29% compared with 15%). Rates were also higher for those who were obese (20%) compared with underweight/normal weight (13%).

During 2008–12, 2.5% of deaths among Indigenous Australians (290) were due to kidney disease. After adjusting for the different age profiles of the two populations, the kidney disease mortality rate was 2.6 times the non-Indigenous rate. Kidney disease death rates significantly declined for Indigenous Australians between 2006 and 2012 (by 40%) and the gap halved with non-Indigenous Australians (declined by 53%). Often, kidney disease is listed as an associated cause of death rather than the principal cause (AIHW 2014k). In 2008–12, there were 1,795 deaths among Indigenous Australians where kidney disease was listed as an associated cause of death.

In 2011–13, care involving dialysis was the leading cause of hospitalisation (45%) for Indigenous Australians. Hospitalisation for dialysis was 10 times the non-Indigenous rate. Excluding dialysis there were also 4,120 hospitalisations for Indigenous Australians during this period for chronic kidney disease, 3 times the non-Indigenous rate.

The incidence of patients commencing ongoing kidney replacement therapy (KRT) (dialysis or kidney transplantation) for ESKD is higher for Indigenous Australians than for non-Indigenous Australians. Between 2010 and 2012, there were 716 new Indigenous patients registered as commencing KRT, accounting for 10% of all new registrations. The age-adjusted incidence rate of treated ESKD was 7 times as high for Indigenous Australians as for non-Indigenous Australians.

Indigenous Australians commencing KRT were younger than non-Indigenous Australians commencing KRT, with 60% aged less than 55 years compared with 31% of non-Indigenous Australians. Treated-ESKD incidence was higher for Indigenous Australians in all adult age groups, with the greatest gap seen in the 55–64 year age group.

In the period 2010–12, treated-ESKD incidence rates among Indigenous Australians were highest in the NT (152 per 100,000) and lowest in NSW/the ACT

(34 per 100,000). Treated-ESKD incidence rates were higher in remote (149 per 100,000) and very remote areas (97 per 100,000) than non-remote areas (33 per 100,000). For non-Indigenous Australians, rates were similar across all regions.

The incidence of treated-ESKD among Indigenous males has increased by 33% over the period 1996–2012. Treated-ESKD incidence for non-Indigenous males has also increased; therefore, the gap has not changed. Rates have remained stable over the period for both Indigenous and non-Indigenous females. The increase in the incidence of treated-ESKD among Indigenous males may reflect both real growth in the underlying disease, an increase in treatment and/or improved levels of identification of Indigenous Australians in the registry.

ESKD patients require either a kidney transplant or dialysis to maintain the functions normally performed by the kidneys. In December 2012, there were 1,617 Indigenous Australians registered for ongoing KRT. Of these, 88% were reliant on dialysis and 12% had received a kidney transplant. In comparison, 53% of non-Indigenous Australians with treated-ESKD were reliant on dialysis and 47% had a kidney transplant. After adjusting for differences in the age structure of the two populations, Indigenous Australians with treated-ESKD were 9 times as likely as non-Indigenous Australians with treated-ESKD to be reliant on dialysis.

Implications

The high level of ESKD among Indigenous Australians is associated with the high rates of diabetes, high blood pressure, obesity, low birthweight, and possibly the high rates of bacterial infections and glomerulonephritis in childhood (AIHW 2005a). These factors, in turn, are associated with issues of access to primary health care (see measure 3.14) and determinants of health (see Tier 2). Healthier nutrition and greater physical activity play a role in reducing risk, as well as early detection and diagnosis and appropriate and timely treatment of conditions associated with kidney disease.

A study of Australian nephrologists found that, in the absence of robust evidence on predictors of post-transplant outcomes, decisions on which patients to refer for kidney transplantation are not based on systematic formal approaches. Instead, decisions may be influenced by factors such as kidney shortages, compliance with dialysis as a predictor of compliance with transplant regimes (despite large



differences in these factors), and anecdotal evidence suggests, experiences with other Indigenous patients. This is leading to Indigenous patients being more commonly identified as 'high-risk' transplant candidates (Anderson et al. 2012).

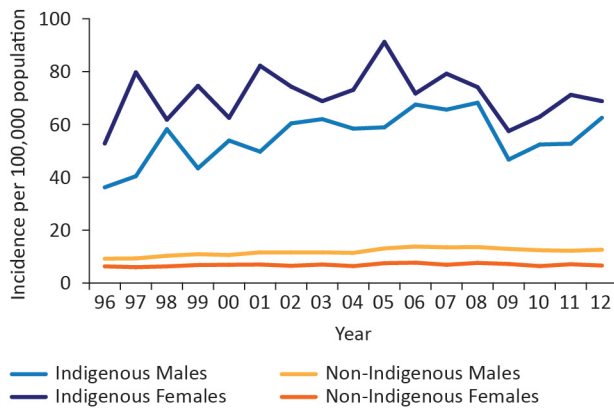
Mobile Dialysis Bus services offer respite dialysis to remote communities in the NT and SA, on a frequent basis. The Health and Hospitals Fund is providing funding

of \$56 million for 31 additional dialysis chairs throughout WA. These options are important for remote communities, where people with ESKD often need to travel long distances, or permanently relocate, to receive dialysis. Indigenous Australians have relatively poorer access to kidney transplants and addressing barriers is important (Cass et al. 2003; Yeates et al. 2009).

A focus on improving primary prevention, detection and management is necessary to lessen the impact of chronic kidney disease on people with the condition and the cost to the health care system and to Indigenous Australians. The Department of Health, through the Indigenous Australians' Health Programme, sets a number of priorities aimed at chronic disease prevention, detection and management.

Figure 1.10-1

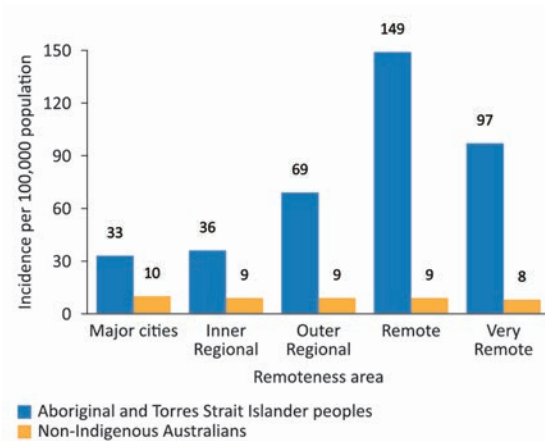
Age-standardised incidence rates for treated end stage kidney disease, by Indigenous status, 1996 to 2012



Source: AIHW analysis Australian and New Zealand Dialysis and Transplant Registry (ANZDATA)

Figure 1.10-3

Age-standardised incidence of treated end stage kidney disease by Indigenous status and remoteness, 2010–12



Source: AIHW analysis of Australian and New Zealand Dialysis and Transplant Registry (ANZDATA)

Table 1.10-2

Incidence of treated end stage kidney disease among Indigenous Australians, by jurisdiction and sex, 2010–12

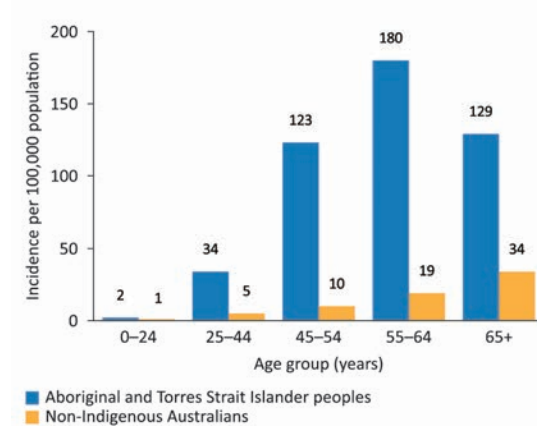
	Male			Female			Persons		
	No.	Rate ^(a)	Ratio	No.	Rate ^(a)	Ratio	No.	Rate ^(a)	Ratio
NSW /ACT	52	29	2.4	62	37	5.3	114	34	4.0
Vic	20	51	3.8	15	n.p.	n.p.	35	44	4.0
Qld	86	60	5.4	93	54	8.5	179	57	7.0
WA	61	82	6.8	74	98	16.0	135	91	10.0
SA	16	n.p.	n.p.	29	86	13.5	45	73	8.0
Tas	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
NT	82	133	13.3	121	171	n.p.	203	152	16.0
Australia	319	57	4.7	397	66	9.8	716	62	7.0

n.p. refers to 'not published' as the rate is based on very small numbers. (a) Rates are age-standardised.

Source: AIHW analysis of Australian and New Zealand Dialysis and Transplant Registry (ANZDATA)

Figure 1.10-2

Incidence of treated end stage kidney disease by Indigenous status and age group, 2010–12



Source: AIHW analysis of Australian and New Zealand Dialysis and Transplant Registry (ANZDATA)

Table 1.10-1

Prevalence of treated end stage kidney disease, by Indigenous status and treatment, 31 December 2012

Treatment:	Number		Rate per 100,000 (age adjusted)		Ratio
	Indig.	Non Indig.	Indig.	Non Indig.	
Dialysis	1,425	10,021	370	40	9.2*
Transplant	192	8,977	44	38	1.1
Total	1,617	18,998	414	78	5.3*

* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparisons at the p<.05 level

Source: AIHW analysis of Australian and New Zealand Dialysis and Transplant Registry (ANZDATA)



1.11

Oral health

Why is it important?

Oral health refers to the health of tissues of the mouth: muscle, bone, teeth, and gums. The two most frequently occurring oral diseases are tooth decay (termed 'caries') and periodontal disease. If not treated in a timely manner, these can cause discomfort and tooth loss, impacting a person's ability to eat, speak, and socialise without active disease, discomfort or embarrassment (Williams et al. 2011). Additionally, oral diseases can exacerbate other chronic diseases (Jamieson et al. 2010) and have been associated with cardiovascular diseases, diabetes, stroke and pre-term low birthweight (Williams et al. 2011; Roberts-Thomson et al. 2008).

Caries experience is measured by the average number of decayed, missing and filled infant/deciduous or adult/permanent teeth. The number of teeth with caries reflects untreated dental disease, while the number of missing and filled teeth reflects the history of dental health problems and treatment. Aboriginal and Torres Strait Islander peoples are more likely than other Australians to have lost all their teeth, have gum disease, and suffer more caries. They are less likely to have received preventive dental care and more likely to have untreated dental disease (Jamieson et al. 2010).

Tooth decay can largely be prevented by diet (for example reducing intake of processed sugary foods/drinks), fluoridation of water supplies, good oral hygiene and yearly dental check-ups. Risk factors for periodontal diseases include smoking, diabetes, stress, poor nutrition, poor oral hygiene, infrequent access to dental care, and substance use (particularly inhalant use). Oral disease is also associated with lower levels of education and income and sub-standard living conditions. Tooth loss is associated with increased age, poor oral hygiene and trauma (Jamieson et al. 2010; Williams et al. 2011).

Findings

Based on self-reported data from the 2008 Social Survey, 32% of Indigenous children aged 0–14 years had teeth or gum problems. The most common types of problems reported were fillings due to dental decay (16%), untreated cavities or dental decay (15%), and having teeth pulled out due to dental decay (7%).

The 2012–13 Health Survey included data on tooth loss. In 2012–13, 5% of Indigenous Australians aged 15 years and over reported they had complete tooth loss and a further 47% had lost at least one tooth (excluding wisdom teeth). Rates of complete tooth loss were highest for those aged 55 years and over living in non-remote areas (26%). The proportion was higher for those with: Year 9 as the highest Year of schooling (7 times those with Year 12); lowest income (7 times those with the highest income); diabetes (6 times those without); and heart/circulatory problems (4 times those without).

In 2012–13, around 21% of Indigenous Australians reported that they didn't go to a dentist when they needed to in the previous 12 months. Reasons included: cost (43%); waiting time too long/service not available at time required (20%); and disliking professional/feeling embarrassed or afraid (19%). Of those who had seen a dentist, 33% visited private dentists, 30% a government dental clinic, 16% a school dental clinic and 16% a dentist at an Aboriginal Medical Service. Around half (51%) waited less than one week to see a public dentist (non-remote areas). Nearly 14% had never seen a dentist (compared with 5% for all Australians). Indigenous Australians living in remote areas were more likely to report having never seen a dentist—21% compared with 12% in non-remote areas (AIHW forthcoming). For Indigenous children aged 2–6 years, 52% reported having never seen a dentist. Nearly half (46%) of Indigenous Australians reported that they brushed their teeth 2 or more times a day and a further 35% reported that they brushed their teeth once a day.

In 2010, for the five states with reliable data (NT, Qld, SA, Tas and WA), the mean number of decayed or missing teeth among Indigenous children was almost twice that for non-Indigenous children in all age groups. By 14–15 years of age, Indigenous children had twice the mean number of decayed teeth, 2.8 times the mean number of missing teeth and a mean number of filled teeth that was 37% higher when compared with non-Indigenous children. Indigenous children aged 5–10 years were less likely to have no decayed, missing or filled teeth (24%) than non-Indigenous children (45%). For those aged 6–15 years, 48% of Indigenous children had no decayed, missing or filled permanent teeth compared with 63% of non-Indigenous children.

In the two years to June 2013, Indigenous children aged 0–4 years were hospitalised for dental conditions at twice the rate of non-Indigenous children (7.8 per 1,000 compared with 3.8 per 1,000). This indicates poor access to, and a large unmet need for, dental care in this age group. Hospitalisation rates for dental problems decline after 14 years of age. Data on hospital procedures for dental conditions requiring general anaesthetic show higher rates for Indigenous children aged 5–9 years than total children (15 per 1,000 compared with 10 per 1,000) but lower rates in the 15–24 year age groups (around 5 per 1,000 compared with 16 per 1,000) (AIHW 2014y). A WA study reported higher rates of emergency care and oral surgery for Indigenous patients, indicating a higher burden of oral disease and late presentation (Kruger et al. 2010).

Between August 2007 and December 2013, more than 19,100 dental services were provided to over 8,800 Indigenous children as part of the *Northern Territory Emergency Response Child Health Check Initiative*, the *Closing the Gap National Partnership Agreement* and then the *Stronger Futures Northern Territory*. The proportion of children treated for at least one dental problem was 43%, mostly for untreated tooth decay. Trend data, available to June 2012, shows that for children who received two or more courses of dental care, there was a 12% decline in the proportion with oral health problems (AIHW 2012b).

Implications

Available data indicate that dental health is worse for Indigenous Australians than other Australians, for both children and adults. These findings raise significant policy questions about access to dental services and population health measures to prevent dental disease and support oral health (see measure 3.14).

The Australian Government will provide up to \$77.7 million over four years from 2012–13 for relocation and infrastructure grants to encourage and support dentists to relocate and practice in more remote areas.

From 1 July 2015, the *National Partnership Agreement on Adult Public Dental Services* will continue funding states and territories for adult public dental services for concession card holders.

The *Child Dental Benefits Schedule (CDBS)* commenced 1 January 2014. The CDBS is means tested, with eligible children aged 2–17 years entitled to benefits



for dental services (capped at \$1,000 over two consecutive calendar years). The range of services covered includes examinations, x-rays, cleaning, fissure sealing, fillings, root canals, extractions and partial dentures. In the first six months (to June 2014) 84,400 dental services had been provided to 19,000 Indigenous children (representing 9% of those eligible for these services). For non-Indigenous children, 16% of those eligible had received services.

Funding for the existing *Oral Health Programme* will continue under the new *Indigenous Australians' Health Programme* and the *Stronger Futures in the Northern Territory (SFNT) National Partnership Agreement* to reduce the prevalence, incidence, severity and impact of oral health problems on the health and wellbeing of Aboriginal children in the NT. The programme intends to reach 80% of target children under 16 years of age by 2021. The

programme is working with primary health care services and other stakeholders to deliver an integrated approach across the continuum of care, with a greater focus on preventive and health promotion activity including fluoride varnish and fissure sealants—both proven to be effective, preventative care treatments (Slade et al. 2011; Ahovuo-Saloranta et al. 2004).

Supporting this, the NT Government is providing training to primary health care providers to enable them to legally apply fluoride varnish in the NT under the *Healthy Smiles Oral Health and Fluoride Varnish* training programme. This programme will provide twice yearly applications where possible, and ensure children receive at least a yearly application.

Under the *Health and Hospitals Fund (2011 Regional priority Round)*, funding of \$2.8 million was provided to the WA

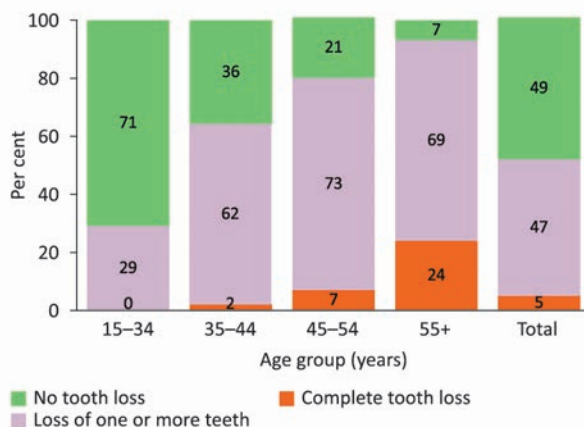
Department of Health, to construct a four-chair dental clinic on the grounds of the Narrogin Regional Hospital.

The SA Government's *Aboriginal Oral Health Program* provides priority free mainstream dental services to Aboriginal adults and children in partnership with Aboriginal health workers and organisations. This is achieved via a number of initiatives including:

- the Aboriginal Liaison Programme, to increase attendance of Aboriginal adults at community dental services
- integration of oral health screening into Aboriginal adult health checks with referral pathways to a community dental or school dental clinic
- specific programmes targeting pregnant women, children in early years, primary school children and teenagers
- promoting the use of Australian Government Teen Dental Vouchers by Aboriginal teens.

Figure 1.11-1

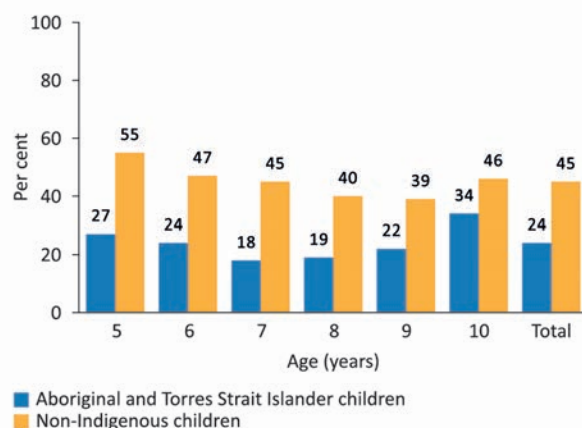
Status of tooth loss by age group, Indigenous Australians aged 15 years and over, 2012–13



Source: AIHW and ABS analysis of 2012–13 AATSIHS

Figure 1.11-3

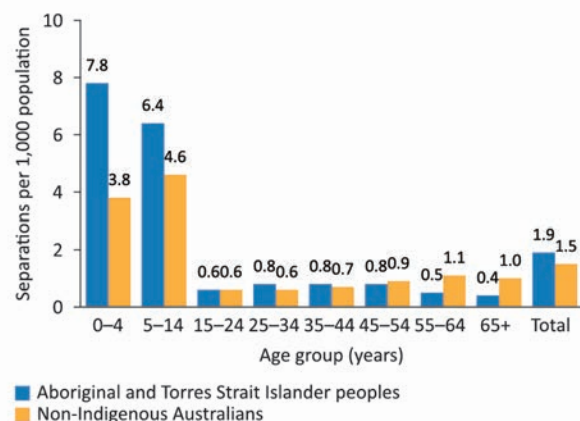
Proportion of children aged 5–10 years with no decayed, missing or filled deciduous teeth, by age and Indigenous status, NT, Qld, SA, Tas, WA and ACT, 2010



Source: AIHW analysis of Child Dental Health Survey

Figure 1.11-2

Age-specific hospitalisation rates for dental problems, by Indigenous status, Australia, July 2011–June 2013

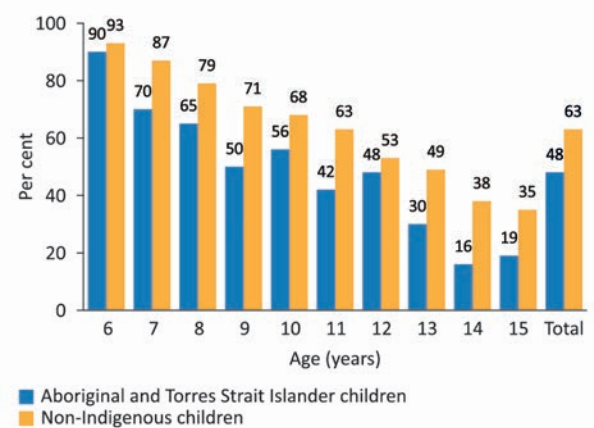


Note: Total is age-standardised

Source: AIHW analysis of National Hospital Morbidity Database

Figure 1.11-4

Proportion of children aged 6–15 years with no decayed, missing or filled permanent teeth, by age and Indigenous status, NT, Qld, SA, Tas, WA and ACT, 2010



Source: AIHW analysis of Child Dental Health Survey



1.12

HIV/AIDS, hepatitis and sexually transmissible infections

Why is it important?

Aboriginal and Torres Strait Islander peoples currently experience a relatively high number of notifications for bacterial sexually transmissible infections (STIs) (12%–43% of new cases in 2011–13) and high notification rates for hepatitis B and C. Each of these infections can have potentially serious consequences if left untreated. Chronic hepatitis causes serious illness and can also progress to cirrhosis of the liver, cancer, and premature death (CDC 2008). It is estimated that of the 1% of the Australian population that is living with chronic hepatitis B, 9% are Aboriginal and Torres Strait Islander peoples (MacLachlan et al. 2013; Couzos et al. 1999). STIs can have serious long-term consequences, such as chronic abdominal pain or infertility in women after gonorrhoea and chlamydia, and heart and brain damage caused by syphilis (Bowden et al. 2002; Couzos et al. 1999). Several of these infections can cause miscarriage (Campbell et al. 2011). The impact of HIV is well documented.

Notification data includes cases that have been tested, diagnosed and notified to health authorities, representing only a proportion of the total incidence of disease. Changes in notification rates over time are influenced by a range of factors including access to health care, improved screening programmes for Indigenous Australians and improved accuracy of tests. For Indigenous Australians, the accuracy of Indigenous identification in the data is also an issue and varies by jurisdiction. Improved primary health care can lead to increased testing and a corresponding increase in notification rates.

Findings

During the three years 2011 to 2013 there were approximately 20,000 notifications among Aboriginal and Torres Strait Islander peoples for chlamydia (in Qld, WA, SA, Tas and the NT combined). After adjusting for differences in age structure, the notification rate was 3 times as high as for other Australians. Between 1996–98 and 2011–13, in WA, SA and the NT combined, the notification rate for chlamydia doubled for Indigenous

Australians. While rates for other Australians also increased, they did so at a slower pace and so the gap widened.

For this same period, there were approximately 12,600 notifications for gonorrhoea among Aboriginal and Torres Strait Islander peoples (for all jurisdictions combined excluding NSW). After adjusting for differences in age structure, rates were 20 times higher than for other Australians. Between 1996–98 and 2011–13 in WA, SA and the NT combined, there was no significant change in rates for Indigenous Australians and no change in the gap. For other Australians there was a significant increase for males but no significant change for females.

There were also approximately 1,100 notifications for syphilis among Indigenous Australians over this period (all jurisdictions). After adjusting for differences in age structure, rates were 6 times as high as for other Australians. Between 1996–98 and 2011–13 in WA, SA and the NT combined, the notification rate for syphilis decreased for Indigenous males and females while increasing for other Australian males (no change detected for females). The highest rate for chlamydia and gonorrhoea was in the NT while the rate of syphilis was highest in Qld.

During the three years 2011 to 2013 there were 402 new notifications for hepatitis B and 847 for hepatitis C among Indigenous Australians. Rates were 3.3 times the other Australian rates for hepatitis C and 2.6 times for hepatitis B. Between 2006–07 and 2012–13 there was a significant decline in the hepatitis B notification rate for Indigenous Australians. For hepatitis C, notifications were highest in the 25–44 age groups for both populations. There have been no significant changes over time in hepatitis C notification rates for Indigenous Australians while over the same period there was a decline for other Australians and an increase in the gap (1996–98 to 2011–13 in WA, SA and the NT combined). The pattern of infection by age groups varies by disease. Those aged 15–24 years have the highest rates for chlamydia and gonorrhoea while the other diseases extend into the middle years.

There have been no significant changes detected in the incidence of HIV infection for Aboriginal and Torres Strait Islander peoples between 1998–2000 and 2010–12. Over this period, the notification rates for other Australians increased by one-third (34%) and have now overtaken the Indigenous rate. For the period 2010–12,

the incidence of HIV was 4.2 per 100,000 for Indigenous Australians and 5.1 for other Australians. Sexual contact between men was the highest HIV risk for both populations; however, injecting drug use represented 9% of Indigenous risk exposure, compared with 2% for others. The AIDS notification rate for Indigenous Australians is now too small to publish.

Implications

STIs are a major health problem for Aboriginal and Torres Strait Islander peoples. These infections are treatable through antibiotics, but if left untreated can have significant health consequences. High rates of infection for Indigenous Australians and disparity with rates for non-Indigenous Australians highlight the need for targeted prevention and information (Graham et al. 2012; Fairley et al. 2012; O'Connor et al. 2014). Evidence suggests that comprehensive strategies including community education and health promotion are most effective in reducing STIs (Strobel et al. 2012). Hepatitis B notifications have declined for Indigenous Australians since 2006–07. As at December 2013, hepatitis B vaccination rates were at 94% for both Indigenous and non-Indigenous children aged two years.

The rate of HIV infection is similar between Indigenous and non-Indigenous Australians. Nevertheless, Indigenous Australians remain disproportionately vulnerable to HIV infection due to factors such as high rates of STIs, poorer general health, high levels of injecting drug use and also unique challenges in accessing HIV treatment and care. Studies have found improvements in years of expected life for people with HIV with early access to antiretroviral treatments compared with the period when no treatment was available (Atkinson et al. 2009).

The *Fourth National Aboriginal and Torres Strait Islander Blood Borne Viruses and Sexually Transmissible Infections Strategy 2014–17* is one of a set of five national strategies aimed at reducing the transmission of STIs and blood-borne viruses and the associated morbidity, mortality, personal and social impacts. Priority action areas include improving vaccination coverage for hepatitis B and HPV, increasing provider initiated testing, increasing treatment rates for people with blood-borne viruses, supporting Aboriginal Community Controlled Health Organisations, reducing racism, stigma and discrimination in community and health-care settings and improving prevalence and incidence data.



Previous strategies have increased testing and may account for improvements in detection and increased rates. However, under-identification of Aboriginal and Torres Strait Islander peoples in notification systems and the volatility in

small numbers means that caution should be used in interpreting trends in these data. Building on the achievements of the *National Partnership Agreement on Indigenous Early Childhood Development*, the Australian Government has

committed \$25.9 million in 2014–15 for a new *Indigenous Teenage Sexual and Reproductive Health and Young Parent Support* measure to continue Indigenous teenage sexual and reproductive health and antenatal care services.

Figure 1.12-1

Age-standardised notification rate for 5 infectious diseases, Aboriginal and Torres Strait Islander peoples, WA, SA and the NT, 1996–98 to 2011–13

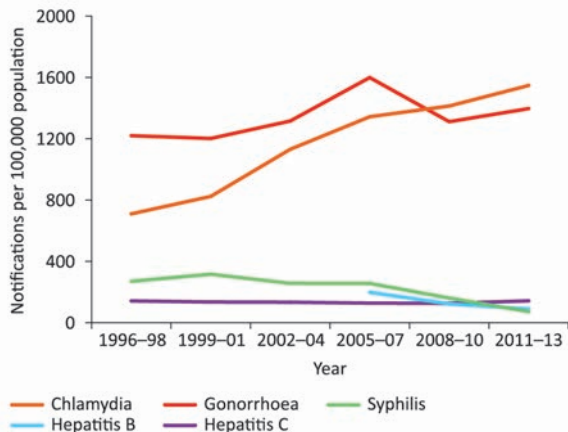
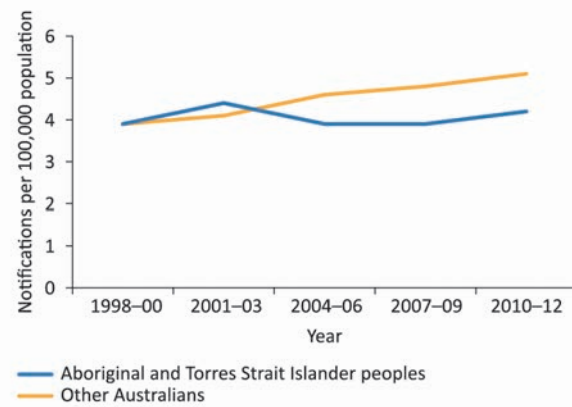


Figure 1.12-2

Age-standardised notification rates for HIV, by Indigenous status, 1998–2000 to 2010–12



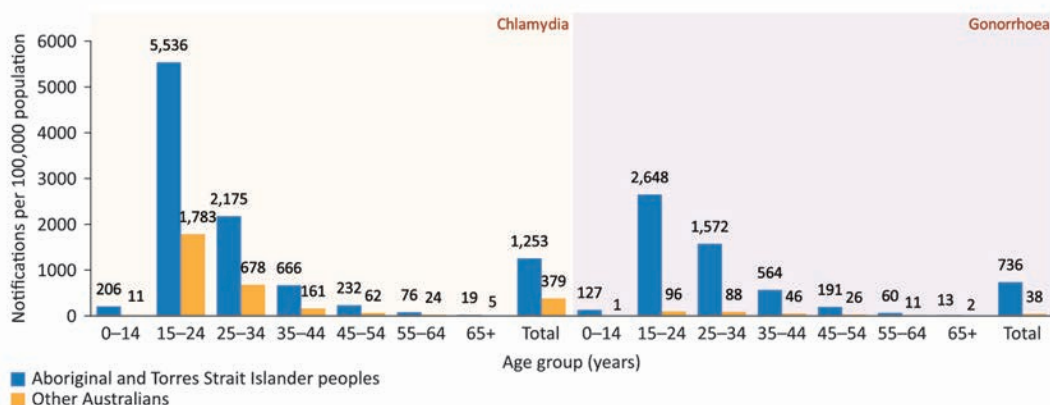
Source: AIHW analysis of National HIV Registry

Note: Notifications data for hepatitis B is of insufficient quality prior to 2005

Source: AIHW analysis of National Notifiable Diseases Surveillance System

Figure 1.12-3

Notification rate for chlamydia and gonorrhoea by Indigenous status and age, selected states, 2011–13

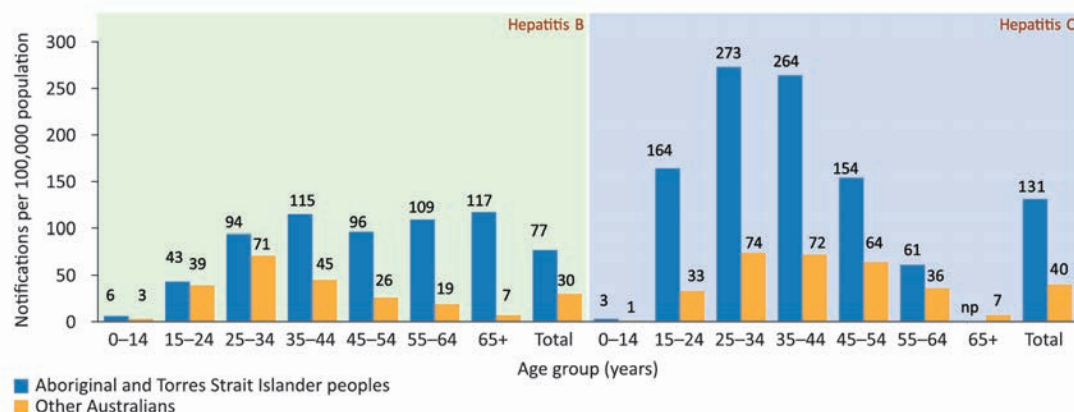


Note: Totals are age-standardised. Data are reported for Qld, WA, SA, NT, and Tas for chlamydia and for Vic, Qld, WA, SA, NT, Tas and ACT for gonorrhoea.

Source: AIHW analysis of National Notifiable Diseases Surveillance System

Figure 1.12-4

Notification rates for hepatitis B and C by Indigenous status and age, selected states, 2011–13



Note: Totals are age-standardised. Data are reported for WA, SA, NT, ACT and Tas for hepatitis B and for WA, SA, NT and Tas for hepatitis C.

Source: AIHW analysis of National Notifiable Diseases Surveillance System



1.13

Community functioning

Why is it important?

Aboriginal and Torres Strait Islander peoples have long sought health outcomes encompassing the physical, social, cultural and emotional elements of life. This includes the ability to live proudly and freely as Aboriginal and Torres Strait Islander peoples (OATSIH 2004). Functioning is about the things people achieve or experience, consistent with their account of wellbeing, varying from 'being adequately nourished and being free from avoidable disease, to very complex activities or personal states, such as being able to take part in the life of the community and having self-respect' (Sen 1999:75). The conversion of capabilities into functioning is influenced by the values and personal features of individuals, families and communities and by the social and cultural environment in which they live. Different cultures give greater or lesser priority to different types of functioning (Sen 1999).

To develop a picture of family and community functioning from Aboriginal and Torres Strait Islander peoples' perspectives, workshops drawing together participants from across Australia were held in 2008 and 2010. Participants at the workshops described the various elements of family and community life essential for high levels of functioning. The workshops identified a number of key themes and weighted these functionings according to their relative value. In 2010, six themes were identified by Aboriginal and Torres Strait Islander participants and these have been used to analyse and present available data.

Participants were drawn from a number of jurisdictions and settings so the themes they identified appear to reflect widely held views among Aboriginal and Torres Strait Islander peoples. Independently of these workshops, a review of relevant research has supported the association between the functionings identified by the workshops and the achievement of health and wellbeing.

While community functioning is a strengths-based measure, analysis of the institutional, interpersonal and internalised elements of racial discrimination suggest this factor deters and undermines community functioning and increases ill-health (Cunningham et al. 2013). In 2008, more than a quarter

(27%) of Indigenous Australians aged 15 years and over reported being treated unfairly in the last 12 months because they were Aboriginal and/or Torres Strait Islander. These estimates are conservative, with research specialising in racial discrimination reporting 97% of Indigenous Australians in the sample experiencing racism (Kelaher et al. 2014). See measure 3.08 for analysis of cultural competency in the health system.

Findings

Outlined below is a description of each of the six themes and the key findings for Aboriginal and Torres Strait Islander peoples, using data from the 2008 Social Survey.

Connectedness to country, land, and history; culture and identity

- *Being connected to country, land, family and spirit*
- *Strong and positive social networks with Aboriginal and Torres Strait Islander peoples*
- *Strong sense of identity and being part of a collective*
- *Sharing; giving and receiving; trust; love; looking out for others*

Based on the 2012–13 Health Survey, 83% of Aboriginal and Torres Strait Islander adults reported feeling proud of who they are. Three-quarters reported that they get the emotional support and help they need from their family (75%) and that their family really tries to help them (76%).

Data from the 2008 NATSISS show:

- 72% of Aboriginal and Torres Strait Islander peoples aged 15 years and over recognised their homelands.
- 62% identified with a clan or language group, up from 54% in 2002.
- 89% 'feel able to have a say with family and friends' some, most, or all of the time. This is associated with excellent or very good self-assessed health status and low to moderate levels of psychological distress.
- 63% had attended a cultural event in the last 12 months.

Resilience

- *Coping with the internal and external world*
- *Power to control options and choices*
- *Ability to proceed in public without shame*
- *Optimising what you have*
- *Challenge injustice and racism, stand up when required*

- *Cope well with difference, flexibility, accommodating*
- *Ability to walk in two worlds*
- *Engaged in decision-making*
- *External social contacts*

Data from the 2008 NATSISS show:

- 69% of Aboriginal and Torres Strait Islander peoples aged 15 years and over reported that they did not avoid situations due to past discrimination.
- 80% agreed that their doctor could be trusted and 69% agreed that the local school could be trusted.
- 89% felt they were able to find general support from outside the household
- 54% in non-remote areas knew someone in an organisation they would feel comfortable contacting.

Leadership

- *Strong elders in family and community, both male and female*
- *Role models, both male and female*
- *Strong direction, vision*
- *The 'rock', someone who has time to listen and advise*

Data from the 2008 NATSISS show:

- 42% of children aged 3–14 years had spent time with an Indigenous leader or Elder in the last week. In remote areas this increased to 63%.

Additional data items that describe values of leadership would be useful in future social surveys.

Having a role, structure and routine

- *Having a role for self: participation, contributing through paid and unpaid roles*
- *Capabilities and skills derived through social structures and experience through non-formal education*
- *Knowing boundaries and acceptable behaviours*
- *Sense of place—knowing your place in family and society*
- *Being valued and acknowledged*
- *Disciplined*

Data from the 2008 NATSISS show:

- 78% of Aboriginal and Torres Strait Islander peoples had lived in only one dwelling in the last 12 months. This was associated with low to moderate levels of psychological distress and being employed.
- 73% were in households that had not experienced cash flow problems in the last 12 months.



- 86% were in households in which there had been no days without money for basic living expenses in the last two weeks.
- Most children aged 0–14 years (94%) had participated in informal learning activities with their main carer.

Feeling safe

- *Lack of physical and lateral violence*
- *Safe places*
- *Emotional security*
- *Cultural competency*
- *Relationships that can sustain disagreement*

Data from the 2008 NATSISS show:

- 75% had not experienced physical and/or threatened violence in the last 12 months.
- 80% felt safe at home alone after dark. This was associated with excellent or very good self-assessed health and low to moderate levels of psychological distress.
- In the five years prior to the survey, 97% of Aboriginal and Torres Strait Islander peoples had not been incarcerated (91% had never been incarcerated in their lifetime).

The final theme, **Vitality** covers community infrastructure access to services, education, health, income and employment.

Data from the 2008 NATSISS show:

- half of Aboriginal and Torres Strait Islander peoples aged 15 years and over had no disability or long-term health condition.
- 68% of those aged 15 years and over had experienced low/moderate levels of psychological distress in the four weeks before the survey.
- 76% of children aged 0–14 years did not have problems sleeping.
- 74% of children aged 4–14 years spent at least 60 minutes every day being physically active.
- 74% of people aged 15 years and over said they can easily get to places as needed. This was associated with feeling able to have a say with family and friends in the community and providing support to relatives.
- Many Aboriginal and Torres Strait Islander people were seeking to improve their knowledge, skills and qualifications, with 41% of those aged 15 years and over (who were not currently studying) intending to study in the future.

- School work was the main purpose of internet use for children (77%), while 30% of those aged 5 years and over used the internet for education or study.

Implications

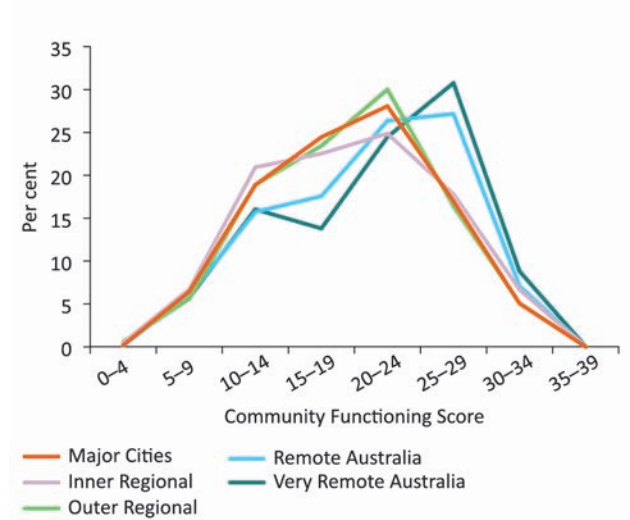
Community functioning for Aboriginal and Torres Strait Islander peoples should be assessed within a framework that reflects values of:

- *Connectedness to country, land and history; culture and identity*
- *Resilience*
- *Leadership*
- *Having a role, structure and routine*
- *Feeling safe; and*
- *Vitality.*

Community functioning scores present a national quantitative measure that demonstrates the strengths and capabilities of Aboriginal and Torres Strait Islander Australian families and communities.

Figure 1.13-1

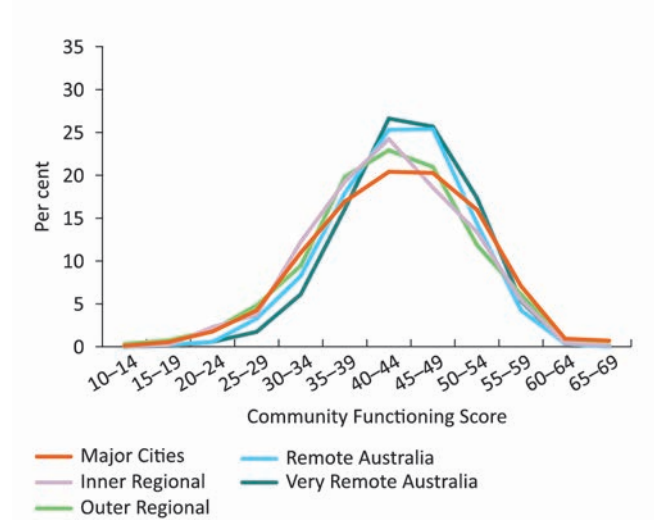
Community functioning score by remoteness, proportions, Indigenous Australians aged 0–14 years, 2008



Source: ABS and AIHW analysis of 2008 NATSISS

Figure 1.13-2

Community functioning score by remoteness, proportions, Indigenous Australians aged 15 years and over, 2008



Source: ABS and AIHW analysis of 2008 NATSISS

**Table 1.13-1**

Selected variables contributing to community functioning among Aboriginal and Torres Strait Islander peoples, 2008 and 2002

Community functioning theme and associated variables	2008	2008 ^(a)	2002 ^(a)
	Number	Per cent	
<i>Connectedness to family land and history, culture, identity</i>			
Recognises homelands	234,383	72	70
Speaks an Aboriginal/Torres Strait Islander language	62,629	19	21
Attended Aboriginal and Torres Strait Islander cultural event in last 12 months	205,674	63	68
Identifies with clan group or language group	203,106	62	54
Feels able to have a say with family and friends some, most or all of the time	292,375	89	
Feels able to have a say within community on important issues some, most and all of the time	157,312	48	
Contact with family or friends outside household at least once per week	307,515	94	
Has friends can confide in	246,649	75	
Able to get support in time of crisis from outside household - from family member	261,506	80	
Provides support to relatives outside household	166,892	51	
<i>Resilience</i>			
Did not feel discriminated against in last 12 months	237,812	73	
Did not avoid situations due to past discrimination	225,507	69	
Can visit homelands	146,017	45	46
Involvement with Aboriginal/Torres Strait Islander organisation	59,516	18	26
Work allows for cultural responsibilities to be met (employed persons)	75,028	44	22
Household member(s) used strategies to meet basic living expenses in last 12 months	119,147	36	49
No community problems reported	84,327	26	25
Community problems reported, but less than three types	73,788	23	29
Theft not reported as a neighbourhood/community problem	192,535	59	57
Alcohol not reported as a neighbourhood/community problem	192,138	59	67
Illegal drugs not reported as a neighbourhood/community problem	208,039	64	68
Family violence not reported as a neighbourhood/community problem	245,938	75	79
Assault not reported as a neighbourhood/community problem	253,009	77	80
Sexual assault not reported as a neighbourhood/community problem	288,926	88	92
Total persons who reported a community problem	232,592	71	74
Agrees that most people can be trusted	118,975	36	
Agrees that their doctor can be trusted	260,777	80	
Agrees that the hospital can be trusted	204,189	62	
Agrees that police in the local area can be trusted	170,317	52	
Agrees that police outside the local area can be trusted	133,362	41	
Agrees that the local school can be trusted	224,734	69	
Knows someone in organisation that is comfortable contacting (non-remote areas)	132,011	54	
Felt able to find general support from outside the household	291,459	89	
Provided support to someone outside household in last 4 weeks	184,537	56	
Participated in sport/social/community activities in last 3 months	289,381	89	
Recreational or cultural group	46,263	14	
Community or special interest group activities	42,274	13	
Church or religious activities	49,393	15	24
Watched Indigenous TV	177,695	54	
Listened to Indigenous radio	85,682	26	

**Table 1.13-1**

Selected variables contributing to community functioning among Aboriginal and Torres Strait Islander peoples, 2008 and 2002

Community functioning theme and associated variables	2008	2008 ^(a)	2002 ^(a)
	Number	Per cent	
Leadership			
Child spent time with an Indigenous leader or elder in last week (3–14 years)	65,035	42	
Encouragement from elders and council would help child to complete Year 12 (2–14 years)	7,504	22	
Encouragement from elders and council would help child in secondary school to complete Year 12 (15–19 years)	3,251	5	
Structure and routine/having a role			
Can communicate with English speakers without difficulty (Indigenous language is main language spoken at home)	27,179	72	
Has lived in only one dwelling for the past year or longer	255,157	78	69
Child involved in informal learning activities with carer in last week (0–14 years)	180,736	94	
Feeling Safe			
Felt safe at home alone during the day	305,892	94	
Felt safe at home alone after dark	261,414	80	
Felt safe walking alone in local area after dark	172,047	53	
Not a victim of physical or threatened violence in the last 12 months	246,372	75	76
Indigenous culture taught at school	87,833	53	
Was taught Indigenous culture at school or as part of further studies	148,592	45	
Learnt about own Indigenous clan/language	55,947	17	
Child neither bullied nor treated unfairly at school because Indigenous	112,159	81	
Not incarcerated in the last 5 years	316,033	97	93
Never incarcerated	297,030	91	
Vitality			
Self-assessed health status excellent or very good	143,004	44	44
Has no disability or long term-health condition	164,157	50	64
Low/moderate level of psychological distress (5–11 K5 score)	221,717	68	
Employed (persons aged 15–64 years)	167,416	54	
Year 12 highest year of school completed (excluding secondary school students)	66,220	22	18
Has a non-school qualification (25–64 years)	83,257	40	32
Living in a dwelling that has no major structural problems (all ages)	370,606	71	60
Household members used telephone(s) in last month	317,203	97	
Used computer in last 12 months	218,006	67	56
Used Internet in last 12 months	192,852	59	41
Has access to motor vehicles whenever needed	215,689	66	55
Can easily get to places needed	241,481	74	70
Total persons aged 15 years and over	327,101	100	

(a) Unless otherwise indicated percentages are of the estimated total Aboriginal and Torres Strait Islander population aged 15 years and over. Where another population is indicated, this has been used to calculate the percentage. For further detail, refer to the Detailed Analyses.

Source: ABS and AIHW analysis of NATSISS 2002 and 2008



1.14

Disability

Why is it important?

Disability may be an impairment of body structure or function, a limitation in activities and/or a restriction in a person's participation in specific activities. A person's functioning involves an interaction between health conditions and environmental and personal factors. Aboriginal and Torres Strait Islander peoples are at greater risk of disability due to increased exposure to factors such as low birthweight, chronic disease, infectious diseases (e.g. otitis media), injury and substance use. Along with limited access to early treatment and rehabilitation services, these factors increase the risk of a person acquiring a disability. Such factors tend to be more prevalent in populations where there are higher rates of unemployment, lower levels of income, poorer diet and living conditions, and poorer access to adequate health care.

Findings

The 2012–13 Health Survey collected data on a broad definition of disability (i.e. those reporting a limitation, restriction, impairment, disease or disorder that has lasted, or is expected to last, for 6 months or more, which restricts everyday activities). Results are self-reported and therefore could be under-stated. In 2012–13, 36% of all Indigenous Australians had a disability or restrictive long-term health condition. Disability increases with age, ranging from 19% of those aged 0–14 years to 67% of the 55 years and over age group. For Indigenous adults (aged 18 years and over), 47% reported disabilities/long-term conditions.

Around 10% of Indigenous Australians had a profound, severe or moderate core activity limitation with at least one activity of everyday living (self-care, mobility or communication). A further 9% had schooling/employment restrictions only. Forty-three per cent of Indigenous students aged 5 years and over with a disability reported difficulty with pursuing their education, with 18% needing time off and 9% not attending school/further study due to their condition. Difficulties with employment were reported by 57% of Indigenous Australians aged 15–64 with a disability, including permanently being unable to work (17%) and restrictions in type of work can do (27%).

The rates of disability for Indigenous males and females were similar. Of those with a disability, 57% had

physical disabilities, 46% sight/hearing/speech disabilities and 19% intellectual disabilities.

Variations in self-reported responses by jurisdiction and remoteness may be affected by factors such as perceptions of health and access to health care for diagnosis. Self-reported rates of disability or restrictive long-term health conditions were lowest in the NT (31%) and highest in the ACT (46%). Rates were slightly lower in remote areas (34%) than non-remote areas (36%).

In 2012–13, after adjusting for differences in the age structure of the two populations, Indigenous Australians were 1.5 times as likely to have a disability or restrictive long-term health condition as non-Indigenous Australians, and 1.6 times as likely to have a profound/severe/moderate core activity limitation. Indigenous rates peaked between the ages of 25 to 44 years when compared with non-Indigenous rates of profound/severe/moderate core activity limitation.

Forty-eight per cent of Indigenous Australians aged 18–64 years reporting disability were not in the labour force, compared with 27% of those without. Indigenous Australians aged 15 years and over with a disability were more likely to be in the lowest income quintile than those without (48% compared with 39%). In addition, 6% of Indigenous Australians aged 15 years and over reported serious disability as a personal or family stressor in the last 12 months, twice the non-Indigenous rate.

The 2011 Census collected data on one element of disability (i.e. those reporting the need for assistance with core activities). In the 2011 Census, 5.7% of the total Indigenous population were identified as needing assistance with a core activity (self-care, mobility or communication) some or all of the time. Rates were similar for males (6.1%) and females (5.4%). Variations in self-reported rates by jurisdiction and remoteness should be treated with caution. Rates ranged from 4.8% of Indigenous Australians in WA to 6.9% in Victoria. In 2011, Indigenous Australians were twice as likely to have a core activity need for assistance as non-Indigenous Australians. ACT had the largest gap followed by WA. The proportion of Indigenous Australians with a core activity need for assistance was higher in all age groups; however, rates increase from 40 years on for Indigenous Australians and from around 60 years for non-Indigenous Australians.

In 2011, 13% of Indigenous Australians

aged 15 years and over provided unpaid care to a person with a disability, long-term illness or problems related to old age, 1.2 times the non-Indigenous proportion. Carers were less likely to be in the labour force (54%) than non-carers (59%).

From the 2012 Survey of Disability, Ageing and Carers, it is estimated that 23% of Indigenous Australians (excluding very remote areas) had a disability; 1.7 times the non-Indigenous rate (SCRGSP 2014a).

In 2012–13, 17,400 disability support service users were Indigenous (5.8%) (AIHW 2014p). This has increased from 4.8% in 2008–09. For persons aged under 65 years, Indigenous Australians used disability support services at twice the rate of non-Indigenous Australians (27 per 1,000 compared with 14 per 1,000). Rates of Indigenous service users were highest in the ACT and Victoria (42 and 41 per 1,000) and lowest in Tasmania (16 per 1,000). Rates were higher in non-remote areas (27 per 1,000) than remote areas (16 per 1,000). Intellectual disability was the most common primary disability group (29%), followed by physical (17%) and psychiatric (16%). Most Indigenous service users were aged under 50 years (84%) while for non-Indigenous service users this group was 74%. The most commonly used services were community support (54%) followed by employment services (35%). The disability support pension was the main income source for 52% of Indigenous service users and also non-Indigenous service users. Most Indigenous service users were unemployed (41%) or not in the labour force (28%) (similar to non-Indigenous service users).

Implications

Although disability prevalence varies across data sources, all show a higher rate of disability experience by Indigenous Australians compared with non-Indigenous Australians. The high levels of disability among Aboriginal and Torres Strait Islander peoples are consistent with the levels of disease and injury, socio-economic and environmental factors, health risk factors and lower access to health services relative to need. There is a clear link between disability and socio-economic disadvantage and the relationship between these factors is cyclical (Kavanagh et al. 2013; VicHealth 2012). Lower levels of educational attainment, lower levels of participation in the workforce and lower income are likely to be both the cause and consequence of disability (Biddle, N et al. 2013). Core activity restrictions occur earlier in life for Indigenous Australians.



The *National Disability Strategy 2010–2020* provides a 10 year national policy framework for all levels of government to improve the lives of people with disability. The Strategy seeks to drive a more inclusive approach to the design of policies, programmes and infrastructure so that people with disability can participate in all areas of Australian life and have the opportunity

to fulfil their potential as equal citizens. A new plan for improving outcomes for Indigenous Australians with disability will be incorporated as a component of the Strategy's second implementation plan.

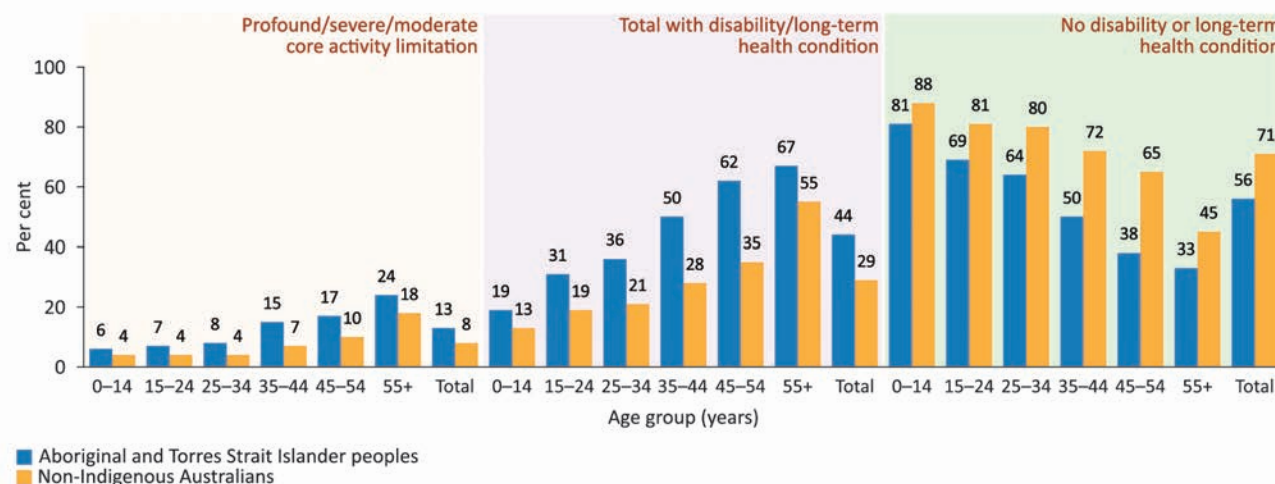
Through the *National Disability Agreement*, all Australian governments developed a National Indigenous Access Framework, which aims to ensure the needs of Aboriginal and Torres Strait

Islander peoples with disability are addressed through appropriate service delivery arrangements.

The Australian Government has committed \$1 billion to support the first stage of a National Disability Insurance Scheme (NDIS). The funding saw NDIS start in mid-2013 for around 10,000 people with significant and permanent disabilities in select locations.

Figure 1.14-1

Disability status by Indigenous status and age group, 2012–13



Note: Totals are age-standardised

Source: ABS and AIHW analysis of 2012–13 AATSIHS

Table 1.14-1

Disability type, by age group, Aboriginal and Torres Strait Islander peoples 2012–13

Disability type	0–5	6–14	15–24	25–34	35–44	45–54	55–64	65+	Total
Per cent									
Sight, hearing, speech	68	52	38	32	42	50	46	64	46
Physical	20†	23	49	63	69	72	78	68	57
Intellectual	20†	36	29	19	14	14	9	4†	19
Psychological	4†	14	21	30	25	28	19	10	21
Head injury, stroke or brain damage	n.p.	1†	2†	5†	7†	8	7†	8†	5
Other	29	24	20	31	36	48	56	51	35
Total with a disability or long-term health condition (a)	100	100	100	100	100	100	100	100	100

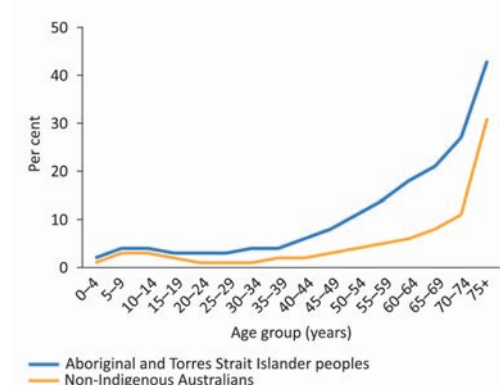
† Estimate has a relative standard error between 25% and 50% and should be used with caution.

a) Note that more than one disability type may be reported and thus the sum of the components may add to more than the total.

Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.14-2

Proportion of persons with core activity need for assistance, by Indigenous status and age group, 2011



Source: ABS and AIHW analysis of 2011 Census data

Figure 1.14-3

Proportion of Aboriginal and Torres Strait Islander peoples with disability/long-term restrictive condition, by jurisdiction and remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS



1.15

Ear health

Why is it important?

Hearing loss among Aboriginal and Torres Strait Islander peoples is widespread and much more common than for non-Indigenous Australians. Hearing loss, especially in childhood, can lead to linguistic, social and learning difficulties and behavioural problems in school. Such difficulties may reduce educational achievements and have lifelong consequences for employment, income, social success and contact with the criminal justice system (Williams et al. 2009).

Otitis media is an inflammation of the middle ear. Otitis media with effusion involves a collection of fluid within the middle ear space, and chronic suppurative otitis media occurs with persistent discharge through a persistent perforation in the eardrum and active bacterial infection within the middle ear space, which lasts several weeks or more. The WHO regards a prevalence of chronic suppurative otitis media of greater than 4% as a massive public health problem requiring urgent action (WHO 2004a). Several studies have found that Indigenous children living in remote communities experience high rates of severe and persistent ear infections (Edwards et al. 2014; Morris et al. 2007; Gunasekera et al. 2009; Coates 2009). Indigenous children have earlier onset of otitis media and it persists longer (Jervis-Bardy et al. 2014). Otitis media is associated with poverty, crowded housing conditions, passive smoking and nutritional deficiencies (Burns J et al. 2013).

Findings

National survey data which rely on self-reporting may under-estimate conditions that are undiagnosed. For example, while the 2008 Social Survey showed 12% of Indigenous children in the NT had ear/hearing problems, ear disease was found in 30% of the 10,605 Indigenous children tested in prescribed areas (remote areas and town camps) between July 2007 and 30 June 2009 as part of the *Northern Territory Emergency Response* (NTER) (AIHW & DoHA 2009). Of the 6,894 children who received audiology/ENT services as part of the NTER and the Stronger Futures in the NT programme (SFNT) between August 2007 and June 2014, two-thirds (66%) had at least one middle ear condition, 26% had otitis media with effusion

and 12% had chronic suppurative otitis media. In 2012–13, 51% of the children receiving audiology services under the SFNT had some form of hearing loss and 10% moderate/severe/profound hearing impairment (AIHW 2014ac). For those children who had received care under the NTER and then SFNT, the proportion with at least one type of middle ear condition had decreased from 86% to 73%. Most (64%) experienced an improvement in hearing.

There has been a significant decline in the national proportion of Indigenous children aged 0–14 years with self-reported hearing conditions, from 11% in 2001 to 7% in 2012–13. In remote areas the decline was steeper, from 18% to 9%. However, in 2012–13 the proportion of Indigenous children with ear health problems was still twice the rate for non-Indigenous children. WA had the highest rate for Indigenous children (11%) and Qld the lowest (5%). Deafness was reported for 3.4% of Indigenous children, otitis media for 2.8% and other ear diseases 1.2%. In 2012–13, ear/hearing problems were more common for Indigenous children aged 4–14 years living in the most socio-economically disadvantaged areas (10%) compared with the most advantaged areas (2%). Indigenous children with ear/hearing problems were more likely to visit a doctor in the last 2 weeks (28%) than those without ear/hearing problems (11%).

In 2012–13, 12% of the total Indigenous population had a reported ear health problem. The pattern of ear health problems varies with age. Otitis media is more prevalent in children while reported deafness increases steadily with age. In 2012–13, deafness was reported for 3% of Indigenous children, with rates rising steadily to 26% of those aged 55 years and over. In 2012–13, hearing loss was higher for Indigenous Australians than for non-Indigenous Australians in all age groups from 0–54 years of age. After adjusting for differences in the age structure of the two populations, otitis media among Indigenous Australians was 2.4 times as high as the non-Indigenous rate, with rate ratios of 1.4 for deafness and 1.3 for ear health problems overall.

During the two years to June 2013, there were around 5,300 hospitalisations for Indigenous Australians for ear disease. The Indigenous rate (3.0 per 1,000) was similar to the non-Indigenous rate (2.6 per 1,000). Rates for Indigenous children aged 0–4 years were less than those for

non-Indigenous children, while for those aged 5–14 years the Indigenous rate was 1.7 times as high. For Indigenous children aged 0–14 years the rate was 3 times as high in remote and very remote areas (18 and 17 per 1,000) as in major cities 6 per 1,000. Since 2004–05, there has been a 56% increase in ear-related hospitalisations for Indigenous children aged 0–14 years (no change for non-Indigenous children) and a 33% increase for those 15 years and over (6% increase for non-Indigenous Australians) in NSW, Vic, Qld, WA, SA and the NT combined.

In 2012–13, the rate of myringotomy procedures (incision in the eardrum to relieve pressure caused by excessive fluid build-up) in hospital was 1.8 per 1,000 in the population for both Indigenous Australians and other Australians (AIHW 2014f). However, in 2013–14 the elective surgery median wait time for myringotomy procedures was 58 days for Indigenous patients compared with 54 days for other Australian patients (public hospital waiting lists) (AIHW 2014g). In the period from July 2011 to June 2013, Indigenous children aged 0–14 years were hospitalised for tympanoplasty procedures (a reconstructive surgical treatment for a perforated eardrum) at 5.5 times the rate of non-Indigenous children. One in ten children fitted with a hearing aid or cochlear implant in 2010 were Indigenous (AIHW and AIFS 2014).

For Indigenous children aged 0–14 years otitis media was managed by GPs at a similar rate (70 per 1,000 encounters) to that for other Australian children (67 per 1,000). Rates were also similar for total diseases of the ear in 2008–2013 (107 compared with 101). In 2012–13, 22% of Australian Government-funded Indigenous primary health services provided access to ENT specialists on site and 73% off site. In 2011–13, data collected through the Qld Deadly Ears programme showed that of 0–4 year old clients who received an audiology assessment, 23% had hearing loss in both ears and 5% in one; for clients aged 5–14 years, 30% had hearing loss in both ears and 14% in one ear.

Implications

Chronic ear disease causing serious hearing damage is common among Indigenous Australians. Indigenous children have been found to wait longer than recommended for ear/hearing services (Gunasekera et al. 2009). The current rate of GP management of ear disease is similar for Indigenous



and non-Indigenous children yet the prevalence of ear disease is twice as high for Indigenous children.

Evidence suggests that a comprehensive approach combining prevention, early treatment, management and referral will be most successful in addressing the high rates of chronic otitis media. Primary prevention includes working with families on modification of risk factors such as encouraging breastfeeding, eating a healthy diet, reducing passive smoking, nasal passage clearing, seeking early medical assessment and encouraging vaccination. Once otitis media develops antibiotic treatment and surgical interventions (in persistent cases) are recommended. Screening for hearing loss in the neonatal period and pre-school period is recommended for Indigenous children given the high prevalence of otitis media. Regular medical examination of children's ears for otitis media is also recommended for this population. Once permanent hearing loss is detected, access and referral to a range of hearing services is needed such as hearing aids, speech therapists

and school based audiology support services (Couzos et al. 2001). Strategies in schools such as classroom management strategies, language therapy, and sound amplification have been successful tools for those with hearing impairment (Massie et al. 2004; Burrow et al. 2009).

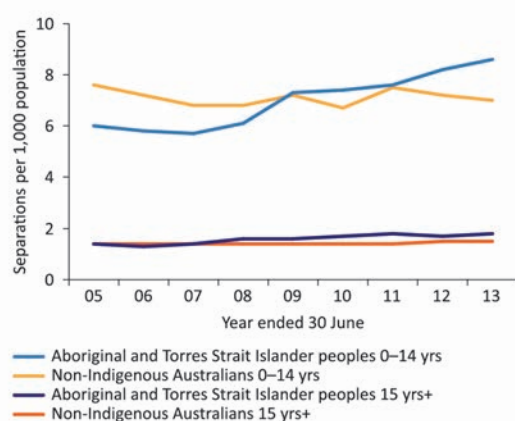
Around \$31 million over 4 years from 2013–14 has been provided for ear health initiatives to assist in reducing the number of Aboriginal and Torres Strait Islander peoples suffering avoidable hearing loss, improve the coordination of hearing health care, and give Indigenous children a better start to education. Key initiatives include more than \$24 million over four years from 2013–14 for the *Healthy Ears—Better Hearing, Better Listening Programme*, which aims to increase access to ear health services including outreach ENT specialists, audiologists and speech therapists services in rural and remote areas; ensuring the currency of the Otitis Media guidelines; provision of equipment to primary health services and a communication programme to raise awareness of ear disease, promote

ear health and 'de-normalise' ear disease. In 2013–14, \$3.331 million was provided for the delivery of the *Australian Hearing Specialist Programme for Indigenous Australians* through outreach sites including remote communities. A further \$3.718 million was provided to Australian Hearing to deliver hearing services to eligible Indigenous Australians over 50 years of age. Australian Hearing also undertakes research and development in the areas of hearing loss prevention and mitigation including spatial processing disorder among Indigenous children. The disorder is thought to affect the listening and therefore learning ability of school aged children, and may be more prevalent in children with an existing hearing loss.

State and territory governments have implemented a variety of programmes for Indigenous hearing health. In Qld, the *Deadly Ears Program* has been established to address middle ear disease, including screening services, health promotion, training, and the delivery of allied health, clinical and surgical services.

Figure 1.15-1

Age-standardised hospitalisation rates for diseases of the ear and mastoid process, by age and Indigenous status, NSW, Vic, Qld, WA, SA and the NT, 2004–05 to 2012–13



Source: AIHW analysis of National Hospital Morbidity Database

Table 1.15-1

Diseases of the ear and mastoid reported for Aboriginal and Torres Strait Islander children aged 0–14 years, by remoteness, 1995, 2001, 2004–05, 2008 and 2012–13

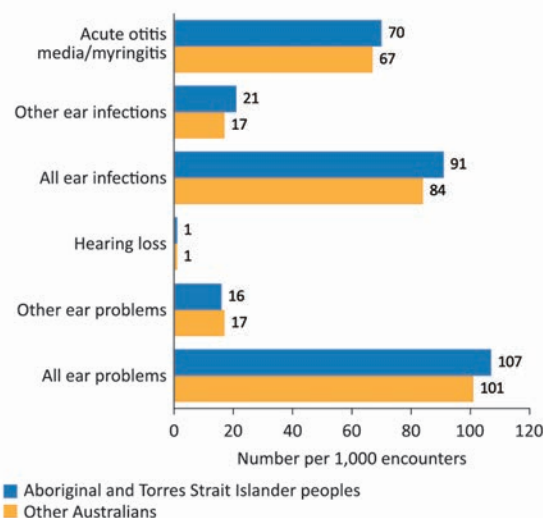
Remoteness area	1995	2001	2004–05	2008	2012–13
Per cent					
Remote	n.a.	18	13	10	9
Non-remote	6	9	9	8	7
Total	n.a.	11	10	9	7

Note: data for the 1995 NATSIHS available for non-remote areas only.

Source: ABS & AIHW analysis of 1995 and 2001 NHS (Indigenous supplements), 2004–05 NATSIHS, 2008 NATSISS and 2012–13 AATSIHS

Figure 1.15-2

Ear and hearing problems managed by GPs, by Indigenous status of patients aged 0–14 years, 2008–13



Source: Family Medicine Research Centre, University of Sydney analysis of BEACH data



1.16

Eye health

Why is it important?

The partial or full loss of vision is the loss of a critical sensory function that has impacts across all dimensions of life. Vision loss and/or eye disease can lead to linguistic, social and learning difficulties and behavioural problems during schooling years, which can then lead to poor education outcomes and employment prospects. Visual impairment can affect health related quality of life and independent living (West et al. 2002).

Cataract is a degenerative condition in which the lens of the eye clouds over, obstructing the passage of light. Blindness from cataract is now rare due to a highly effective surgical procedure but remains a major cause of vision loss among Aboriginal and Torres Strait Islander peoples (Taylor et al. 2014).

Diabetic retinopathy is damage to the blood vessels in the retina caused by complications of diabetes. Without treatment, diabetic retinopathy can progress to blindness. Although diabetic retinopathy often has no early symptoms, early diagnosis and treatment can prevent up to 98% of vision loss (Taylor et al. 2014). The NHMRC recommends that Indigenous Australians with diabetes should have an eye examination every year (NHMRC 2008).

Trachoma is an eye infection that can result in scarring, in-turned eyelashes (trichiasis) and blindness. Trachoma in Australia is found almost exclusively in remote and very remote Indigenous populations. Trachoma is associated with living in an arid dusty environment; poor waste disposal and high number of flies; lack of hand and face washing; overcrowding and low socio-economic status (NTSRU 2012).

Findings

The 2008 National Indigenous Eye Health Survey was based on a sample of 2,883 Indigenous Australians. This survey's strength was that it was based on actual eye examinations and therefore avoided the problem of under-reporting due to undiagnosed conditions. Note: 62% of the sample was in remote areas. In 2008, 9% of Indigenous adults had vision impairment and 2% blindness; while 1.5% of Indigenous children had low vision and 0.2% blindness. Of those adults with vision impairment, the most common

causes were refractive error (54%), cataract (27%), diabetic retinopathy (12%) and trachoma (2%). Vision loss associated with trachoma was only found in very remote areas, with higher rates inland (1.3%) than in coastal areas (0.4%). The leading causes of blindness for Indigenous adults found in this study were cataract, optic atrophy, refractive error, diabetic retinopathy and trachoma. Approximately 65% of Indigenous Australians who needed cataract surgery had been operated on, and a further 35% still required treatment. Of those who had diabetes, 20% reported having had an eye examination within the last year and 13% had visual impairment. Comparisons with studies of non-Indigenous Australians found that Indigenous adults had higher rates of vision impairment and blindness from cataract, diabetic retinopathy and trachoma; and Indigenous children had better vision than non-Indigenous children, especially in remote areas (Taylor, H et al. 2009).

The most recent self-reported data on eye health comes from the 2012–13 Health Survey based on a representative sample of 9,300 Indigenous Australians. In 2012–13, one-third (33%) of Indigenous Australians reported eye or sight problems. Long-sightedness (19%) and short-sightedness (13%) were the most common problems reported followed by partial/complete blindness (3%) and cataract (1%). After adjusting for differences in the age structure of the two populations, Indigenous Australians reported higher rates of partial/complete blindness (7 times) and cataract (1.4 times) than non-Indigenous Australians. Indigenous rates were slightly higher for long sightedness (1.1 times) and lower for short sightedness (0.8 times). Half (52%) of non-Indigenous Australians reported some form of eye problems with the most common being long sightedness (27%), followed by short sightedness (23%). A higher proportion of Indigenous females (38%) reported eye problems compared with Indigenous males (29%). In 2012–13, 9% of Indigenous children aged 0–14 years had eye or sight problems. Eye problems increased with age. Those with diabetes were twice as likely to report eye problems (82%) as those without diabetes (43%). In 2012–13, 29% of Indigenous Australians with diabetes reported they had sight problems due to diabetes and 49% had consulted an eye specialist within the last 12 months. In 2012–13, 79% of Indigenous Australians with eyesight problems wore glasses/contact lenses.

A study from the Eastern Goldfields of WA found that 25% of Indigenous Australians with diabetes showed signs of diabetic retinopathy and 75% of Indigenous Australians with vision loss also had diabetes. Having diabetes increased the risk of vision loss from any cause by 8.5 times (Clark et al. 2010).

In 2012, the National Trachoma Surveillance and Reporting Unit reported the prevalence of trachoma in children aged 5–9 years in 204 at-risk communities in the NT, SA, WA and Qld combined as 4%. Prevalence was 4% in NT, 4% in WA and 1% in SA. None of the children screened in Qld had active trachoma. One quarter of communities screened (48 out of 193) had endemic trachoma (over 5% of children with active trachoma) and 63% of communities (121) had no trachoma detected (NTSRU 2012). Of the cases detected, 95% had received treatment and 81% of the estimated household and other contacts had received treatment. Health promotion activities were reported in 133 of the 204 communities screened. The study also screened for clean faces, with 79% of children overall having clean faces. The proportion of communities reaching the target of 80% of children with clean faces ranged from 33% in Qld to 89% in SA.

Based on a survey of GPs, eye problems accounted for 1% of all problems managed by GPs at encounters with Indigenous patients during 2008–13. Overall rates were similar to other Australians except for cataracts, where Indigenous rates were significantly higher (3.5 times). In 2013–14, 47,414 Medicare health assessments (which included eye checks) were undertaken with Indigenous children aged 0–14 years, representing around 19% of children in this age group. In 2012–13, 62% of Australian Government-funded Indigenous primary health services provided access to optometrists on site and 41% off site, while 32% provided access to ophthalmologists onsite and 64% off-site.

In the two years to June 2013, there were 5,674 hospitalisations of Indigenous Australians for diseases of the eye (mainly cataracts). The hospitalisation rate was lower for Indigenous Australians than non-Indigenous Australians (ratio of 0.8). In the 9 years between 2004–05 and 2012–13, there has been a doubling of hospitalisations for eye disease among Indigenous Australians in NSW, Vic, Qld, WA, SA and the NT combined. These rates reflect hospitalisations rather than the extent of the problem in the community.



In 2012–13, the cataract surgery rate for Indigenous Australians was 8.7 per 1,000 population, similar to other Australians (8.9 per 1,000) (AIHW 2014f). In 2013–14, the public hospital median wait time for cataract surgery was 107 days for Indigenous patients compared with 78 days for other patients (AIHW 2014g).

Implications

Eye health can be affected by diseases such as diabetes (see measure 1.09) as well as environmental factors linked to higher rates of infection and cross-infection, geographic isolation, economic disadvantage and barriers to health care, which can limit the opportunities for detection and treatment.

It has been estimated that 94% of vision loss in the Indigenous population is preventable or treatable but 35% of Indigenous adults have never had an eye exam (Taylor et al. 2014). The WHO SAFE strategy to eliminate trachoma

includes surgery (to correct trichiasis), antibiotic treatment, facial cleanliness and environmental improvements (such as fly control, sewerage/rubbish removal, house maintenance). This strategy is based on a primary care model tailored to local situations and building community capacity (NTSRU 2012).

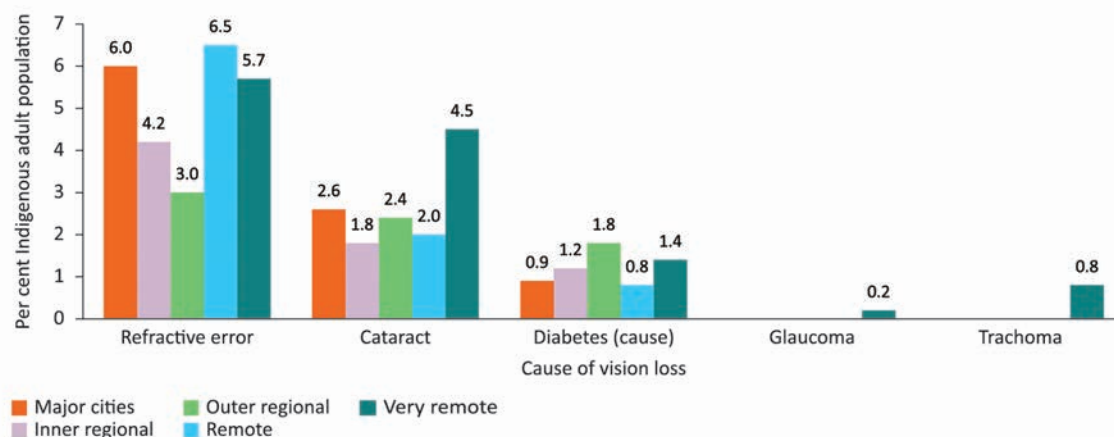
The Australian Government will provide \$22 million over four years from 2013–14 to improve the eye health of Indigenous Australians. \$16.5 million dollars of this has been allocated to continue national efforts to eliminate trachoma by 2020. The screening and treatment of trachoma is conducted in line with the 2013 National Trachoma Guidelines. The remaining funding will be used to undertake trachoma surveillance and reporting activity, purchase eye health equipment for use in remote areas, perform cataract surgeries in remote areas and fund the Indigenous Eye Health Unit at the University of Melbourne to

undertake a range of activities to improve eye health for Indigenous Australians.

In addition, approximately \$25.4 million is being provided from 2013–14 to 2016–17 to support the *Visiting Optometrists Scheme* (VOS), which improves access to optometry services for people living in rural and remote locations. In 2013–14, around 19,000 Indigenous patients (out of 39,000 total) were seen through the VOS. The *Rural Health Outreach Fund* (RHOF) provides outreach initiatives aimed at supporting people living in rural and remote locations to access health care including eye health. In 2013–14, 4,224 Indigenous patients (out of 20,364) were seen by ophthalmologists through the RHOF and a further 1,696 Indigenous patients (out of 4,064) were seen by other eye health professionals. In Qld an Indigenous Diabetes Eye and Screening van provides screening and eye procedures to regional areas.

Figure 1.16-1

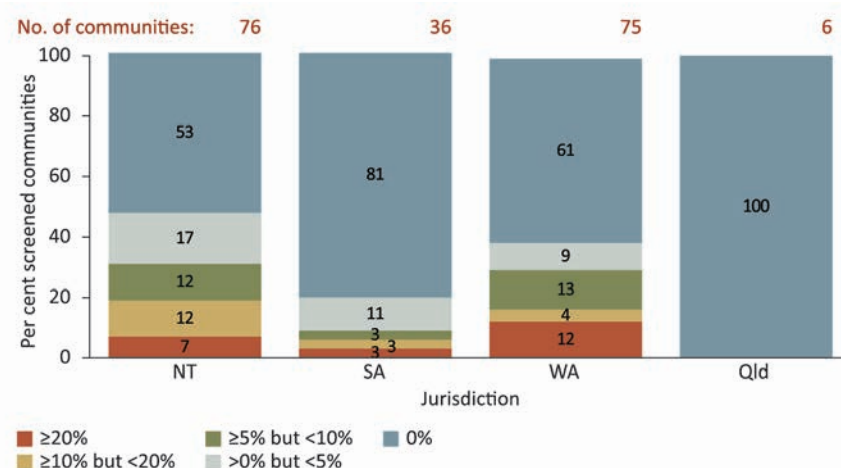
Proportion of Indigenous adults with vision loss, by cause and remoteness, 2008



Source: National Indigenous Eye Health Survey, 2008 (Taylor, H et al. 2009)

Figure 1.16-2

Proportion of screened communities by level of trachoma prevalent in 5–9 year old children, by jurisdiction, 2012



Source: National Trachoma Surveillance and Reporting Unit



1.17

Perceived health status

Why is it important?

Self-assessed health status provides a measure of the overall level of a population's health based on individuals' personal perceptions of their own health. Health is recognised as having physical, mental, social and spiritual components. Therefore, the measurement of health must go beyond quantifying levels of morbidity and mortality. Part of this broader approach to measuring health is to ask people to assess the state of their own health.

Self-assessed health status is dependent on an individual's awareness and expectations regarding their health. It is influenced by various factors, including access to health services and health information, the extent to which health conditions have been diagnosed, and level of education (Delpierre et al. 2009). Social constructs of health also influence this assessment, such as the culturally distinct view of health and wellbeing held by Aboriginal and Torres Strait Islander peoples, the existing level of health within a community and judgments concerning the person's own health compared with others in their community.

Self-assessed health status correlates with measures of health, such as reported long-term health conditions, recent health-related actions, and the presence of disability. However, there are some inconsistencies in how Aboriginal and Torres Strait Islander people report their health status, particularly those for whom English is not their main language. Many Aboriginal and Torres Strait Islander people have rated their health as good or excellent despite significant health problems. Self-assessed health status is a useful measure of overall health status, but is not an objective measure and needs to be interpreted with some caution.

Findings

Based on responses from the 2012–13 Health Survey, 39% of Aboriginal and Torres Strait Islander peoples aged 15 years and over reported their health as being very good or excellent, 37% reported their health as being good, and 24% reported their health as being poor or fair. There has been a decline in the

proportion of the population rating their health as excellent/very good between 2004–05 and 2012–13 (43% and 39% respectively). Older people were less likely than younger people to report very good or excellent health: 54% in the 15–24 years age group compared with 20% in the 55 years and over age group. Indigenous females were less likely than Indigenous males to report their health as being very good or excellent (37% compared with 42%).

Aboriginal and Torres Strait Islander peoples were less likely than non-Indigenous Australians to report very good or excellent health, and the difference between the two populations was greatest in the older age groups. After adjusting for differences in the age structure of the two populations, Aboriginal and Torres Strait Islander peoples were twice as likely as non-Indigenous Australians to report their health as fair or poor.

The proportion of Aboriginal and Torres Strait Islander peoples reporting fair or poor health was highest in NSW, Victoria, and Tasmania (27% for the three jurisdictions), and lowest in the NT (18%).

Indigenous Australians aged 15 years and over living in remote/very remote areas were less likely to report their health as being fair or poor (20%) compared with those in non-remote Australia (25%). Despite these results there is evidence that a number of health conditions such as circulatory disease (see measure 1.05) and kidney disease (see measure 1.10) and risk factors such as smoking (see measure 2.15) are worse in remote areas. Interpretation of the question will be influenced by the person's view of 'health' and whether the concept is perceived holistically to include social, culture, emotional and spiritual wellbeing or as a biomedical concept linked to the absence of disease and incapacity (NAHWSP 1989; Vass et al. 2011). It can also be influenced by how an individual assesses their own health relative to other people around them.

Nationally Aboriginal and Torres Strait Islander people reporting the presence of long-term health conditions are more likely to report their health as fair or poor. The proportion of Aboriginal and Torres Strait Islander peoples reporting fair or poor health increases with the number of health conditions reported. A similar pattern can be observed for non-Indigenous Australians.

In 2012–13, 46% of Indigenous Australians in the highest household income quintiles reported very good/excellent health status, compared with 32% of those in the lowest quintile. Approximately 49% of those who had completed Year 12 reported good/excellent health status, compared with 29% of those who had completed Year 9 or below. Note: this analysis does not control for age.

Based on responses from the 2008 Social Survey, having excellent or very good self-assessed health status is associated with feeling safe, feeling able to have a say with family or friends and within the community, having contact with family or friends outside the household at least once a week, having friends to confide in, no community problems reported and agreeing that most people can be trusted (see measure 1.13).

Implications

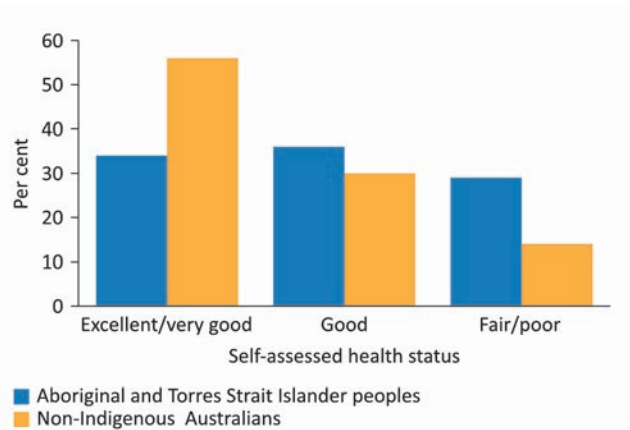
Aboriginal and Torres Strait Islander people rate their own general health as poorer than that of other Australians across all adult age groups, particularly in the middle age groups. The differences between the two populations are large, which is consistent with other measures of overall health status.

Self-assessed health is one of very few measures of overall health status that are currently available for Aboriginal and Torres Strait Islander peoples throughout the country. Those living in very remote areas are more likely to rate their health as good and less likely to rate it as fair/poor than other places in Australia. This could be related to definitions of 'health' (holistic or biomedical), the role of connections to family, community, land, sea and spirit and also how an individual assesses their own health relative to other people around them. There is a similar challenge to develop valid measures for comparing international variations in perceptions of health and health-related experiences (Murray et al. 2003; Salomon et al. 2003).

On some measures such as the prevalence of end stage kidney disease there is a worsening of health by remoteness (see measure 1.10).

**Figure 1.17-1**

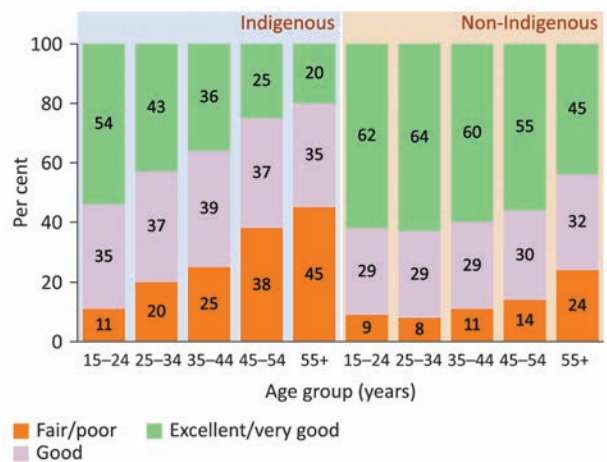
Self-assessed health status (age-standardised) by Indigenous status, persons aged 15 years and over, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.17-2

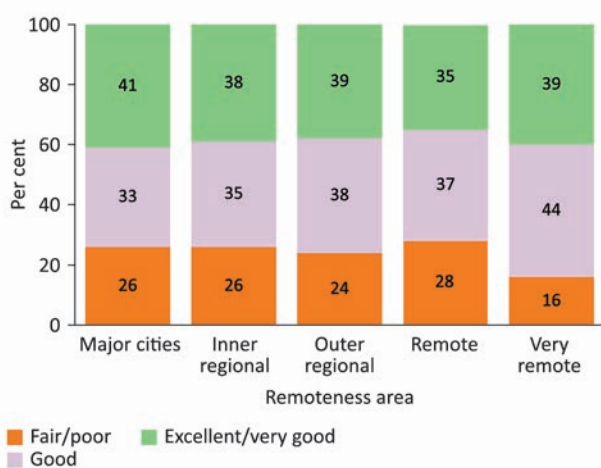
Self-assessed health status by Indigenous status and age group, persons aged 15 years and over, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.17-3

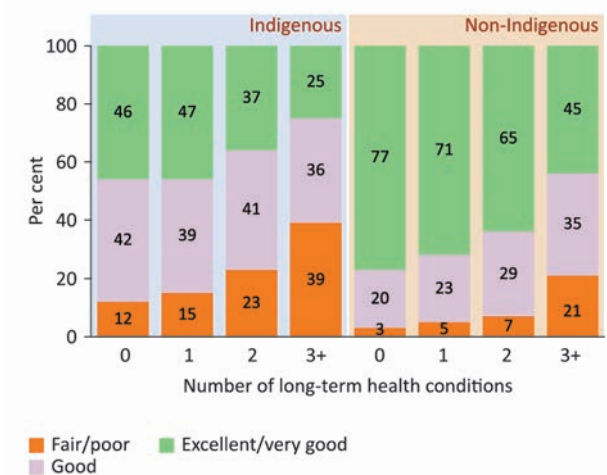
Self-assessed health status, Indigenous Australians aged 15 years and over, by remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.17-4

Self-assessed health status (age-standardised) by Indigenous status and number of long-term health conditions, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.17-5

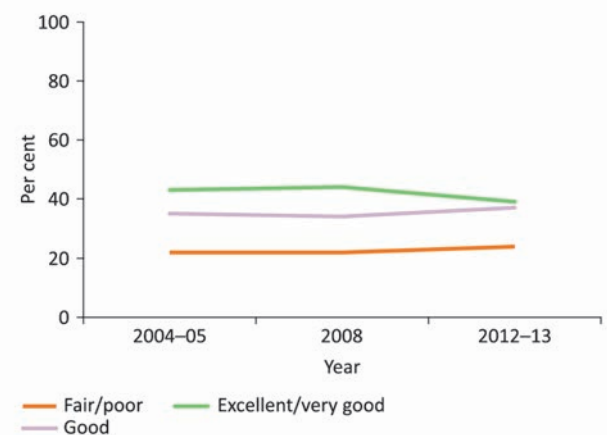
Self-assessed health status, Indigenous Australians aged 15 years and over, by state/territory, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 1.17-6

Self-assessed health status, Indigenous Australians aged 15 years and over, 2004–05, 2008 and 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS



1.18

Social and emotional wellbeing

Why is it important?

Social and emotional wellbeing is a holistic concept based on connections to country, culture, community, family, spirit and physical and mental health. For Aboriginal and Torres Strait Islander peoples, health is not just the physical wellbeing of the individual but the 'social, emotional and cultural wellbeing of the whole community' (SHRG 2004).

Social and economic disadvantage is interconnected with historical loss of land (which was the economic and spiritual base for Aboriginal and Torres Strait Islander communities); damage to traditional social and political structures and languages; child removals; incarceration rates and inter-generational trauma (NPHP 2006). Experience of discrimination also leads to psychological distress and has a negative impact on health (Paradies et al. 2008).

Indigenous Australians experience higher levels of morbidity and mortality from mental illness, psychological distress, assault, self-harm and suicide than other Australians.

Findings

The Health Survey and Social Survey collect information on a range of social issues relevant to the social and emotional wellbeing of Indigenous Australians. These surveys show that Indigenous Australians retain strong links to their traditional culture. In 2012–13, 63% of Indigenous Australians aged 18 years and over reported they identified with a clan or language group, 73% recognised an area as homelands/ traditional country and 86% felt accepted by other Aboriginal and Torres Strait Islander people.

Family and community attachments are important factors in the lives of Indigenous Australians (see measure 1.13). In 2008, 89% of Indigenous Australians reported that they could get support from outside the household in time of crisis and approximately 89% reported that they had been involved in social activities in the last three months. In 2012–13, approximately 54% of Indigenous Australians aged 15 years and over reported that they and/or a relative had been removed from their natural family. Those who were removed from their family were more likely to

have high levels of psychological distress (35%) than those never affected by family removals (26%).

Based on analysis of the 2008 Social Survey and the Household Income and Labour Dynamics in Australia Survey (AIHW 2014o), 53% of Indigenous Australians reported that they had 'been a happy person' all or most of the time in the previous four weeks compared with 61% of non-Indigenous Australians. Conversely, 51% of Indigenous Australians reported that they had 'felt so down in the dumps' nothing could cheer them up at least some of the time over the same period compared with 37% of non-Indigenous Australians. However, despite these reported lower levels of wellbeing, on a scale of life satisfaction ranging from 0 (completely dissatisfied) to 10 (completely satisfied) a higher proportion of Indigenous (41%) than non-Indigenous (32%) Australians reported a value of 9 or 10 (AIHW 2014o).

Having a health condition is associated with lower levels of emotional wellbeing (Kahneman et al. 2010). When Indigenous (and non-Indigenous) people reported that their health had improved, they also tended to report a rise in happiness and life satisfaction. Indigenous Australians who were employed tended to report higher levels of wellbeing than those who were unemployed or not in the labour force (AIHW 2014o). There was a weaker link between income and positive wellbeing for Indigenous Australians in remote areas compared with non-remote areas.

Psychological distress

Based on the 2012–13 Health Survey, most (70%) Indigenous adults had low/moderate levels of psychological stress and 30% had high/very high levels. There was a statistically significant 3 percentage point increase in those reporting high/very high levels of psychological distress since 2004–05. After adjusting for differences in the age structure of the two populations, the Indigenous rate of high/very high psychological distress was 2.7 times the rate for non-Indigenous adults. Indigenous women (36%) were significantly more likely than Indigenous men (24%) to report high/very high levels of psychological distress. Indigenous Australians living in non-remote areas were more likely to report high/very high distress levels (32%) compared with those in remote areas (24%). Those who reported excellent/very good health were less likely (24%) than those who reported fair/poor health (48%) to have

high levels of psychological distress. High/very high psychological distress levels were associated with lower income, lower educational attainment and unemployment.

Life stressors

In 2012–13, Aboriginal and Torres Strait Islander peoples reported high levels of stressors in their lives, with 73% of those aged 15 years and over reporting that they, their family or close friends had experienced at least one stressor in the previous 12 months. The most common stressors reported were the death of a family member or close friend (37%), serious illness (23%), inability to get a job (23%), mental illness (16%), or alcohol-related problems (14%). The proportion of the Indigenous population reporting at least one stressor was 1.4 times the non-Indigenous rate. People living in non-remote areas tended to experience a greater number of stressors on average (4) than those living in remote areas (3). Those living in non-remote areas were also more likely to have reported serious illness or disability, mental illness and/or involuntary loss of a job. Those living in remote areas experienced stressors such as the death of a family member or close friend and overcrowding more often than those living in non-remote areas.

Research has shown that parental stress caused by factors such as unemployment and financial problems is associated with emotional or behavioural difficulties in children and decreased utilisation of health services for the child's needs (Ou et al. 2010; Strazdins et al. 2010).

Depression and racism

In 2012–13, 16% of Indigenous Australians reported they felt they had been treated badly in the last 12 months because they were Aboriginal and/or Torres Strait Islander. Rates of psychological distress were higher for this group (47%) than for those who reported that they had not been treated badly (27%).

Research in the NT has found a significant association between interpersonal racism and depression among Aboriginal and Torres Strait Islander peoples after adjusting for sociodemographic factors. Lack of control, stress, negative social connections and reactions to racism such as feeling ashamed or powerless were each identified in the relationship between racism and depression (Paradies et al. 2012). A study of 755 Aboriginal Victorians also found an association between reported racism and psychological distress (Kelaher et al. 2014).



Social and emotional wellbeing of children

The Longitudinal Study of Indigenous Children (LSIC) included a module on Strengths and Difficulties. In Wave 4, Indigenous boys had higher average behavioural and emotional difficulties scores (13) than girls (11.4) (LSIC 2013). These difficulty scores were higher than scores obtained from studies of the general population (ranging from 9 to 9.9 for boys and from 7.5 to 7.7 girls) (Hawes et al. 2004; Mellor 2005). Caution should be used in comparing these studies as they covered different geographies and ages. In Wave 3 of LSIC, 23% of children had scores putting them in the high-risk category for developing clinically significant behavioural problems (LSIC 2012). The 2001–02 Western Australia Aboriginal Child Health Survey (WAACHS) reported that 26% of Indigenous children aged 4 to 11 years were at high risk of clinically significant behaviour problems compared with 17% of non-Indigenous children (De Maio et al. 2005). Another study (NSW Health 2005) found that 23% of Indigenous children aged 5 to 15 years in NSW were at a high risk of emotional or behavioural difficulties.

In Wave 4 of LSIC, the main risk factors found to have the greatest impact on the surveyed children's social and emotional difficulties scores, were a close family member having been arrested, been in jail or had problems with the police; the children being cared for by someone else for at least a week as opposed to remaining constantly with their regular carers; and children being scared by other people's behaviour. These intra-family factors were more significant than many commonly assumed social factors, such as illness, housing problems and money worries (LSIC 2013).

Mental health conditions

Mental health related conditions accounted for 3% of deaths among Indigenous Australians over the period 2008–12 in NSW, Qld, WA, SA and the NT combined. Of these deaths 54% were for organic mental disorders (injury or non-psychiatric illness affecting the brain), and 31% were for mental and behavioural disorders due to psychoactive substance use. After adjusting for differences in the age structure of the two populations Indigenous Australians died from mental health related conditions at 1.2 times the non-Indigenous rate.

In the period July 2011 to June 2013, mental health related conditions

were the principal reason for 8% of hospitalisations (excluding dialysis) for Indigenous Australians. Indigenous men were hospitalised for mental health related conditions at 2.3 times the rate of non-Indigenous males, and Indigenous females at 1.7 times the rate for non-Indigenous females. Since 2004–05, there has been a 40% increase in hospitalisations for mental health related conditions among Indigenous Australians in the six jurisdictions with adequate data for trend reporting (NSW, Vic, Qld, WA, SA and the NT combined). Rates among non-Indigenous Australians remained static over this period, resulting in a 144% increase in the difference between Indigenous and non-Indigenous rates.

The most common reasons for mental health related hospitalisation were mental and behavioural disorders due to psychoactive substance use (37% of episodes), schizophrenia (23%), mood disorders (15%), and neurotic, stress-related disorders (15%). Indigenous hospitalisation rates for mental health related issues were highest in the 25–54 year age groups. Rates were lowest in inner regional (22 per 1,000 population) and very remote areas (23 per 1,000 population) and were highest in remote areas (37 per 1,000 population). Rates varied between jurisdictions. The highest rates were for SA (48 per 1,000) and the lowest for Tasmania (11 per 1,000).

GP survey data collected from April 2008 to March 2013 suggest that 11% of all problems managed by GPs among Indigenous patients were mental health related problems. After adjusting for differences in the age structures of the two populations, Indigenous Australians had mental health problems managed by GPs at 1.3 times the rate for other Australians. Depression was the most frequently reported mental health related problem managed by GPs among Indigenous Australians, followed by anxiety, and then use of tobacco, alcohol and other drugs. Depression and anxiety were the leading mental health related problems managed for other Australians.

Suicide

For the period 2008–2012, among Indigenous Australians in the jurisdictions with adequate data quality (NSW, Qld, WA, SA and the NT combined), there were 561 suicides. This accounted for approximately 5% of deaths among Indigenous Australians at a rate of 19.3 per 100,000 population. Among Indigenous Australians, 73%

of suicides were among males. After adjusting for differences in the age profile of the two populations, the Indigenous suicide rate was around twice the rate for non-Indigenous Australians. Among Indigenous Australians aged 15–19 years, the suicide rate was 5 times the non-Indigenous rate. An ABS analysis of suicide data for the 10 years from 2001 to 2010 found that an average of 100 Indigenous Australians ended their lives through suicide each year over the period (ABS 2012c).

During 2008–2012, approximately 88% of Indigenous suicides occurred before 45 years of age. This pattern is different among non-Indigenous Australians, with 50% of suicides occurring at less than 45 years of age. After the age of 50, Indigenous suicide rates drop below the suicide rates for non-Indigenous Australians.

There has been no significant change in suicide death rates among Indigenous Australians between 1998 and 2012 in NSW, Qld, WA, SA and the NT combined. Research in the NT has shown that Indigenous suicide rates increased significantly between 1981 and 2002 and particularly from the mid-1990s while the non-Indigenous suicide rate remained relatively stable over this period (Measey et al. 2006). More recent data from the NT shows no significant change between 2001 and 2012.

In 2012–13 there were 2,536 hospitalisations among Indigenous Australians for non-fatal intentional self-harm, this represented 3% of Indigenous hospitalisations over this period (SCRGSP 2014a). Rates were higher for Indigenous females (437 per 100,000 population) compared with males (318 per 100,000) and were higher in remote areas (426 per 100,000 population) compared with other areas (389 per 100,000 in major cities and 346 per 100,000 population in regional areas). After adjusting for differences in population age structures, Indigenous Australians were hospitalised for self-harm at 2.7 times the rate of non-Indigenous Australians.

In 2001–02, as part of the WAACHS, young people aged 12–17 years were asked about suicidal thoughts and suicide attempts. Suicidal thoughts were reported by around 1 in 6 (16%) of these young people in the 12 months prior to the survey. A higher proportion of Aboriginal girls reported they had seriously thought about ending their own life than Aboriginal boys (20%



compared with 12%). Of those who had suicidal thoughts in the 12 months prior to the survey, 39% reported they had attempted suicide in the same period.

The proportion of Aboriginal children who reported suicidal thoughts was significantly higher among those who smoked regularly, used cannabis, drank to excess in the six months prior to the survey, were exposed to some form of family violence, or who had a friend who had attempted suicide.

Implications

The policy responses to social and emotional wellbeing need to be multidimensional and involve a wide range of stakeholders including families and communities, the health sector, housing, education, employment and economic development, family services, crime prevention and justice, and Aboriginal Community Controlled Health Organisations. Strategies that build on the strengths, resilience and endurance within Aboriginal and Torres Strait Islander communities and recognise the important historical and cultural diversity within communities are recommended (SHRG 2004). Recent suicide prevention studies have identified the need to focus on protective factors, such as community connectedness, strengthening the individual and rebuilding family, as well as

culturally based programmes that include traditional elements (Tighe et al. 2012; Dudgeon et al. 2012).

The Aboriginal and Torres Strait Islander Healing Foundation is building the evidence base on the value of healing programmes that connect people with cultural traditions to address social and emotional wellbeing. The Foundation is also building a trauma-informed workforce, developing skills such as conflict mediation, suicide prevention, mental health, first aid and lateral violence prevention (Training and Education Volume 2 Healing Foundation 2014). The Foundation has invested \$4 million in workforce and community development projects across almost 50 communities, to increase capacity to understand, cope with and respond to people experiencing trauma, loss and grief. The Healing Foundation activities report showed that 94% of participants had improved social and emotional wellbeing, 73% increased their capacity to manage the impacts of trauma, and 60% increased their access to support services following healing activities (Healing Foundation 2014).

The *Indigenous Advancement Strategy—Safety and Wellbeing* programme provides funding for strategies known to enhance community safety and support Indigenous wellbeing. In 2014–15 this included funding of \$39.7m for social and emotional wellbeing services and workforce support.

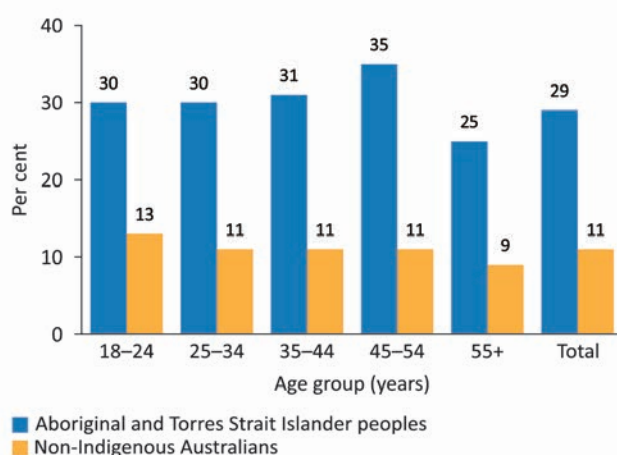
Work to renew the *Social and Emotional Wellbeing Framework* is also underway. Suicide prevention investment for Indigenous Australians is also provided by the Australian Government:

- Approximately \$4.9m committed under the *National Suicide Prevention Programme* to specific services for Aboriginal and Torres Strait Islander Australians.
- \$1.2m committed under the *Taking Action to Tackle Suicide* package for specific suicide prevention activity targeting Aboriginal and Torres Strait Islander peoples.

The *Alive and Kicking Goals* (AKG) programme is an innovative and award winning suicide prevention programme targeting youth at risk in regional (West Kimberly) WA. The programme is the first of its kind that is evidenced-based, wholly owned and led by young Aboriginal women and men. AKG aims to save young lives through building positive help-seeking attitudes; culturally secure peer education and support network.

Figure 1.18-1

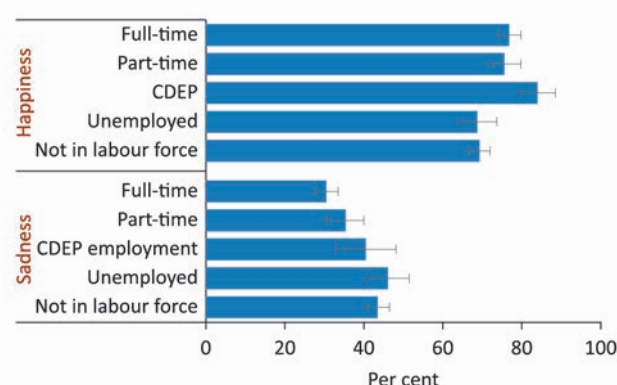
Proportion of people reporting high/very high levels of psychological distress, by Indigenous status and age group, persons aged 18 years and over, 2012–13



Note: totals are age-standardised
Source: ABS analysis of the 2012–13 AATSIHS

Figure 1.18-2

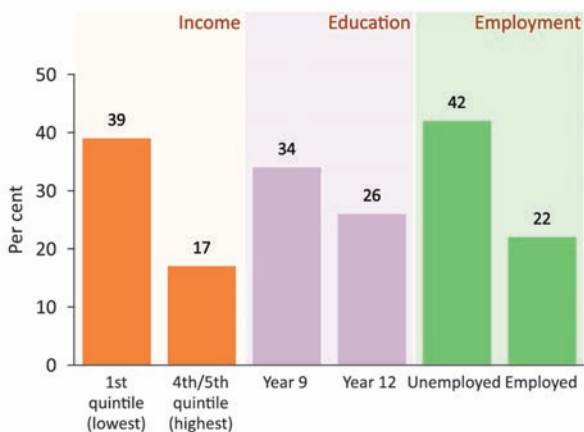
Happiness and sadness, by labour force status, Indigenous Australians aged 15 and over, 2008



Source: Adapted from the AIHW Indigenous Observatory (AIHW 2014a)

**Figure 1.18-3**

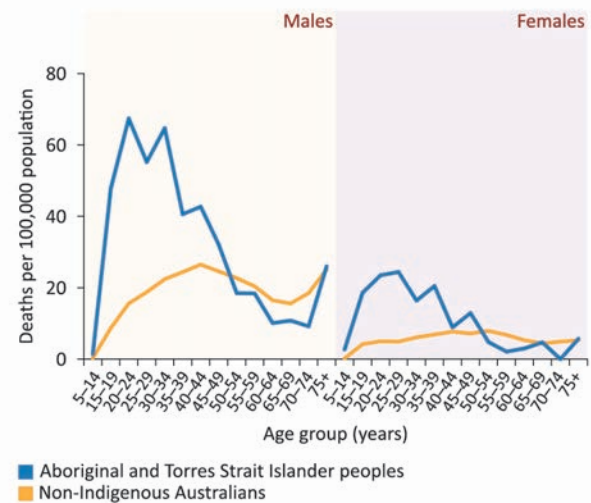
Relationship between high/very high levels of psychological distress and social factors, Indigenous Australians, 2012–13



Source: ABS analysis of the 2012–13 AATSIHS

Figure 1.18-4

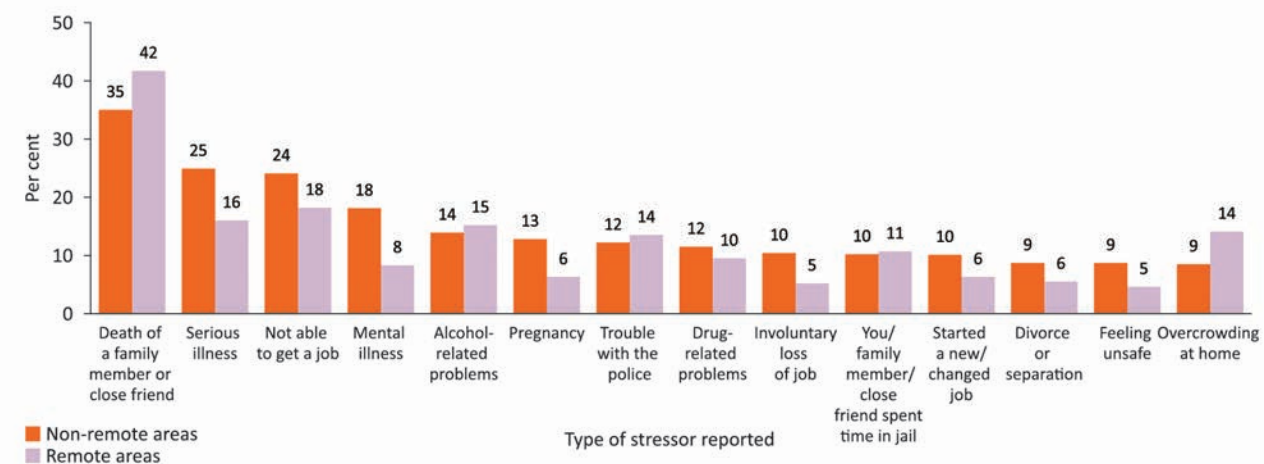
Mortality from suicide rates per 100,000, by Indigenous status, sex and age group, NSW, Qld, WA, SA and the NT, 2008–12



Source: AIHW and ABS analysis of National Mortality Database

Figure 1.18-5

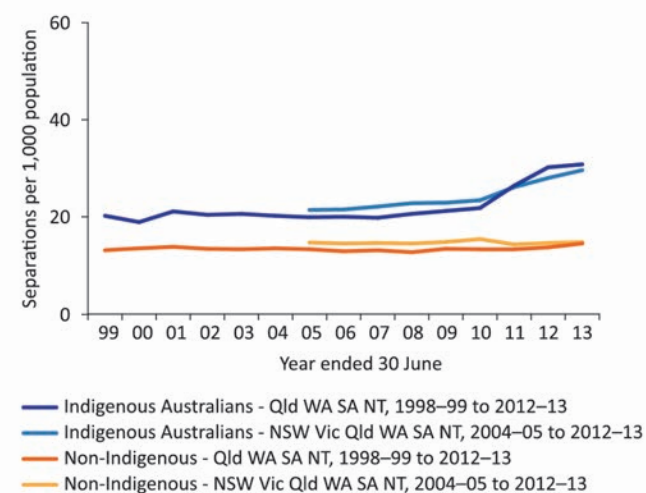
Proportion of people reporting selected stressors, by remoteness area, Indigenous persons aged 15 years and over, 2012–13



Source: ABS analysis of the 2012–13 AATSIHS

Figure 1.18-6

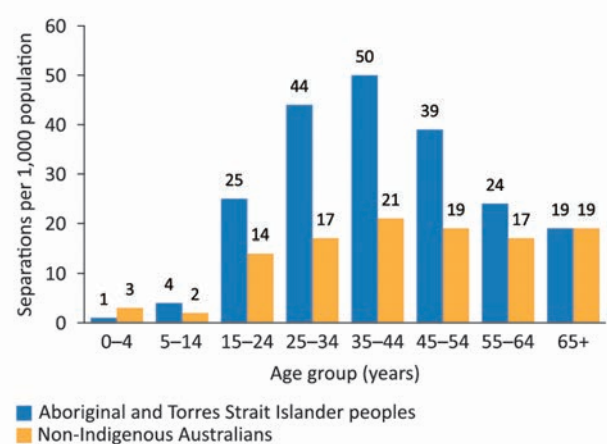
Age-standardised hospitalisation rates for mental health related conditions, by Indigenous status, 1998–99 to 2012–13



Source: AIHW analysis of National Hospital Morbidity Database

Figure 1.18-7

Age-specific hospitalisation rates for mental health related conditions, by Indigenous status, July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database



1.19

Life expectancy at birth

Why is it important?

Life expectancy at birth is widely used internationally as a measure of the general health of populations. Over the last 125 years, life expectancy at birth for the Australian population has increased by more than 30 years (from 47 years for males and 51 years for females in 1885) (ABS 2012b). There is currently a large gap in life expectancy between Indigenous and non-Indigenous Australians. A recent study in the NT estimated that socio-economic disadvantage accounted for one-third to one-half of the gap in life expectancy (Zhao et al. 2013a). Social and economic factors such as poverty, racism, stressors, educational exposure and employment status impact on the individual's propensity to engage in health risk behaviours and on their access to the health system. These factors combined lead to increased risk of circulatory disease (Dong et al. 2004) and cancer (Kelly-Irving et al. 2013), the leading causes of death.

Findings

In 2010–12, life expectancy for Aboriginal and Torres Strait Islander males was estimated to be 10.6 years lower than that of non-Indigenous males (69.1 years compared with 79.7 years) and 9.5 years lower for females (73.7 compared with 83.1 years). For the first time, the ABS has published trend data by revising the 2005–07 estimate to provide comparable data with 2010–12. Over this five year period life expectancy increased for both Indigenous men and

women and the life expectancy gap between Indigenous and non-Indigenous Australians reduced slightly by 0.8 years for males and by 0.1 years for females. Four jurisdictions have populations of sufficient size to calculate Indigenous life expectancy estimates (NSW, Qld, WA and the NT). Indigenous life expectancy is estimated to be lower in the NT than in any other jurisdiction. Life expectancy for Indigenous males in the NT was estimated to be 63.4 years compared with 70.5 years for NSW (a gap of 7.1 years). Indigenous females in the NT had a life expectancy estimate of 68.7 years compared with 74.6 years for Indigenous females in NSW (a gap of 5.9 years). Life expectancy for Aboriginal and Torres Strait Islander males living in outer regional, remote and very remote areas combined was estimated to be 0.7 years lower than that of Indigenous males living in major cities and inner regional areas combined (67.3 years compared with 68 years) and 0.8 years lower for females (72.3 compared with 73.1 years).

Internationally, life expectancy has increased greatly over the past few decades. The OECD average is now 80.1 years and emerging countries such as Brazil and China have also achieved large gains in longevity (OECD 2013). Methods of calculating life expectancy vary internationally so caution is needed in making comparisons. Higher income per capita is generally associated with higher life expectancy, although there are some variations across countries, for example the US had lower life expectancy than other countries with similar incomes. Life expectancy at birth for Indigenous Australians was close to that of the general populations in Brazil and Indonesia. In New Zealand, there was a

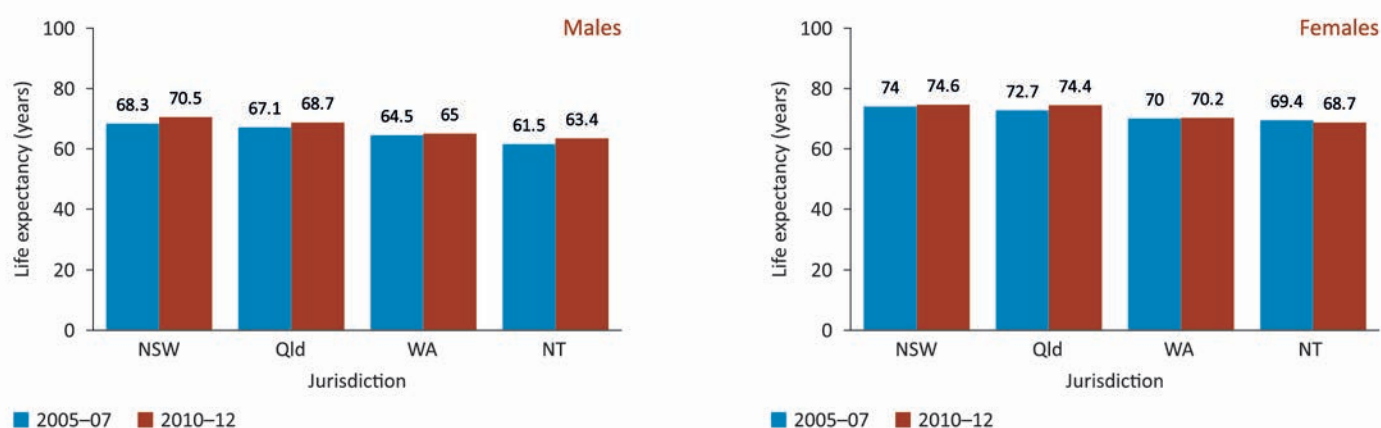
life expectancy gap between Maori and non-Maori of 7.4 years for males and 7.2 years for females (Statistics NZ 2013).

Implications

Closing the gap in life expectancy between Aboriginal and Torres Strait Islander peoples and other Australians within a generation has been adopted as a target by COAG. Life expectancy estimates move slowly, currently around 0.25 years of life per year for the Australian population. The ABS estimates that life expectancy at birth for Indigenous males has increased by 0.32 years per year since 2005–07, and by 0.12 years per year for Indigenous females. To meet the target by 2031, Indigenous life expectancy needs to increase by 0.6 to 0.8 years per year. In the five years since the target was set there has been limited time for investments to impact on population level death rates. For example, reductions in population level smoking rates take 5 years to impact on heart disease and up to 20 years for cancer. Improvements in educational attainment will take 20 to 30 years to impact on early deaths from chronic disease in the middle years. Most deaths for Indigenous Australians occur in the middle years. Indigenous mortality rates are 5 times the non-Indigenous rate between the ages of 35–44 years. The leading causes of death for Indigenous Australians are circulatory disease, cancer, injury, diabetes and respiratory disease. The results signal the need for significant and concerted efforts to continue improving Indigenous health outcomes, both directly through health interventions and by addressing the social determinants of health.

Figure 1.19-1

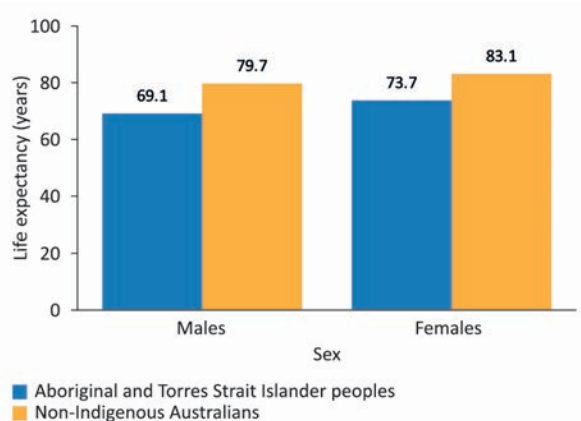
Trends in life expectancy for Indigenous males and females by state/territory, 2005–07 and 2010–12



Source: ABS (2013f)

**Figure 1.19-2**

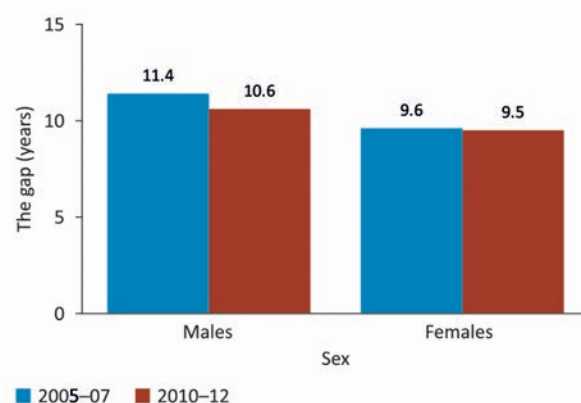
Life expectancy at birth, Indigenous and non-Indigenous Australians by sex, 2010–12



Source: ABS (2013f)

Figure 1.19-4

The gap in life expectancy between Indigenous and non-Indigenous Australians by sex, 2005–07 and 2010–12



Source: ABS (2013f)

Table 1.19-1

Life expectancy at birth and the gap in life expectancy, by Indigenous status and sex, 2005–07 and 2010–12

status and sex, 2005–07 and 2010–12						
	Males		Gap	Females		Gap
	Indig.	Non Indig.		Indig.	Non Indig.	
Years						
2005-07 (revised)	67.5	78.9	11.4	73.1	82.6	9.6
2010-12	69.1	79.7	10.6	73.7	83.1	9.5
change 2005-07 to 2010-12	1.6	0.8	-0.8	0.6	0.5	-0.1

Source: ABS Life Tables for Aboriginal and Torres Strait Islander Australians, 2010-12

Table 1.19-2

Life expectancy at birth, by Indigenous status and sex, selected states/territories and remoteness, 2010–12

Territories and remoteness, 2010–12						
	Males		Gap	Females		Gap
	Indig.	Non Indig.		Indig.	Non Indig.	
Years						
New South Wales	70.5	79.8	9.3	74.6	83.1	8.5
Queensland	68.7	79.4	10.8	74.4	83.0	8.6
Western Australia	65.0	80.1	15.1	70.2	83.7	13.5
Northern Territory	63.4	77.8	14.4	68.7	83.1	14.4
Major cities & inner regional	68.0	79.9	11.9	73.1	83.0	9.9
Outer regional & remote	67.3	78.5	11.2	72.3	82.5	10.2

Source: ABS Life Tables for Aboriginal and Torres Strait Islander Australians, 2010-12

Figure 1.19-3

Life expectancy at birth, comparison across selected countries, 2013



Source: OECD (2013)



1.20

Infant and child mortality

Why is it important?

Infant mortality is the death of a child less than one year of age and is a long established measure of child health, as well as the overall health of the population and its physical and social environment. COAG has committed to halving the gap in mortality rates for Aboriginal and Torres Strait Islander children under 5 years by 2018.

Improvements in Australia's infant mortality rates in the last 100 years were largely due to improved social and public health conditions such as sanitation and health education in the first half of the twentieth century, followed by the development of immunisation, and in more recent years by better treatment in neonatal intensive care and interventions for Sudden Infant Death Syndrome (SIDS).

Findings

Between 1998 and 2013 there has been a significant decline in Indigenous child mortality rates of 31% and a significant narrowing of the gap (by 35%) with non-Indigenous children in jurisdictions with reliable data (NSW, Qld, WA, SA and the NT) (see Figure 3).

In the 5-year period 2009–13, there were 621 deaths of Aboriginal and Torres Strait Islander children aged 0–4 years, and of these, 502 were infant deaths (81%). The mortality rate for Aboriginal and Torres Strait Islander children aged 0–4 years was 1.9 times the non-Indigenous rate.

In the period 2008–12, the mortality rate for Indigenous infants was 1.7 times the non-Indigenous rate (6.2 per 1,000 live births compared with 3.7 per 1,000 live births). The Indigenous infant mortality rate declined by 64% between 1998 and 2012, compared with a decline of 25% for non-Indigenous infants. The gap between mortality rates for Indigenous infants and non-Indigenous infants narrowed significantly (by 83%). In 2008–12, Aboriginal and Torres Strait Islander infant mortality rates varied across jurisdictions, from 4 per 1,000 in NSW, to 13 per 1,000 in the NT. A study in Victoria involving data linkage to improve the quality of Indigenous identification found the Indigenous infant mortality rate was nearly twice the rate for non-Indigenous infants (Freemantle et al. 2014). Data on trends from 1967 to 2006 in the NT (the only jurisdiction with adequate data

quality for this period) show an 81% fall in the Indigenous infant mortality rate with rapid declines until the mid-1980s, followed by slower improvement over the past 20 years. There has been substantial improvement in the NT during the period 1967 to 2006 for both neonatal death rates (up to age 28 days) and post-neonatal death rates (from 28 days to one year) (Wang et al. 2010b).

In 2008–12 the most common causes of death for Aboriginal and Torres Strait Islander infants were conditions originating in the perinatal period (48%) such as birth trauma, foetal growth disorders, complications of pregnancy, and respiratory and cardiovascular disorders specific to the perinatal period. The second leading cause of death was signs, symptoms and ill-defined conditions (19%). This category includes SIDS, which accounted for 9% of infant deaths. The third most common cause of Indigenous infant deaths was congenital malformations accounting for 15% of infant deaths. Among older Indigenous children aged 1–4 years, injury accounted for half of the deaths.

Over two-thirds of the decline in Indigenous infant mortality over the last decade is due to a reduction in deaths from signs, symptoms and ill-defined conditions (including SIDS) and certain conditions originating in the perinatal period (such as complications of pregnancy, labour and delivery, foetal growth disorders, infections and respiratory and cardiovascular disorders). For Indigenous children aged 1–4 years there was an increase in mortality rates due to injury, and declines in deaths due to diseases of the nervous system and signs, symptoms and ill-defined conditions (AIHW 2014ad).

International statistics show that indigenous infants in the US and New Zealand have higher mortality rates than infants in the general population and these gaps are similar to the gap between Aboriginal and Torres Strait Islander and non-Indigenous infants. In New Zealand the infant mortality rate for Maoris was 7 per 1,000 live births compared with 4 per 1,000 for other infants in 2011. In the United States, the mortality rate for American Indians/Alaskan Natives was 9 per 1,000 live births compared with 6 per 1,000 live births for the total population in 2009. Caution must be used in comparing data with other countries due to variations in data quality, methods applied for addressing data quality issues and definitions for identifying Indigenous Australians.

Implications

Both child and infant Indigenous mortality rates are declining. While mortality for non-Indigenous children is also declining, the gaps in mortality between Indigenous and non-Indigenous infants and children are reducing. Deaths during the neonatal period (up to 28 days), which account for 61% of infant deaths, have also fallen significantly (see measure 1.21).

This significant improvement provides opportunities to understand which aspects of Aboriginal and Torres Strait Islander lives contribute to infant and child mortality and where the health system could be more effective in engaging with Aboriginal and Torres Strait Islander peoples to support healthy pregnancies and childhood development.

The key risk factors associated with infant and child mortality include low birthweight and pre-term births, maternal health and behaviours (smoking, alcohol, nutrition during pregnancy), socio-economic status, and access to health services (AIHW 2014ad). There have been improvements for Indigenous Australians for several of these risk factors in recent years, for example a 9% decline in low birthweight between 2000 and 2011 (see measure 1.01). However, there remains a significant disparity between the Indigenous and non-Indigenous rates of low birthweight (2 times higher for Indigenous), smoking during pregnancy (4 times higher), immunisation at age 1 (4 percentage points lower), and antenatal care in the first trimester (15 percentage points less).

A study of avoidable mortality in the NT between 1985 and 2004 found the largest improvements in deaths were for conditions amenable to medical care such as increased number of births in hospital, improved neonatal and paediatric care and the establishment of pre-natal screening for congenital abnormalities (Li et al. 2009). The long term study in the NT from 1967 found improvements in both neonatal deaths (usually indicative of pregnancy related health and services) and post-neonatal deaths (indicative of conditions) (Wang et al. 2010b).

In December 2007, COAG committed to closing the gap in Indigenous disadvantage and, in particular, to halving the gap in mortality rates for Aboriginal and Torres Strait Islander children under 5 years of age by 2018. Australian governments are investing in a range of initiatives to improve child and maternal health.

The 2014–15 Federal Budget provided funding of \$94 million from July 2015



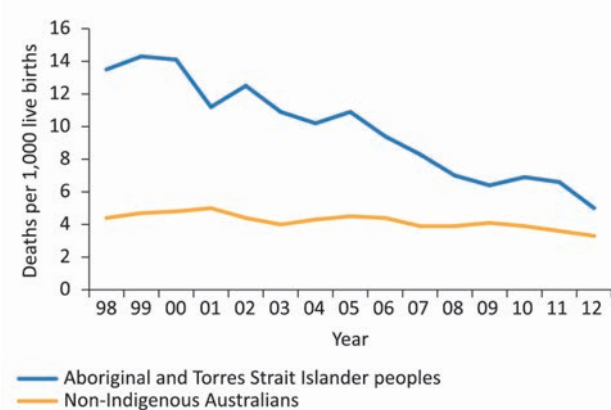
for the *Better Start to Life* approach to expand efforts in child and maternal health to support Indigenous children to be healthy and ready for school. The *Better Start to Life* approach included \$54 million to increase the number of *New Directions: Mothers and Babies* services from 85 to 136. These services provide Aboriginal and Torres Strait Islander families with access to antenatal care, practical advice and assistance with parenting, and health checks for

children. The *Better Start to life* approach will also provide \$40 million to expand the *Australian Nurse Family Partnership Program (ANFPP)* from 3 to 13 sites. The ANFPP aims to improve pregnancy outcomes by helping women engage in good preventive health practices, support parents to improve their child's health and development, and help parents develop a vision for their own future, including continuing education and finding work.

The 2014–15 Federal Budget also committed \$25.9 million in 2014–15 for a new *Indigenous Teenage Sexual and Reproductive Health and Young Parent Support* measure to continue Indigenous teenage sexual and reproductive health and antenatal care services to provide information to young people to make informed decisions about their reproductive health and health behaviours during pregnancy.

Figure 1.20-1

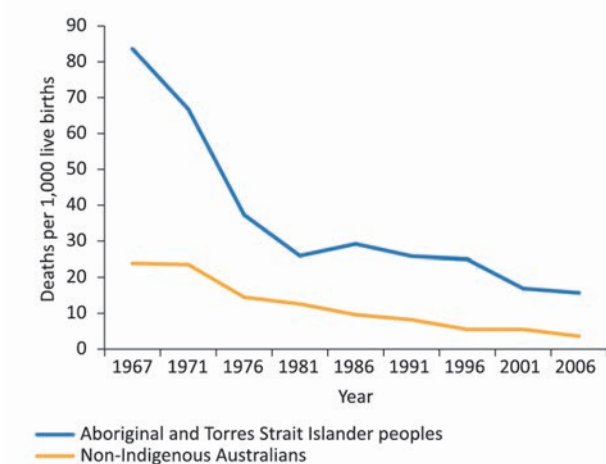
Infant mortality rates per 1,000 live births, by Indigenous status, NSW, Qld, WA, SA and the NT, 1998 to 2012



Source: ABS and AIHW analysis of National Mortality Database

Figure 1.20-2

Infant mortality rates per 1,000 live births, by Indigenous status, NT, 1967 to 2006



Note: Rates are for 4- and 5-year averages

Source: Wang et al. (2010b)

Table 1.20-1

Infant mortality rates per 1,000 live births, by Indigenous status, NSW, Qld, WA, SA and the NT, 2008–12

Jurisdiction	Number of deaths		Rate per 1,000 live births		Ratio	Rate Difference
	Indig.	Non Indig.	Indig.	Non Indig.		
NSW	103	1,745	3.6	3.7	1.0	-
Qld	182	1,320	6.9	4.5	1.5	2.4
WA	85	396	7.3	2.8	2.6	4.4
SA	26	290	5.5	3.1	1.8	2.4
NT	97	45	12.5	3.8	3.2	8.6
Total of 5 jurisdictions	493	3,796	6.2	3.7	1.7	2.5

Source: ABS and AIHW analysis of National Mortality Database

Table 1.20-2

Causes of infant death by Indigenous status, NSW, Qld, WA, SA and the NT, 2008–12

Cause of death:	Number of deaths		Rate per 1,000 live births		Ratio	Rate difference
	Indig.	Non Indig.	Indig.	Non Indig.		
Certain conditions originating in the perinatal period	237	1,893	3.0	1.9	1.6	1.1
Signs, symptoms & ill-defined conditions	96	386	1.2	0.4	3.3	0.9
<i>SIDS (subcategory of Signs, symptoms etc.)</i>	46	245	0.6	0.2	2.4	0.3
Congenital malformations	74	992	0.9	1.0	1.0	-
Other conditions	21	247	0.3	0.1	3.7	-
Diseases of the respiratory system	20	69	0.3	0.1	3.7	0.2
Infectious and parasitic diseases	19	51	0.2	0.1	2.1	0.2
Injury & poisoning	17	104	0.2	0.1	2.1	0.1
Diseases of the circulatory system	9	72	0.1	0.1	1.6	-
Total	493	3,796	6.2	3.7	1.7	2.5

Source: ABS and AIHW analysis of National Mortality Database



1.21

Perinatal mortality

Why is it important?

The perinatal mortality rate includes foetal deaths (stillbirths) and deaths of live-born babies within the first 28 days after birth. Almost all of these deaths are due to factors that occur during pregnancy and childbirth. Perinatal mortality reflects the health status and health care of the general population, access to and quality of preconception, reproductive, antenatal and obstetric services for women, and health care in the neonatal period. Broader social factors such as maternal education, nutrition, smoking, alcohol use in pregnancy, and socio-economic disadvantage are also significant.

Findings

Reliable data on foetal and neonatal deaths for Aboriginal and Torres Strait Islander peoples are only available for NSW, Qld, WA, SA and the NT. Based on the combined data for these jurisdictions for the period 2008–12, the perinatal mortality rate for Aboriginal and Torres Strait Islander babies was around 9.6 per 1,000 births compared with 8.1 per 1,000 births for non-Indigenous babies. Foetal deaths (stillbirths) account for around 60% of perinatal deaths for Aboriginal and Torres Strait Islander babies and 67% of perinatal deaths for non-Indigenous Australian babies.

Due to small numbers, time-series data for perinatal mortality are volatile. The perinatal mortality rate for Aboriginal and Torres Strait Islander peoples decreased by around 52% between 1998 and 2012—an average yearly decline of 0.7 deaths per 1,000 births. The perinatal mortality rate for non-Indigenous Australians also decreased, but by a smaller amount, so that the gap between Indigenous Australians and non-Indigenous Australians decreased significantly over this period. Foetal death rates for Indigenous Australians declined by 44% and neonatal deaths by 61%.

Estimated rates for perinatal mortality vary between jurisdictions from 3.7 deaths per 1,000 births to Aboriginal and Torres Strait Islander mothers in SA, to 18 per 1,000 births in the NT. The largest gap was in the NT with Indigenous rates 2.6 times the non-Indigenous rates. Indigenous perinatal mortality rates were lower than non-Indigenous rates in NSW and SA.

The two leading causes of Aboriginal and Torres Strait Islander perinatal mortality were premature birth/ inadequate foetal growth and a group of conditions originating in the perinatal period including birth trauma and disorders specific to the foetus/newborn (together accounting for 72% of deaths). Congenital malformations, deformations and chromosomal abnormalities were the third most common group of conditions (15%). The main conditions in the mother leading to perinatal deaths were complications of pregnancy (14%) followed by complications of the placenta, cord and membranes (13%). A higher proportion of deaths in the first 28 days were due to disorders related to length of gestation and foetal growth (36% Indigenous compared with 31% non-Indigenous) and a lower proportion due to congenital malformations (19% Indigenous compared with 28% non-Indigenous).

Implications

Reductions in perinatal mortality rates among Indigenous Australians have occurred since the 1990s. Rates of low birthweight for Aboriginal and Torres Strait Islander babies have improved by 9% between 2000 and 2011 (see measure 1.01). A study of avoidable mortality in the NT between 1985 and 2004 found a significant improvement in mortality for conditions amenable to medical care for Indigenous Australians in the NT, including perinatal survival. The authors noted that a broad range of medical care improvements such as an increased number of births in hospital, improved neonatal and paediatric care, and the establishment of pre-natal screening for congenital abnormalities have likely contributed to this improvement (Li et al. 2009).

Due to small numbers it is not possible to detect statistically significant changes in particular causes of perinatal deaths.

Enhanced primary care services and continued improvement in antenatal care have the capacity to support improvements in the health of the mother and baby. Recognising this, the 2014–15 Federal Budget provides funding of \$94 million from July 2015, for the *Better Start to Life* approach to expand efforts in child and maternal health to support Indigenous children to be healthy and ready for school.

The *Better Start to Life* approach includes \$54 million to increase the number of sites providing *New Directions: Mothers and Babies Services* from 85 to 136. These Services provide Aboriginal and Torres Strait Islander families with access to antenatal care; practical advice and assistance with parenting; and health checks for children. The *Better Start to Life* approach will also provide \$40 million to expand the *Australian Nurse Family Partnership Program* (ANFPP) from 3 to 13 sites. The ANFPP aims to improve pregnancy outcomes by helping women engage in good preventive health practices; supporting parents to improve their child's health and development; and helping parents develop a vision for their own future, including continuing education and finding work. A study of the impact of the US Nurse Family Partnership programme, on which the ANFPP is modelled, has shown reductions in all-cause mortality among mothers and preventable-cause mortality in children in disadvantaged settings (Olds et al. 2014).

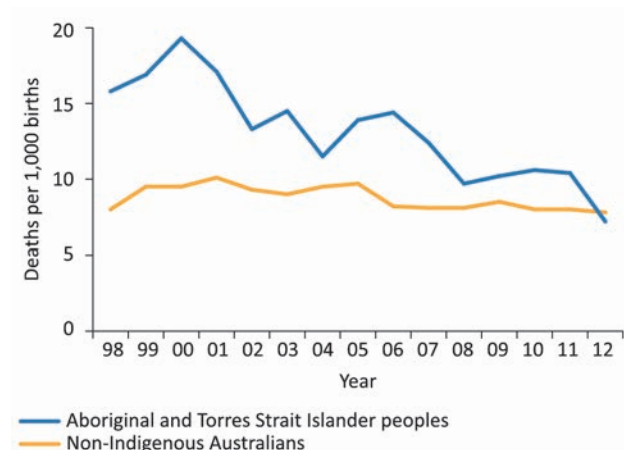
The 2014–15 Federal Budget also commits \$25.9 million in 2014–15 for a new *Indigenous Teenage Sexual and Reproductive Health and Young Parent Support* measure to continue Indigenous teenage sexual and reproductive health and antenatal care services. Implemented by states and territories, these services will provide information to young people to make informed decisions about their reproductive health and health behaviours during pregnancy in order to influence the health of young mothers and their babies.

State and territory governments provide a comprehensive range of services that aim to improve child and maternal health and prevent perinatal mortality. For example, in the ACT the *Aboriginal Midwifery Access Program* is provided through the Winnunga Nimmityjah Aboriginal Health Service. This programme offers antenatal and postnatal care, community at home support, baby health checks, breastfeeding support, immunisations, and a range of women's health services.

Improvements in social, environmental and behavioural factors are also needed to achieve healthy outcomes for mothers and their babies.

**Figure 1.21-1**

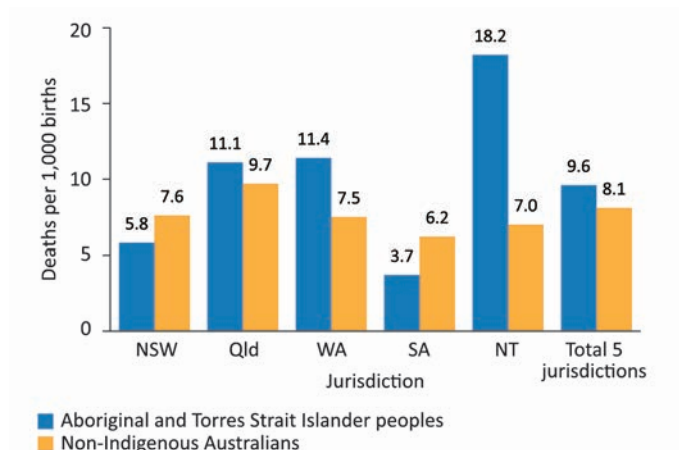
Perinatal mortality rate by Indigenous status, NSW, Qld, WA, SA, and the NT, 1998 to 2012



Source: ABS and AIHW analysis of National Mortality Database

Figure 1.21-2

Perinatal mortality rate by state/territory and Indigenous status, 2008–12



Source: ABS and AIHW analysis of National Mortality Database

Table 1.21-1

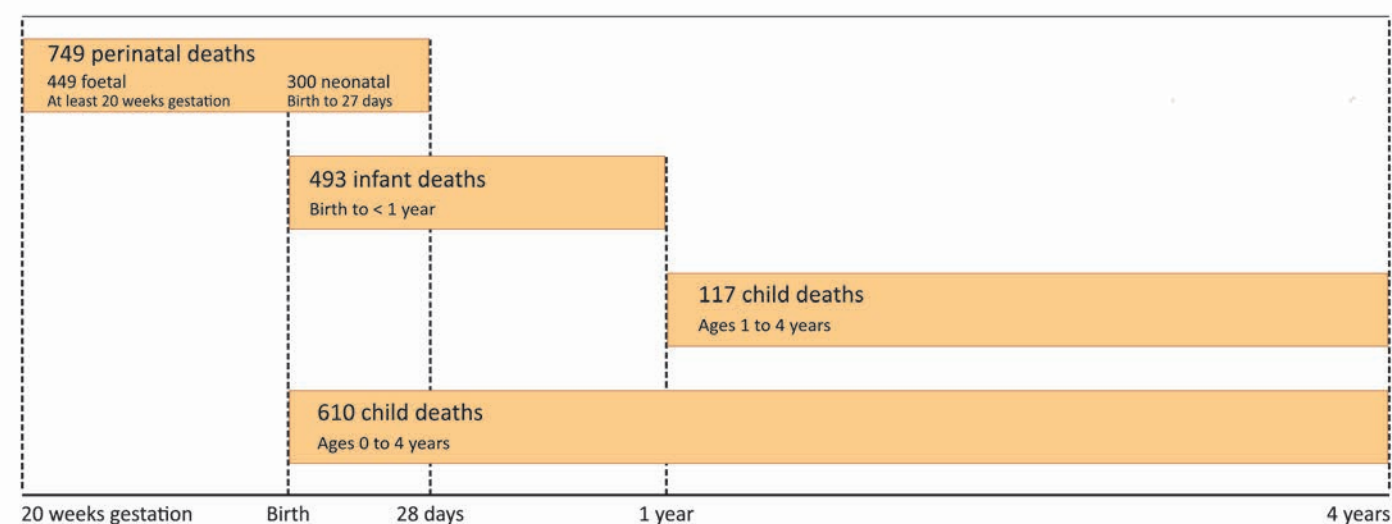
Proportion of deaths for perinatal babies by underlying cause of death and Indigenous status, NSW, Qld, WA, SA and NT, 2008–12

Cause of death:	Foetal deaths		Neonatal deaths		Perinatal deaths	
	Indig.	Non Indig.	Indig.	Non Indig.	Indig.	Non Indig.
	Per cent		Per cent		Per cent	
Main condition in the fetus/infant:						
Other conditions originating in the perinatal period	48.3	48.1	18.3	20.8	36.3	39.1
Disorders related to length of gestation and fetal growth	35.2	30.3	36.3	30.8	35.6	30.5
Congenital malformations, deformations and chromosomal abnormalities	12.5	16.2	19.0	27.6	15.1	19.9
Respiratory and cardiovascular disorders	3.3	4.2	15.7	11.2	8.3	6.5
Infections	n.p.	0.7	5.0	3.7	2.4	1.7
Other conditions	0	0.5	5.7	5.8	2.3	2.3
Main condition in the mother:						
Complications of placenta, cord and membranes	13.1	14.9	12.7	11.9	13.0	13.9
Maternal complications of pregnancy	10.7	10.1	18.7	19.5	13.9	13.2
Maternal conditions that may be unrelated to present pregnancy	9.8	5.3	5.3	5.7	8.0	5.4
Complications of labour and delivery and noxious influences transmitted via placenta or breast milk	5.8	5.7	4.7	8.2	5.3	6.5
Total deaths (Number)	449	5 515	300	2 685	749	8 200

Source: AIHW analysis of ABS Deaths Registration Database

Figure 1.21-3

Child and infant mortality. Aboriginal and Torres Strait Islander peoples. 2008–12



Source: ABS and AIHW analysis of National Mortality Database



1.22

All causes age-standardised death rate

Why is it important?

The mortality rate of a population provides a summary measure of the overall health status of that population. However, it has some well-known limitations. There may be delays for many years before improvements in health status lead to reductions in mortality, and mortality statistics do not reflect the burden of illness in a population for diseases that do not necessarily result in death, such as arthritis and depression.

Despite these limitations, mortality rates are a useful measure with which to compare the overall health status of different populations and to monitor changes in overall health status of populations over time.

The all-causes mortality rate for Aboriginal and Torres Strait Islander peoples is 1.7 times that for non-Indigenous Australians, indicating that the overall health status of Aboriginal and Torres Strait Islander peoples is worse than that of non-Indigenous Australians.

Findings

During the period 2009–13, in those jurisdictions with adequate quality data (NSW, Qld, WA, SA, and the NT), 12,327 deaths were identified as those of Aboriginal and Torres Strait Islander peoples. After adjusting for age differences between the two populations, the all-cause mortality rate was 1.7 times as high for Aboriginal and Torres Strait Islander peoples as the rate for non-Indigenous Australians (985 versus 585 deaths per 100,000 population).

There was a 16% reduction in all-cause mortality rates for Aboriginal and Torres Strait Islander peoples in the time period 1998 to 2013 (in NSW, Qld, WA, SA, and the NT). There was also a significant narrowing of the gap (by 15%) in mortality rates between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians over this period.

Most deaths for Aboriginal and Torres Strait Islander peoples occur in the middle age groups. Most deaths for the non-Indigenous population occur in the older age groups. This partly reflects the younger age profile of the Indigenous population. In 2008–12, 64% of Aboriginal

and Torres Strait Islander deaths occurred before the age of 65 years. The largest gaps were in the 35–59 year age group (based on the sum of years of life lost due to premature mortality). In the 35–44 year age group the Indigenous mortality rate was 4 times the non-Indigenous rate.

Within the Indigenous population males and females had different patterns of mortality by age. Indigenous males aged 15–34 years had mortality rates twice that of Indigenous females. For males, deaths were highest in the 45–64 years age group, while for females deaths were highest in the 55–74 years age group.

In the period 2009–13, Indigenous mortality rates ranged from 804 deaths per 100,000 in NSW to 1,461 in the NT.

Between 2001 and 2012 there has been a significant decrease in mortality rates in remote areas (remote and very remote combined) for young children and middle age groups and an increase in the 75 years and over group.

Mortality rates are also available for other countries where Indigenous peoples share a similar history of relatively recent European colonisation, such as New Zealand and the United States. In New Zealand, the age-standardised all-cause mortality rate for the Maori population was 922 per 100,000 in 2012, compared with 615 per 100,000 for other New Zealanders. In the United States, the mortality rate for American Indians/Alaska Natives was 50% higher than the rate for non-Hispanic whites during the period 1999–2009 (Espey et al. 2014). Caution must be used in comparing Australian data with data for other countries due to variations in data quality, methods applied for addressing data quality issues and definitions for identifying indigenous peoples.

Implications

The very high mortality rates for Aboriginal and Torres Strait Islander peoples, particularly in early childhood and the middle adult years, are an indication of the relatively poor overall health status of Aboriginal and Torres Strait Islander peoples and reflect the high rates of chronic disease and injury.

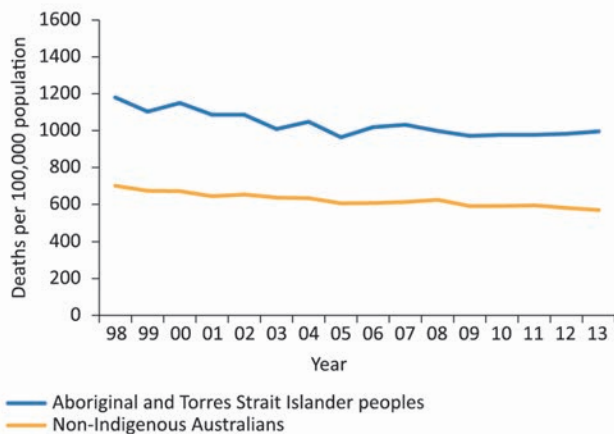
There has been significant improvement in mortality rates for Aboriginal and Torres Strait Islander peoples in the past 15 years in the jurisdictions with adequate data for long term analysis (NSW, Qld, WA, SA and the NT). There has also been a significant narrowing

of the gap. The fact that improvements have occurred demonstrates that the severe health problems of Aboriginal and Torres Strait Islander peoples have been reduced to some extent and can be reduced further, and faster, with sustained and improved effort.

Closing the gap in life expectancy between Aboriginal and Torres Strait Islander peoples and other Australians within a generation has been adopted as a target by COAG. In the five years since the target was set there has been limited time for investments to impact on population level death rates. For example, reductions in population level smoking rates take five years to impact on heart disease and up to twenty years for cancer. Improvements in educational attainment will take 20 to 30 years to impact on early deaths from chronic disease in the middle years.

**Figure 1.22-1**

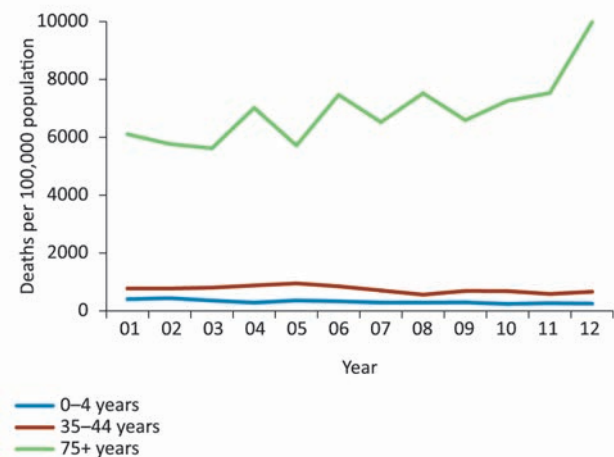
Age-standardised all-cause mortality rates, by Indigenous status, 1998 to 2013



Source: ABS and AIHW analysis of National Mortality Database

Figure 1.22-2

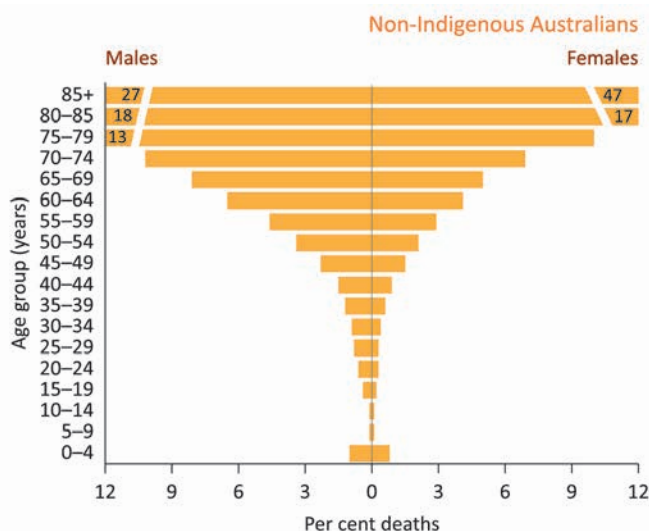
Selected age-specific mortality rates, Indigenous Australians, in remote areas, 2001 to 2012



Source: ABS and AIHW analysis of National Mortality Database

Figure 1.22-4

Age distribution of proportion of deaths, by sex and Indigenous status, NSW, Qld, WA, SA and the NT, 2008–12



Source: ABS and AIHW analysis of National Mortality Database

Table 1.22-1

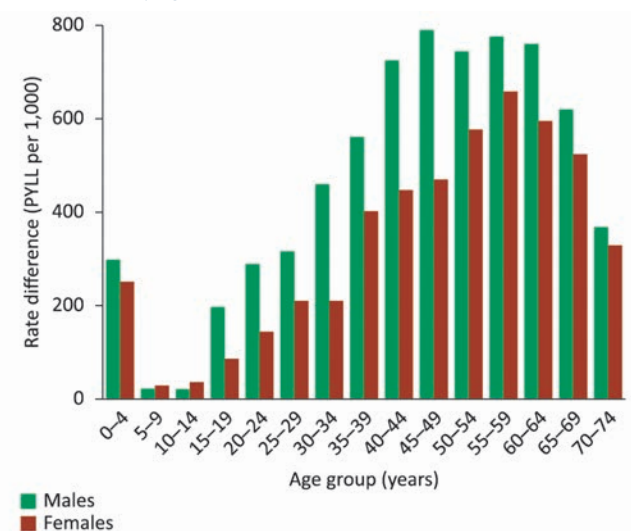
Age-standardised all-cause mortality rates, by Indigenous status, NSW, Qld, WA, SA and the NT, 2009–13

Jurisdiction	Number of deaths		Deaths per 100,000		Rate ratio	Rate difference
	Indig.	Non Indig.	Indig.	Non Indig.		
NSW	3,327	240,265	804	585	1.4	219
Qld	3,652	130,702	964	590	1.6	375
WA	2,229	61,941	1,323	552	2.2	680
SA	776	63,088	818	611	1.3	207
NT	2,343	2,676	1,461	612	2.4	850
Total NSW, Qld, WA, SA & NT	12,327	498,672	985	585	1.7	400

Source: ABS and AIHW analysis of National Mortality Database

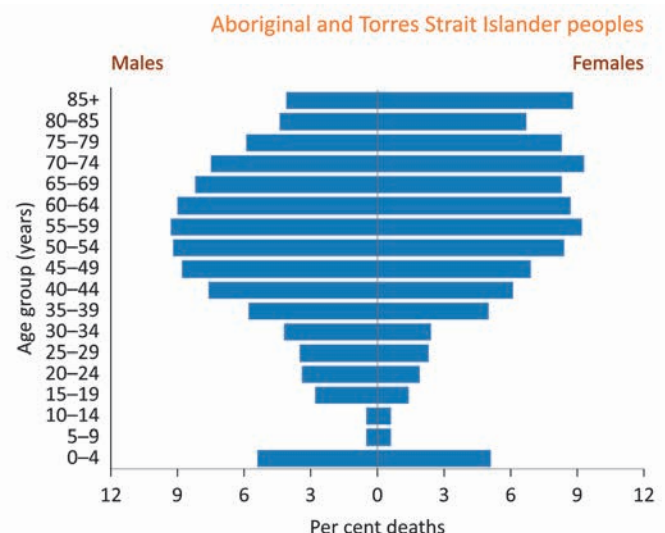
Figure 1.22-3

The gap in potential years of life lost before age 75 years (PYLL) per 1,000 population between Indigenous and non-Indigenous Australians, by age and sex, 2008–12



Note: PYLL is the number of additional years a person would have lived had they not died before age 75 years. The gap is the difference between the PYLL rate per 1,000 for Indigenous and non-Indigenous Australian populations.

Source: ABS and AIHW analysis of National Mortality Database





1.23

Leading causes of mortality

Why is it important?

Mortality rates are a useful measure of the overall health status of a population, particularly to compare one population with another or to measure improvements over time. The gap between the Aboriginal and Torres Strait Islander population and the rest of the Australian population for particular causes of death provides an indication of the prevention, prevalence and management of particular diseases for Aboriginal and Torres Strait Islander peoples, relative to the rest of the population. This provides a useful indication of the diseases that have a greater impact on Aboriginal and Torres Strait Islander peoples. However, some significant health problems will not be reflected in mortality statistics; many conditions that cause serious health problems may not be fatal (such as depression, arthritis and intellectual disability) and so do not appear as common causes of death. As health status and health services improve for Aboriginal and Torres Strait Islander peoples, it is anticipated that premature mortality will reduce over time.

Findings

During the period 2008–12, in the five jurisdictions with adequate quality data (NSW, Qld, WA, SA and the NT), the most common cause of death among Aboriginal and Torres Strait Islander peoples was circulatory diseases (25% of all deaths), followed by neoplasms (including cancer) (20%) and external causes (15%). Circulatory diseases were also the most common cause of death for non-Indigenous Australians followed by cancer.

After adjusting for age, circulatory disease accounted for the largest gap in death rates (24% of the gap) followed by endocrine, metabolic and nutritional disorders (including diabetes) (21%); neoplasms (including cancer) (12%); and respiratory diseases (12%). Deaths due to diabetes were 6 times higher for Indigenous Australians than non-Indigenous Australians and the leading cause of the gap for females.

While the pattern of the leading causes of Indigenous deaths were the same across jurisdictions, the leading causes contributing to the gap varied: in NSW

and WA the largest gap was in circulatory diseases, in Qld and the NT it was endocrine, metabolic and nutritional disorders (including diabetes) and in SA it was external causes.

For Indigenous Australians, the leading causes of death due to external causes were suicide (32%), transport accidents (26%), accidental poisoning (11%), assault (11%) and accidental drowning (4%). Around 60% of these deaths were for people between 15 and 39 years of age. For non-Indigenous Australians external causes made up 6% of all deaths. For the total Australian population, the leading external causes of death were suicide (27%), accidental falls (22%) and transport accidents (16%) (ABS 2014f).

Mortality rates for circulatory diseases showed the largest decline in deaths for both Indigenous Australians and non-Indigenous Australians. Between 1998 and 2012 there was a significant decline of 40% in death rates due to circulatory diseases for Indigenous Australians and a significant narrowing of the gap. A study in the NT found that while there was an increase in incidence of acute myocardial infarction between 1992 and 2004 for Aboriginal and Torres Strait Islander peoples, at the same time there was an improvement in survival due to reductions in death both pre-hospital and after hospital admission (You et al. 2009).

Between 1998 and 2012 there was a significant decline in mortality rates due to respiratory disease for Indigenous Australians (by 27%) and a significant narrowing of the gap.

For kidney disease mortality there was a significant decrease in both the Aboriginal and Torres Strait Islander mortality rate and the gap (over the period 2006 to 2012).

Since 2006 there has been a significant increase in the age-standardised mortality gap due to cancer, reflecting an increase in mortality rates for Indigenous Australians and a decrease in rates for non-Indigenous Australians.

For injury deaths, there was no significant reduction in short-term trends, or in the longer term. No significant changes were detected for diabetes mortality rates or the gap in diabetes mortality between Indigenous and non-Indigenous Australians.

Implications

Chronic conditions account for approximately 70% of Indigenous

deaths and 81% of the gap in mortality between Indigenous and non-Indigenous Australians (including circulatory diseases, diabetes, cancer, kidney and respiratory diseases). In the period 1998–2012 there was a significant decline in mortality due to chronic diseases and a significant narrowing of the gap between Indigenous and non-Indigenous Australians. External causes such as suicide and transport accidents are also important contributors to the gap in mortality; however, there have been no significant changes in these deaths over time.

The health system can contribute to sustained improvements, in partnership with Aboriginal and Torres Strait Islander peoples, through identification of Indigenous clients, health promotion, early detection, chronic disease management and specialist and acute care to treat the more severe outcomes. A recent study of the gap in life expectancy between Indigenous and non-Indigenous Australians in the NT found socio-economic disadvantage was the leading factor accounting for one-third to one-half of the gap (Zhao et al. 2013a). Another recent study found chronic disease mortality increased with remoteness, reflecting differentials in health care and socio-economic status across areas. This finding was consistent across Australia and within most states and territories (Chondur et al. 2014). Improved management of chronic diseases can prevent the development of life-threatening complications but cannot cure these diseases. For example, a study of incidence and survival of acute myocardial infarction found improvements in survival for the NT Indigenous population associated with pre-hospital management of conditions. Also within-hospital specialised coronary care services and greater emphasis on post-hospital management was a factor in improved survival rates (You et al. 2009). Another study in the NT found the largest gains for the Indigenous population in avoidable mortality were for conditions amenable to medical care, but only marginal change for potentially preventable conditions such as lung cancer, chronic liver disease and cirrhosis and motor vehicle accidents (Li et al. 2009).

The 20–24 year age group had the highest number of deaths from suicide while deaths due to transport accidents were highest in the 15–19 year age group. Acute care services can save the lives of seriously injured people,



and there is scope for improvements in timely access to life-saving emergency care for Indigenous Australians. High levels of intentional self-harm highlight the need for cross-sectoral approaches to healing, self-esteem and social and emotional wellbeing (see measure 1.18).

Closing the gap in life expectancy between Aboriginal and Torres Strait

Islander peoples and other Australians within a generation has been adopted as a target by COAG. In the five years since the target was set there has been limited time for investments to impact on population level death rates. For example, reductions in population level smoking rates take five years to impact on heart disease and up to twenty years for cancer. Improvements in educational

attainment will take 20 to 30 years to impact on early deaths from chronic disease in the middle years.

The results signal the need for significant and concerted efforts to continue improving Indigenous health outcomes, both directly through health interventions and by addressing the social determinants of health.

Table 1.23-1

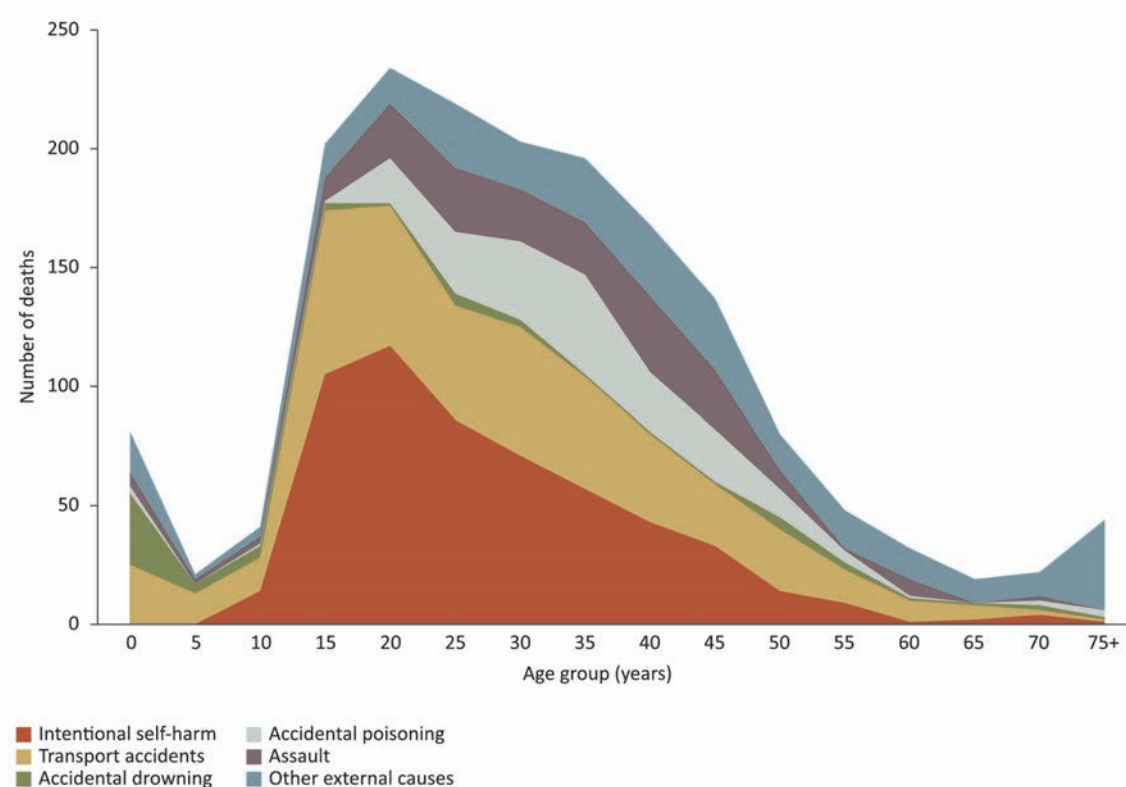
Causes of death, by Indigenous status, NSW, Qld, WA, SA and the NT, 2008–12

Underlying cause of death	Per cent of deaths		Age standardised deaths per 100 000 persons		Ratio	Gap	% of total gap
	Indig.	Non Indig.	Indig.	Non Indig.			
Circulatory diseases	25.5	32.3	285.7	191.8	1.5	93.8	24.1
Neoplasms	20.2	30.1	224.1	177.9	1.3	46.2	11.9
<i>Digestive organs</i>	5.8	8.1	62.9	47.7	1.3	15.2	3.9
<i>Lung cancer</i>	4.9	5.7	56.4	33.5	1.7	22.9	5.9
<i>Cervical cancer</i>	0.5	0.2	3.5	1.0	3.5	2.5	0.6
External causes	15.2	6.1	75.2	38.2	2.0	37.0	9.5
Endocrine, metabolic & nutritional disorders	9.1	3.8	103.3	22.7	4.6	80.6	20.7
<i>Diabetes</i>	7.9	2.6	89.9	15.6	5.8	74.3	19.1
Respiratory diseases	7.6	8.4	96.3	49.8	1.9	46.5	12.0
Digestive diseases	5.6	3.4	47.4	20.5	2.3	26.9	6.9
Nervous system diseases	2.5	4.3	24.0	25.8	0.9	-1.8	-0.5
Kidney diseases	2.5	1.9	29.6	11.2	2.6	18.4	4.7
Infectious & parasitic diseases	2.4	1.5	19.4	9.2	2.1	10.2	2.6
Conditions originating in perinatal period	2.1	0.4	4.3	2.6	1.6	1.7	0.4
Other causes	7.4	7.8	76.4	47.0	1.6	29.4	7.6
All causes	100.0	100.0	985.6	596.7	1.7	388.9	100.0

Source: ABS and AIHW analysis of National Mortality Database

Figure 1.23-1

Deaths of Indigenous Australians from external causes of injury and poisoning, by age, NSW, Qld, WA, SA and the NT, 2008–12



Source: ABS and AIHW analysis of National Mortality Database

**Table 1.23-2**

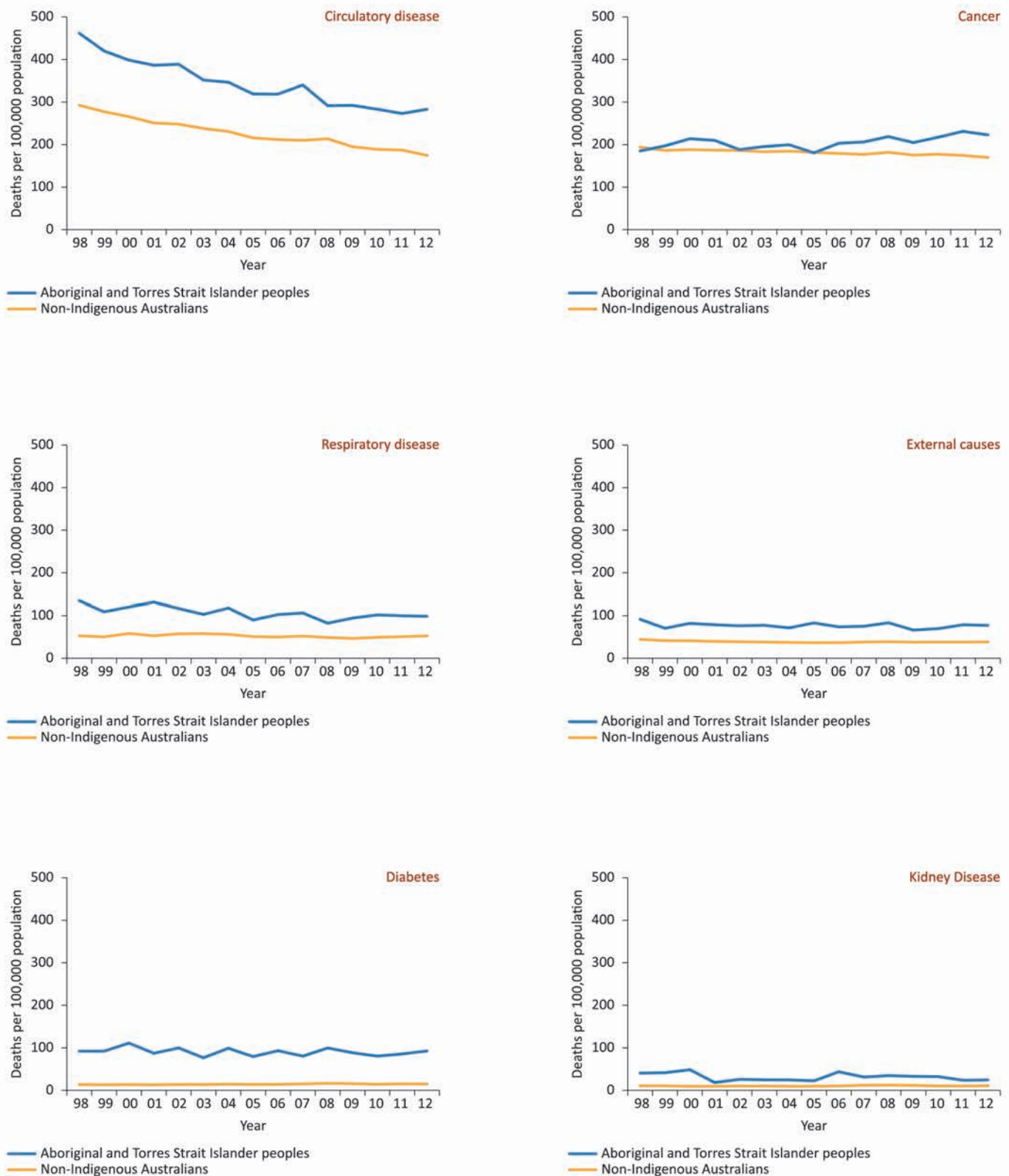
Detailed causes of death for circulatory disease, cancer and respiratory disease, by sex, Aboriginal and Torres Strait Islander peoples, NSW, Qld, WA, SA and the NT, 2008–12

Underlying cause of death	Males		Females		Total	
	Deaths	%	Deaths	%	Deaths	%
Circulatory diseases						
Ischaemic heart disease	1,041	63.3	587	44.7	1,628	55.0
<i>Acute myocardial infarction</i>	389	23.6	249	19.0	638	21.6
Other heart disease	245	14.9	264	20.1	509	17.2
Cerebrovascular disease	220	13.4	281	21.4	501	16.9
<i>Stroke</i>	180	10.9	231	17.6	411	13.9
Hypertension disease	55	3.3	65	5.0	120	4.1
Rheumatic heart disease	33	2.0	63	4.8	96	3.2
Other	51	3.1	53	4.0	104	3.5
Total circulatory diseases	1,645	100.0	1,313	100.0	2,958	100.0
Neoplasms (includes cancer, by site of neoplasm)						
Digestive organs	380	31.5	297	26.2	677	28.9
<i>Bowel</i>	66	5.5	67	5.9	133	5.7
Respiratory and intrathoracic organs	353	29.3	251	22.1	604	25.8
Breast	-	-	150	13.2	150	6.4
Lip, oral cavity and pharynx	110	9.1	24	2.1	134	5.7
Female genital organs	-	-	133	11.7	133	5.7
<i>Cervix</i>	-	-	53	4.7	53	2.3
Lymphoid, haematopoietic and related tissue	63	5.2	68	6.0	133	5.6
Male genital organs	76	6.3	-	-	76	3.2
Non-malignant neoplasms	16	1.3	24	2.1	40	1.7
Other	207	17.2	188	16.6	395	16.9
Total neoplasms	1,205	100.0	1,135	100.0	2,340	100.0
Respiratory diseases						
Chronic lower respiratory diseases	280	61.3	284	65.9	564	63.5
<i>COPD</i>	231	50.5	240	55.7	471	53.0
<i>Asthma</i>	14	3.1	21	4.9	35	3.9
Pneumonia and influenza	91	19.9	76	17.6	167	18.8
Other	86	18.8	71	16.5	157	17.7
Total respiratory diseases	457	100.0	431	100.0	888	100.0

Source: ABS and AIHW analysis of National Mortality Database

**Figure 1.23-2**

Age-standardised mortality rates for selected causes of death, by Indigenous status, NSW, Qld, WA, SA and NT, 1998 to 2012



Source: ABS and AIHW analysis of National Mortality Database



1.24

Avoidable and preventable deaths

Why is it important?

Avoidable and preventable mortality refers to deaths from conditions that are considered avoidable given timely and effective health care (including disease prevention and population health initiatives) (AIHW 2010e; Page et al. 2006). Avoidable deaths have been used in various studies to measure the quality, effectiveness and/or accessibility of the health system. Deaths from most conditions are influenced by a range of factors in addition to health system performance, including the underlying prevalence of conditions in the community, environmental and social factors and health behaviours.

Causes of avoidable mortality can be subdivided into 'preventable' conditions for which there are effective means to prevent the condition occurring (e.g. conditions caused by smoking) and 'amenable' conditions for which death may be averted even after the condition has developed through early detection and effective treatment (e.g. cervical cancer).

Potentially avoidable deaths can sometimes be further assigned to categories reflecting whether they could be avoided through primary interventions (prevention), secondary (early intervention) and tertiary interventions (medical treatment) (NHPC 2004).

Findings

In the period 2008–12, there were 7,079 deaths of Aboriginal and Torres Strait Islander people aged 0–74 years from avoidable causes in NSW, Qld, WA, SA and the NT combined. This represented 75% of all deaths of Aboriginal and Torres Strait Islander peoples aged 0–74 years. In contrast, deaths from avoidable causes for non-Indigenous Australians represented 66% of all non-Indigenous deaths in this age group.

Amenable mortality accounted for 2,607 Indigenous deaths in the five jurisdictions, or 28% of deaths of Indigenous Australians aged 0–74 years. For non-Indigenous Australians aged 0–74 years, amenable mortality accounted for 26% of deaths. Potential years of life lost due to amenable mortality were highest in the 45–64 year age group for both Indigenous and non-Indigenous Australians. However,

potential years of life lost were higher in the 25–44 year group for Indigenous Australians (27%) compared with non-Indigenous Australians (16%) and lower in the 65–74 year age group (4% and 13% respectively).

After adjusting for differences in age structure, Aboriginal and Torres Strait Islander peoples died from all avoidable causes at 3 times the rate of non-Indigenous Australians. The avoidable mortality rate of Aboriginal and Torres Strait Islander peoples was higher than that of non-Indigenous Australians in all age groups, and particularly high (4 times that of non-Indigenous Australians) in the middle adult age groups (35–54 years). Indigenous avoidable mortality rates were lowest in NSW (304 per 100,000) and highest in the NT (789 per 100,000).

There was a 27% decline in the avoidable mortality rate for Aboriginal and Torres Strait Islander peoples in the period 1998 to 2012, and a significant narrowing of the gap. A study in the NT found a rapid fall in avoidable mortality between 1985 and 2004 in the Indigenous population for conditions amenable to medical care. This suggests that improvements in health care have made a major contribution to the fall in death rates and is consistent with observed improvements in perinatal survival, congenital malformations, stroke and hypertensive conditions, pneumonia and asthma, and infectious diseases (Li et al. 2009).

Among Aboriginal and Torres Strait Islander peoples, the most common conditions or events causing avoidable mortality were ischaemic heart disease (19%), cancer (18%), diabetes (10%), suicide (9%) and road traffic injuries (6%). After adjusting for the difference in age structure the conditions contributing the most to the avoidable mortality gap between Indigenous and non-Indigenous Australians were ischaemic heart disease (22% of the gap), diabetes (17% of the gap) and cancer (14% of the gap).

Within potentially avoidable deaths, the greatest opportunities to reduce mortality for Aboriginal and Torres Strait Islander peoples relate to primary prevention (53% of avoidable deaths). However, there are also significant opportunities in terms of secondary (24%) and tertiary interventions (23%).

Implications

Death rates for avoidable mortality among Aboriginal and Torres Strait Islander peoples are declining and the

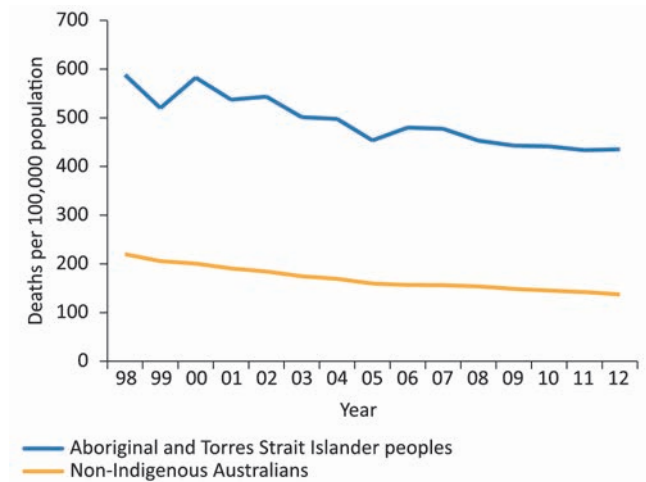
gap is closing. Chronic disease and injury are causing the greatest proportion of avoidable deaths for Aboriginal and Torres Strait Islander peoples and are amenable to both prevention and treatment. A study in the NT found that this decline has been greatest for conditions amenable to medical care, for example neonatal and paediatric care, antibiotics, immunisation, drug therapies, and improved intensive care and surgical procedures. Only marginal change was found for conditions responsive to public health (Li et al. 2009).

The *Indigenous Australians' Health Programme* commenced from 1 July 2014, consolidating four existing funding streams (primary health care base funding, child and maternal health programmes, *Stronger Futures in the Northern Territory and the Aboriginal and Torres Strait Islander Chronic Disease Fund*), to improve the focus on local health needs, deliver the most effective outcomes, and better support efforts to achieve health equality between Aboriginal and Torres Strait Islander and non-Indigenous Australians (see Policies and Strategies section).

The *National Suicide Prevention Programme* and *Taking Action to Tackle Suicide* package include Indigenous specific initiatives (see measure 1.18).

**Figure 1.24-1**

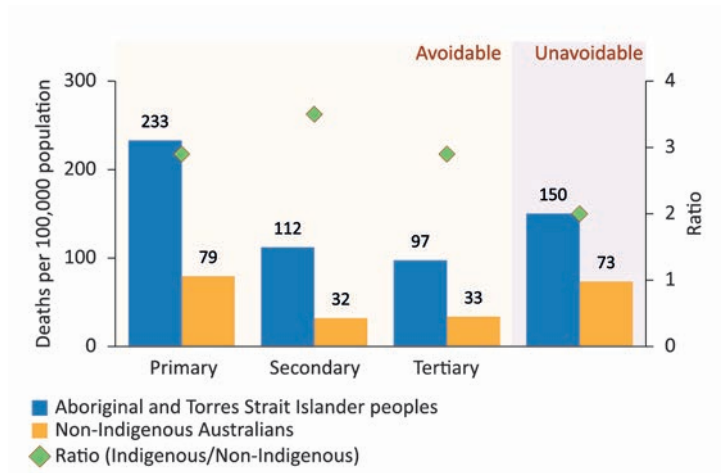
Age-standardised mortality rates for avoidable causes of death, Indigenous and non-Indigenous Australians aged 0–74 years, NSW, Qld, WA, SA and the NT, 1998 to 2012



Source: ABS and AIHW analysis of National Mortality Database

Figure 1.24-2

Avoidable mortality (by subcategory) and unavoidable mortality, by Indigenous status, persons aged 0–74 years, NSW, Qld, WA, SA and the NT, 2008–12



Source: ABS and AIHW analysis of National Mortality Database

Table 1.24-1

Avoidable mortality, by cause of death and Indigenous status, persons aged 0–74 years, NSW, Qld, WA, SA, and the NT, 2008–12

Cause of death	Per cent		Age standardised rate per 100,000		Rate ratio	Rate difference	Rate difference %
	Indigenous	Non Indig.	Indigenous	Non Indig.			
Ischaemic heart disease	18.5	16.4	89.2	23.3	3.8	65.9	22.1
Cancer	18.0	39.2	96.9	55.4	1.7	41.4	13.9
Digestive organ cancers	5.7	12.1	30.9	17.1	1.8	13.8	4.6
Lung cancer	6.5	13.9	37.3	19.5	1.9	17.9	6.0
Cervical cancer	0.7	0.5	3.3	0.7	4.5	2.5	0.9
Diabetes	10.4	3.3	56.4	4.7	12.0	51.7	17.4
Suicide	8.9	7.5	23.4	11.6	2.0	11.7	3.9
Road traffic injuries	6.1	3.8	16.6	5.9	2.8	10.6	3.6
Alcohol related disease	5.0	2.7	20.3	3.9	5.2	16.4	5.5
Cerebrovascular disease	4.2	5.6	21.6	8.1	2.7	13.6	4.6
COPD	4.4	4.9	321.0	109.6	2.9	211.4	na
Nephritis and nephrosis	3.4	1.3	18.4	1.9	9.5	16.4	5.5
Selected infections	3.3	2.1	14.3	3.1	4.7	11.2	3.8
Violence	2.7	0.7	8.0	1.0	7.8	7.0	2.4
Birth defects	1.9	1.7	3.3	2.7	1.2	0.6	0.2
Complications of perinatal period	1.8	0.8	2.4	1.3	1.8	1.0	0.3
Rheumatic and other valvular heart disease	1.3	0.3	5.3	0.4	12.4	4.8	1.6
Other	10.3	9.9	38.6	14.9	2.6	23.7	8.0
Total	100.0	100.0	442.7	145.3	3.0	297.4	100.0
Total avoidable deaths 0-74 years	7,079	112,076					
Total deaths people 0-74 years	9,438	169,111					
Total deaths	11,612	495,782					

Note: The avoidable mortality classification includes some causes for specific age groups: childhood vaccine-preventable diseases (0–14 years), asthma (0–44 years) and chronic obstructive pulmonary disease (COPD, 45–74). Age-standardised rates cannot be calculated for these causes. Rates for COPD are age-specific death rates. Childhood-vaccine-preventable deaths and asthmas have been excluded from the 'other' category, and all three causes are excluded from the total.

Source: ABS unpublished 2014 special tables





Tier 2 Determinants of health

Environmental factors

- 2.01 Housing
- 2.02 Access to functional housing with utilities
- 2.03 Environmental tobacco smoke

Socio-economic factors

- 2.04 Literacy and numeracy
- 2.05 Education outcomes for young people
- 2.06 Educational participation and attainment of adults
- 2.07 Employment
- 2.08 Income
- 2.09 Index of disadvantage

Community capacity

- 2.10 Community safety
- 2.11 Contact with the criminal justice system
- 2.12 Child protection
- 2.13 Transport
- 2.14 Indigenous people with access to their traditional lands

Health behaviours

- 2.15 Tobacco use
- 2.16 Risky alcohol consumption
- 2.17 Drug and other substance use including inhalants
- 2.18 Physical activity
- 2.19 Dietary behaviour
- 2.20 Breastfeeding practices
- 2.21 Health behaviours during pregnancy

Person-related factors

- 2.22 Overweight and obesity





2.01

Housing

Why is it important?

Housing circumstances including overcrowding, tenure type and homelessness have potential impacts on health. The effects of overcrowding occur in combination with other environmental health factors such as poor water quality and sanitation, which are associated with increased risk of transferring infectious diseases, recurrence/exacerbation of chronic infections such as otitis media, and exposure to hazards such as smoking indoors (see measure 2.03) as well as increased risk of injury within the home (Bailie et al. 2006; Nganampa Health Council 1987; Department of Family and Community Services 2003). Overcrowding and insecure housing tenure is also associated with stress and adverse educational opportunities for students such as educational continuity, school attendance and attainment (Dockery et al. 2013; Taylor et al. 2012) (measure 2.05). However, the presence of more people in a household may decrease social isolation, which could have a positive impact on health (Greenop et al. 2014). Biddle (2011b) found structural problems and missing facilities (measure 2.02) had a greater association with wellbeing than overcrowding and tenure type.

Homelessness is strongly associated with poor health outcomes (Ford et al. 2014). Like overcrowding (Memmott et al. 2012), Aboriginal and Torres Strait Islander peoples perceive, define and experience homelessness in distinct ways including being separated from traditional lands (see measure 2.14).

Findings

In 2012–13, 23% of all Aboriginal and Torres Strait Islander persons were living in overcrowded households (households requiring one or more additional bedrooms according to the Canadian National Occupancy Standard). In comparison, 5% of non-Indigenous Australians were living in overcrowded households. More than half (54%) of Indigenous Australians in very remote areas lived in overcrowded households, compared with 17% in major cities. A large number of Indigenous Australians in non-remote areas were living in overcrowded households (almost 85,000) in addition to those in remote areas (60,000).

In 2012–13, overcrowding was higher in the NT (55%) than any other state or territory. The next highest proportion was WA (25%). Of those living in remote areas, NT had a higher proportion of overcrowding (62%) than those living in remote areas in other states and territories (43% in SA, 37% in WA and 34% in Qld).

Nationally, between 2004–05 and 2012–13, the proportion of Indigenous Australians living in overcrowded households declined by 4.5 percentage points (from 27.2% to 22.7%) and the gap narrowed with non-Indigenous rates, which remained steady at around 5%.

In 2012–13, 10% of Indigenous Australians aged 15 years and over reported overcrowding as a stressor, down from 21% in 2002. This change was greatest in remote areas (SCRGSP 2014a). Household overcrowding varies by socio-economic status. In 2012–13, Indigenous Australians were more likely to be living in overcrowded households if their household income was in the lowest income quintile rather than the highest income quintiles (23% compared with 3%); if living in social housing rather than being an owner-occupier (33% compared with 10%); and if unemployed or not in the labour force rather than employed (25% compared with 15%). Overcrowding was also associated with household facilities not being available/working (37%).

In 2012–13, 30% of Indigenous adults lived in homes that were owned or being purchased (referred to here as home owners); 38% lived in a property rented through social housing (provided by state/territory governments and community sectors to assist people who are unable to access private rental); and 30% lived in private rentals. In contrast, 72% of non-Indigenous adults were home owners (SCRGSP 2014a).

Nationally, rates of Indigenous home ownership increased by 3 percentage points between 2002 and 2012–13. Housing tenure patterns are influenced by a range of factors including socio-economic status and Indigenous land arrangements in some remote areas (where there are communal tenancy arrangements). In 2012–13, home ownership by Indigenous adults was higher in non-remote areas (36%) than remote areas (10%) reflecting the barriers to home ownership in remote areas. In remote areas, the largest category of housing was rental through social

housing (72%), whereas in non-remote areas this represented 28% of Indigenous adults' tenure arrangements. Indigenous home ownership was highest in the ACT (53%) and lowest in the NT (13%) (SCRGSP 2014a).

In 2011, Aboriginal and Torres Strait Islander peoples accounted for 28% of the homeless population (based on the new ABS definition of homelessness). Indigenous Australians were 14 times as likely as non-Indigenous Australians to be homeless (AIHW 2014q). The rate of homelessness among Indigenous Australians fell by 14% between 2006 and 2011. Three quarters of Indigenous homelessness is due to living in severely crowded dwellings while the remainder includes people living in supported accommodation for the homeless (12%); people in improvised dwellings, tents or sleeping out (6%); people staying temporarily in other households (4%); and people living in boarding houses (2.5%) and other temporary lodging (0.2%) (AIHW 2014q). In 2011, 42% of Indigenous homeless people were under 18 years.

In 2012–13, 22% of those accessing specialist homelessness services were Indigenous Australians (9 times the non-Indigenous rate), while 33% of children aged 0–9 years using these services were Indigenous children. Domestic/family violence was the main reason for both Indigenous (28%) and non-Indigenous (30%) female clients seeking specialist homelessness services. Indigenous clients (29%) were more likely than non-Indigenous clients (19%) to be presenting as a single person with children. Almost one-third (31%) of Indigenous clients were living in improvised inadequate accommodation prior to accessing homelessness support, and 25% of Indigenous males were living without shelter prior to accessing support.

Implications

While there have been improvements in overcrowding and home ownership for Aboriginal and Torres Strait Islander households, outcomes for Indigenous Australians remain lower than those for non-Indigenous Australians.

The *National Affordable Housing Agreement* (NAHA) aims to ensure that all Australians have access to affordable, safe and sustainable housing that contributes to social and economic participation. Two of the six NAHA outcomes focus specifically on

Indigenous Australians: that Indigenous Australians have the same housing opportunities (homelessness services, housing rental, housing purchase and access to housing through an efficient and responsive housing market) as other Australians; and that Indigenous Australians have improved housing amenity and reduced overcrowding.

The NAHA is supported by the *National Partnership Agreement on Homelessness* (NPAH) and the *National Partnership Agreement on Remote Indigenous Housing* (NPARIH). Specific NPAH initiatives aimed at addressing Indigenous homelessness include youth facilities, domestic and family violence support and outreach to rough sleepers.

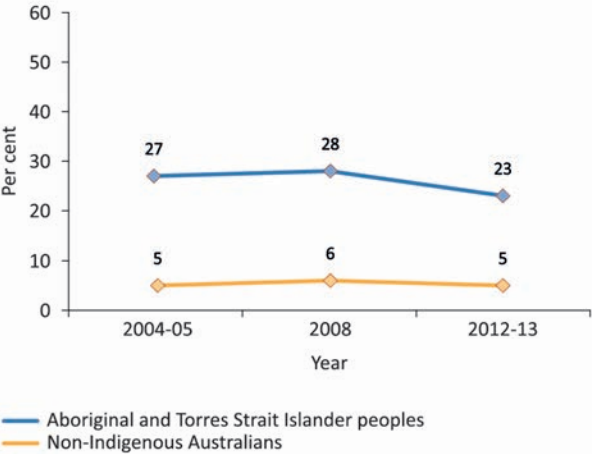
The NPARIH is designed to help address significant overcrowding, homelessness, poor housing condition and severe housing shortages in remote Indigenous communities. Under the NPARIH, the Australian Government, in partnership with the state and territory governments, has committed \$5.5 billion over ten years to 2018. The NPARIH is expected to deliver up to 4,200 new houses by 2018 and rebuild or refurbish around 4,876 existing houses in remote Indigenous communities by 2014. The NPARIH includes standardised tenancy arrangements for all remote Indigenous housing consistent with public housing standards. Initiatives include progressive resolution of land tenure

on remote community-titled land to secure investment and home ownership opportunities. The NPARIH reforms also provide for employment-related accommodation to support people from remote communities to access training, education and employment. The NPARIH maintains a 20% employment workforce development target to provide employment and training for Indigenous Australians on all NPARIH construction.

The Australian Government provides direct support for home ownership through financial literacy support and assisted loans through Indigenous Business Australia.

Figure 2.01-1

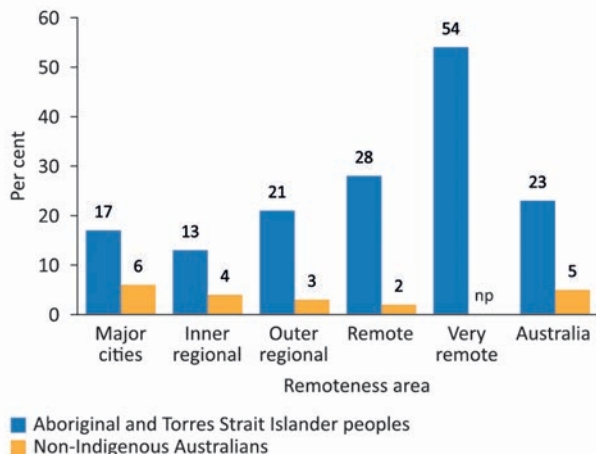
Proportion of persons living in overcrowded households, by Indigenous status, 2004–05, 2008 and 2012–13



Source: AIHW and ABS analysis of 2012–13 AATSIHS, 2008 NATSISS, 2004–05 NATSIHS

Figure 2.01-2

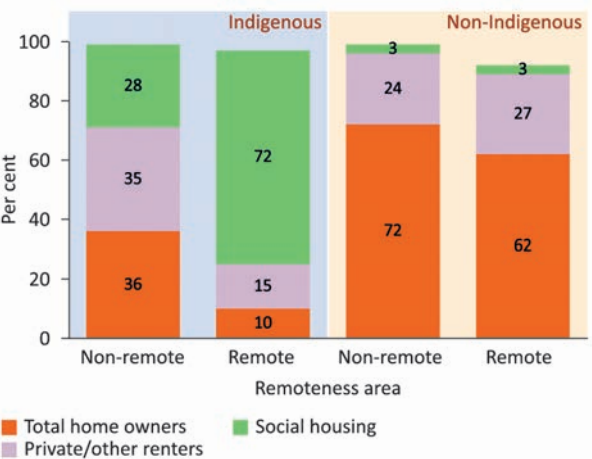
Proportion of persons living in overcrowded households, by Indigenous status and remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.01-3

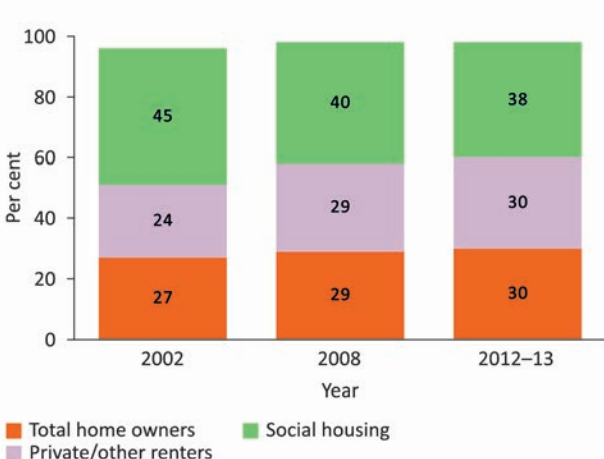
Proportion of persons 18 years and over, by Indigenous status, tenure type and remoteness, 2012–13



Source: AIHW and ABS analysis of 2012–13 AATSIHS

Figure 2.01-4

Proportion of Indigenous persons 18 years and over, by tenure type, 2002, 2008 and 2012–13



Source: AIHW and ABS analysis of 2012–13 AATSIHS, 2008 and 2002 NATSISS



2.02

Access to functional housing with utilities

Why is it important?

Housing is an important mediating factor for health and wellbeing. Functional housing encompasses basic services/facilities, infrastructure and habitability. These factors combined enable households to carry out healthy living practices including waste removal; maintaining cleanliness through washing people, clothing and bedding; managing environmental risk factors such as electrical safety and temperature in the living environment; controlling air pollution for allergens; and preparing food safely (Bailie et al. 2006; Nganampa Health Council 1987; Department of Family and Community Services 2003).

Children who live in a dwelling that is badly deteriorated have been found to have poorer physical health outcomes and social and emotional wellbeing compared with those growing up in a dwelling in excellent condition (Dockery et al. 2013). Comparisons between Indigenous and non-Indigenous children in the *Longitudinal Study of Australian Children* (LSAC) show improvements in housing can be expected to translate into gains for Indigenous children's health, social and learning outcomes (Dockery et al. 2013). As expected, housing variables are closely associated with socio-economic status, including: crowding, renting rather than owning, and being in financial stress (see measures 2.01 and 2.08).

Infectious diseases are more common in households with poor housing conditions. For example, trachoma and acute rheumatic fever are present almost exclusively in the Indigenous population in remote areas (see measures 1.06 and 1.16). Domestic infrastructure, along with overcrowding and exposure to tobacco smoke increases the risk of otitis media in children (Jervis-Bardy et al. 2014) (see measures 1.15, 2.01 and 2.03).

Findings

The 2012–13 Health Survey collected data on household facilities and structural problems. In 2012–13, 22% of Indigenous households were living in houses of an unacceptable standard (more than two major structural problems and less than 4 working facilities for washing people, clothes/

bedding, storing/preparing food, and sewerage). This has increased from 17% of Indigenous households in 2008. The highest proportion was in the NT (36%) followed by WA (26%) and NSW (22%).

In 2012–13, more than one-third (34%) of Indigenous households were living in dwellings with major structural problems (including problems such as sinking/moving foundations, sagging floors, wood rot/termite damage and roof defects). Between 2008 and 2012–13, the proportion rose from 26% to 34%. The standard of housing condition decreased as remoteness increased, with 32% of Indigenous households in non-remote areas living in dwellings with major structural problems compared with 46% of households in remote areas. One in every 6 (15%) Indigenous households reported major cracks in walls/floors. Plumbing problems were more frequent for remote households (18%) compared with non-remote (7%), as were electrical problems (13% for remote compared with 5% for non-remote). Comparable data for non-Indigenous households is not available.

The condition of dwellings may impact on facilities that support healthy living practices including sewerage, washing (people and clothes/bedding) and food preparation. In 2012–13, the proportion of Indigenous households reporting a lack of working facilities increased with remoteness. In remote areas almost a quarter (24%) of households did not have working facilities for preparing food, compared with 8% in non-remote areas. Washing clothes and bedding is also a key issue for remote areas, where 12% of households do not have these facilities compared with 5% of households in non-remote areas. As with the findings for dwellings with major structural problems, the NT and WA have the highest proportions of households reporting a lack of food preparation and washing facilities for clothes/bedding.

Implications

Improved access to functional housing is associated with better health outcomes. An evaluation of the *NSW Housing for Health Program* found that 'those who received the *Housing for Health* intervention had a significantly reduced rate of hospital separations for infectious diseases—40% less than the hospital separation rate for the rest of the rural NSW Aboriginal population without the *Housing for Health* interventions' (NSW Health 2010). Research suggests

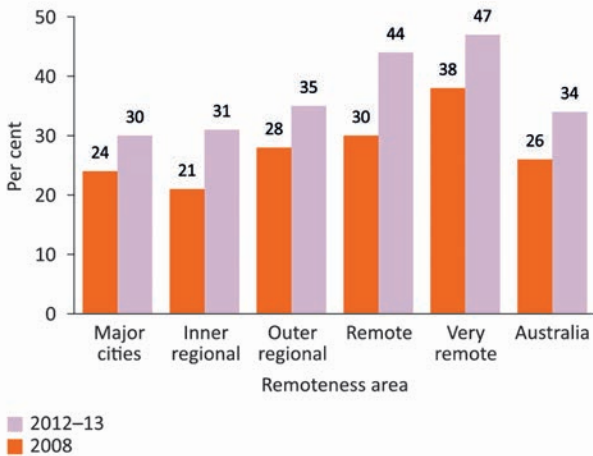
that housing programmes need to be accompanied by health promotion and environmental programmes to support a reduction in the occurrence of common childhood infections (Bailie et al. 2011a; Bailie et al. 2011b).

The *National Partnership Agreement on Remote Indigenous Housing* (NPARIH) is a strategy to address overcrowding, homelessness, poor housing conditions and severe housing shortages in remote Indigenous communities. Over 10 years, the agreement will deliver construction of up to 4,200 new houses, and 4,876 upgrades/repairs to existing houses. At June 2014, over 2,556 new houses had been constructed and more than 6,726 houses had been refurbished under this agreement. The NPARIH reforms include standardised tenancy arrangements for all remote Indigenous housing that include repairs, ongoing maintenance and governance arrangements consistent with mainstream public housing standards.

In South Australia, the *Aboriginal Environmental Health Worker Program* delivers environmental health services in rural and remote communities. The role of Aboriginal environmental health workers is to develop community environmental health plans to guide improvements in community environmental health through interventions in dog control, water management, food safety, pest control and other environmental issues.

Figure 2.02-1

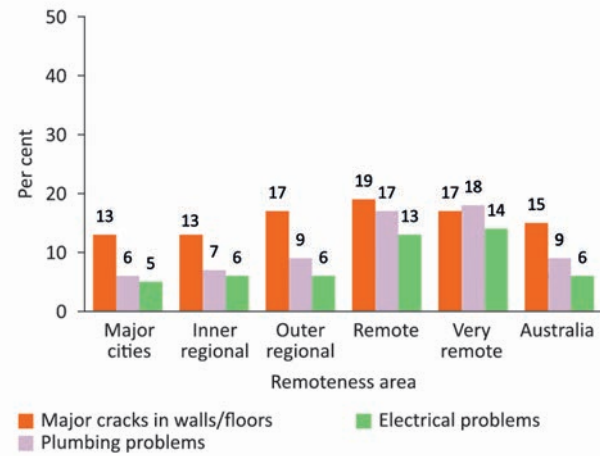
Proportion of Indigenous households in dwellings with major structural problems by remoteness, 2008 and 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.02-2

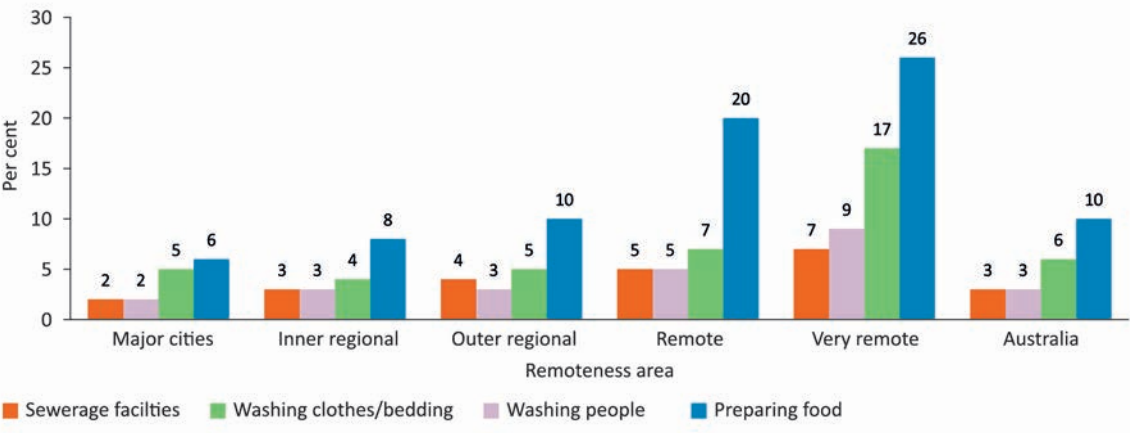
Proportion of Indigenous households in dwellings with major structural problems, by select problem and remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.02-3

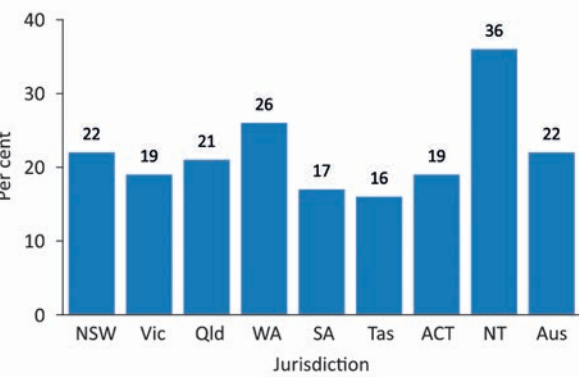
Proportion of Indigenous households reporting lack of working facilities for each of the first 4 Healthy Living Practices, by remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.02-4

Proportion of Indigenous households living in houses of an unacceptable standard, by state/territory, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS



2.03

Environmental tobacco smoke

Why is it important?

Environmental tobacco smoke (also known as second-hand or passive smoking) is a significant cause of morbidity and mortality. The first evidence of harm to children from passive smoking (Colley 1974; Harlap et al. 1974; Leeder et al. 1976) and increased lung cancer risk in adults (Hirayama 1981) emerged over 30 years ago. Global burden of disease analysis attributed 603,000 deaths to second-hand smoke in 2004 (Öberg et al. 2011).

There is strong and consistent evidence that passive smoking increases a non-smoker's risk of lung cancer and ischaemic heart disease. Passive smoking is associated with increased risk of respiratory disease in adults, increases the risk of Sudden Infant Death Syndrome, and exacerbates asthma and ear infections such as otitis media in children (Thomas, DP et al. 2014) (see measure 1.15). Passive smoking during pregnancy is also associated with an increased risk in neural tube defects (Wang, M et al. 2014).

The home is a key setting for exposure to environmental tobacco smoke for pregnant women and young children. Exposure to parents' smoking in childhood is found to have pervasive vascular health effects into adulthood (Gall et al. 2014). Overcrowding in housing (see measure 2.02) increases the risk of such exposure and developing asthma. Smoking in cars is also an important locus for child exposure to second-hand smoke (Agaku et al. 2014).

Smoke-free homes support successful smoking cessation (quit attempts and preventing relapse) along with a reduction in consumption of cigarettes (Thomas, DP et al. 2014) (see measure 2.15). Qualitative research also suggests smoke-free homes are associated with reductions in young people taking up smoking (Thomas, DP et al. 2014).

Evaluation of a family-centred intervention to reduce infant exposure to second-hand smoke in Indigenous families concluded that all household members (not only the mother) should cease smoking from the time of conception (Walker et al. 2014).

Findings

Based on the 2012–13 Health Survey, there were an estimated 130,600 Aboriginal and Torres Strait Islander children aged 0–14 years living in households with a daily smoker, representing 57% of all

Aboriginal and Torres Strait Islander children in this age range. In comparison, 26% of non-Indigenous children within the same age range lived in households with a daily smoker.

Of those children living in households with a daily smoker, Aboriginal and Torres Strait Islander children were 2.4 times as likely to live in households with people who smoked at home indoors (28% of Indigenous children living in households with a daily smoker compared with 12% of non-Indigenous children).

Between 2004–05 and 2012–13 there was a significant reduction in the proportion of Aboriginal and Torres Strait Islander children aged 0–14 years living in households with a daily smoker, falling from 68% to 57%. For non-Indigenous children there was also a significant reduction from 35% in 2004–05 to 26% in 2012–13.

In 2012–13, the proportions of Aboriginal and Torres Strait Islander children aged 0–14 years who lived in households with a daily smoker ranged from 50% in major cities to 74% in very remote areas. The proportion of Aboriginal and Torres Strait Islander children aged 0–14 years, who lived in households with a daily smoker who smoked at home indoors, ranged from 25% in major cities to 34% in very remote areas.

The proportion of Aboriginal and Torres Strait Islander children aged 0–14 years living in households with a daily smoker ranged from 47% in the ACT to 75% in the NT. The proportion of Aboriginal and Torres Strait Islander children aged 0–14 years, who lived in households with a daily smoker who smoked at home indoors, ranged from 17% in WA to 37% in the NT.

Strong associations exist between the socio-economic circumstances of Indigenous households and whether children are exposed to environmental smoke. The 2012–13 Health Survey results indicate that Indigenous children aged 0–14 years living in the lowest income households were 2.7 times as likely to have a smoker who smokes at home indoors compared with those living in the highest income households. There is a similar relationship with housing: 31% of children living in rental households had a smoker who smoked at home indoors compared with those living in homes that are owned or being purchased (17%).

Implications

The Australian Government has a range of policies and programmes in place that

complement state and territory activity to reduce the harms from smoking. These policies and programmes include: excise increases on tobacco; education programmes and campaigns; plain packaging of tobacco products; labelling tobacco products with new, larger graphic health warnings; prohibiting tobacco advertising and promotion; and providing support for smokers to quit.

States and territories have taken lead responsibility for smoking restrictions to prevent exposure to second-hand tobacco smoke. Smoking is now banned in almost all indoor public places and increasingly in outdoor spaces, particularly where children are present. Most jurisdictions prohibit smoking in cars when children are present. The NT and Qld have introduced complete smoking bans in their prisons and Victoria, NSW and Tasmania are planning bans in theirs in 2015.

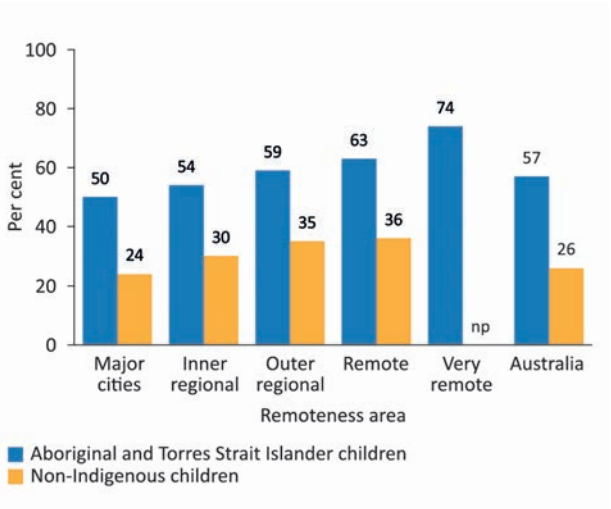
The policy implications for addressing the dangers of environmental tobacco smoke are similar to those for tobacco smoking in general (see measure 2.15) and tobacco smoking during pregnancy (see measure 2.21). Exposure to environmental tobacco smoke should be monitored in conjunction with those measures.

The *Tackling Indigenous Smoking* programme provides a national platform for reducing Aboriginal and Torres Strait Islander smoking rates. This programme includes promoting an understanding of the importance of smoke-free environments and compulsory smoke-free policies for funded organisations. The *Tackling Indigenous Smoking* programme includes regional teams that work with communities to design and deliver locally tailored health promotion, social marketing and education campaigns and activities addressing smoking.

Australian governments are committed to ensuring that programmes to address high rates of smoking are based on the most up-to-date evidence, and are delivered in a way that is appropriate, effective and efficient. As a result, the Australian Government is undertaking an independent review of the *Tackling Indigenous Smoking* programme in 2014–15. The review will establish a new evidence base and provide recommendations on the best way to reduce Aboriginal and Torres Strait Islander smoking rates and reduce the high proportion of children who are exposed to second-hand tobacco smoke.

Figure 2.03-1

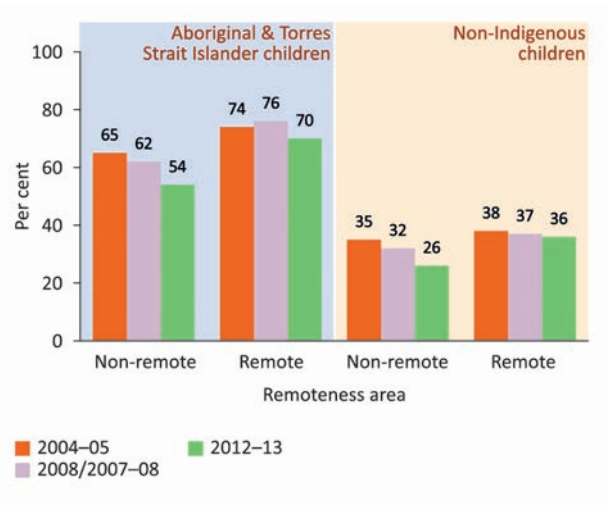
Children aged 0–14 years living with current daily smoker(s), by Indigenous status and remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.03-2

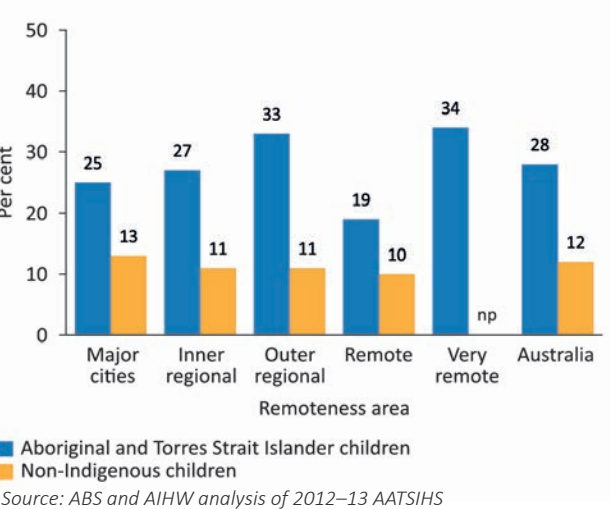
Children aged 0–14 years living in households with current daily smoker(s), by remoteness and Indigenous status, 2004–05, 2008/2007–08 and 2012–13



Source: ABS and AIHW analysis of 2004–05 NATSIHS, 2008 NATSISS, 2004–05 NHS, and 2007–08 NHS, 2012–13 AATSIHS

Figure 2.03-3

Children aged 0–14 years, living with a current daily smoker who smokes at home indoors, by Indigenous status and remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Table 2.03-1

Children aged 0–14 years living in households with current daily smoker(s), by Indigenous status of children, 2012–13

	Aboriginal and Torres Strait Islander children aged 0-14	Non Indigenous children aged 0-14
Per cent		
Daily smoker in household		
No	43	74
Yes	57	26
Whether any daily smokers smoke at home indoors		
No	72	88
Yes	28	12

*Difference between Indigenous/non-Indigenous children is statistically significant at the p<0.05 level.

Source: ABS and AIHW analysis of 2012–13 AATSIHS



2.04

Literacy and numeracy

Why is it important?

There is a two-way association between health and education. People with low educational attainment tend to have poorer health, fewer opportunities, lower incomes and reduced employment prospects (Johnston et al. 2009). In turn, poor health is associated with lower educational attainment (Conti et al. 2010). Vision or hearing loss (measures 1.15 and 1.16) is associated with linguistic, social and learning difficulties and behavioural problems in school. These problems can lead to reduced educational performance (Hopkins 2014) and have life-consequences for employment, income, and contact with the criminal justice system (Williams et al. 2009) (see measure 2.11).

Early education experiences and school readiness are important as they influence future academic performance. The Australian Early Development Census measures how children are faring as they enter school. Key findings from the 2012 collection indicate that Indigenous children are more than twice as likely to be developmentally vulnerable than non-Indigenous children. In 2012, 43% of Indigenous children were vulnerable on one or more domains (Australian Government 2013). NAPLAN test results decline with any absence from school and this accumulates over time (Hancock et al. 2013). Low-performing students have a propensity for poor attendance in later years, and are also less likely to complete Year 12 (Hancock et al. 2013).

In December 2007, COAG agreed to a target of halving the gap between the proportion of Indigenous and non-Indigenous students achieving reading, writing and numeracy benchmarks within a decade. In May 2014, COAG agreed to a five-year target of Closing the Gap between Indigenous and non-Indigenous school attendance. School attendance is key to school outcomes for Indigenous students. Around 20% of the gap in school performance between Indigenous 15-year-olds is explained by poorer school attendance by Indigenous students (Biddle 2014a).

The NAPLAN Minimum Standard represents a performance standard in literacy and numeracy, below which students will have difficulty progressing satisfactorily at school.

Findings

Between 2008 and 2014, the proportion of Indigenous students at or above the National Minimum Standards in reading and numeracy has shown no statistically significant improvement nationally in any of the eight measures (Years 3, 5, 7 and 9 in reading and numeracy). For Year 5 reading, there was a large apparent rise in the proportion of Indigenous students meeting the national minimum standards from 2012 to 2013 (from 64.7% to 83.3%). However, this proportion fell back to 70.3% in 2014.

In 2014, NAPLAN results at the national level showed two of the eight areas (Year 7 reading and Year 9 numeracy) were consistent with the required trajectory points. In the other six areas, 2014 results were below the required trajectory points. Around 75% of Indigenous students met the Year 3 national minimum standard in reading, 70% in Year 5, 77% in Year 7, and 71% in Year 9. Around 76% of Indigenous students met the national minimum standard for writing in Year 3, 63% in Year 5, 59% in Year 7, and 49% in Year 9. Around 78% of Indigenous students met the national minimum standard for numeracy in Year 3, 71% in Year 5, 80% in Year 7, and 76% in Year 9. Around 74% of Indigenous students met the national minimum standard for spelling in Year 3, 74% in Year 5, 73% in Year 7, and 70% in Year 9. Around 73% of Indigenous students in Year 3 met the national minimum standard for grammar and punctuation, 68% in Year 5, 70% in Year 7, and 63% in Year 9. The proportion of Aboriginal and Torres Strait Islander students achieving the national minimum standards for each of these areas in all school years tested remain below corresponding proportions for non-Indigenous students.

Proportions of Aboriginal and Torres Strait Islander students achieving literacy and numeracy benchmarks remain lower for students living in remote and very remote areas. This relationship was also evident for non-Indigenous students, but was much less marked, resulting in a much larger gap between Indigenous and non-Indigenous results in remote areas than in metropolitan areas. For example, in 2014, 85.7% of all Indigenous students in metropolitan areas met or exceeded the National Minimum Standards for Year 7 reading compared with only 34.9% of Indigenous students in very remote areas.

The gap in school attendance rates between Indigenous and non-Indigenous students widens as children age and is significantly greater in remote and very remote areas. In 2013, Indigenous attendance rates in government schools were lower than non-Indigenous rates for each jurisdiction and all grades from Year 1 to Year 10 (SCRGSP 2014a). The NT had the largest attendance gaps, ranging from 21–22 percentage points in the primary school years (Years 1–6), to 31 percentage points in Year 10.

In 2008, Indigenous parents reported that school attendance was affected by their child being bullied for 29% of children in Year 3 and 34% of children in Years 5 and 7.

Hearing and vision loss due to high rates of otitis media and trachoma also impact on literacy difficulties for Indigenous students. Regardless of ear health status, Indigenous students' literacy skills remain consistently poorer compared with non-Indigenous peers (Timms et al. 2014). Poor literacy achievement is more common among students who do not speak Standard Australian English at home, while poorer numeracy is more evident among students with parents in less skilled occupations (Purdie et al. 2011) (see measure 2.07). While the 2011 Census reports 83% of Indigenous Australians speak English at home, many Indigenous Australians use a distinctly Aboriginal form of English that differs from the Standard Australian English used in educational settings (Hall 2013; Eades 2013).

Implications

Developing strong links between schools, parents and communities to improve attendance, providing culturally competent (measure 3.08) and quality teaching, and ensuring schools help Indigenous students to feel included and supported provides a foundation for improving literacy and numeracy outcomes of Indigenous children. Evaluation of the *Smarter Schools National Partnerships* has linked positive outcomes with enhancing family and community participation in learning, mentoring programmes, individual learning plans for at-risk students, and enhanced use of student achievement data.

The *Aboriginal and Torres Strait Islander Education Action Plan 2010–2014* includes attendance, literacy, numeracy, readiness for school and post-school

pathways as priorities, and includes local, systemic and national collaborative actions to improve the literacy and numeracy levels of Aboriginal and Torres Strait Islander students.

Findings from the *2011 Evaluation of the Home Interaction Program for Parents and Youngsters* (HIPPY) found an improvement in children’s early numeracy and early literacy skills (the gap observed in HIPPY children’s early numeracy and early literacy skills at the beginning of the programme, compared with the Australian norm, had closed by the end of the programme), and improvements in the home learning environment and parent’s social connectedness and inclusion.

Reviews of the *National Partnerships* (NP) for *Literacy and Numeracy* and *Low Socio-Economic Status School Communities*

(which together, involved 54.6% of all Indigenous students) found that:

- NP participation was associated with some improvements in NAPLAN primary-level numeracy among Indigenous students compared with similar schools not participating.
- In the NT, the Indigenous cohort in some schools involved in the ‘Maximising Improvement in Literacy and Numeracy’ programme outperformed comparative groups with respect to both numeracy and reading.
- In Qld, carefully designed intervention programmes that focused on Indigenous culture yielded improvements in enrolment and attendance rates. NP participation was also associated with improved

engagement among Indigenous students with notable examples including an increase in attendance in SA for case-managed students or students provided with individual targeted support.

- Higher Indigenous retention rate to Year 10 was also noted in NP schools in WA, NSW, Victoria and Tasmania compared with other schools in these states.
- NP schools increased the involvement of Indigenous families and community members in student learning, including classroom activities and community events. In Victoria for example, Koorie Education Workers helped to increase participation of local Indigenous community members in teaching and learning forums, as well as guided teacher knowledge and appreciation of Indigenous cultures.

Figure 2.04-1
 Proportion of Year 3, 5, 7 and 9 students at or above the national minimum standards for reading, writing, numeracy, spelling, and grammar and punctuation, by Indigenous status, 2014

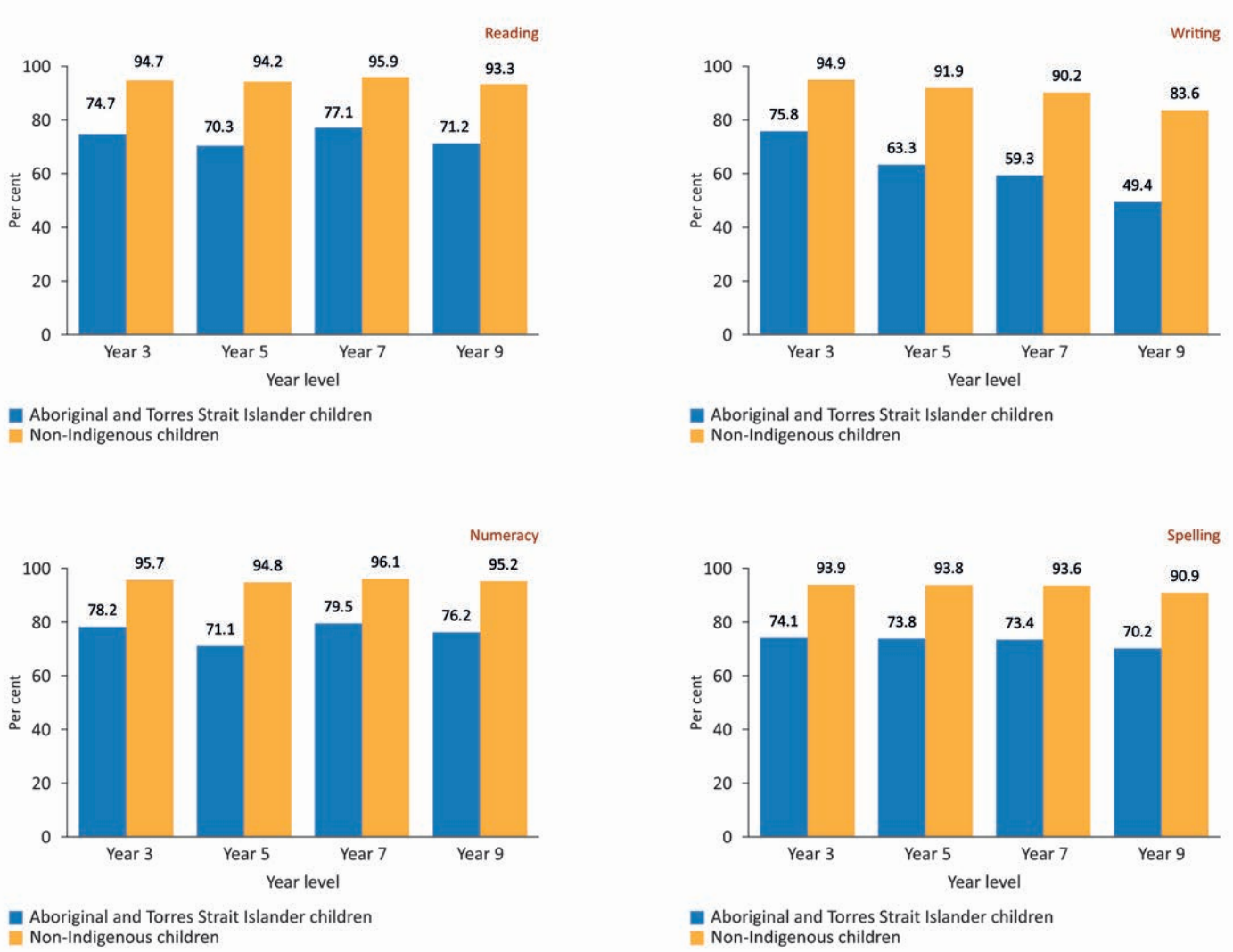
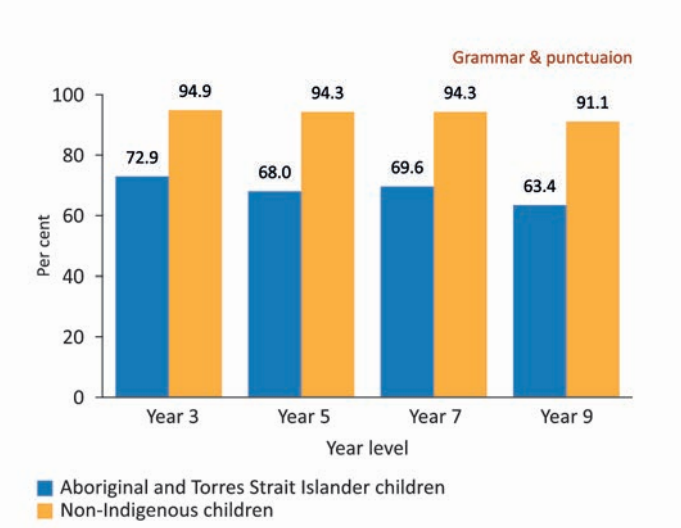


Figure 2.04-1 (continued)



Source: MCEECDYA 2014

Figure 2.04-2

Proportion of Year 3, 5, 7 and 9 students at or above the national minimum standards for reading, writing and numeracy, by remoteness area and Indigenous status, 2014

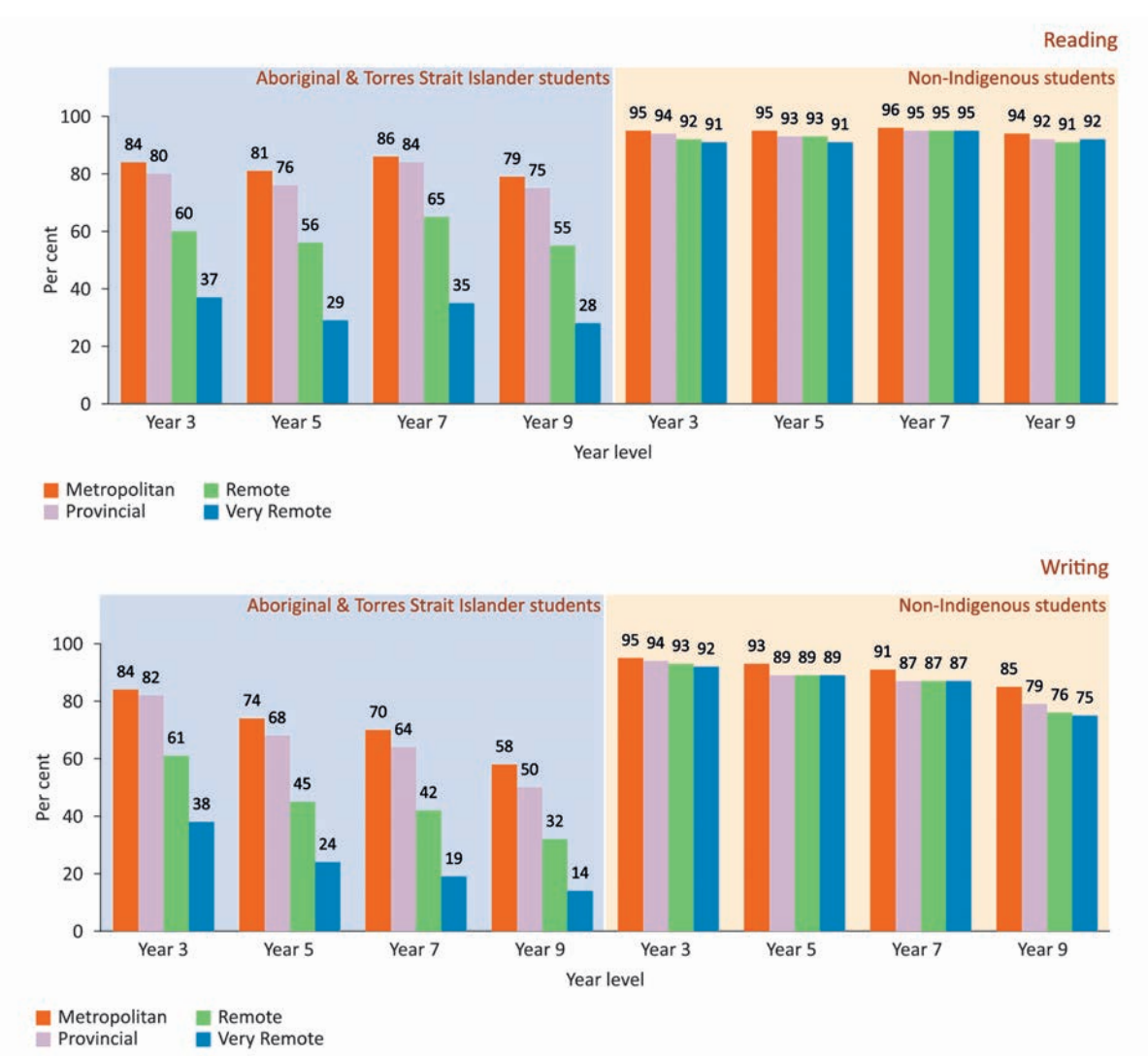
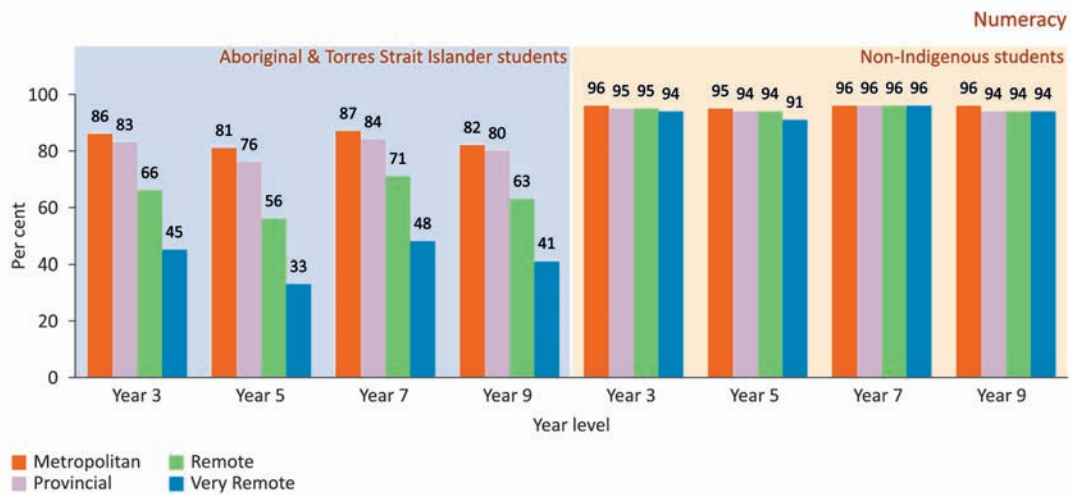


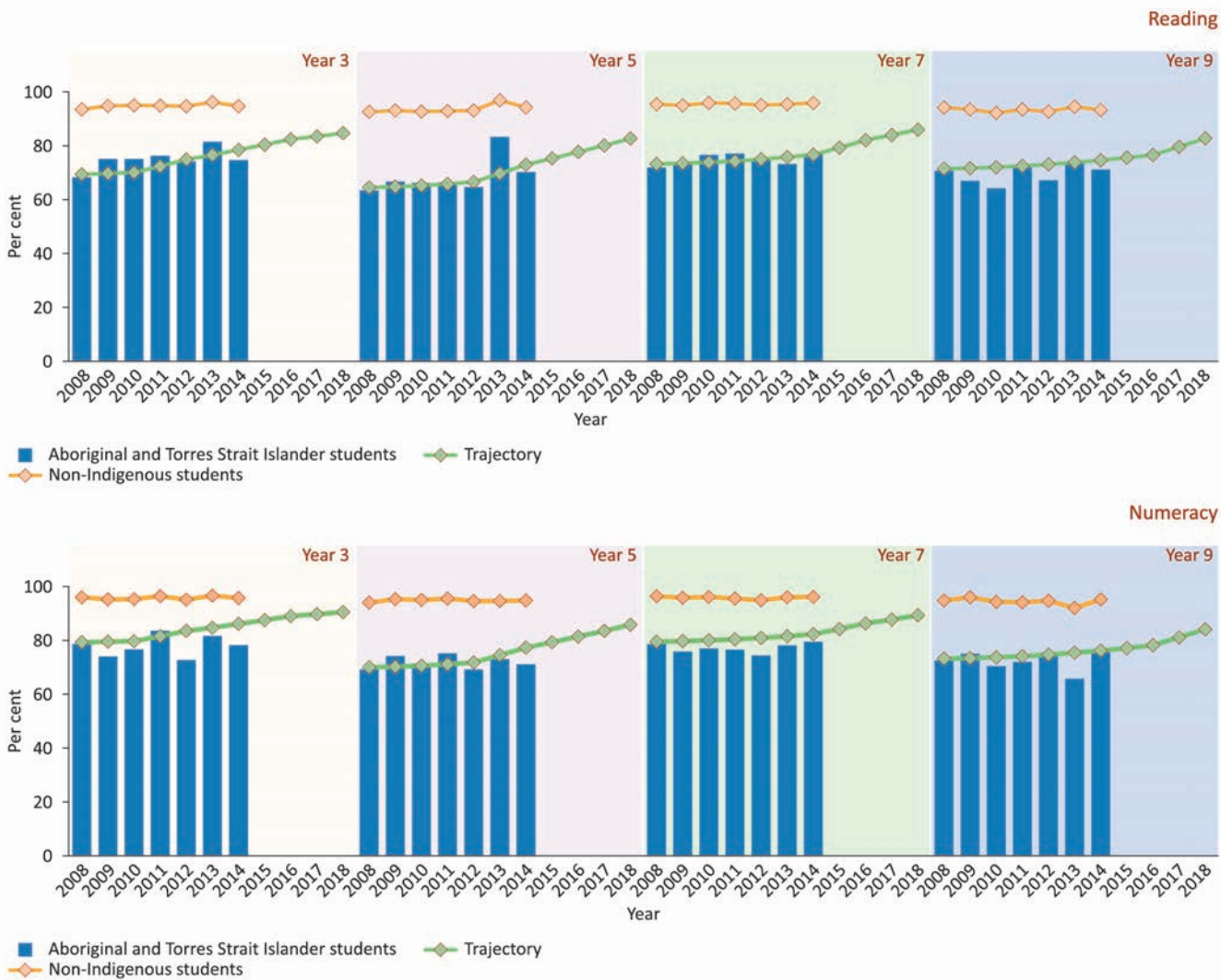
Figure 2.04-2 (continued)



Source: MCEECDYA 2014

Figure 2.04-3

Proportion of Year 3, 5, 7 and 9 students at or above the national minimum standards for reading and numeracy, by Indigenous status, 2008–14 and trajectory to COAG target



Source: MCEECDYA 2014



2.05

Education outcomes for young people

Why is it important?

Higher levels of education are associated with improved health outcomes through greater health literacy and better prospects for socio-economic status (including income and employment) which supports increased access to safe and healthy housing (see measures 2.01 & 2.02), healthy lifestyle choices such as regularly eating fruit and vegetables; and not smoking (see measures 2.15 & 2.19) (Clark et al. 2014). Research in the US (Wong et al. 2002) found that mortality has declined at a faster pace for those with more education, with a 7-year increase in life expectancy for college-educated students. International literature also documents improvements in child mortality associated with increased levels of maternal education and attributed this to a variety of factors, including improved understanding of and greater willingness to access health services (Gakidou et al. 2010).

The 'retention rate' measures the extent to which students stay on at school until Year 10, and until Year 12. Another measure is the 'attainment rate', the extent to which students are awarded a certificate at the end of Year 10 or Year 12. Historically, Aboriginal and Torres Strait Islander students have had lower retention and attainment rates compared with non-Indigenous students.

Findings

Data for 2013 show that the apparent retention rate of full-time Aboriginal and Torres Strait Islander students from Years 7/8 to Year 10 was 98% compared with full retention for other students. In the same year, the apparent retention rate of full-time Aboriginal and Torres Strait Islander students from Years 7/8 to Year 12 was 55% compared with 83% for other students. The apparent retention rate of full-time Aboriginal and Torres Strait Islander students from Year 11 to Year 12 was 71% compared with 87% for other students. The apparent retention rate for Aboriginal and Torres Strait Islander females was higher compared with males across all year groups of school retention.

There have been significant increases in Indigenous student apparent retention rates from Year 7/8 to Year 12 (55%), Year 7/8 to Year 10 (20%) and Year 10 to Year 12 (30%) between 1999 and 2013.

In 2013, NSW had the largest number of Aboriginal and Torres Strait Islander full-time students (57,728) followed by Qld (53,768). In the NT 40% of full-time students identify as Aboriginal and Torres Strait Islander (ABS 2014I). In 2013, NSW and Victoria had the highest retention rates of Aboriginal and Torres Strait Islander students from Year 7/8 to Year 10 (around 100%), while the NT had the lowest (75%). Retention rates of Indigenous students from Year 7/8 to Year 12 were highest in SA (77%) and the ACT (69%) and were lowest in the NT (36%). Rates for Tasmania and the ACT should be interpreted with caution, due to small numbers in these jurisdictions. Some rates exceed 100%, reflecting the movement of students interstate and from non-government to government schools in Years 11 and 12.

Between 2008 and 2012–13, the gap in the Year 12 or equivalent attainment rate for those aged 20–24 years has narrowed by 11.6 percentage points and the COAG target to halve the gap by 2020 is currently on track (Australian Government 2015). Nationally, the proportion of Indigenous 20–24 year olds who had attained Year 12 or equivalent increased from 45% in 2008 to 59% in 2012–13.

In 2012–13, Year 12 or equivalent attainment rates for Indigenous 20–24 year olds were highest in outer regional areas (66%) and lowest in very remote areas (37%). The gap in attainment rates between Indigenous and non-Indigenous was smallest in outer regional areas, where non-Indigenous attainment rates were also lower. The 2012 Programme for International Student Assessment, an international survey of 15-year-olds, found no significant difference between Indigenous Australian males and females in mathematical and scientific literacy; but Indigenous Australian males performed below Indigenous Australian females in reading literacy. Across mathematical, scientific and reading literacy, Indigenous Australian students had a mean score that equated to 2.5 years of schooling below non-Indigenous students. Half of Indigenous Australian students were low performers compared with 18% of non-Indigenous students (Thomson et al. 2013). Indigenous Australian students also achieved lower scores in financial literacy compared with non-Indigenous peers (Thomson 2014).

In the 2008 Social Survey, Indigenous parents identified assistance that would support children to complete Year 12

such as support from family, friends and school (83%); career guidance (36%); subsidies or grants to help with affordability (25%); and schools being suitable for culture and/or beliefs (17%).

Implications

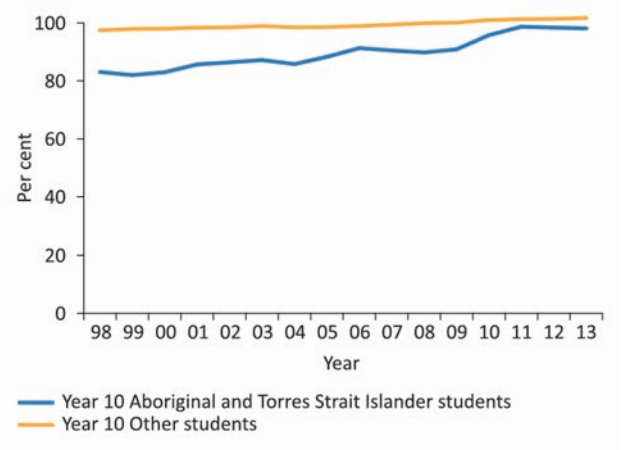
Multi-faceted strategies addressing access to education, family and community engagement, home learning environments, mentors, culturally inclusive support strategies and pathways to employment are needed to improve education outcomes.

COAG has committed to improving educational standards and the quality of schools and has recently agreed a new Closing the Gap target on school attendance (to be met by 2018) (COAG 2014). Under constitutional arrangements, state and territory governments are responsible for ensuring all school-age children have the opportunity to enrol in a safe and supportive school that provides high quality education (SCRGSP 2014b). State and territory governments are responsible for the administration of government schools and provide the majority of the government funding for these schools. Non-government schools operate under conditions determined by state and territory government registration authorities. In 2012, 85% of Indigenous students attended government schools (SCRGSP 2014b).

The Australian Government is responsible for allocating funding to states and territories to support improved service delivery and reform to meet nationally agreed outcomes. The majority of these funds are provided through the *National Schools Specific Purpose Payment* with supplementary funds through other arrangements such as National Partnerships under the *National Education Agreement*. The Australian Government provided \$6.8 million in 2014 to assist non-government schools with large numbers of Indigenous boarders from remote areas. The *Youth Connections* programme provided individual support services to almost 75,000 young people between January 2010 and December 2013 (19% of participants were Indigenous).

Figure 2.05-1

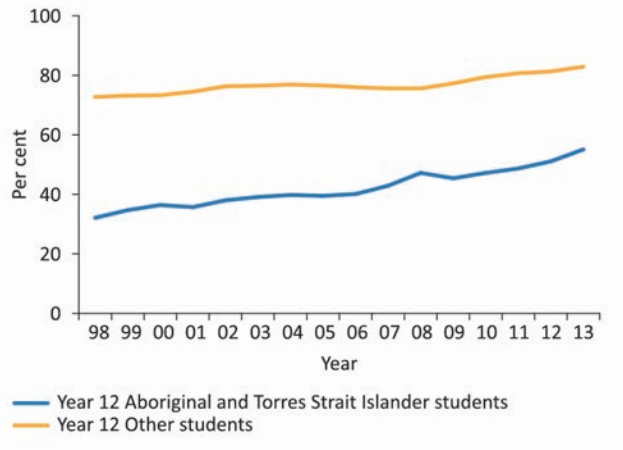
Apparent Year 10 retention rates, by Indigenous status, 1998–2013



Source: AIHW analysis of ABS National Schools Statistics Collection

Figure 2.05-2

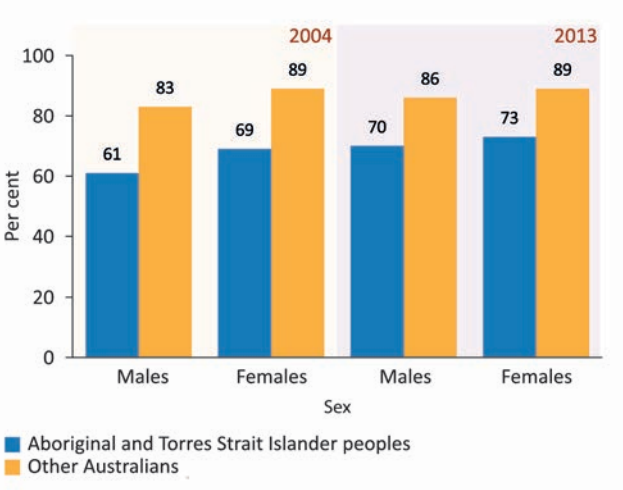
Apparent Year 12 retention rates, by Indigenous status, 1998–2013



Source: AIHW analysis of ABS National Schools Statistics Collection

Figure 2.05-3

Apparent Year 11 to Year 12 retention rates, by Indigenous status and sex, 2004 and 2013



Source: AIHW analysis of ABS National Schools Statistics Collection

Table 2.05-1

Apparent retention rates, by Indigenous status, jurisdiction and sex, 2013

	Aboriginal and Torres Strait Islander peoples									Other Aust
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust	
Per cent										
Year 7/8 to 10 - Apparent retention										
Males	103.7	105.3	98.6	90.6	99.7	103.3	105.2	75.3	97.2	101.5
Females	107.7	103.4	102.3	89.0	96.6	101.8	96.2	74.4	99.0	101.9
Total	105.6	104.3	100.4	89.8	98.1	102.6	100.9	74.9	98.1	101.7
Year 7/8 to 12 - Apparent retention										
Males	44.2	50.0	64.2	50.2	70.6	49.2	70.6	33.2	52.0	79.1
Females	54.9	60.0	66.4	48.7	83.5	61.8	65.8	39.5	58.2	86.9
Total	49.5	55.1	65.3	49.5	76.9	54.7	68.5	36.1	55.1	82.9
Year 11 to 12 - Apparent retention										
Males	63.2	63.6	80.1	62.5	75.8	68.4	60.0	64.0	69.6	85.5
Females	71.4	75.8	78.1	61.3	79.8	75.6	44.6	72.6	72.9	89.2
Total	67.5	69.8	79.1	61.9	77.9	71.8	52.6	68.1	71.3	87.4

Source: AIHW analysis of ABS National Schools Statistics Collection



2.06

Educational participation and attainment of adults

Why is it important?

Adult learning is a powerful tool in achieving better health, education and economic outcomes (Chandola et al. 2014). Longitudinal studies show that adults who participate in learning post-school engage in more healthy behaviours including increased amounts of physical exercise, reduced alcohol consumption, and improved social and emotional wellbeing. Marmot et al. (2010) argue that adult learning should be made available to those who are unemployed or economically inactive in order to reduce health inequalities. Research also shows that the value of education in mid-life is greatest for those with the poorest education at the time of leaving school, with qualifications achieved at this life-stage offering a protective effect against coronary heart disease (Chandola et al. 2011). Biddle (2014b) found disability and low financial resources were significant impediments for Indigenous Australians completing a post-school qualification (see measures 1.14 and 2.08).

There are strong associations between formal educational attainment (particularly Year 12), parental educational attainment and measures of health literacy (ABS 2008). Research shows health outcomes are influenced by a person's ability to use a wide range of materials and resources to build health knowledge and enable empowered health decision making. Lower health literacy is a barrier to acquiring health education information and accessing treatment (ACSQHC 2013).

Findings

In 2012–13, 20% of Aboriginal and Torres Strait Islander peoples aged 15 years and over were currently studying at an educational institution compared with 17% of non-Indigenous Australians in the same age range. However, Indigenous Australian young adults (aged 15–24 years) were less likely to be studying than their non-Indigenous counterparts.

In 2012–13, Year 12 was the highest level of school completed by 27% of Aboriginal and Torres Strait Islander peoples aged 18 years and over. In comparison, non-Indigenous Australians aged 18 years or over were more likely to have completed Year 12 or equivalent (54%). The proportion of Aboriginal and Torres

Strait Islander peoples aged 18 years and over who completed Year 12 increased from 19% in 2002 to 27% in 2012–13. Indigenous Australians aged 18 years and over living in remote areas were less likely than those living in non-remote areas to have completed Year 12 or equivalent (20% compared with 29%).

In 2012–13, 43% of Aboriginal and Torres Strait Islander peoples aged 20–64 years reported they either had a Certificate III or above or were studying; a 17 percentage point increase from 2002. In 2011–12, 67% of non-Indigenous Australians aged 20–64 years reported they had either a Certificate III or above or were studying.

Higher proportions of Indigenous Australians aged 15 years and over were studying at TAFE/VET, particularly in the 45 and over age group, compared with non-Indigenous Australians. Fewer Indigenous Australians were currently studying at university/other higher education institutions in 2012–13 compared with non-Indigenous Australians (4% and 7% respectively), particularly in the younger age groups. However, Indigenous Australians in the 45 years and over age group were 1.5 times as likely to be studying at university/other higher education institutions compared with non-Indigenous Australians. Overall, much lower proportions of Aboriginal and Torres Strait Islander peoples had a bachelor degree or above as their highest level of non-school qualification (6%) compared with non-Indigenous Australians (26%).

VET courses are providing large numbers of Aboriginal and Torres Strait Islander peoples with non-school education training opportunities. In 2012, there were approximately 20,300 course completions in the VET sector by Indigenous Australians aged 15 years and over. This constitutes 5% of the Aboriginal and Torres Strait Islander population aged 15 years and over compared with 3% for other Australians.

Between 1996 and 2012, there was a significant increase in the rate of Aboriginal and Torres Strait Islander students and other students who had completed a course in the VET sector and the magnitude of the increase among Indigenous students was higher. In 2012, the VET load pass rate for Indigenous students was 75% compared with 83% for other Australian students.

During 2012, 0.5% of Aboriginal and Torres Strait Islander peoples completed a course in the higher education sector compared with 1.9% of other Australians. In the 22–24 year age group, 0.8% of Indigenous Australians completed a course in the higher education sector compared with 9.6% of other Australians. The gap narrows in the older age groups indicating that Indigenous students completing higher education courses have an older age profile than other students. Higher education award completions by Indigenous students increased by 8 percentage points between 1996 and 2012; however, this increase was at a slower rate than for other Australians and the gap has widened.

In 2012–13, Indigenous Australians aged 15–64 years who had non-school qualifications were more likely to be employed (64%) than those without non-school qualifications (36%). Indigenous adults who had non-school qualifications were also more likely to be in the top two income quintiles (20%) than those without non-school qualifications (9%).

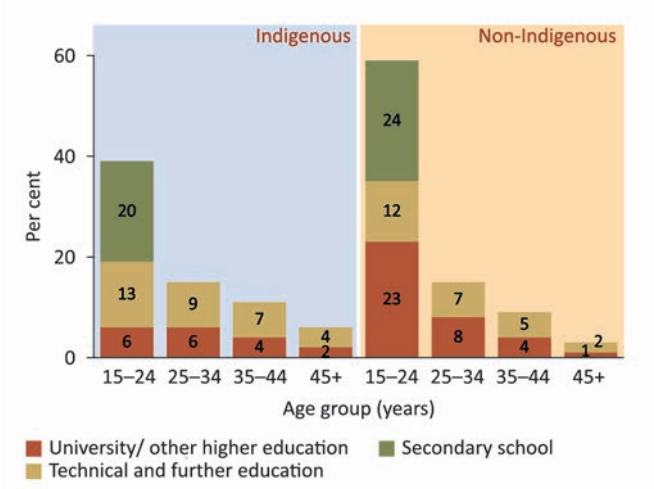
Implications

Despite improvements in recent years, there are still large gaps between Indigenous Australians and other Australians in educational participation and attainment. The greatest improvements have been in the VET sector where Indigenous participation exceeds non-Indigenous participation.

A range of measures are currently in place to support Indigenous students in higher education including the *Commonwealth Scholarships Programme*, the *Indigenous Support Programme* and the *Higher Education Participation and Partnerships Programme* (HEPP). The HEPP commenced in January 2015. The aim of the HEPP is to increase the number of people from disadvantaged backgrounds who access, participate and succeed in higher education. In line with recommendations of the 2012 *Review of Higher Education Access and Outcomes for Aboriginal and Torres Strait Islander People*, all universities have put targets and strategies in place for improving Aboriginal and Torres Strait Islander access to and outcomes from higher education.

Figure 2.06-1

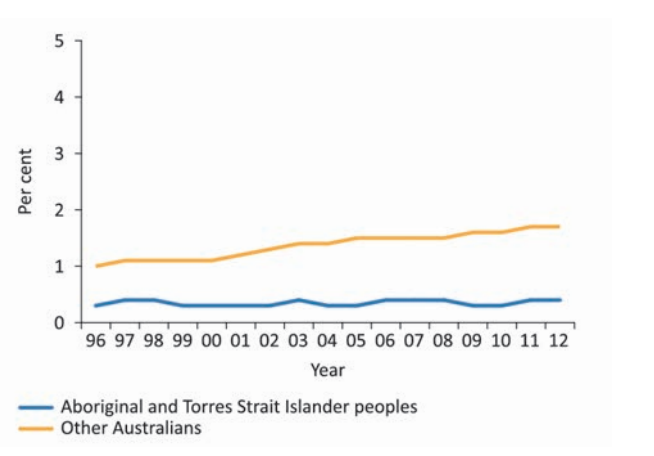
Educational institution currently attended, by Indigenous status and age group, persons aged 15 years and over, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.06-3

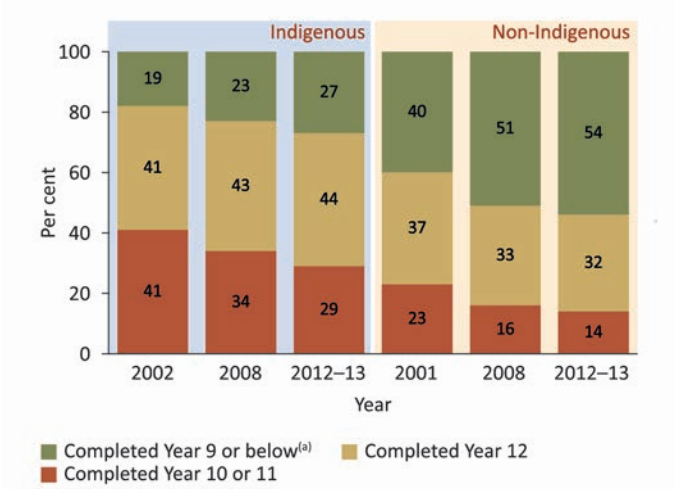
Higher education award course completions, by Indigenous status, 1996 to 2012



Source: AIHW analysis of DEEWR Higher Education Statistics Collection

Figure 2.06-2

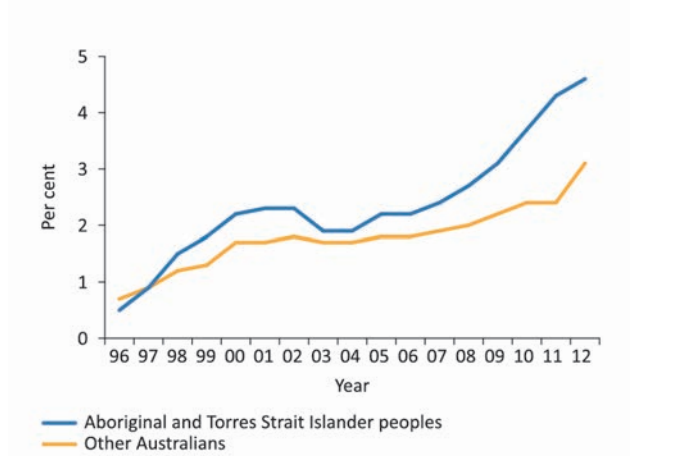
Highest level of school completed, by Indigenous status, persons aged 18 years and over, 2001/2002, 2008 and 2012–13



a) Includes persons who never attended school.
Source: ABS and AIHW analysis of 2002, 2008 NATSISS and 2012–13 AATSIHS

Figure 2.06-4

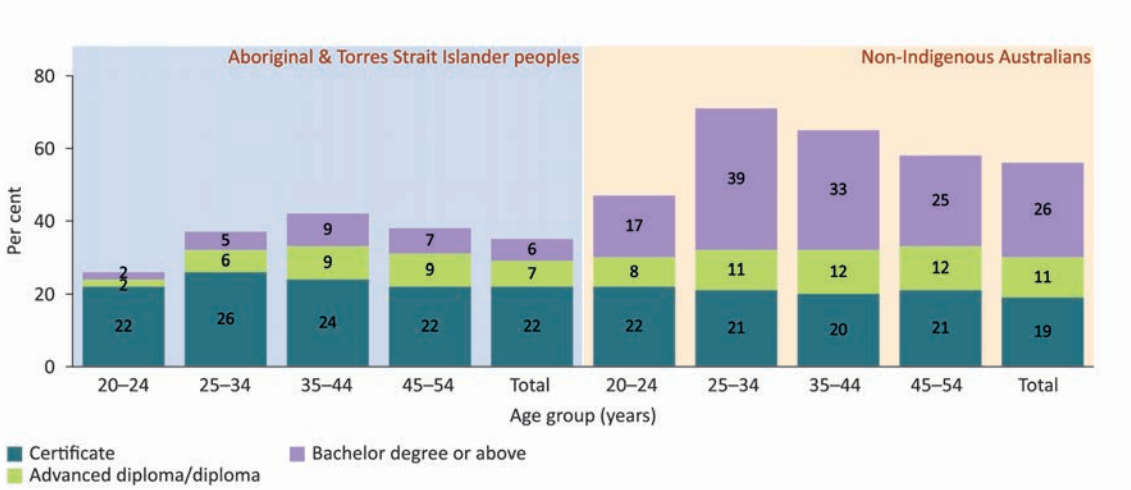
Total completions in the VET sector for persons aged 15 years and over, by Indigenous status, 1996 to 2012



Source: AIHW analysis of NCVER, National VET Provider Collection, 2012

Figure 2.06-5

Highest non-school qualifications, by Indigenous status and age group, persons aged 20 years and over, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS



2.07

Employment

Why is it important?

Participation in employment has important consequences for health, social and emotional wellbeing and living standards for individuals, families and communities (Bambra 2011). Conversely, being sick or disabled, or looking after someone in poor health acts as a barrier to labour-force participation (Belachew et al. 2014). In addition to poor health outcomes, reasons for Indigenous Australians having lower employment rates include lower levels of education and training, higher levels of contact with the criminal justice system, experiences of discrimination and lower levels of job retention (Gray et al. 2012).

The labour force comprises all people contributing to, or willing to contribute to, the supply of labour. This includes the employed (people who have worked for at least 1 hour in the reference week) and the unemployed (people who are without work, but have actively looked for work in the last four weeks and are available to start work). The remainder of the population is not in the labour force. The labour force participation rate is the number of people in the labour force as a proportion of the working age population (15–64 years). The unemployment rate is the number of unemployed people as a proportion of the labour force. The employment to population ratio, also referred to as the employment rate, is employed people as a proportion of the population aged 15–64 years.

Findings

Over the last twenty years there has been a significant increase in Indigenous employment; however, since 2008 this gain has fallen and the gap with non-Indigenous employment has widened. In 1994, 38% of the Indigenous working age population were employed (SCRGSP 2014a). This increased to a peak of 54% in 2008 and then fell to 48% in 2012–13. Between 2008 and 2012–13 there has been an increase of 6.9 percentage points in the employment gap between Indigenous and non-Indigenous working age people (up from 21.2 to 28.1 percentage points). The Indigenous unemployment rate is currently 21%, an increase of 4.3 percentage points since 2008, and is 4 times the current non-Indigenous unemployment rate of 5%. The employment rate was higher for Indigenous males (53%) compared

with Indigenous females (42%). Both rates have fallen since 2008 with males falling by 9.9 percentage points and female employment falling by 3.2 percentage points. There was a decrease in employment for males in the 15–17 year old age group (from 36% in 2008 to 17% in 2012–13) (SCRGSP 2014a). In 2012–13, 40% of Indigenous youth aged 17–24 years were fully engaged in study or work, about half the non-Indigenous rate (76%). Rates of Indigenous youth fully engaged ranged from 48% in major cities to 16% in very remote areas. The employment gap has also increased since 2008 in each state and territory. The greatest increase in the gap was in WA at 13 percentage points, with a current gap of 32.8 percentage points. The highest overall gap was in the NT (40.5 percentage points).

In 2012–13, major cities and inner regional areas had the highest employment rates for Indigenous Australians (50%) while very remote areas had the lowest employment rate at 42%. Very remote areas also recorded the largest fall in employment since 2008 (12 percentage points). However, these rates include *Community Development Employment Program* (CDEP) participants (phased out since 2008). In 2008, CDEP employment accounted for almost half of all employment in very remote areas, but by 2012–13 it accounted for just over one quarter of total employment. Given this significant change it is more appropriate to look at non-CDEP (mainstream) employment. The Indigenous mainstream employment rate in remote and very remote combined was 33% in 2008 and 35% in 2012–13. The Indigenous mainstream employment rate in the major cities fell from 59% in 2008 to 50% in 2012–13.

In 2012–13, 60% of Indigenous Australians aged 15–64 years were in the labour force. This was made up of 48% employed and 13% unemployed. Data for non-Indigenous Australians is available from the 2012 Survey of Education and Work. In 2012, 80% of non-Indigenous people of working age were in the labour force. This was made up of 76% employed and 4% unemployed. After controlling for education levels, geographic dispersion and self-assessed health status the gap in labour force participation rates between Indigenous Australians and non-Indigenous Australians drops by two-thirds, from 19.9 to 6.3 percentage points (ABS 2014k).

Studies of the social gradient of health demonstrate that characteristics of employment such as occupation, job security and control affect health outcomes (Marmot et al. 2010). Non-Indigenous employed persons are more likely to work as professionals (22%) than Indigenous employees (13%), while Indigenous Australians are more likely to work as labourers (18%) or as community and personal service workers (17%). There was an increase in the proportion of employed Indigenous Australians working as professionals/managers between 2001 and 2011 (16% to 19%). Between 2002 and 2012–13 there has been an increase in the proportion of employed Indigenous Australians who are employed full-time (54% to 65%) (SCRGSP 2014a). Long-term unemployment was higher for Indigenous Australians living in remote areas (42% of unemployed persons) compared with those living in non-remote areas (29% of unemployed persons). Over the last decade the proportion of the Indigenous labour force in long-term unemployment has remained stable.

In 2012–13 Indigenous Australians were 3 times as likely to report a family stressor of not being able to get a job (23%) compared with non-Indigenous Australians (8%). This stressor was higher for Indigenous Australian males, particularly those aged 25–34 years (30%). In 2011 the unemployment rate for Indigenous Australians who provided unpaid assistance to a person with a disability (21%) was more than 3 times that for non-Indigenous carers (6%).

Implications

To achieve the COAG target to halve the gap in employment, the gap would need to shrink to 10.6 percentage points by 2018. However, between 2008 and 2012–13 the gap has widened meaning this target is not currently on track.

The Australian Government is currently considering the recommendations made by the Forrest Review, *Creating Parity*, which was commissioned with the intent of creating innovative and effective measures to address the gap in employment outcomes.

Under the *Indigenous Advancement Strategy*, the Australian Government has allocated \$2.5 billion over four years to the *Jobs, Land and Economy Programme*. This programme supports adults into work, fosters Indigenous businesses and assists Indigenous Australians generate

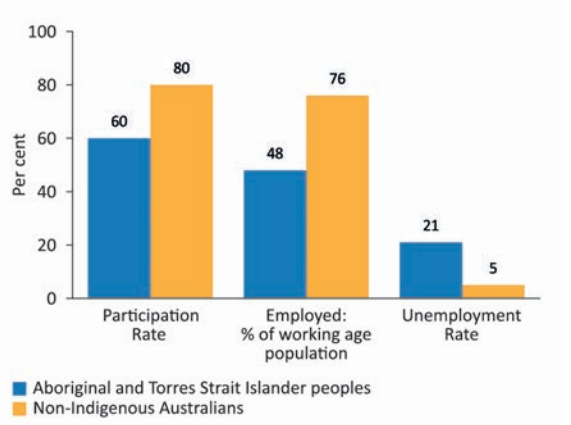
economic and social benefits from effective use of their land. During 2014, 24 Vocational Training and Employment Centres were established and over 4,500 jobs were committed by employers. The Government has also invested \$1.5 billion over five years to fund the *Remote Jobs and Communities Programme* to help Australians living in remote regions. The main programmes delivering employment services to Indigenous

Australians include *Job Services Australia* (JSA), *Disability Employment Services* (DES) and CDEP. JSA assists eligible job seekers to overcome personal vocational and non-vocational difficulties that may be hindering their ability to find and keep a job. Support can include the provision of tools, training courses, clothing or help to obtain a driver's licence or help to meet transport costs. Indigenous job seekers comprise 9% of JSA caseloads.

All DES providers are required to develop, maintain and implement an Indigenous employment strategy. The new *Employment Services 2015–2020* model (which will replace JSA) will incorporate a specific focus on Indigenous outcomes. Each employment provider will have Indigenous outcome targets to meet, based on the achievement of paid outcomes for Indigenous job seekers.

Figure 2.07-1

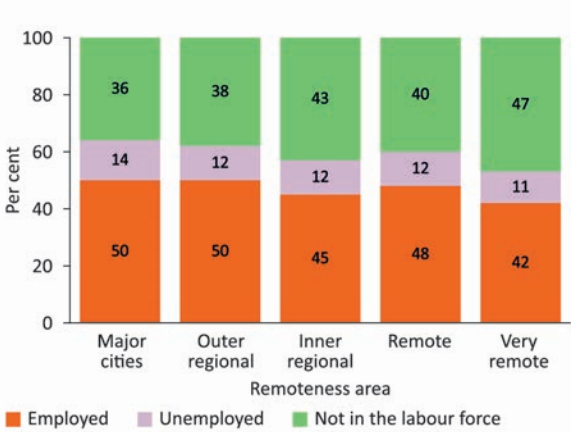
Labour force status of persons aged 15–64 years by Indigenous status, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS and 2012 SEW

Figure 2.07-3

Labour force status of Indigenous persons aged 15–64 years, by remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Table 2.07-1

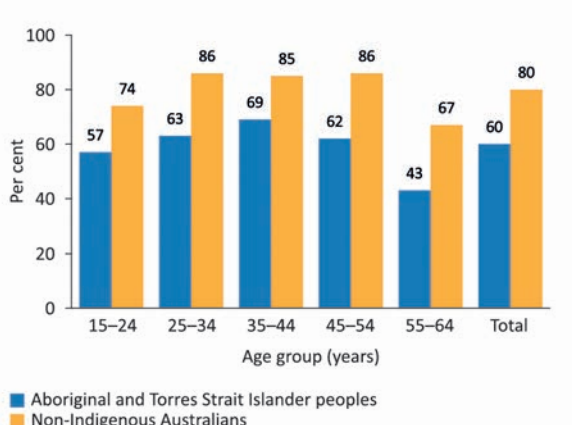
Labour force status of Indigenous Australians aged 15–64 years, by remoteness, 2012–13

	Remote	Non remote	Australia
Labour Force Status	Per cent		
In the Labour Force (Participation Rate)	55	62	60
Employed CDEP	9	0	2
Employed non-CDEP	35	49	46
Total Employed	44	49	48
Unemployed (% of working age population)	11	13	13
Unemployment Rate (% of Labour Force)	20	21	21
Not in the Labour Force	45	39	40
Total	100	100	100

Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.07-2

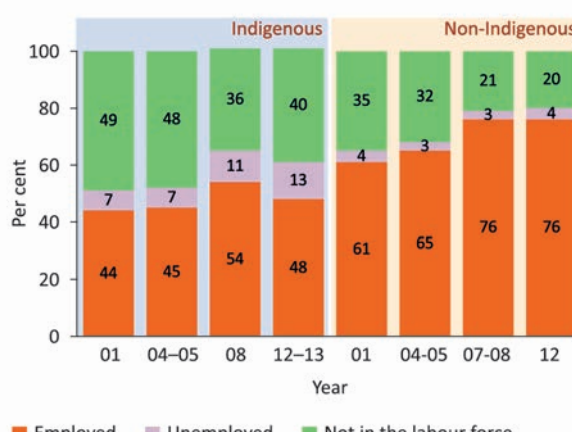
Labour force participation of persons aged 15–64 years by Indigenous status and age, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS and 2012 SEW

Figure 2.07-4

Labour force status of persons aged 15–64 years, by Indigenous status, 2001, 2004–05, 2008 and 2007–08, 2012–13



Source: ABS and AIHW analysis of 2001 NHS (Indigenous supplement), 2004–05 NATSIHS, 2004–05 NHS, 2008 NATSISS, 2007–08 NHS, 2012–13 AATSIHS, 2012 SEW



2.08

Income

Why is it important?

There is strong evidence from Australia and other developed countries that low socio-economic status is associated with poor health (Turrell et al. 2000; Marmot et al. 2010; WHO 2003). Low income is associated with a wide range of disadvantages including poor health, shorter life expectancy, poor education, substance abuse, reduced social participation, crime and violence. People with a lower socio-economic status bear a significantly higher burden of disease (Begg et al. 2007). The level of income inequality within a society has been identified as a determinant of differential health outcomes (Wolfson et al. 1999). It has been estimated that in the NT, socio-economic status contributes 30% to 50% of the gap in life expectancy between Indigenous and non-Indigenous Australians (Zhao et al. 2013b). Biddle (2011a) found complex relationships between income and self-ratings of wellbeing among Indigenous Australians.

Disparity in income is one aspect of socio-economic status through which Indigenous Australians face disadvantage. Income is closely linked to employment status (see measure 2.07) and educational attainment (see measures 2.04, 2.05 and 2.06).

The statistical measure adopted here is 'equivalised gross household income', which adjusts reported incomes to take into account number of people living in a household, particularly children and other dependants, as well as economies of scale.

Findings

Based on the 2012–13 Health Survey, an estimated 43% of Indigenous adults had incomes in the bottom 20% of equivalised gross weekly household Australian incomes. This compares with 17% of non-Indigenous adults. Only 6% of Indigenous adults lived in households with an equivalised gross weekly income in the top quintile compared with 22% of non-Indigenous Australians. The proportion of Indigenous adults in the lowest quintile of equivalised household income varied across jurisdictions, from 52% in the NT to 19% in the ACT. In all other jurisdictions, the proportion of Indigenous adults in the lowest quintile of equivalised household income was in the range of 36% to 46%.

A higher proportion of Indigenous adults living in very remote areas were in the lowest quintile of equivalised household income (59%). Inner regional areas had the lowest proportion of Indigenous adults in the lowest quintile (38%). Remote areas had the highest proportion of Indigenous adults living in the highest quintile (9%) while very remote areas had the lowest (2%).

Over time, the third, fourth and highest equivalised household income quintiles have been static for Indigenous adults. There was an increase in the proportion of Indigenous adults in the lowest quintile between 2004–05 and 2008 and then a drop between 2008 and 2012–13, leading to no significant change over the whole period.

In 2012–13, the median equivalised gross weekly household income for Indigenous adults was \$465 compared with \$869 for non-Indigenous adults. After adjusting for inflation, between 2002 and 2008 there was a statistically significant increase of \$107 (28%) in the median equivalised gross household income for Indigenous adults (\$385 to \$492). There was no statistically significant change between 2008 and 2012–13 and no significant change in the gap between Indigenous and non-Indigenous adults.

These national estimates mask considerable geographic variation. For example, the median gross weekly equivalised income for Indigenous adults in 2012–13 ranged from \$395 in the NT to \$827 in the ACT. There was also variation by remoteness, ranging from \$364 in very remote areas to \$516 in major cities.

Biddle (2013) examined Census personal income data for Indigenous Australians and reported variations in disposable income by age (40–44 year olds had a disposable income 3.94 times as high as 15–19 year olds) and sex (1.20 as high for males) as well as variations in average income by region (ranging from \$258 per week in Apatula, NT, to \$783 per week in South Hedland, WA).

In 2012–13, 55% of Indigenous adults and 59% of children aged 0–14 years were living in households reporting that they could not raise \$2,000 within a week in an emergency. Indigenous Australians in remote areas were more likely to report that they could not raise \$2,000 within a week than those in non-remote areas (73% compared with 51%). Approximately 43% of Indigenous adults were living in households that had experienced days

without money for basic living expenses in the last 12 months.

An indication of the relationship between low income and poorer health is provided by the 2012–13 Health Survey. Indigenous Australians in the lowest equivalised household income quintile were more likely to report fair/poor health than those in the highest quintiles (see measure 1.17). Relationships between income and educational attainment and employment are also evident.

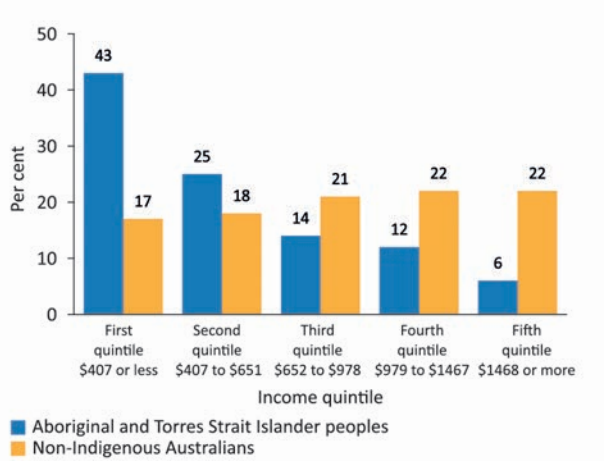
A recent study found that Indigenous Australians had lower total personal incomes than other Australians across all labour force categories, particularly for those who were employed full-time (Howlett et al. 2015). This is partly due to lower wages (around 18% lower for Indigenous men), which can be explained by lower levels of education, poorer access to 'good' jobs and less weeks worked per year on average. This paper finds that Indigenous Australians have considerably less income from other private sources (business and investment income) than other Australians. A higher proportion of Indigenous incomes come from government payments. Based on responses from the 2012–13 Health Survey, 46% of Indigenous Australians aged 18–64 years received a government cash pension or allowance compared with 13% of non-Indigenous Australians. Indigenous women received higher government payments than non-Indigenous women. Indigenous women, on average, have more children, are more likely to be a carer and/or have a partner with a low income. Hunter et al. (2014) found that the gaps in both personal and household income in urban areas are greatly reduced after adjusting for educational attainment.

Implications

The disparity in incomes between Indigenous and non-Indigenous Australians has important implications for health. These implications include the capacity to access goods and services required for a healthy lifestyle, including adequate nutritious food, housing, transport and health care. Other factors that may exacerbate the situation faced by low-income households include resource commitments to extended families and visitors (SCRGSP 2007). Income discrepancies are also an indicator of uneven access to education and employment opportunities.

Figure 2.08-1

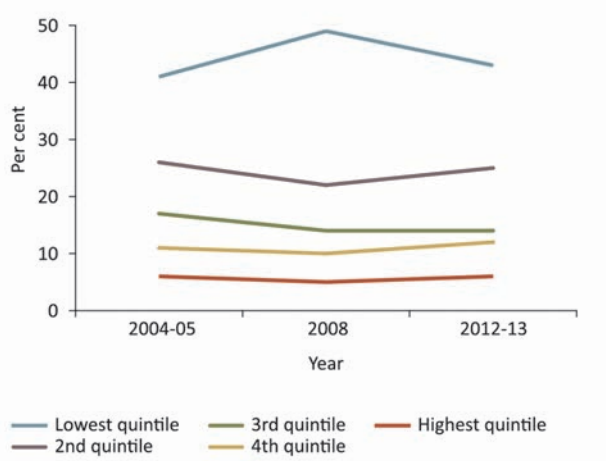
Proportion of persons aged 18 years and over in each equivalised gross weekly household income quintile, by Indigenous status, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.08-2

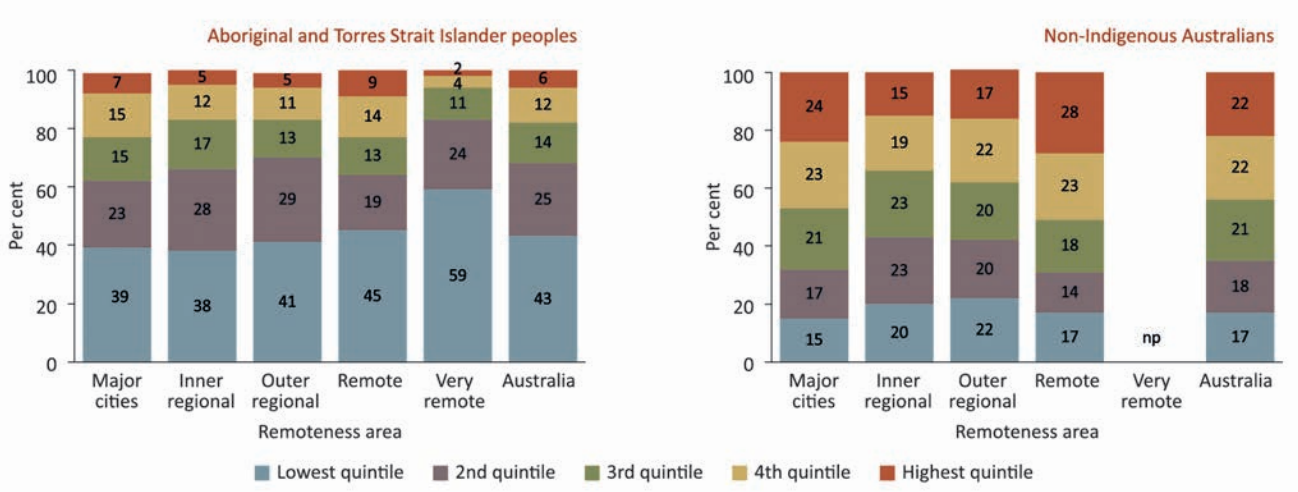
Proportion of Indigenous Australians aged 18 years and over in each equivalised gross weekly household income quintile



Source: ABS and AIHW analysis of 2012–13 AATSIHS, 2008 NATSISS, 2004–05 NATSIHS

Figure 2.08-3

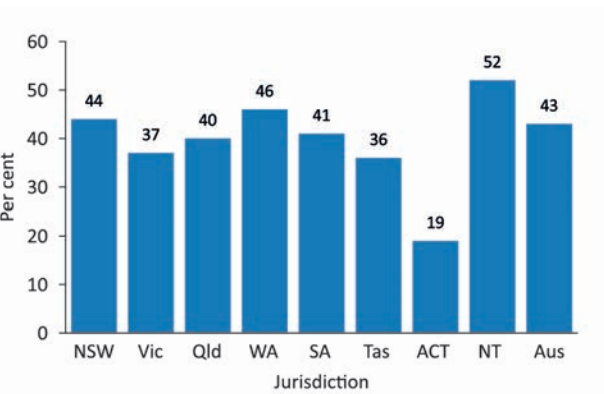
Proportion of persons aged 18 years and over in each equivalised gross weekly household income quintile, by Indigenous status and remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.08-4

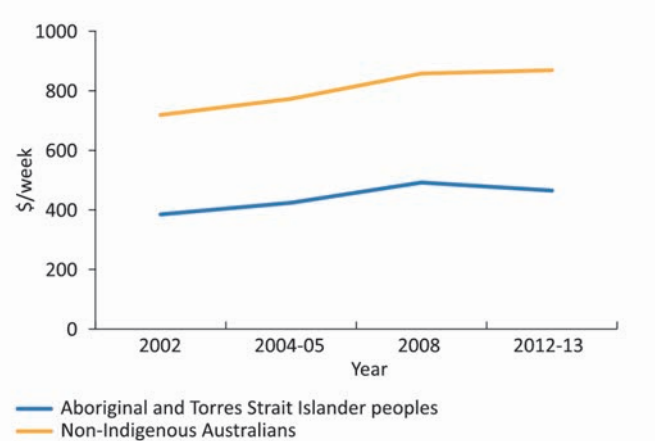
Proportion of Aboriginal and Torres Strait Islander peoples aged 18 years and over who were in the lowest quintile of equivalised gross weekly household income quintiles, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.08-5

Median equivalised gross weekly household income, persons aged 18 years and over, by Indigenous status, 2002, 2004–05, 2008, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS, 2007–08 NHS, 2008 NATSISS, 2004–05 NATSIHS, 2002 NATSISS



2.09

Index of disadvantage

Why is it important?

The links between different forms of disadvantage such as poverty, unemployment, poor education, racism and consequent social dysfunction, stress, social exclusion, and poor health are well documented (Wilkinson et al. 2003; Marmot 2005; Paradies 2006; Saunders et al. 2007; Sassi 2009). A recent study in the NT found that socio-economic disadvantage accounted for one-third to one-half of the gap in life expectancy between Indigenous and non-Indigenous Australians (Zhao et al. 2013a).

Socio-economic indexes for areas bring together a composite measure of advantage and disadvantage at the regional level. They provide a broad basis for tracking progress in addressing Indigenous disadvantage across the spectrum of determinants of health.

The ABS has developed the Socio-Economic Indexes for Areas (SEIFA) (Adhikari 2006). These indexes summarise a range of socio-economic variables associated with advantage and disadvantage such as the proportion of families with high incomes, people with a tertiary education, and employees in skilled occupations. Scores for each geographic area are produced by weighting these variables. All areas are then ordered from lowest to highest score and areas are divided up into ten or five equal-sized groups, from most disadvantaged to most advantaged depending on their score.

The limitation with these ABS indexes for this measure is that the rankings of regions are based on the whole population in the area and will not necessarily reflect the profile for Indigenous Australians. To address these shortcomings, Biddle (2009 & 2013) over the last few years has constructed a number of Indigenous indexes of socio-economic outcomes. The results from this work are also included here.

Findings

In 2011, Aboriginal and Torres Strait Islander peoples were over-represented in the three most disadvantaged deciles, ranked according to the ABS' SEIFA Index of Relative Socio-Economic Advantage/Disadvantage. Thirty-seven per cent of Indigenous Australians lived in areas in the most disadvantaged decile (the bottom 10%), compared with 9% of the

non-Indigenous population. Only 1.8% of Indigenous Australians lived in areas in the most advantaged decile (the top 10%).

Analysis at the jurisdictional level suggests that in all states and territories a greater proportion of the Indigenous Australian population lived in the most disadvantaged quintile (bottom 20%) compared with the non-Indigenous population. The NT had the highest proportion (74%) and the ACT the lowest proportion (2.6%) of Aboriginal and Torres Strait Islander peoples living in the most disadvantaged quintile areas. Tasmania had the lowest proportion (1%) and the ACT the highest proportion (35%) of Indigenous Australians living in the most advantaged quintile areas (top 20%).

These results need to be interpreted with caution. Indigenous Australians often represent a small proportion of the population in each area and therefore the socio-economic status of the area as a whole will not always reflect the socio-economic status of the Indigenous residents (the 'ecological fallacy'). One study found that Indigenous Australians consistently had a lower socio-economic status than the SEIFA score for the area (Kennedy et al. 2004).

Biddle (2009 & 2013) has constructed a number of Indigenous indexes of socio-economic outcomes based on the Indigenous data from the 2001, 2006 and 2011 Censuses. These studies have consistently found that for Indigenous Australians there is a clear gradient of disadvantage by remoteness. Capital city regions ranked relatively well while remote regions ranked relatively poorly. Income, employment and education correlated geographically while other areas of wellbeing showed more complex patterns.

Within each region there was substantial variation across the smaller, underlying Indigenous Areas. For example, while Sydney was the highest ranking Indigenous Area across all of Australia, the Indigenous population in areas such as Blacktown and Campbelltown had outcomes that were closer to those found in remote Australia. Similar variation was found in remote Indigenous areas, demonstrating that any geographic strategy for addressing Indigenous disadvantage must be targeted below the regional level (Biddle 2009).

The analysis based on the 2011 Census found that in every area, Indigenous Australians had higher levels of socio-economic disadvantage compared with the non-Indigenous population

of the area. There was no single area in Australia where the Indigenous population had better or even relatively equal outcomes compared with the non-Indigenous population. The gap between the two populations was smallest in city and regional rural areas (37–38 percentage points) and highest in Indigenous towns (89 percentage points) and remote dispersed settlements (81 percentage points) (Biddle 2013).

This study found that, over time, the ranking for most Indigenous areas remained similar, particularly for the top and bottom-ranked areas. City areas, large regional towns and remote towns remained relatively stable. There was a relative worsening of outcomes in small regional towns and rural areas and a relative improvement in Indigenous towns and remote dispersed settlements (Biddle 2013).

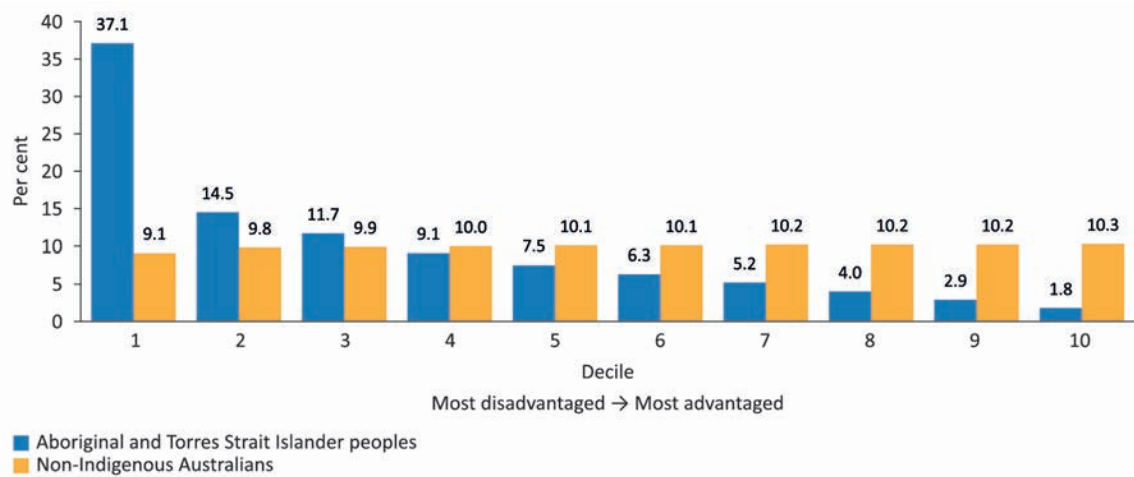
Any regional-level analysis of complex social and economic issues using Census data will be affected by the scope of the questions included in the Census, the 'ecological fallacy' and data quality issues. However, this type of analysis does provide useful insights into regional variations in outcomes and comparisons between Indigenous and non-Indigenous population groups.

Implications

COAG has set targets to reduce the gap in Indigenous disadvantage across health, education and economic participation. This summary measure supplements what is known and reported in other measures about the relative disadvantage that Aboriginal and Torres Strait Islander peoples experience across a wide spectrum of social and economic issues.

Figure 2.09-1

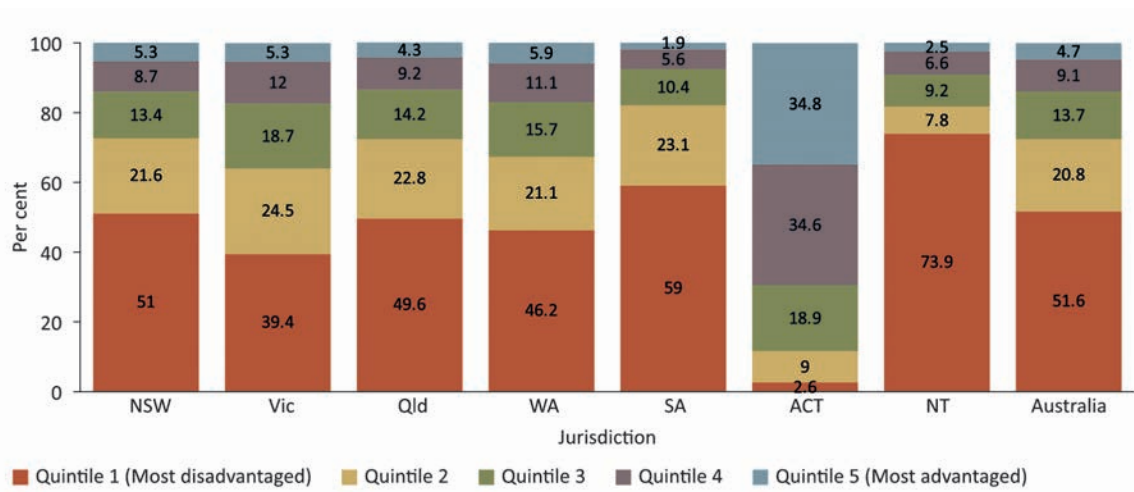
Population distribution by SEIFA advantage/disadvantage decile, by Indigenous status, 2011



Source: AIHW analysis of ABS 2011 Census of population and housing

Figure 2.09-2

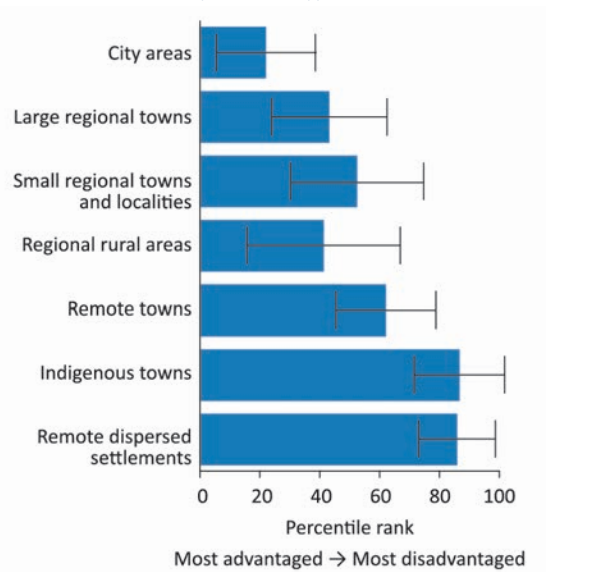
Population distribution by SEIFA advantage/disadvantage quintiles, Indigenous population by state/territory and total population, 2011



Source: AIHW analysis of ABS 2011 Census of population and housing

Figure 2.09-3

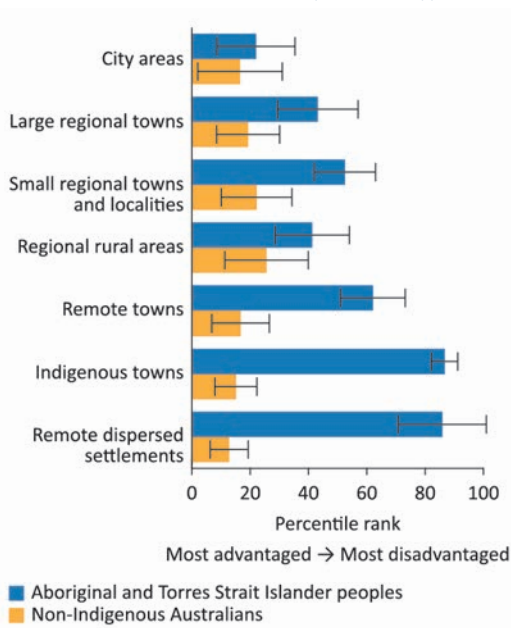
Indigenous-specific index socio-economic percentile rank and standard deviation by location type, 2011



Source: Biddle (2013) Indigenous Relative Socio-economic Outcomes index

Figure 2.09-4

Indigenous and non-Indigenous pooled socio-economic percentile ranks and standard deviations, by location type, 2011



Source: Biddle (2013) Pooled Indigenous and Non-Indigenous Relative Socio-economic Outcomes index



2.10

Community safety

Why is it important?

Experiencing threats of violence, being in an environment where personal safety is at risk, or in a social setting where violence is common, has negative health effects. The level of violence experienced by Indigenous Australians is also experienced in the context of colonisation, discrimination and subsequent markers of disadvantage such as low income, unemployment, lack of access to traditional lands and substance use (Day et al. 2013). Safe communities are places in which people are more likely to experience empowerment, security, pride, wellbeing and resilience (see measure 1.13).

The Burden of Disease and Injury study (Vos et al. 2007) ranked homicide and violence as the tenth largest contributor to the total burden of disease and injury for Indigenous Australians. For Indigenous females, intimate partner violence was a health risk factor responsible for 5.4% of the burden of disease and injury, having its impact not only through homicide and violence but also anxiety and depression, heart disease, suicide and other diseases.

Findings

In 2008, 24% of Indigenous Australian adults reported they were a victim of physical or threatened violence in the last 12 months, twice the rate for non-Indigenous Australians.

In 2012–13, 8% of Indigenous Australians reported family stressors relating to feeling unsafe or being a witness to violence, and 7% reported stressors related to abuse/violent crime. Similar proportions of Indigenous Australian men (12%) and women (13%) reported stressors due to trouble with the police and were 5 times as likely to report this as a stressor compared with non-Indigenous Australians. Indigenous women were more likely to report experiencing stressors due to alcohol and drug-related problems (21%) than Indigenous men (15%). A higher proportion of Indigenous Australians living in non-remote areas reported stress related to feeling unsafe (9%) compared with those living in remote areas (5%). Those who were unemployed were more likely to report feeling unsafe, witnessing violence and/or abuse/violent crime than those who were employed (18% compared with 13% respectively). These safety problems were also more likely to be reported by those who were in the lowest income quintile

(16%) compared with those who were in the highest income quintile (13%).

In 2012–13, 19% of Indigenous Australians had been injured in the 4 weeks prior to being surveyed. Of those aged 15 years and over who had their injuries treated, 11% were injured while under the influence of alcohol/drugs. In terms of how the injury occurred, around 6% were injured due to an attack by another person or fighting and 11% were injured by hitting something or being hit by something. Half of all injuries treated occurred in or around the person's own home or someone else's home.

In 2013 (NSW, SA and the NT combined), police recorded 12,000 cases of assault where the victim was Indigenous. Indigenous victims of assault were more likely to report the offender being known to the victim compared with non-Indigenous victims. For Indigenous females, partners were the most common offenders.

In 2008, 25% of Aboriginal and Torres Strait Islander women had experienced one or more incidents of physical violence in the previous 12 months and almost all (94%) knew the perpetrator of their most recent incident. These women were more likely to identify a current or previous partner (32%) and/or a family member (28%) as the perpetrator.

Nationally, the hospitalisation rates for assault were similar for Indigenous males and Indigenous females (10 per 1,000) during the period July 2011 to June 2013. In the NT, rates for Indigenous females were 63 times the rates for non-Indigenous females. Indigenous females in the NT account for 0.3% of all females in Australia, but represent 16% of all female hospitalisations for assault in Australia. After adjusting for differences in the age structure between populations, Indigenous males were 8 times as likely to have been hospitalised for assault than non-Indigenous males, and Indigenous females were 32 times as likely to have been hospitalised than non-Indigenous females.

There has been no significant change in the rate of hospitalisations due to assault between 1998–99 and 2012–13 among Indigenous Australians in Qld, WA, SA and the NT combined.

In the period July 2011 to June 2013, Indigenous hospitalisation rates for assault were highest in remote and very remote areas (28 and 23 per 1,000 respectively) compared with 4 per 1,000 in major cities. Rates were highest for Indigenous Australians aged 25–44 years,

15 to 19 times the non-Indigenous rate for these age groups. Indigenous children aged 0–17 years were 5 times as likely as non-Indigenous children to be hospitalised due to assault (AIHW 2014r).

A similar pattern to hospitalisations is evident in the number of deaths related to assault. There were 189 Indigenous deaths in 2008–12 due to assault. The mortality rate for assault for Indigenous Australians was around 7 times the rate of non-Indigenous Australians in this period. Mortality rates for assault were highest among those aged 35–44 years in both the Indigenous and non-Indigenous populations. Deaths from assault were 10 times the rate of non-Indigenous Australians in this same age group.

Analysis of victims of homicide between 2007 and 2012 shows higher rates of intimate partner and other family members as being victims of homicide for Indigenous Australians (60%) compared with non-Indigenous Australians (43%). Similarly, circumstances of domestic altercation were higher for Indigenous Australian victims of homicide (43%) compared with non-Indigenous (28%). In 2012–13, 28% of Indigenous female clients cited domestic/family violence as the main reason for seeking assistance from homeless services.

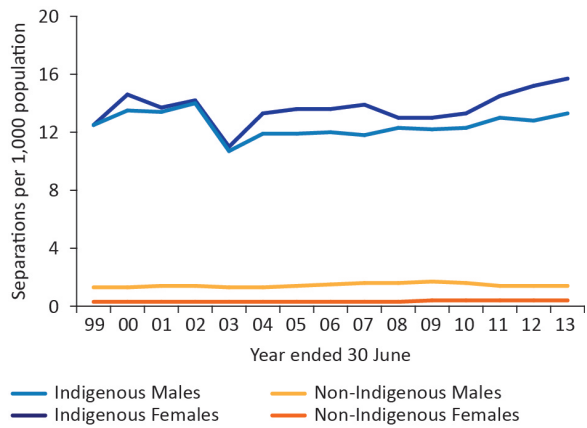
Implications

Having a safe community to live in is critical to closing the gap in Indigenous disadvantage. All Australian governments have endorsed the *National Plan to Reduce Violence Against Women and their Children 2010–2022* (the National Plan), which includes a specific focus on Indigenous family violence through Outcome 3: Indigenous Communities are Strengthened. The Second Action Plan under the National Plan (released in June 2014) contains 26 actions and has a strong focus on deepening the understanding of Indigenous women's experience of violence in order to stop it from happening.

The Australian Government's *Indigenous Advancement Strategy* includes a *Safety and Wellbeing Programme* to enhance Indigenous community safety and wellbeing through funding: community legal services, court support and counselling; early intervention and violence prevention activities; coordination of support services for victims of violence; women's safe houses; community education and community strengthening projects; and initiatives that seek to change violent attitudes and behaviours.

Figure 2.10-1

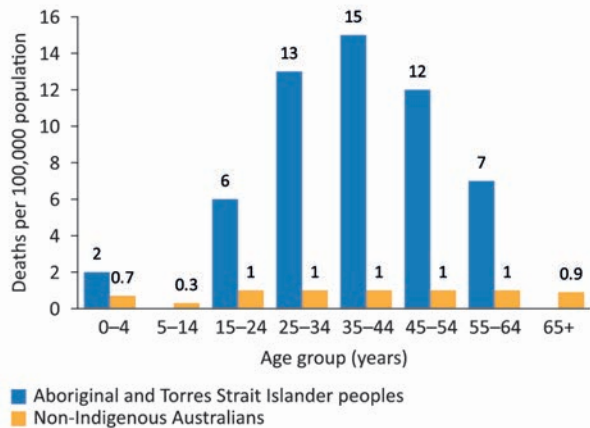
Age-standardised hospitalisation rates for assault by Indigenous status, Qld, WA, SA and the NT, 1998–99 to 2012–13



Source: AIHW analysis of AIHW National Hospital Morbidity database

Figure 2.10-2

Deaths from assault (homicide) by Indigenous status and age, NSW, Qld, WA, SA and the NT, 2008–12



Source: AIHW analysis of AIHW National Mortality Database

Table 2.10-1

Issues of community safety, proportion of persons aged 15 years and over, by Indigenous status, 2012–13

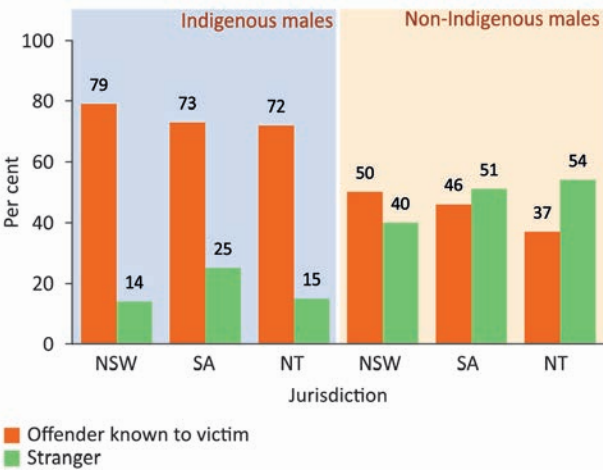
	Male		Female		Persons	
	Indigenous	Non Indigenous	Indigenous	Non Indigenous	Indigenous	Non Indigenous
Per cent						
Experienced by individual, family members and/or close friends in last 12 months:						
Alcohol or drug related problems	15	4	21	6	18	5
Trouble with the police	12	3	13	2	13	2
Witness to violence	7	2	8	2	8	2
Gambling problems	7	1	9	1	8	1
Abuse or violent crime	4	2	10	2	7	2

Differences between Indigenous/non-Indigenous groups are statistically significant at the p<0.05 level.

Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.10-3

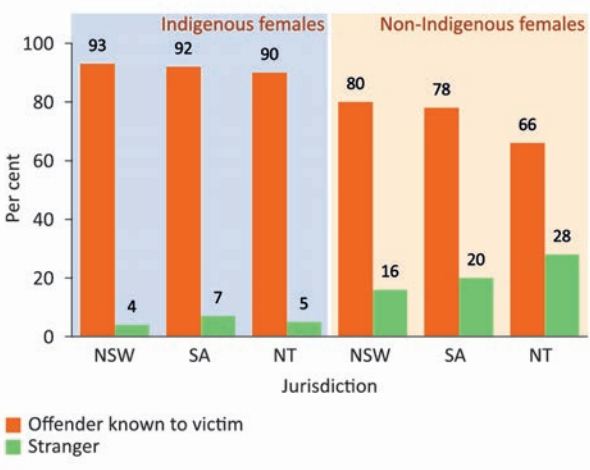
Male victims of assault, relationship to offender, by Indigenous status, NSW, SA & NT, 2013



Source: ABS Recorded Crime—Victims, 2013 (ABS 2014j)

Figure 2.10-4

Female victims of assault, relationship to offender, by Indigenous status, NSW, SA & NT, 2013



Source: ABS Recorded Crime —Victims, 2013 (ABS 2014j)



2.11

Contact with the criminal justice system

Why is it important?

Aboriginal and Torres Strait Islander peoples experience higher rates of arrest and incarceration than non-Indigenous Australians. Imprisonment impacts on family, children and the broader community. It increases stress, affects relationships and has adverse employment and financial consequences.

Prison populations over-represent people with mental health and substance abuse problems, cognitive impairment, hearing loss, learning difficulties and histories of physical and sexual abuse (Levy 2005). Putt et al. (2005) found that 69% of male Indigenous prisoners had used alcohol at the time of arrest compared with 27% of non-Indigenous prisoners; Indigenous prisoners were also more likely to attribute their crime to drug or alcohol intoxication (ANCD 2013; Kariminia et al. 2012). Kinner et al. (2011) found released prisoners have an increased risk of death compared with the general population, with a disproportionate number dying within the first four weeks of release.

Findings

Youth justice supervision

On an average day in 2012–13, 40% of those under youth justice supervision were Indigenous (around 2,600 out of 6,300) (including estimates for WA and the NT). Given Indigenous youth only make up about 5% of the population aged 10–17 years, they were significantly over-represented in youth justice supervision. Young people may be supervised either in their communities or in secure detention facilities: on an average day most Indigenous youth under supervision are under community-based supervision (81%) with the remainder in detention (19%). However, of the 975 young people in detention, on an average day, half (486) were Indigenous (including estimates for WA and the NT).

In 2012–13, the rate of Indigenous 10–17 year olds under some form of supervision was 188 per 10,000 on an average day. This was 14 times as high as the non-Indigenous rate (13 per 10,000). Males made up 81% of Indigenous young people under supervision (similar to the non-Indigenous proportion). Indigenous 10–17 year olds were 16 times as likely to

be in community-based supervision and 28 times as likely to be in detention as non-Indigenous young people (including estimates for WA and the NT) (AIHW 2014z).

Over the last five years, there has been a small (5%) decline in the number of Indigenous youth under supervision. The level of over-representation has increased due to a slightly larger fall for non-Indigenous youth (including estimates for WA and the NT) (AIHW 2014ae).

Over-representation of Indigenous young people aged 10–17 years in youth justice supervision occurred in all jurisdictions where data was available (WA and the NT did not supply Juvenile Justice NMDS data for 2012–13). NSW and Qld had the highest level of over-representation in youth justice supervision (15 times each). ACT had the highest rate of Indigenous young people under supervision (233 per 10,000 on an average day) and Tasmania the lowest Indigenous rate (57 per 10,000 and lowest level of over-representation).

On an average day in 2012–13, 27% of Indigenous youth under supervision were aged 10–14 years, twice the non-Indigenous proportion (13%).

In 2012–13, a higher proportion of Indigenous young people completed multiple periods of supervision than non-Indigenous young people (22% compared with 14%). Indigenous youth with sentenced supervision orders were 1.3 times as likely to return to youth supervision within both 1 and 2 years as their non-Indigenous counterparts.

Indigenous young people spent more time under supervision on average. For those supervised in 2012–13, the average length of time under supervision was 15 days longer for Indigenous young people (195 days) than non-Indigenous young people (180 days).

In 2012–13, on an average day there were 198 Indigenous young people in unsentenced detention. The rate of Indigenous young people on remand was 21 times the rate for non-Indigenous youth. The majority (86%) were in the 14–17 year age group. Indigenous youth spent about 2 weeks longer in unsentenced detention during the year than non-Indigenous youth (47 days compared with 34 days, on average). Indigenous youth were 23 times as likely as non-Indigenous youth to have 6 or more completed periods of unsentenced detention during the year.

In NSW prisons, Aboriginal inmates were twice as likely to report a history of juvenile detention compared with non-Indigenous inmates, and Aboriginal men were more likely to have been in juvenile detention five or more times compared with non-Indigenous men (Indig et al. 2010).

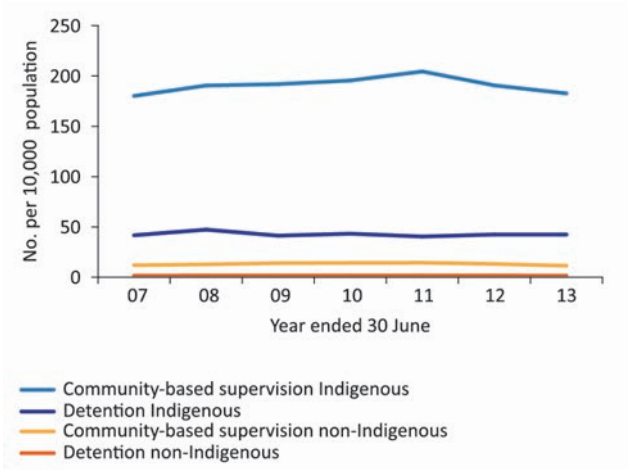
In NSW, a higher proportion of young Aboriginal youth in juvenile detention had been placed in out-of-home care as a child (38%) than non-Indigenous (17%) (Indig et al. 2011) (see measure 2.12). In the adult population, nearly half of all Aboriginal inmates in NSW prisons were placed in care as children, twice the non-Indigenous rate (Indig et al. 2010). Aboriginal inmates were also more likely to report their parents had been placed in care as a child (27% of Aboriginal women and 14% of Aboriginal men).

Children of parents who have been incarcerated (particularly boys whose fathers have a criminal record) are more likely to also be in the criminal justice system (Goodwin et al. 2011). The *Health of Australia's Prisoners 2012* (AIHW 2013e) found that 1 in 5 Indigenous prison entrants reported their father had been imprisoned; and they were 6 times as likely to have had both their mother and father imprisoned compared with non-Indigenous prison entrants. Aboriginal youth in custody in NSW were twice as likely to have ever had a parent in prison (61% compared with 30%) and 16% had a parent in prison at the time of being surveyed (compared with 4% of non-Indigenous youth). In NSW prisons, one in three Aboriginal inmates had a parent imprisoned during their childhood (3 times the non-Indigenous rate). Aboriginal inmates were also more likely than non-Indigenous inmates to have dependent children (Indig et al. 2010).

Aboriginal youth in NSW juvenile custody were 3 times more likely to have a possible intellectual disability than their non-Indigenous counterparts (Haysom et al. 2014), 92% had a psychological disorder and 83% were risky drinkers (Wallace 2014). In the adult prison population, traumatic brain injuries and cognitive impairment, illicit drug/risky alcohol use, and high psychological distress compound the high rates of mental health disorders (AIHW 2013e).

Figure 2.11-1

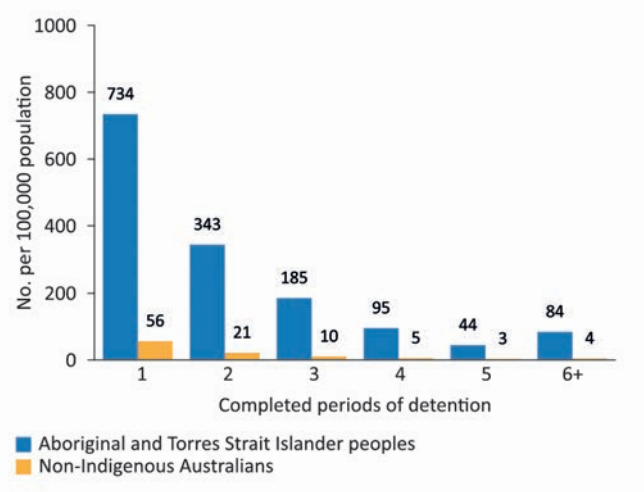
Rates of young people aged 10–17 years under community-based supervision and detention, by Indigenous status, 2006–07 to 2012–13



Note: WA and the NT did not supply Juvenile Justice NMDS data for 2008–09 to 2012–13
Source: AIHW Juvenile Justice National Minimum Dataset, 2012–13

Figure 2.11-2

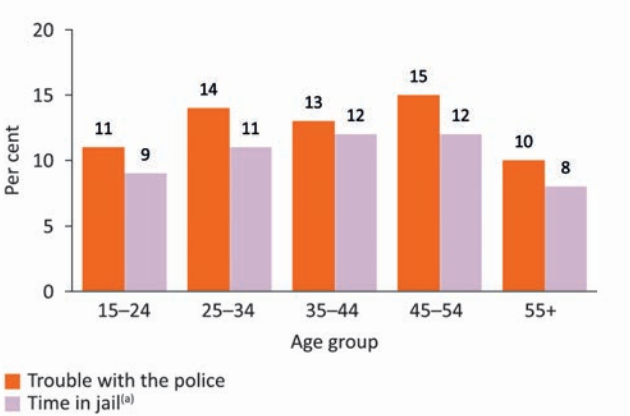
Rates of young people aged 10–17 years who completed a period of unsentenced detention, by number of periods and Indigenous status, 2012–13



Note: excludes WA and the NT
Source: AIHW Juvenile Justice National Minimum Dataset, 2012–13

Figure 2.11-3

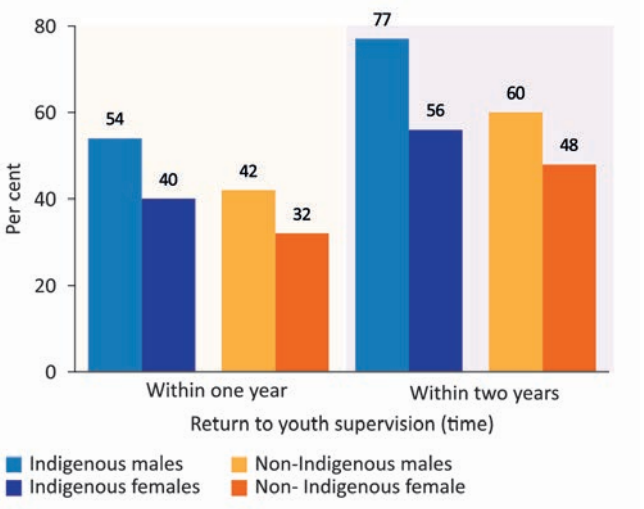
Indigenous Australians reporting trouble with the police or time spent in jail^(a) as a family stressor during the last 12 months, by age group, 2012–13



(a) Respondent/family member/close friend spent time in jail in last 12 months
Source: ABS and AIHW analysis of AATSIHS, 2012–13

Figure 2.11-4

Young people with sentenced supervision orders in 2009–10 to 2010–11 with one or more returns to sentenced youth justice supervision



Note: excludes WA and NT
Source: AIHW analysis of Juvenile Justice National Minimum Dataset



Adult imprisonment

As at 30 June 2013, there were 8,430 adult prisoners who identified as Aboriginal and Torres Strait Islander in the National Prison Census, representing 27% of total prisoners. After adjusting for differences in age structure of the two populations, the Indigenous imprisonment rate per 100,000 in the adult population was 13 times the rate for non-Indigenous Australians. The imprisonment rate for Indigenous Australians has increased by 68% since 2000 and the gap has widened.

In 2013, the median age of adult Indigenous prisoners was 31 years compared with 35 years for non-Indigenous prisoners. Indigenous men made up 27% of the total male prisoner population. Indigenous women were also over-represented in the prison population, representing 33% of the female prisoner population. Of all Indigenous prisoners, 91% were male.

In 2013, highest rates of imprisonment of Indigenous Australians were reported in WA followed by the NT and the lowest in Tasmania. In the June Quarter 2014, there were also 11,357 Indigenous Australians in community-based corrections, representing 21% of those in community-based corrections (ABS 2013c).

In 2013, there were proportionally more Indigenous prisoners (77%) than non-Indigenous prisoners (51%) who had a prior adult imprisonment under sentence. Longitudinal analysis shows Indigenous Australians are around 1.7 times more likely to be reimprisoned within 10 years of release from prison compared with non-Indigenous Australians (ABS 2014e).

Three quarters (75%) of Indigenous sentences are under 5 years. The median aggregate sentence for Indigenous prisoners was lower than for non-Indigenous prisoners (24 months compared with 42 months) (ABS 2013g).

A larger proportion of Aboriginal and Torres Strait Islander prisoners had a most serious offence of acts intended to cause injury (34%) compared with other prisoners (15%). They were less likely than other prisoners to be in prison for illicit drug offences (2% compared with 15%) and homicide (6% compared with 10%).

In 2012–13, 10% of Indigenous Australians reported stressors due to themselves, a family member or friend being incarcerated in the last year. In 2012–13, 13% of Indigenous Australians

had stressors due to trouble with the police in the last year (five times the rate of non-Indigenous Australians).

In 2008, one in four Indigenous men aged 35 and over reported that they had spent time in prison. Approximately 48% of Indigenous males aged 15 years and over had been formally charged by the police, 22% had been arrested in the previous 5 years and 6% had been incarcerated in the previous 5 years. By age 23, more than three quarters (76%) of the NSW Indigenous population have been cautioned by the police, referred to a youth justice conference or convicted of an offence in a NSW criminal court (non-Indigenous figure was 17%) (Weatherburn 2014).

In 2012, Indigenous prison entrants were twice as likely to have a level of schooling to Year 8 or below compared with their non-Indigenous counterparts who were almost twice as likely to have completed Year 12. Indigenous prison entrants were more likely to be unemployed, sleeping rough or in short-term/emergency accommodation compared with non-Indigenous prison entrants and were also more likely to be facing homelessness on release (see measure 2.01).

Indigenous prisoners (46%) were more likely than non-Indigenous prisoners (39%) to be referred for follow-up care following an initial health assessment in 2012 (AIHW 2014ab). In 2012, Indigenous prison entrants were more likely to test positive to hepatitis B core antibodies, while non-Indigenous prison entrants were more likely to test positive to hepatitis C antibodies (see measure 1.12). In 2012, most Indigenous prison entrants were current smokers (92%), while 59% reported risky alcohol use and 67% reported illicit drug use in the last 12 months. Indigenous prison discharges were more likely to report not having a Medicare card available on release (17%) compared with non-Indigenous discharges (10%) (AIHW 2013e).

A study of Indigenous inmates in the NT found that 94% had significant hearing loss (Vanderpoll et al. 2012). Hearing loss was associated with altercations with others due to misunderstandings and difficulties communicating within the criminal justice system including during hearings.

National Deaths in Custody data show rates of deaths in prison custody have declined for both Indigenous and non-Indigenous Australians. In 2013 there were 1.1 deaths per 1,000 Indigenous

Australians in prison custody compared with 3.4 in 2000. For non-Indigenous Australians, rates were 2.0 per 1,000 in 2013 compared with 2.8 per 1,000 in 2000. Data from 2012–13 indicate that there were 13 deaths of Indigenous Australians in all forms of custody and 58 for non-Indigenous Australians. Four of the Indigenous deaths occurred in police custody, 9 in prison and none in juvenile justice/welfare custody. Seven of these Indigenous deaths were due to natural causes, 4 were accidents and 1 was self-inflicted.

Implications

Findings show a high level of inter-generational disadvantage associated with contact with the criminal justice system, including high rates of parental incarceration and experiences of being placed in care (see measure 2.12). Efforts to reduce Indigenous over-representation in the criminal justice system require recognition of the health and social issues associated with recidivism and non-compliance with court orders.

Primary responsibility for criminal justice issues sits with state and territory governments. The states and territories deliver a range of programmes to reduce levels of Indigenous incarceration and re-offending, including diversionary programmes (e.g. cautions and conferencing), 'circle sentencing' and Indigenous courts, and prisoner through-care arrangements. Crime prevention strategies that consider the needs of victims and communities through justice reinvestment have also been recommended (AHRC 2013). Circle sentencing offers an inter-sectoral strategy to work with communities to address trauma, social difficulties, substance use, low self-esteem and mental health (Wallace 2014).

The Australian Government funds a number of initiatives through its *Indigenous Advancement Strategy's Safety and Wellbeing Programme* designed to address the factors contributing to Indigenous Australians' high rates of contact with the criminal justice system. For example, the Government funds a range of prisoner through-care and youth diversion activities that seek to support safer communities by reducing Indigenous offending, targeting Indigenous youth and adults who are currently in or recently exited from the criminal justice system. Activities funded include: rehabilitation services to Indigenous prisoners and

juvenile detainees (both male and female); intensive case management to Indigenous youth; youth prevention activities to Indigenous youth in regional and remote communities; and community-based mediation services to remote communities.

The Australian Government is also working with states and territories to develop nationally comparable Indigenous offending and victimisation data sets that will assist with identifying areas of greatest need and significant trends. More evidence is required about what prevention strategies and interventions are effective in reducing victimisation, offending and reoffending, and consequent incarceration and contact with the criminal justice system.

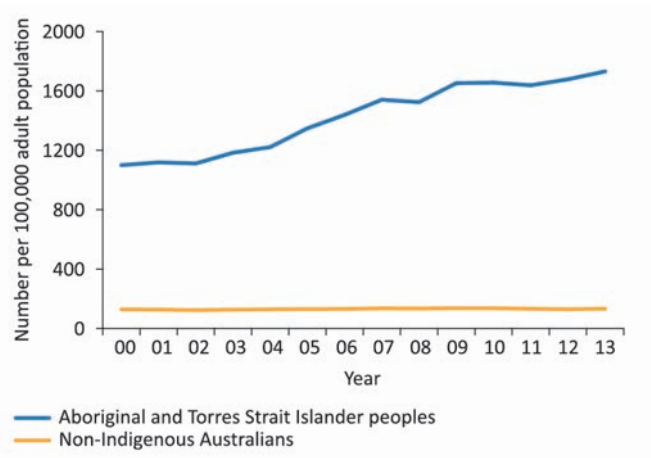
Weatherburn (2014) identifies four key risk factors for Indigenous offending: exposure to child neglect (see measure 2.12), school attendance and performance (see measure 2.05), unemployment

(see measure 2.07), and drug and alcohol abuse (see measures 2.16 and 2.17). Findings from these measures combined show Indigenous Australians fare worse across all factors, which all play a significant role in contact with the criminal justice system. One study found that the differences in arrest rates between Indigenous and non-Indigenous Australians may explain around 15% of the difference in employment outcomes (Borland et al. 2000). Weatherburn suggests that child and maternal health services provide opportunities to address antecedents of child neglect (substance abuse and maternal depression resulting from poor health, family violence, financial stress, homelessness and traumatic life events). State and territory youth justice agencies provide programmes designed for Indigenous Australians focusing on family violence, alcohol and drug use, education and employment, counselling and family support (AIHW 2014ae).

Prisoner health issues (particularly mental health and substance use issues) affect not only those within the prison system, but also families and communities more broadly; and access to health services is pertinent both prior to imprisonment and post-release (Lloyd et al. 2013). Accessing health care post-imprisonment requires reapplying for a Medicare number, which creates an additional barrier to addressing health issues while managing competing priorities of re-establishing housing, employment and relationships with family and community. Some Aboriginal health organisations have developed their own health programmes for prisoners and their families (Winnunga Nimmityjah Aboriginal Health Service 2007; Commission on Social Determinants of Health 2007). In 2012, 14 prisons in Australia received visits from Aboriginal health services (AIHW 2014ab).

Figure 2.11-5

Age-standardised rate of persons in prison, by Indigenous status, 2000 to 2013



Source AIHW and ABS analysis 2013 Prison Census

Table 2.11-1

People in prison custody by Indigenous status, sex and state/territory, 30 June 2013

	Indigenous Number				Non Indigenous Number				Rate difference ^(b)
	Males	Females	Persons	Crude rate ^(a)	Males	Females	Persons	Rate ratio	
NSW	2,097	202	2,297	1,830	7,014	462	7,476	11.2	1,455.0
Vic	361	28	388	1,330	4,604	348	4,952	10.3	1,078.8
Qld	1,722	174	1,898	1,623	3,818	359	4,178	10.8	1,235.9
WA	1,763	214	1,977	3,593	2,712	234	2,947	18.5	2,786.3
SA	449	46	496	2,141	1,669	97	1,770	12.2	1,710.2
Tas	61	6	70	474	380	34	413	3.2	287.6
ACT	52	3	63	1,529	277	18	286	13.9	1,193.1
NT	1,145	96	1,241	2,793	186	6	195	16.2	2,194.4
Aust	7,650	769	8,430	2,039	20,660	1,558	22,217	13.0	1,598.1

(a) Number per 100,000 adult population
 (b) Rate ratios and differences are age-standardised
 Source AIHW and ABS analysis 2013 Prison Census



2.12

Child protection

Why is it important?

Experience of maltreatment (physical, emotional and psychological abuse, neglect, sexual abuse and witnessing family violence) during childhood has serious and long-term impacts on social and emotional wellbeing and health. Exposure to trauma and neglect and experience of out-of-home care is associated with suicidal behaviour (Atkinson 2013; Robinson et al. 2011) and contact with the criminal justice system and increases the risk of experiencing family violence as an adult (Guthridge et al. 2014; Wong et al. 2014).

Various services and activities are used to promote the safety of children including prevention, mitigating risk factors and intervention where child maltreatment has already occurred (Higgins 2010). All jurisdictions have legislative requirements on the reporting of suspect child abuse. Child protection functions are undertaken at the state and territory level of government. Each jurisdiction has its own legislation, policies and practices in relation to child protection (AIHW 2014m).

Indigenous Australians' experience of child welfare policies has historically been traumatic, with the policy of forcible removal of children known as the Stolen Generations (HREOC 1997). The consequences of these removal policies have long term impacts, including social, physical and psychological impacts for those directly involved, as well as their families and communities (Atkinson 2013). Child protection issues continue to be very significant for Indigenous communities, reflecting this history of trauma and stressors that have impacted on parents, parenting skills and communities.

In responding to situations in which Indigenous children are at risk, all states and territories have adopted the Aboriginal Child Placement Principle that requires that where Aboriginal and Torres Strait Islander children are removed from their family, the following order of preference for their placement should be followed: the child's extended family; the child's Indigenous community; other Indigenous Australians.

Findings

In 2012–13 there were around 11,000 Indigenous children who were the subject of substantiated child protection notifications. For Indigenous children aged 0–17 years, the rate was 38 per 1,000—6.6 times the rate for non-Indigenous children (6 per 1,000).

Note: the rates calculated for this report are based on the revised Indigenous population estimates (see ABS 2014g). Rates of children who were the subject of substantiations of notifications vary across jurisdictions, in part reflecting different legislation, practices and resources in each jurisdiction. While comparisons between jurisdictions should be made with care, rates of Indigenous children who were the subject of substantiations were higher than for non-Indigenous children within each jurisdiction (ranging from 3 times to 13 times). The most common type of substantiated child protection notification for Aboriginal and Torres Strait Islander children was neglect (40% of substantiations compared with 23% for non-Indigenous children). Nationally, the second most common reason for notification for Indigenous children was emotional abuse (34% compared with 40% for non-Indigenous children). Across all jurisdictions sexual abuse was the least common type of substantiation for Indigenous children (9% nationally compared with 15% for non-Indigenous children).

As at 30 June 2013 there were 14,455 Aboriginal and Torres Strait Islander children on care and protection orders. This represents a steady increase from 30 June 2009 (36.6 to 49.9 per 1,000), while the non-Indigenous rate has remained relatively stable (5.3 to 5.8 per 1,000).

As at 30 June 2013, there were 13,952 Indigenous children in out-of-home care. Across Australia, 68% of Indigenous children in out-of-home care were placed with either a relative/kin or an Indigenous carer or other Indigenous care. Placements with relative/kin or an Indigenous carer were highest in NSW (82%) and lowest in Tasmania (40%). Reasons for placements outside the Indigenous community include the unavailability of carers within the community, the impact of trauma and disadvantage on previous generations, the unwillingness of some Indigenous people to be associated with the child protection system, and the disproportionately high number of Aboriginal and Torres Strait Islander children compared with adults (Berlyn et al. 2009).

In NSW prisons nearly half of all Aboriginal inmates were placed in care as children, twice the non-Indigenous rate. Aboriginal inmates were also more likely to report their parents had been placed in care as a child (27% of Aboriginal women and 14% of Aboriginal men) (Indig et al. 2010).

Implications

Child protection data provide a measure of how many children come into contact with child protection services; however, these data do not capture all children who have been abused or neglected and, additionally, may include some children who have not been abused or neglected (Bromfield et al. 2004).

Aboriginal and Torres Strait Islander children continue to be subject to higher rates of child protection substantiations, mainly for 'neglect'. COAG has two major commitments in the area of child protection: The *National Framework for Protecting Australia's Children 2009–2020* (COAG 2009) and the *National Plan for Australia to Reduce Violence Against Women and their Children 2010–2022*. These commitments recognise that everyone has a right to be free and safe from family violence and abuse and that breaking inter-generational cycles of maltreatment is best achieved by families, communities, community organisations and governments working as partners to build strong and resilient families.

State and territory governments have primary responsibility for child protection. The Australian Government funds a number of initiatives through its *Indigenous Advancement Strategy's Safety and Wellbeing Programme* designed to deliver a range of activities for Indigenous families whose children have come into contact with the child protection system or are at risk of coming into contact with the child protection system.

The Australian Government funds Mobile Child Protection Teams in the Northern Territory, which provide timely, high quality investigation into allegations of child abuse and neglect or protective concerns about children and young people. They assist Aboriginal families and communities to make decisions about the safety and care of their children, and contribute to the development of a holistic and sustainable child protection and family support service to meet the care and protection needs of Aboriginal children.

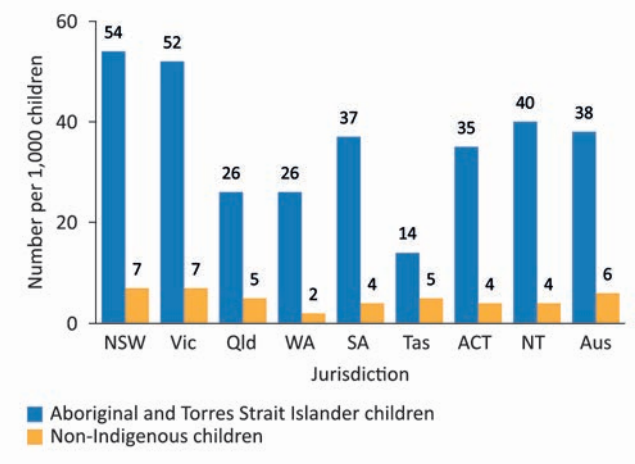
The Australian Government funds Remote Aboriginal Family and Community Workers (RAFCWs) in the Northern Territory to provide culturally appropriate intensive parenting support and education services to prevent the removal of children into out-of-home

care in remote communities. RAFCWs have increased the capacity of the NT Department of Children and Families to provide a more responsive and culturally appropriate child protection service to Aboriginal families living in remote communities.

The Australian Government also funds Indigenous Parenting Services that provide prevention and early intervention activities that support parents to address underlying issues that can present barriers to effective parenting, especially for children at risk of abuse and neglect.

Figure 2.12-1

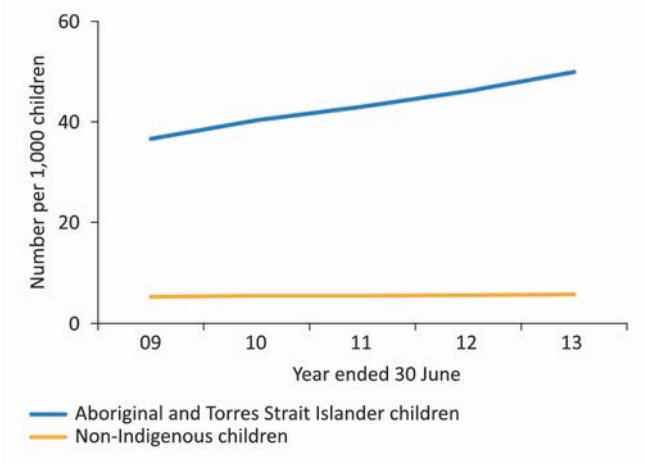
Children aged 0–17 years who were the subject of a substantiation: no. per 1,000 children, by Indigenous status and jurisdiction, 2012–13



Source: AIHW Child Protection Collections 2013

Figure 2.12-2

Children aged 0–17 years on care and protection orders: no. per 1,000 children, by Indigenous status, 30 June 2009 to 30 June 2013



Source: AIHW Child Protection Collections 2013

Table 2.12-1

Children (0–17 years) in out-of-home care, by Indigenous status and state and territory, at 30 June 2013

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Number of Children:									
Indigenous	6,203	1,087	3,195	1,678	788	243	140	618	13,952
Non-Indigenous	11,214	5,442	4,884	1,721	1,835	803	399	124	26,422
Total ^(a)	17,422	6,542	8,136	3,425	2,657	1,067	558	742	40,549
No. per 1,000 children									
Indigenous	68.1	52.9	37.3	45.5	49.8	23.1	58.4	23.2	48.2
Non-Indigenous	7.1	4.4	4.8	3.2	5.4	7.7	4.9	3.4	5.3
Total ^(a)	10.4	5.2	7.3	5.9	7.4	9.3	6.6	11.7	7.7
Rate ratio	9.6	12.0	7.8	14.3	9.3	3.0	11.9	6.8	9.0

(a) Includes Indigenous status not known

Source: AIHW Child Protection Collections 2013

Figure 2.12-3

Proportion of Indigenous child placements with relatives, kin or other Indigenous caregiver, by jurisdiction, at 30 June 2013



Source: AIHW Child Protection Collections 2013



2.13

Transport

Why is it important?

Transport is a key enabler for access to health care, goods and services and supports Aboriginal and Torres Strait Islander peoples in maintaining cultural obligations to travel to family commitments (Helps et al. 2010).

Aboriginal and Torres Strait Islander peoples face various barriers to accessing appropriate health care (see measure 3.14) including logistics, cost and reliability of transport options. These challenges have a broader impact on social and economic circumstances of both health-service users who need to travel significant distances while unwell, along with carers who support attendance at services for antenatal care, young children, people with a disability, or people suffering from chronic health conditions, mental health or substance use issues (Lee et al. 2014). Limited or no public transport options significantly impact on the capacity to access specialist health care, particularly for patients with chronic health conditions (Teng et al. 2014) or requiring birthing services (Parker et al. 2014) in rural and remote areas (Kelly et al. 2014).

Findings

In the 2012–13 Health Survey, transport/distance was a reason 16% of Indigenous Australians reported they did not access health services when they needed to. For specific types of health services, transport/distance was a reported barrier to visiting the dentist (11%), the doctor (14%), other health professionals (13%), counsellors (10%) and hospital (17%). Logistical reasons (transport/distance, waiting time too long, availability of service in the area) were a greater barrier to accessing a health provider when needed (40%) than cost (36%) or cultural appropriateness of services (32%). Logistical reasons were a greater barrier to accessing hospital services (37%) than cultural appropriateness of services (27%) or cost (8%). Likewise, logistical reasons were a greater barrier to accessing a doctor (34%) than cultural appropriateness of services (23%) or cost (13%). Logistical reasons were second only to cost as a barrier to accessing dental services and other health professionals.

Logistical reasons were a bigger barrier to accessing health services for those living in remote areas (54%) than those living in non-remote areas (37%). This difference was mainly due to the service required not being available in the area; however, transport/distance was also a reason specified by 22% of people in remote areas and 15% in non-remote areas. Of those who did not access dental services, transport/distance was the reason given by 22% of Indigenous Australians in remote areas compared with 9% in non-remote areas.

Since 2004–05 there has been no change in the proportion of Indigenous Australians reporting they did not access dentists and doctors when they needed to because of transport/distance barriers. The proportion not accessing hospitals due to transport/distance problems has reduced by 2 percentage points and the proportion for other health professionals has increased by 5 percentage points.

The 2011 Census found that Indigenous households were less likely than other households to have access to a motor vehicle (81% compared with 91%). In very remote areas 46% of Indigenous households did not have access to a motor vehicle compared with 8% of other households in very remote areas. Indigenous Australians aged 17 years and over were less likely to live in households with a motor vehicle compared with non-Indigenous Australians (77% compared with 94% respectively). This rate did not vary by age.

The 2008 Social Survey found 26% of Aboriginal and Torres Strait Islander adults had used public transport (a regular public or community bus, boat or ferry or train, tram/light rail) in the previous two weeks. Of those who had not used public transport in the previous two weeks, 43% lived in an area in which there was no local public transport available. Use of public transport by Indigenous adults was lower in remote areas (13% in the last two weeks) than in non-remote areas (30%). Of the 65,000 Indigenous adults in remote areas who had not used public transport in the previous two weeks, 83% lived in an area where there was no public transport available. Research has found that 34% of Aboriginal and Torres Strait Islander people were subjected to racism while using public transport (Ferdinand et al. 2012) that, along with availability of public transport, impedes access to services.

In 2012–13, 89% of Aboriginal and Torres Strait Islander primary health care services provided transport to clients as part of their health-related and community programmes. While transport is a key enabler of access to health services, it also poses risks to health if the mode of transport is unsafe, such as a vehicle not in good working order, or a driver operating a vehicle while under the influence of alcohol or drugs (Symons et al. 2012; Fitts et al. 2013). Hospitalisation and deaths due to injuries from transport accidents remain a concern (see measure 1.03).

Implications

While public transportation may compensate for the lack of private transport in non-remote areas, a higher proportion of Indigenous Australians in both remote and non-remote areas have less access to a motor vehicle compared with non-Indigenous Australians. Schemes to assist patients with travel and associated accommodation operate in the various jurisdictions. Other approaches have also been adopted, such as support for specialist services flying into remote localities.

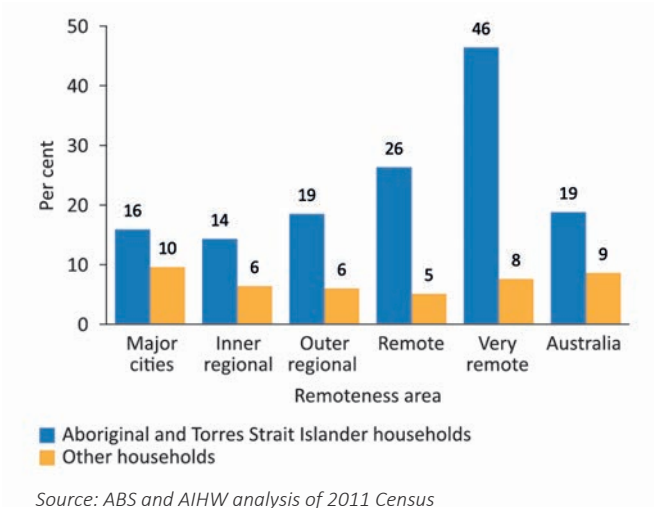
Patient transport services designed to assist patients with chronic illnesses to access health services on a regular basis are an important aspect of health service delivery. This is particularly the case for Indigenous households where private and public transport options are often restricted. Patient transport services are provided by a broad range of services including voluntary groups, Aboriginal Community Controlled Health Organisations (ACCHOs), hospitals and ambulance services. For example, the WA Department of Health has funded patient transport officers and patient journey officers in ACCHOs and area health services to ensure that Aboriginal patients have adequate transport to medical appointments at all levels of the health system (primary, secondary and tertiary). Unfortunately, the provision of these services varies significantly across Australia and access is not always assured. Queensland Health provides the *Indigenous Cardiovascular Outreach Program* and the *Indigenous Respiratory Outreach Care Program* to deliver a range of primary, secondary and tertiary health-care services in locations with limited access to specialist services.

Table 2.13-1
Indigenous Australians who did not access health services when needed to and reasons relating to logistics, 2012–13

	Dentist	Doctor	Other health professional	Hospital	Counsellor
	per cent				
Did not access service when needed to in last 12 months	21	14	9	6	9
Reason(s) did not access service					
Waiting time too long or not available at time required	20	22	17	25	12
Transport/distance	11	14	13	17	10
Service not available in area	9	5	6†	3†	6
Logistical reasons (subtotal)	33	34	28	37	22

Note: Comprehensive significance testing results are published in the Detailed Analyses
† Estimate has a relative standard error between 25% and 50% and should be used with caution.
Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.13-1
Proportion of households without access to a motor vehicle, by Indigenous status and remoteness, 2011



Source: ABS and AIHW analysis of 2011 Census

Table 2.13-2
Use of public transport, by remoteness, Indigenous persons aged 18 years and over, 2008

	Non remote	Remote	Total
	Per cent		
Used public transport in last 2 weeks	30	13	26
Used transport but not public transport in last 2 weeks	69	79	72
Did not use any transport in last 2 weeks	1	7	3
Total	100	100	100
Main reason did not use public transport^(a)			
Prefer to use own transport or walk	58	13	44
Costs too much/takes too long	3	1.0‡	3
No suitable services	7	2.3‡	6
Personal reasons	3	0.3‡	2
Other	3	0.9‡	2
Total with access to public transport in local area	74	17	57
No public transport available in local area	26	83	43
Total	100	100	100

a) Proportion calculation excludes ‘used public transport in last 2 weeks’
‡ Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.
Source: ABS analysis of 2008 NATSISS.



2.14

Indigenous people with access to their traditional lands

Why is it important?

Connection to family and community, land and sea, culture and identity has been identified as integral to health from an Aboriginal perspective (NAHSWP 1989). As stated by Anderson: 'Our identity as human beings remains tied to our land, to our cultural practices, our systems of authority and social control, our intellectual traditions, our concepts of spirituality, and to our systems of resources ownership and exchange. Destroy this relationship and you damage—sometimes irrevocably—individual human beings and their health' (1996:15). Ongoing access to traditional lands also offers socio-political, economic and environmental benefits (Weir et al. 2011). Analysis of 2008 Social Survey data found a clear association between cultural attachment and positive socio-economic outcomes and wellbeing (Dockery 2011).

For many Aboriginal and Torres Strait Islander peoples, disconnection from Country is considered a form of homelessness. Likewise many people are less likely to perceive themselves as homeless, regardless of the adequacy of their dwelling, if they are on Country (ABS 2014h).

Access to traditional lands is not only a determinant of health in remote contexts where Indigenous Australians are more likely to have ownership and control over their Country; it is also a determinant of health for those living in non-remote and urban areas. Research in Victoria has found the role of Country in strengthening self-esteem, self-worth, pride, cultural and spiritual connection and positive states of wellbeing (Kingsley et al. 2013).

Caring for Country means participation in activities on traditional land, with the objective of promoting ecological, spiritual and human health (Berry et al. 2010). In central Arnhem Land, a cross-sectional study of almost 300 Indigenous adults aged 15–54 years applied multivariate analysis to control for socio-economic characteristics and health behaviours and found that participation in Caring for Country was associated with better health outcomes including diet, physical activity, mental health and

lowered risk of diabetes, kidney disease and cardiovascular disease (Burgess et al. 2009).

Findings

In 2012–13, 73% of Aboriginal and Torres Strait Islander adults reported that they recognised their homeland or traditional country. A quarter (25%) reported they lived on their homelands, 46% did not live on homelands but were allowed to visit, and less than one per cent were not allowed to visit their homelands/traditional country.

Indigenous Australians in the 45–54 year age group were more likely to recognise their homelands than those in the 18–24 year age group (75% compared with 60%). Note that 14% of Indigenous Australians reported they had been removed from their family, and 40% reported that they had relatives removed from their family. People who were removed from their family were less likely to live on homelands/traditional country (24%) compared with those who were not removed from their family (25%). This was also the case for people who had a relative removed from their family (22% lived on homelands/traditional country compared with 27% who did not have a relative taken away).

Those who lived in remote areas (46%) were more likely than those in non-remote areas (19%) to live on homelands/traditional country. Many of those who recognised, but did not live on homelands, were allowed to visit (42% of those in remote areas and 47% of those in non-remote areas).

The 2012–13 Health Survey provides opportunities to analyse relationships between access to lands and other factors. The analysis outlined below summarises the associations found in the data and further multivariate analysis is needed to explore the complex interactions between these issues. Compared with those who do not recognise homelands, those who lived on homelands/traditional country were less likely to have completed Year 12 (18% compared with 30%), to be employed (22% compared with 29%), or be able to raise \$2000 in a week (19% compared with 32%). However, living on homelands was also associated with having no current long-term health condition (23%) compared to those who did not recognise homelands (15%). Those living on homelands were less likely to report having a disability;

particularly a profound, severe or moderate core activity limitation (11%) compared to those who did not recognise homelands/traditional country (14%). Those living on homelands were more likely to report having a low/moderate level of psychological distress (75%) compared with those who did not recognise homelands (71%).

Aboriginal and Torres Strait Islander peoples who do not recognise homelands/traditional country are less likely to report experiencing family stressors than those who do recognise homelands (32% compared with 22% reported no family stressors). People who recognised homelands were more likely than those who do not recognise homelands to report community safety related stressors (38% compared with 29%), death of a family member or close friend (42% compared with 25%) and overcrowding at home (11% compared with 7%). There was no significant difference between those who recognised homelands and those who did not for health-related stressors.

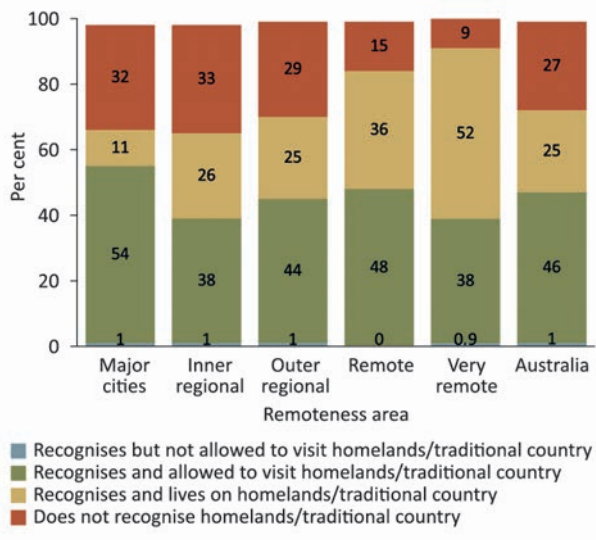
Implications

While the evidence suggests there are health benefits in connections to Country and culture, for many people living on Country is not an option, particularly in non-remote areas. In this situation, visits may be the only realistic possibility.

Indigenous Land Corporation data show that in April 2014, Aboriginal and Torres Strait Islander peoples collectively owned or controlled 16% of land in Australia, with most of this land (98%) in very remote areas. Nationally in 2013, Native Title had been determined to exist in 21% of Australia (up from 5% in 2004) and registered Indigenous Land Use Agreements covered 24% of Australia.

Figure 2.14-1

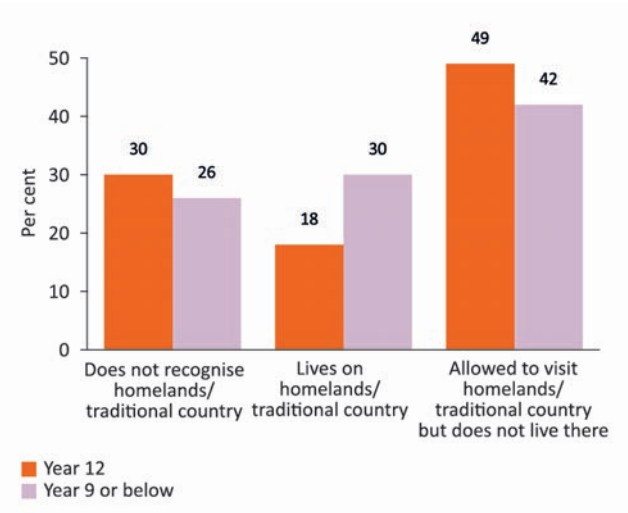
Access to homelands/traditional country, by remoteness area, Indigenous Australians aged 18 years and over^(a), 2012–13



a) Excludes ‘not known’ responses
Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.14-2

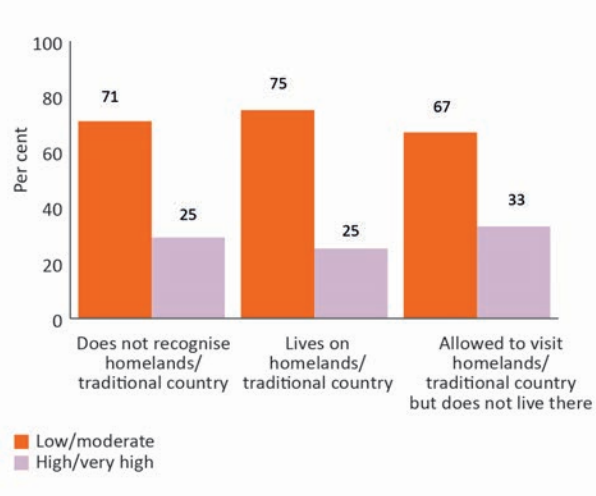
Highest year of school completed by whether Aboriginal and Torres Strait Islander people recognised/did not recognise homelands/traditional country, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.14-3

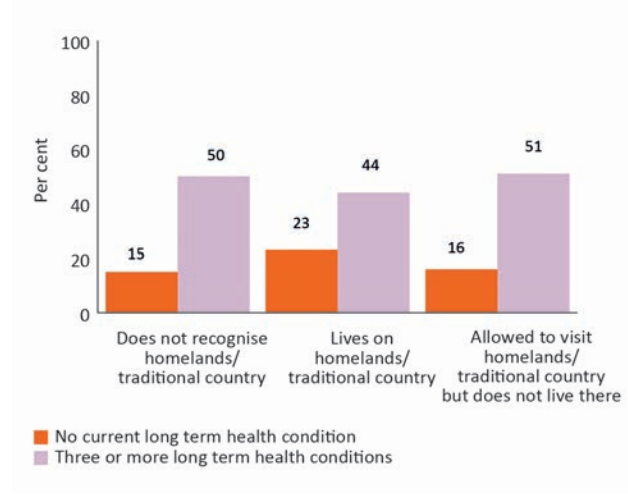
Psychological distress^(a) by whether Aboriginal and Torres Strait Islander people recognised/did not recognise homelands/traditional country, 2012–13



a) Kessler 5
Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.14-4

Long-term health conditions by whether Aboriginal and Torres Strait Islander people recognised/did not recognise homelands/traditional country, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS



2.15

Tobacco use

Why is it important?

Tobacco is one of the leading contributors to the burden of disease among Aboriginal and Torres Strait Islander peoples. Tobacco has been estimated to contribute 12% of the burden and 17% of the gap in health outcomes between Indigenous and non-Indigenous Australians (Vos et al. 2009).

The health impact of smoking is evident in the high rates of hospitalisation and deaths from tobacco-related conditions (e.g. chronic lung disease, cardiovascular disease and many forms of cancer) (Marley et al. 2014; IGCD 2012). In Australia, up to two-thirds of deaths in current smokers can be attributed to smoking (Banks et al. 2015). Current smokers are estimated to die an average of 10 years earlier than non-smokers. Among Indigenous Australians, smoking directly causes about one-third of the burden from cancers and cardiovascular disease and around 1 in 5 deaths (Vos et al. 2007). Maternal smoking during pregnancy increases the risk of poor outcomes for babies and children (see measure 2.21) and environmental tobacco smoke has adverse health effects for others who are in close proximity to a smoker (measure 2.03).

The *National Tobacco Strategy 2012–2018* states that approximately 15,000 Australians die prematurely from tobacco-related diseases each year (Begg et al. 2007) and smoking imposes an estimated \$31.5 billion financial burden on the community (Collins et al. 2008).

Findings

The latest data on smoking rates for the Indigenous population come from the 2012–13 Health Survey. In 2012–13, 44% of Indigenous Australians aged 15 years and over reported being a current smoker (42% smoked daily and 2% less than daily). After adjusting for differences in the age structure of the two populations, Indigenous Australians were 2.5 times as likely to smoke as non-Indigenous Australians.

Between 2002 and 2012–13, current smoking rates declined significantly by 7 percentage points for Indigenous Australians aged 15 years and over. The short-term trend from 2008 to 2012–13 was also significant (a 3 percentage point decline). Prior to 2002, rates had been quite static. Over the last decade, rates

remained the same in very remote areas (at 56%) and declined elsewhere: by 10 percentage points in outer regional areas to 4 percentage points in remote areas. The smallest decline was in the NT (2 percentage points) and the largest in NSW (11 percentage points). The 15–17 year age group had the largest decline (33% to 19%). In the same period, there was a corresponding increase in the proportions of Indigenous Australians who were ex-smokers (from 15% to 20%) and who had never smoked (from 33% to 36%). For those who continue to smoke, there has been a decline in the average number of cigarettes smoked daily (from 15 in 2008 to 13 in 2012–13), although there is no safe level of smoking.

In 2012–13, Indigenous smoking rates were highest in the NT (54%) and lowest in the ACT (30%). Smoking rates for males (46%) were slightly higher than for females (42%). Rates were highest in the 25–34 year age group (54%) and lowest among those aged 15–17 years (19%) and 55 years and over (30%). This pattern was similar for non-Indigenous Australians. The Health Survey included a measure of blood cotinine levels; high levels indicating smoking or exposure to tobacco (e.g. second-hand smoke). Cotinine levels were high for 95% of reported current smokers aged 18 years and over, 14% of ex-smokers and 6% of those who had never smoked. Of the reported non-smokers in remote areas with high cotinine levels, 19% reported chewing tobacco daily.

Smoking status is associated with socio-economic factors and smoking rates are highest for Indigenous Australians in the most socially disadvantaged circumstances (Thomas et al. 2008). In 2012–13, Indigenous Australians aged 15 years and over were more likely to report being a non-smoker if they were employed, had completed Year 12, or had a high self-assessed health status. For Indigenous Australians aged 18 years and over, being a non-smoker was associated with being in the highest household income quintiles and having lower levels of psychological distress. Social, cultural and family factors also play important roles (Johnston et al. 2008; Hearn et al. 2011). Certain populations are more at risk. For example, in 2012, 92% of Indigenous prison entrants were current smokers (see measure 2.11) (AIHW 2013e). Those who smoked were also more likely to drink at risky levels (66% exceeded short-term guidelines) compared with those who did not smoke (44%).

Implications

Tobacco smoking is influenced by a range of factors, including normalisation of smoking in peer groups and families, positive attitudes towards smoking, and smoking as a coping mechanism (Robertson et al. 2013; Scollo et al. 2012). The influence of these factors varies across the different community settings and social environments in which Aboriginal and Torres Strait Islander peoples live (Johnston et al. 2008). Consequently, it is important that strategies to reduce Indigenous smoking rates acknowledge the social exchange that often occurs when smoking, the important role of family, and the high rates of stress experienced by Aboriginal people (Cosh et al. 2014; Hearn et al. 2011).

A Cochrane review of smoking cessation intervention studies in Indigenous populations internationally found limited rigorous evidence to evaluate which interventions would be effective in reducing tobacco use (Carson et al. 2012). There was some evidence supporting pharmacotherapies when combined with culturally tailored interventions and health professional support (Carson et al. 2014). A multifaceted approach addressing prevention and cessation from various sources simultaneously, and targeted to the population, appeared more likely to increase success together with evaluations to assess effectiveness.

Opportunities for prevention and intervention occur through both individual and community-based approaches and primary health care (NACCHO/RACGP 2012; Robertson et al. 2013). Lessons learnt from studies of interventions include the importance of local development, ownership and participation, worker professional development and support, and operating within a framework of cultural safety (Robertson et al. 2013; Hearn et al. 2011). Motivators and enablers to successfully quit smoking often involve significant life events and supportive relationships. Quitting smoking entails major changes in the person's life requiring resilience and empowerment, and encouragement and support from family, friends and health professionals (Bond et al. 2012).

Australian governments have worked closely with Indigenous Australians and health organisations over many years to deliver a range of approaches to address the high rates of tobacco smoking in the Indigenous population (see Figure 4). Smoking rates are starting to decline; however, they are still high, particularly

in remote areas. Further sustained improvements will be needed to close the gap in health outcomes.

The *National Tobacco Strategy 2012–2018* has nine priority areas for future action. One priority action is to build on existing programmes and partnerships to reduce smoking rates among Aboriginal and Torres Strait Islander peoples. The evidence-informed priority areas include demand reduction, supply reduction and harm reduction approaches (IGCD 2012).

Indigenous Australians are a major target audience of the *National Tobacco Campaign*. Specific advertising (*Break the Chain*) was placed in a range of Indigenous and mainstream media. The campaign encourages Indigenous smokers to cut down or quit and recent quitters to continue not to smoke and to encourage others to quit. The *National Tobacco Campaign—More Targeted*

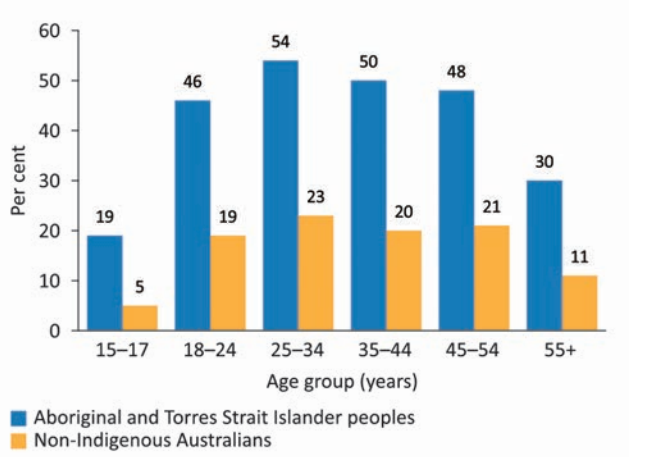
Approach (aimed at reducing smoking prevalence among high-risk and hard-to-reach groups) includes materials developed for Indigenous Australians. Materials featuring Indigenous women have been placed as part of the *Quit for You, Quit for Two* component, targeting pregnant women and their partners. Evaluation research found the campaign effectively promoted positive attitudes and intentions towards not smoking. Since 1 December 2012, all tobacco products have been required to be sold in plain packaging with updated and expanded graphic health warnings. Excise on tobacco and tobacco-related products was increased by 12.5 per cent on 1 December 2013 and 1 September 2014, with further 12.5 per cent increases to be implemented on 1 September 2015 and 2016.

The *Tackling Indigenous Smoking* programme provides a national platform

for reducing Indigenous smoking rates. This programme includes promoting an understanding of the importance of smoke-free environments and compulsory smoke-free policies for funded organisations. The programme includes regional teams that work with communities to design and deliver locally tailored health promotion, social marketing and education campaigns and activities addressing smoking. The Government is committed to ensuring that programmes to address high rates of smoking are based on the most up-to-date evidence, and are delivered in a way that is appropriate, effective and efficient. An independent review of the *Tackling Indigenous Smoking* programme in 2014–15 will consider recent literature and research findings and make recommendations on how best to reduce Indigenous smoking rates.

Figure 2.15-1

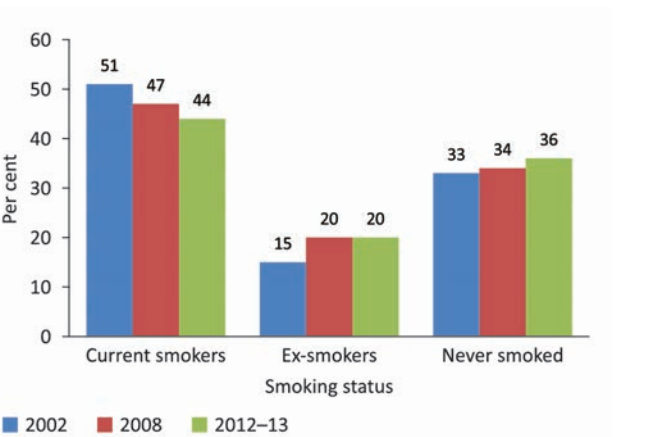
Proportion of population aged 15 years and over reporting they are a current smoker, by Indigenous status and age, 2012–13



Source: 2012–13 AATSIHS (ABS 2014d)

Figure 2.15-2

Smoker status, Aboriginal and Torres Strait Islander peoples aged 15 years and over, 2002, 2008 and 2012–13



Source: 2012–13 AATSIHS (ABS 2014d)

Table 2.15-1

Proportion of current smokers by age, sex, remoteness area and state/territory, Indigenous Australians aged 15 years and over, 1994, 2002, 2008 and 2012–13

	1994	2002	2008	2012–13
Age				
15–17	30	33	22	19
18–24	56	58	53	46
25–34	63	58	56	54
35–44	57	58	53	50
45–54	49	49	48	48
55+	33	35	32	30
Sex				
Male	55	53	49	46
Female	49	50	45	42
Persons	52	51	47	44
Remoteness Area				
Major Cities	52	48	42	39
Inner Regional	53	52	45	44
Outer Regional	50	51	49	41
Total non-remote	51	50	45	41
Remote	54	53	50	49
Very Remote	52	56	55	56
Total remote	53	55	53	53
State/Territory				
NSW	53	53	48	42
Vic	59	54	48	44
Qld	50	51	44	43
WA	51	48	44	43
SA	58	48	48	42
Tas	49	44	45	40
ACT	43†	45	36	30
NT	50	56	53	54
Total	52	51	47	44

Note: Comprehensive significance testing results are published in the Detailed Analyses
† Estimate has a relative standard error between 25% and 50% and should be used with caution.

Source: ABS and AIHW analysis of the 1994 NATSIS, 2002 and 2008 NATSIS and 2012–13 AATSIHS



2.16

Risky alcohol consumption

Why is it important?

Excessive consumption of alcohol is associated with health and social problems in all populations. Long-term excessive alcohol consumption is a major risk factor for conditions such as liver disease, pancreatitis, heart disease, stroke, diabetes, obesity and cancer. It is also linked to social and emotional wellbeing, mental health and other drug issues (NHMRC 2009). Where mothers have consumed alcohol during pregnancy, babies may be born with Foetal Alcohol Spectrum Disorders (FASD) (Telethon 2009).

Binge drinking contributes to injuries and death due to suicide, transport accidents, violence, burns and falls. For the general population, one-third of suicides for men and women and one-third of motor vehicle deaths for men have been linked to alcohol consumption (NHMRC 2009). Alcohol abuse can also affect families and communities. It has the potential to lead to anti-social behaviour, violence, assault, imprisonment and family breakdown (NHMRC 2009).

The 2003 Burden of Disease study estimated that alcohol harm accounts for 5.4% of the total burden of disease and injury for Indigenous Australians. For Indigenous males aged 15–34 years, alcohol was responsible for the greatest burden of disease and injury among the risk factors considered and was the second leading cause for females in this age group (Vos et al. 2007).

Findings

The National Health and Medical Research Council (NHMRC) state that 'drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury' and that 'drinking no more than four standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion' (NHMRC 2009).

The 2012–13 Health Survey collected data on those who exceeded the NHMRC lifetime and single occasion risk guidelines. Based on the survey, 26% of Indigenous Australians aged 15 years and over abstained from alcohol in the previous 12 months. After adjusting for differences in the age structure of the two populations, this was 1.6 times the non-Indigenous rate.

In 2012–13, 54% of Indigenous Australians exceeded the single occasion guidelines (binge drinking) at least once in the last twelve months (19% weekly and 35% less than weekly). After adjusting for differences in the age structures of the two populations, this was 1.1 times the non-Indigenous rate. Rates of binge drinking were higher for Indigenous males (64%) than females (44%). Those living in non-remote areas were more likely to binge drink at least once in the last 12 months than those living in remote areas (55% compared with 48%); while rates for binge drinking at least once per week were 20% in remote areas and 18% in non-remote areas. Comparable data for Indigenous Australians aged 18 years and over from 2004–05 show no change in binge drinking over time.

In 2012–13, 18% of Indigenous Australians drank at rates that exceeded the NHMRC lifetime risk guideline, a rate similar to non-Indigenous Australians. Comparable data for Indigenous Australians aged 18 years and over show no significant change in lifetime risky drinking between 2001 and 2012–13.

Excess alcohol consumption has significant impacts on communities. In 2012–13, 14% of Indigenous Australians reported experiencing a family stressor related to alcohol problems. After adjusting for differences in the age structure of the two populations Indigenous Australians were 3.6 times more likely to report a stressor relating to alcohol or drug-related problems than non-Indigenous Australians. Numerous studies show that alcohol increases the risk of violence among people pre-disposed to aggression (Exum 2006; Fergusson et al. 2000). One study in NSW found that, after controlling for social and demographic variables, rates of offensive behaviour and property damage tended to be higher in areas with higher levels of alcohol sales (Stevenson et al. 1999). There is a clear link between alcohol, violence and imprisonment (see measure 2.11).

Survey data provides an indication of the prevalence of alcohol consumption, but under-estimates actual consumption. Furthermore, it cannot be assumed that patterns of consumption are uniform across geographic regions (Stockwell et al. 2004). After considering a range of evidence, a review by Wilson and colleagues estimated the prevalence of harmful alcohol use in the Aboriginal and Torres Strait Islander population at twice that of the non-Indigenous population (Wilson et al. 2010).

Over the period 2008–12, in NSW, Qld, WA, SA and the NT combined, Indigenous males died from alcohol-related causes at 5 times the rate of non-Indigenous males, and Indigenous females at 6 times the non-Indigenous rate. Most deaths (245 out of 365 deaths) were due to alcoholic liver disease. Indigenous Australians died from mental and behavioural disorders due to alcohol use at 6 times the rate of non-Indigenous Australians and alcoholic liver disease and poisoning by alcohol at 4 times the rate of non-Indigenous Australians. The *Overcoming Indigenous Disadvantage Report* (SCRGSP 2014a), found that the age-standardised alcohol-related death rate among Indigenous Australians fell from 28 deaths per 100,000 in 2003–07 to 22 deaths per 100,000 in 2008–12 and that the gap between Indigenous Australians and non-Indigenous Australians narrowed.

Over the period July 2011 to June 2013, there were 9,995 hospitalisations of Indigenous Australians with a principal diagnosis related to alcohol use. This represented 2% of all hospitalisations of Indigenous Australians (excluding dialysis). Rates were highest in remote areas (17 per 1,000) and lowest in inner regional areas (5 per 1,000). Indigenous males were hospitalised for diagnoses related to alcohol use at 5 times the rate of non-Indigenous males, and Indigenous females at 4 times the rate of non-Indigenous females. Acute intoxication was the most common reason Indigenous Australians were hospitalised for alcohol use (56%), followed by dependence syndrome (13%), alcoholic liver disease (11%), and withdrawal (11%). Indigenous Australians were hospitalised for acute intoxication at 11 times the rate of non-Indigenous Australians and for alcoholic liver disease at 5 times the rate. Between 2004–05 and 2012–13 hospitalisation rates relating to alcohol use increased for Indigenous females (4.8 to 7.5 per 1,000 population) and Indigenous males (9.8 to 12.8 per 1,000 population).

Implications

The health effects of excess alcohol consumption are evident in both mortality and morbidity statistics. Reducing alcohol abuse can reduce levels of assaults and disability and improve the health and wellbeing of the population.

Interventions that reduce the supply of alcohol are effective (Gray et al. 2010). Internationally, price controls have been

found to be the most effective method. A study in Central Australia attributed the decline in alcohol consumption and related harm over the period 2000–10 to a suite of alcohol control measures, finding that the biggest contribution was from measures that indirectly increased the price of alcohol (Symons et al. 2012).

Evidence from trials in Newcastle demonstrates a reduction in assaults as a result of trading hour restrictions (Jones et al. 2009). Reducing the number of alcohol sales outlets may also be effective, with a halving in assaults in Aurukun attributed to the phased closure of the Aurukun tavern (FaHCSIA 2012). Community alcohol restrictions that are supported by residents, leaders and businesses can also be effective. Margolis et al. (2011) reported that the rate of serious injury in four remote Indigenous communities in Queensland, as measured by Royal Flying Doctor Service injury retrieval data, dropped from 30 per

1,000 in 2008 to 14 per 1,000 in 2010, coinciding with the tightening of alcohol restrictions.

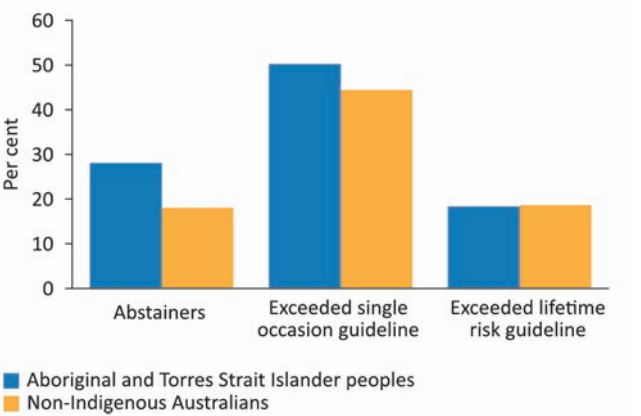
The *National Drug Strategy 2010–2015* provides the framework for an integrated and coordinated approach across all levels of government that aims to reduce drug-related harm and drug use in Australia. Under the strategy, the *National Aboriginal and Torres Strait Islander peoples Drug Strategy* (NATSIPDS) is being developed. The NATSIPDS will act as a guide for governments, communities, service providers and individuals to identify key issues and priority areas for action. The goal of the strategy is to improve the health and wellbeing of Indigenous Australians by preventing and reducing the harmful effects of alcohol and drugs on individuals, families, and their communities. The strategy has been informed by community and stakeholder consultation.

The *Indigenous Advancement Strategy—Safety and Wellbeing Programme* and the *Indigenous Australians’ Health Programme* provide funding for combatting alcohol and other substance misuse (see measure 3.11).

On 25 June 2014, the Australian Government announced funding of \$9.2 million for the *National Fetal Alcohol Spectrum Disorders (FASD) Action Plan*, which includes funding for Indigenous-specific prevention and promotion activities. The FASD Action Plan is directed at the frontline of dealing with risky alcohol consumption—providing better diagnosis and management, developing best practice interventions, and services to support high-risk women. A review of 22 programmes in the US has found that pre-natal health screening followed by empathetic interventions by health professionals was effective in reducing alcohol use during pregnancy (AIHW and AIFS 2015).

Figure 2.16-1

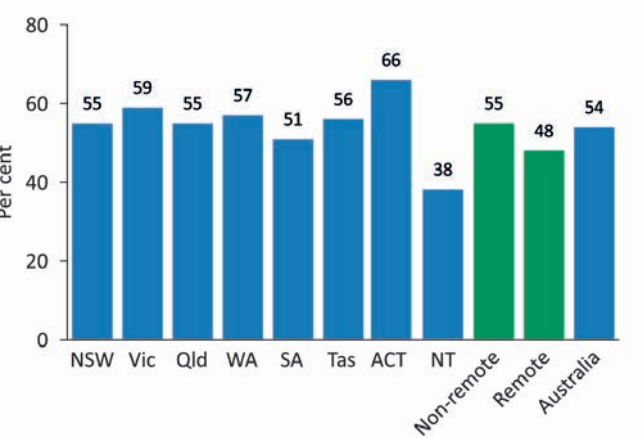
Alcohol risk levels by Indigenous status, persons aged 15 years and over, age-standardised, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.16-3

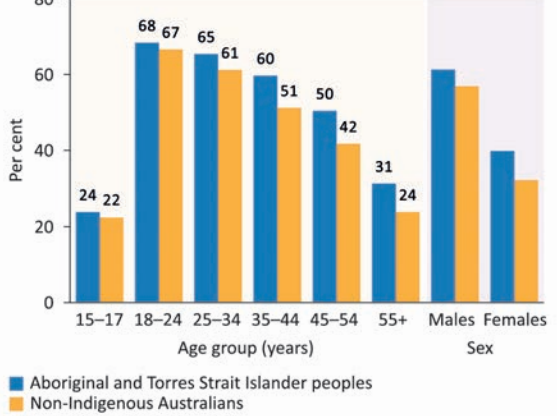
Aboriginal and Torres Strait Islander peoples who exceeded single occasion risk guidelines, by jurisdiction and remoteness area, persons aged 15 years and over, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.16-2

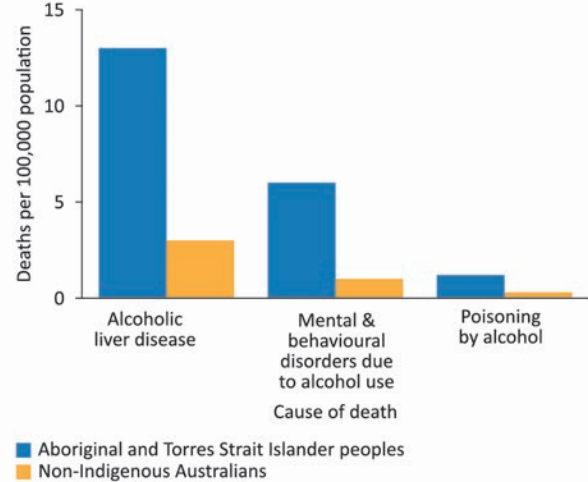
Persons aged 15 years and over who exceeded single occasion risk guidelines, by age and sex, and Indigenous status, 2012–13



a) Percentages are age-standardised
Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.16-4

Age-standardised rates for deaths related to alcohol use, NSW, Qld, WA, SA and the NT, 2008–12



Source: ABS and AIHW analysis of National Mortality Database



2.17

Drug and other substance use including inhalants

Why is it important?

Drug and other substance use is a contributing factor to illness and disease, accident and injury, violence and crime, family and social disruption and workplace problems (SCRGSP 2014a). Estimates of the burden of disease and injury in Aboriginal and Torres Strait Islander peoples attribute 3.4% of the total burden to illicit drug use (Vos et al. 2007).

Substance use is often associated with mental health problems (Catto et al. 2008) and has been found to be a factor in suicides (Robinson et al. 2011). The use of drugs or other substances including inhalants is linked to various medical conditions. Injecting drug users, for example, have an increased risk of contracting blood-borne viruses such as hepatitis or HIV (Kratzmann et al. 2011) and around half of heroin and opioid users report overdosing (Catto et al. 2008).

For communities, there is increased potential for social disruption, such as that caused by domestic violence, crime and assaults. Research has identified relationships with loss of control and abusive behaviour, ranging from physical to emotional violence (Franks 2006). Alcohol and substance use has been found to be a factor in assault (Mitchell 2011; Mouzos et al. 2004). Drugs and other substance use play a significant role in Aboriginal and Torres Strait Islander peoples' involvement in the criminal justice system (see measure 2.11).

Glue sniffing, petrol sniffing, inhalant abuse and solvent abuse are difficult to control because the active substances are found in many common products that have legitimate uses. People who use these products as inhalants risk long-term health problems or sudden death. Continued use can also lead to the social alienation of sniffers, violence and reduced self-esteem (Karam et al. 2014; Midford et al. 2011). There is also reported high use of kava in some Arnhem Land communities (Clough et al. 2002).

Findings

The latest data on substance use rates for Aboriginal and Torres Strait Islander peoples comes from the 2012–13 Health Survey. In 2012–13, half (53%) of Indigenous Australians aged 15 years and

over reported never having used drugs and other substances, 23% reported using substances in the last 12 months and a further 23% reported having used substances but not in the last 12 months. Time-series data between 2002 and 2012–13 is limited to non-remote areas only. Between 2002 and 2012–13, there was a decline in recent users (from 26% to 24%); however, there was an increase in Indigenous Australians who had used substances at least once in their lifetime (from 44% to 49%) in non-remote areas. Between 2008 and 2012–13, there was a small significant increase in the proportion of the Indigenous population who had used marijuana in the last 12 months in remote areas (14% to 17%) and non-remote areas (18% to 20%).

Comparisons with non-Indigenous Australians are available from the National Drug Strategy Household Survey, which included a small sample of Indigenous Australians. According to this survey, in 2013 Indigenous Australians aged 14 years and over were 1.5 times as likely to report using substances in the last 12 months compared with non-Indigenous Australians (around 23% and 15% respectively) (AIHW 2014v). In 2001, 37.4% of non-Indigenous Australians reported they had ever used substances compared with 41.4% in 2013. Over this period there was no clear trend in recent users.

In 2012–13, substance use was more prevalent among Indigenous males, of whom 53% had tried drugs compared with 40% of Indigenous females. Indigenous males also had higher rates for recent use in the last 12 months (28%) compared with Indigenous females (18%). Rates of substance use reported by Indigenous Australians aged 15 years and over in the last 12 months were lower in remote areas (19%) than non-remote areas (24%).

Cannabis was the most common illicit substance used in the last 12 months for Aboriginal and Torres Strait Islander peoples (19%), followed by pain-killers or analgesics for non-medical use (3%) and amphetamines/speed/ice (2%). Approximately 18% of Indigenous Australians reported having used one substance in the last 12 months and 5% two or more substances. The study of burden of disease in Aboriginal and Torres Strait Islander peoples estimated that heroin or poly-drug dependence was responsible for 37% of the burden due to illicit drugs (Vos et al. 2007).

In 2012–13, 18% of Indigenous Australians aged 15 years and over reported alcohol or drug-related problems as a family stressor during the last 12 months with rates higher for females (21%) than males (15%). Indigenous Australians reported alcohol or drug-related problems at 3.6 times the rate of non-Indigenous Australians.

A 2008 survey of school students showed that around 23% of Indigenous students aged 12–15 years had used an illicit substance in their lifetime, compared with 11% of all 12–15 year old students. The most common illegal substance used by Indigenous students was cannabis (used by 20%), followed by amphetamines (8%), ecstasy (6%), hallucinogens (5%), cocaine (5%) and opiates (5%). In addition, 24% of Indigenous students had used inhalants (glue, paint, petrol), with 13% in the past month (compared with 8% in the past month for total students) (White et al. 2009).

In 2012–13, a higher proportion of Indigenous Australians aged 15 years and over who were recent substance users reported they were current smokers (69%) and drank at risky/high-risk levels (76%) than Indigenous persons who had never used illicit substances (33% and 44% respectively). Approximately 5% of mothers with a child aged 0–3 years reported having used substances during pregnancy in 2008.

A 2013 study of 41 Aboriginal communities in the NT, WA and SA found 276 people were current sniffers (d'Abbs et al. 2013). Nearly 80% of sniffers were male and over half were aged 15–24 years. There was a significant reduction in the prevalence of petrol sniffing in 15 communities with time-series data following the introduction of low aromatic fuel in those communities. Across the sample there were 546 petrol sniffers in 2005–07, dropping to 160 in 2008, and 97 in 2011–12, an 82% decrease in the number of people sniffing between baseline and the current survey. The report indicates that sniffing levels have dropped in regions where there has been an uptake of low aromatic fuel and that the regions with the highest levels of sniffing are those where regular unleaded petrol is still available. Between 2008 and 2011–12 there was a continued decline from 2005–07 in the number of sniffers aged 5–9 years and 10–14 years and a slight increase in the 15–24 year age group. While the number of occasional sniffers declined, the numbers of heavy sniffers in 14 communities rose from 18 in 2008 to 32 in 2011–12.

For the period July 2011 to June 2013, there were 6,926 hospitalisations of Indigenous Australians related to substance use. Indigenous Australians were hospitalised for conditions related to substance use at rates 2.5 times as high as non-Indigenous Australians.

The *Drugs Use Monitoring in Australia* programme run by the Australian Institute of Criminology reports on drug use among police detainees at 8 police stations in metropolitan areas in SA, NSW, Qld, WA and the NT. In 2012, the proportion of detainees that tested positive for drugs was higher for Indigenous detainees than for non-Indigenous detainees in all police stations surveyed. Cannabis was the most frequently detected drug.

Implications

In 2012–13, around 1 in 5 Aboriginal and Torres Strait Islander peoples aged 15 years and over had used substances in the last 12 months. Higher rates of

drug use are related to poorer health status and higher levels of psychological distress.

The *National Drug Strategy 2010–2015* (NDS) provides the framework for an integrated and coordinated approach across all levels of government which aims to reduce the prevalence of drug-related harm and drug use in Australia. Under the strategy, a specific *National Aboriginal and Torres Strait Islander peoples Drug Strategy* (NATSIPDS) is being developed.

The NATSIPDS will act as a guide for governments, communities, service providers and individuals to identify key issues and priority areas for action relating to the harmful use of alcohol and other drugs. The overarching goal of the strategy is to improve the health and wellbeing of Aboriginal and Torres Strait Islander people by preventing and reducing the harmful effects of alcohol and other drugs on individuals, families, and their communities. The strategy

builds on the national framework provided by the NDS, and has been informed by extensive community and stakeholder consultations.

The *Indigenous Advancement Strategy —Safety and Wellbeing programme* provides funding for strategies known to enhance community safety, including combatting alcohol and other substance misuse.

The *Petrol Sniffing Strategy*, launched in 2005, is a comprehensive regional approach to addressing the problem of petrol sniffing in regional and remote areas of Australia. The strategy aims to reduce the incidence of petrol sniffing and improve the health and social wellbeing of Indigenous youth. In 2014–15, the *Petrol Sniffing Strategy* became part of the Government’s *Indigenous Advancement Strategy* under the *Safety and Wellbeing Programme* managed through the Department of the Prime Minister and Cabinet.

Table 2.17-1
Aboriginal and Torres Strait Islander peoples aged 15 years and over, substance use by remoteness and sex, 2012–13

	Non remote areas	Remote areas	Males	Females	Persons
Used substances	Per cent				
Used substances in last 12 months					
Marijuana, Hashish or Cannabis Resin	19.6	17.2	24.2	14.2	19.1
Pain-killers or analgesics for non-medical use	3.2	1.5†	2.6	2.9	2.8
Tranquilisers or sleeping pills for non-medical use	2.3	0.9†	2.2	1.8	2.0
Amphetamines or speed	2.8	0.8†	3.0	1.8	2.4
Kava	1.2†	1.8†	2.1	0.6†	1.3
Other	2.9	0.8†	3.4	1.5	2.5
<i>Total used substances in last 12 months</i>	<i>23.8</i>	<i>19.0</i>	<i>27.6</i>	<i>18.1</i>	<i>22.7</i>
Used substances but not in last 12 months	24.8	17.1	25.1	21.3	23.1
Total ever used substances	49.1	36.2	53.3	39.6	46.3
Never used substances	49.7	63.6	45.7	59.4	52.7
Total	100	100	100	100	100
Persons who accepted form ('000)	291	81	181	192	372
Persons 15 years and over ('000)	318	91	201	208	409

Note: Comprehensive significance testing results are published in the Detailed Analyses
† Estimate has a relative standard error between 25% and 50% and should be used with caution.
Source: ABS & AIHW analysis of 2012–13 AATSIHS



2.18

Physical activity

Why is it important?

Physical activity can be defined as a bodily movement produced by the muscles resulting in energy expenditure, and can include organised or incidental activity (AIHW 2010a). Physical inactivity is an important modifiable risk factor associated with several potentially preventable chronic diseases that are prevalent in the Aboriginal and Torres Strait Islander population. These diseases include cardiovascular disease, cancer, stroke, hypertension and diabetes (AIHW 2012c; Gray et al. 2013; Wilmot et al. 2012). Physical inactivity is also related to overweight and obesity, another important risk factor for multiple preventable diseases.

Physical inactivity accounts for approximately 6.6% of the total burden of disease in the Australian population and 8% for the Indigenous population (Vos et al. 2007; Begg et al. 2007). Physical inactivity is the third leading risk factor in the Indigenous population, after tobacco use and high body mass. Its effect is manifested through a range of diseases, most notably ischaemic heart disease (55% of the burden attributed to physical inactivity) and diabetes (33%).

Current guidelines recommend that children aged 2–4 years are physically active for at least 3 hours every day; that children aged 5–17 years do at least 60 minutes per day of moderate to vigorous intensity physical activity; that adults aged 18–64 years accumulate 150 to 300 minutes (2 ½ to 5 hours) of moderate intensity physical activity or 75 to 150 minutes (1 ¼ to 2 ½ hours) of vigorous intensity physical activity per week; and that adults aged over 65 years accumulate at least 30 minutes of moderate intensity physical activity on most days (Department of Health 2014). The guidelines also recommend minimal time spent sitting (sedentary behaviour) for all ages. Katzmarzyk et al. (2009) found an increased risk of mortality with higher levels of sitting time regardless of whether sufficient physical activity was undertaken.

Research has established inverse associations between physical activity with fat mass and biomedical risk factors for chronic disease (Ness et al. 2007; Steele et al. 2009; White et al. 2011), and studies have confirmed that activity reduces the risk for heart disease (Stephenson et al. 2000; Bull et

al. 2004; Sattelmair et al. 2011), high blood pressure (Kokkinos et al. 2001), diabetes (NHF 2006) and the symptoms of depression, anxiety and stress (WHO 2010; Moylan et al. 2013). Physical activity has physical and psychological benefits for the management and treatment of chronic conditions (Adami et al. 2009; NHF 2006; Holmes et al. 2005).

Findings

The most recent data on physical activity is from the 2012–13 Health Survey, which collected information on walking for exercise/transport and moderate and vigorous physical activity in the week prior. While information was collected in both remote and non-remote areas, results are not comparable due to differing methodologies across areas.

In 2012–13, 38% of Indigenous adults in non-remote areas had undertaken a sufficient level of physical activity in the week prior (at least 150 minutes over 5 or more sessions). Rates of sufficient activity were higher for Indigenous males (43%) than for Indigenous females (33%). After adjusting for differences in the age structure of the two populations, Indigenous adults were less likely than non-Indigenous adults to have met sufficient activity levels in the last week (rate ratio of 0.8), and more likely to be inactive (rate ratio of 1.3).

Younger Indigenous Australians were more likely to be sufficiently active and activity levels declined with age; 48% aged 18–24 years were sufficiently active compared with 27% aged 55 years and over.

After adjusting for differences in the age structure between the two populations, Indigenous adults spent 1.7 times the time walking for transport than non-Indigenous adults (average of 143 minutes compared with 83 minutes per week) and less time on walking for fitness (0.8 times) and moderate or vigorous physical activity (0.7 and 0.8 times respectively). Indigenous adults spent 1.3 times the time spent by non-Indigenous adults on watching television or videos and less time using a computer/internet (0.6 times) and sitting for transport (0.8 times).

In the pedometer study, 17% of Indigenous adults did the required 10,000 steps per day on average.

More than half (55%) of Indigenous adults in remote areas spent more than 30 minutes in the previous day undertaking physical activity/walking; 20% spent less than 30 minutes and 21% did no physical activity.

In 2012–13, 82% of Aboriginal and Torres Strait Islander children aged 2–4 years in non-remote areas met the recommendations of at least 3 hours of physical activity per day. Average time spent in physical activity was similar for Indigenous and non-Indigenous children aged 2–4 years, although Indigenous children spent more time outdoors (3.5 hours compared with 2.8 hours per day on average).

Nearly half (48%) of Indigenous children aged 5–17 years in non-remote areas met the recommended physical activity guidelines, at a much higher rate than for non-Indigenous Australians (35%). Indigenous children were 1.4 times as likely than non-Indigenous to have met both the physical activity and screen-based guidelines in the three days prior (25% compared with 18%). One in four Indigenous children met the threshold of 12,000 steps per day (on average), similar to non-Indigenous children.

In 2012–13, 82% of Aboriginal and Torres Strait Islander children aged 5–17 years in remote areas did more than 60 minutes of physical activity on the day prior (only 4.1% did no physical activity).

Aboriginal and Torres Strait Islander adults who were sufficiently active were less likely to be obese (31%) than those who were inactive (56%). Indigenous adults with educational qualifications of Year 12 or above were 1.5 times as likely to have done sufficient physical activity compared with those with below Year 10 (44% compared with 29%). Indigenous adults in non-remote areas who described their health as excellent or very good were 1.7 times as likely to have done sufficient physical activity compared with those with fair/poor self-assessed health.

Implications

Low levels of physical activity were reported by nearly 3 in 5 Aboriginal and Torres Strait Islander people aged 18 years and over in non-remote areas in 2012–13. Higher rates of sedentary behaviours are associated with an increased risk of chronic disease. Improving levels of physical activity levels presents a significant opportunity for health improvements and for reducing the health gap between Indigenous and non-Indigenous Australians.

Thompson et al. (2013) found that the concept of physical activity in remote NT communities was strongly linked to land and resource management and seasonal, family and cultural activities.

Several studies have shown that high levels of incidental exercise can have health benefits (Ekblom-Bak et al. 2014; Samitz et al. 2011; Duvivier et al. 2013).

To increase opportunities for physical activity, funding agreements are in place to provide access to a range of sport and physical recreation activities across Australia. These agreements include weekly sports competitions, sports carnivals, small sporting grants, sports equipment, sport and recreation officers and access to sport-specific accreditation (e.g. sports administration, umpiring, coaching). Community sports and recreation programmes have potential health, education and employment benefits along with improved social cohesion and physical and mental wellbeing (Ware et al. 2013).

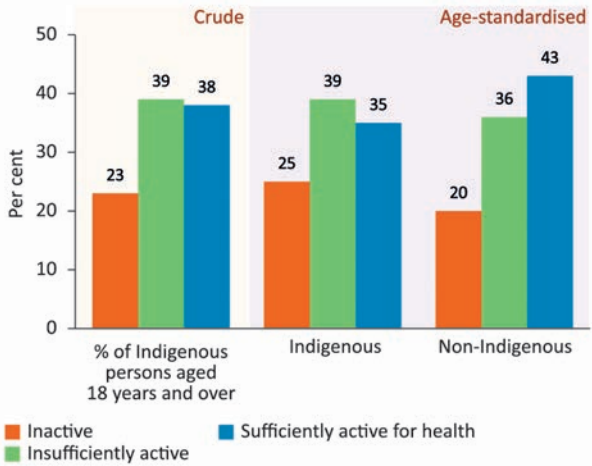
The *Indigenous Sport and Active Recreation Program* supports community participation in sport and active recreation activities to support improved health and physical wellbeing and broader social benefits for participants and their communities. The programme’s objectives are to increase the active participation of able and disabled Indigenous Australians in sport and active recreation; encourage and increase community ownership and management of sport and active recreation activities, including through skills development; and provide employment opportunities for people to support or assist in the provision of sport and active recreation activities.

Under the Australian Government’s *Indigenous Australians’ Health Programme*, a national Regional Tackling

Smoking and Healthy Lifestyle workforce has been deployed in 57 regions across the country to raise awareness of the health impacts of tobacco smoking and chronic disease in Indigenous communities, to actively promote positive lifestyle changes and to assist in timely access to appropriate health services as needed. The teams facilitate culturally secure community education, health promotion, and social marketing activities to promote quitting, smoke-free environments and encourage healthy lifestyle choices, including physical activity and nutrition. A review is being undertaken to ensure programmes to address the high rates of smoking and low rates of physical activity are based on the most up-to-date evidence.

Figure 2.18-1

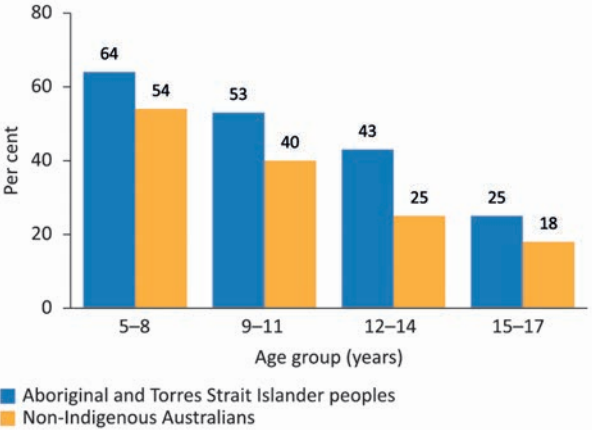
Persons aged 18 years and over, level of physical activity, by Indigenous status, non-remote areas, 2012–13



Source: 2012–13 AATSIHS (ABS 2014c)

Figure 2.18-3

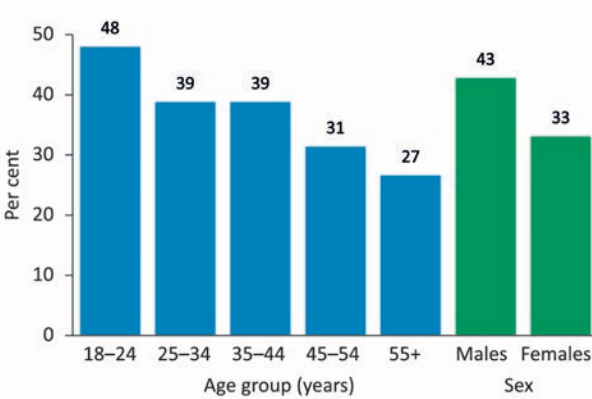
Persons aged 5–17 years, whether met physical activity recommendations by Indigenous status, non-remote areas, 2012–13



Source: 2012–13 AATSIHS (ABS 2014c)

Figure 2.18-2

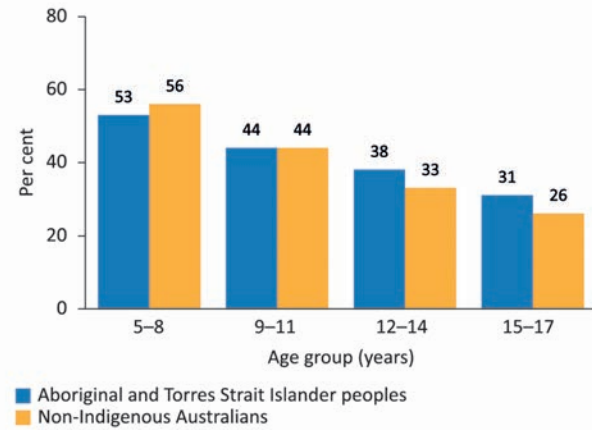
Indigenous persons aged 18 years and over reporting a sufficient level of physical activity, by age-group and sex, non-remote areas, 2012–13



Source: 2012–13 AATSIHS (ABS 2014c)

Figure 2.18-4

Persons aged 5–17 years, whether met screen-based activity recommendations by Indigenous status, non-remote areas, 2012–13



Source: 2012–13 AATSIHS (ABS 2014c)



2.19

Dietary behaviours

Why is it important?

Many of the principal causes of ill-health among Aboriginal and Torres Strait Islander peoples are nutrition-related diseases, such as heart disease, Type 2 diabetes and renal disease. While a diet high in saturated fats and refined carbohydrates increases the likelihood of developing these diseases, regular exercise and intake of fibre-rich foods, such as fruit and vegetables, can have a protective effect against disease (Wang et al. 2014). The National Health and Medical Research Council revised their *Australian Dietary Guidelines* in 2013. The guidelines specify recommendations for adequate minimum daily intake of fruit and vegetables according to age and sex (NHMRC 2013; ABS 2014d).

The *Burden of Disease and Injury in Aboriginal and Torres Strait Islander peoples 2003* (Vos et al. 2007) attributed 3.5% of the total burden of disease in the Aboriginal and Torres Strait Islander population to low fruit and vegetable consumption. Its impact is largely as a risk factor for ischaemic heart disease (Vos et al. 2007). Diet-related diseases are caused by combinations and interactions of environmental, behavioural, biological, social and hereditary factors. There is a substantial quantity of evidence that associates dietary excesses and imbalances with chronic disease. Of particular relevance in Indigenous communities are factors such as socio-economic status and other risk factors including insulin resistance, glucose intolerance, obesity (especially central fat deposition), hypertension, high blood triglycerides, perinatal and postnatal nutrition and childhood nutrition (NHMRC 2000; Longstreet et al. 2008). Good maternal nutrition and healthy infant and childhood growth are fundamental to the achievement and maintenance of health throughout the life cycle. Inadequate nutrition during pregnancy is associated with low birthweight in babies (see measure 1.01). Growth retardation among Indigenous infants after the age of 4 to 6 months has consistently been noted (Bar-Zeev et al. 2013). Australian obesity rates have also increased from 19% of the adult population in 1995 to 28% in 2011–12 (ABS 2013h).

Findings

The latest data on dietary behaviours for Aboriginal and Torres Strait Islander peoples comes from the 2012–13 Health Survey. In 2012–13, 15% of Indigenous Australians aged 2–14 years and 3% of those aged 15 years and over reported adequate daily fruit and vegetable intake. For those aged 15 years and over, 42% were eating the recommended daily intake of fruit (2 serves) and 5% the recommended daily intake of vegetables (5–6 serves). The recommendations for minimum serves of fruit and vegetables were lower for children (around half of the adult recommendations). In 2012–13, 78% of Indigenous children aged 2–14 years met the recommended fruit intake and 16% the recommended vegetable intake.

The majority of Indigenous Australians aged 15 years and over reported eating at least one serve of vegetables daily (91%) and also at least one serve of fruit (72%). Since 2004–05 (in non-remote areas), there has been a decline in the proportion of Indigenous Australians aged 15 years and over meeting the required vegetable intake (8.3% to 5.3%).

In 2012–13, the age group least likely to be consuming adequate serves of fruit and vegetables were those aged 18–24 years. Adequate daily intake of fruit was higher for Indigenous Australians aged 15 years and over in remote areas (46%) compared with non-remote (41%) while this pattern was reversed for adequate daily intake of vegetables (3.1% in remote and 5.3% in non-remote areas). A higher proportion of Indigenous females aged 15 years and over reported adequate daily fruit and vegetable intake (45% and 7%) compared with Indigenous males (40% adequate fruit intake and 3% adequate vegetable intake).

After adjusting for differences in the age structure of the two populations, Indigenous Australians aged 12 years and over were 1.4 times more likely than non-Indigenous Australians to report less than one serve of fruit daily and 1.9 times as likely to report less than one serve of vegetables. Rates of recommended levels of daily fruit and vegetable intake were lower for Indigenous Australians than for non-Indigenous Australians (ratio of 0.9 for fruit and 0.8 for vegetables).

The 2012–13 Health Survey showed an association between dietary behaviour and income, educational attainment and self-assessed health status. For example, Indigenous Australians aged 18

years and over in the lowest quintile of income were more likely than Indigenous Australians in the two highest quintiles of household income to report less than one serve of fruit daily (30% compared with 27%) and less than one serve of vegetables daily (10% compared with 6%). Those who were unemployed were less likely to eat the recommended serves of fruit (39%) than those who were employed (43%). Low fruit and vegetable intake was also associated with low levels of physical activity and risky/high risk alcohol consumption.

Findings from the biomedical component of the 2012–13 Health Survey show that 8% of Indigenous Australian adults had haemoglobin levels indicating a risk of anaemia, with women more likely to be at risk than men (10% compared with 5%). After adjusting for differences in the age structure of the two populations Indigenous Australians were almost twice as likely (rate ratio of 1.9) as non-Indigenous Australians to be at risk.

Implications

Evidence suggests that people living in poverty tend to maximise calories per dollar spent on food. Energy-dense foods rich in fats, refined starches and sugars represent the lowest-cost options, while healthy diets based on lean meats, whole grains and fresh vegetables and fruits are more costly (Drewnowski et al. 2004). People in vulnerable groups may therefore simultaneously be overweight or obese and experience food insecurity (AIHW 2012a).

In 2012–13, 10% of Indigenous Australians aged 15 years and over went without food when they could not afford to buy more. Indigenous Australians were 7 times as likely as non-Indigenous Australians to go without food due to financial constraints in the previous 12 months.

A person's access to a healthy diet can be influenced by a range of socio-economic, geographical and environmental factors. Food security, food access and food supply issues are of particular importance in rural and remote areas. Remote stores often have a limited range of foods, particularly perishable foods such as fresh fruit, vegetables and dairy foods, and purchase prices are usually higher (Pratt et al. 2014; Scelza 2012; DAA 2013). Low income combined with high food costs result in many Indigenous Australians spending a large proportion of their income on food and contributes to concerns among Indigenous Australians

of going without food (Brimblecombe et al. 2009). Australians in the most disadvantaged groups tend to spend 40% of their income on food while those in the highest income quintile spend 15%.

In 2009–10, the *National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan (NATSINSAP)* was evaluated to determine how effectively it was implemented and how it could be more effective and responsive to the current environment. The evaluation identified that the key achievements of NATSINSAP were in three of the seven priority action areas: food supply in remote and rural communities; disseminating and communicating good practice; and Aboriginal and Torres Strait Islander nutrition workforce. Some specific examples within these priority action areas include: the launch of the Remote Indigenous stores and takeaways resources; the development of nationally accredited nutrition training materials for Indigenous health workers; the revival of the National Nutrition Networks conference and development of an Indigenous nutrition web directory on the Australian Indigenous Health InfoNet. The outcome of the evaluation is currently informing the development of a National

Nutrition Framework to identify and drive nutrition-related activities. The nutritional needs of Indigenous populations are expected to be a key area of focus in the framework.

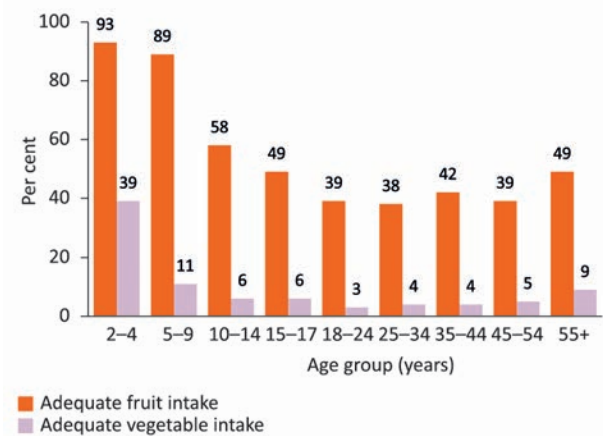
The revised *Australian Dietary Guidelines* ('the Guidelines') incorporating the *Australian Guide to Healthy Eating (AGTHE)* was released in 2013 under the banner of the *Eat for Health Programme*. The programme provides a suite of evidence-based guidelines as well as educator and consumer nutrition resources. The Guidelines apply to all population groups, including adults, children and adolescents, pregnant and breastfeeding women, older Australians, Aboriginal and Torres Strait Islander peoples and culturally and linguistically diverse groups. Currently there is a range of consumer and professional healthy eating resources available, including posters for Indigenous populations and a new AGTHE plate that shows the proportion of the diet that should come from each of the five food groups each day. Further adaptations of these resources for specific sub-groups of the population are planned, including adapting the AGTHE plate for Aboriginal and Torres Strait Islander peoples in 2014–15.

Under the *Tackling Indigenous Smoking* programme, a component of the Australian Government's *Indigenous Australians' Health Programme*, a national Regional Tackling Smoking and Healthy Lifestyle workforce has been deployed in 57 regions across the country to raise awareness of the health impacts of tobacco smoking and chronic disease in Indigenous communities, to actively promote positive lifestyle changes and to assist in timely access to appropriate health services as needed. The teams facilitate culturally secure community education, health promotion, and social marketing activities to promote quitting, smoke-free environments and encourage healthy lifestyle choices, including physical activity and nutrition. A review is being undertaken to ensure programmes are based on the most up-to-date evidence.

In 2014, the Australian Government launched the *Healthy Bodies Need Healthy Drinks* resource package. This suite of culturally appropriate promotional materials encourages school-aged children, their families and communities to choose water instead of high-sugar drinks in an effort to prevent obesity, chronic disease and dental caries.

Figure 2.19-1

Whether met guidelines for adequate intake of fruit and vegetables, Indigenous Australians, by age, 2012–13^{(a)(b)}



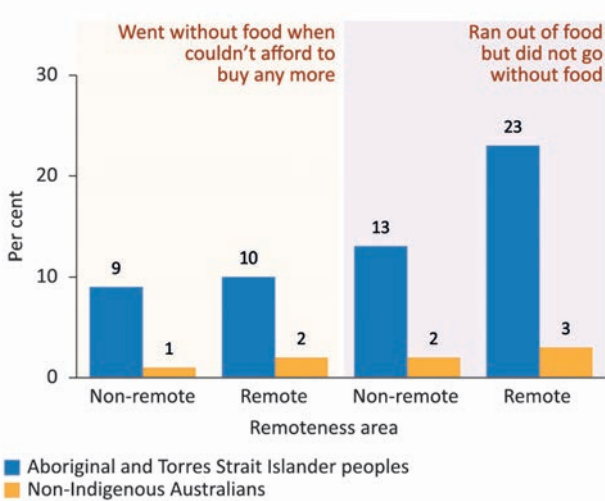
^(a) Based on one serve of fruit for children aged 2–8 years and two serves for persons aged 9 years and over.

^(b) Based on two serves of vegetables for children aged 2–3 years, four serves for ages 4–8 years and five for persons aged 9 years and over with the exception of 18–49 year old males to eat six serves.

Source: 2012–13 AATSIHS (ABS 2014b)

Figure 2.19-2

Proportion of persons aged 15 years and over who ran out of food and couldn't afford to buy more at some time over the last year, 2012–13



Source: ABS & AIHW analysis of 2012–13 AATSIHS



2.20

Breastfeeding practices

Why is it important?

Breastfeeding is one of the most important health behaviours for the survival, growth, development and health of infants and young children. Early initiation (within the first hour after birth) and exclusive breastfeeding during the first month is associated with a reduced risk of neonatal morbidity and mortality (Khan et al. 2014). Breast milk is uniquely suited to the needs of newborns, providing nutrients readily absorbed by their digestive system and conferring both active and passive immunity (NHMRC 2012). The National Health and Medical Research Council recommend exclusive breastfeeding for the first 6 months of life and that ideally breastfeeding continue until 12 months of age and beyond if the mother and child wish (NHMRC 2012).

Breastfeeding offers protection against many conditions, including sudden infant death syndrome (SIDS), diarrhoea, respiratory infections, middle ear infections and the development of diabetes in later life (Annamalay et al. 2012). Breastfeeding is associated with a lower risk of obesity later in childhood, and also provides health benefits for mothers including reduced risk of breast and ovarian cancer in premenopausal women (NHMRC 2012). For Aboriginal and Torres Strait Islander infants living in poor housing conditions (see measure 2.02), breastfeeding offers additional protection where hygiene practices required for sterilising bottles may not be easily achieved or maintained.

Findings

New findings from the 2012–13 Health Survey show that 83% of Indigenous children aged 0–3 years have been breastfed. While these rates were high, they remain significantly lower than the corresponding proportion of non-Indigenous children (93%). Indigenous infants were more than twice as likely as non-Indigenous infants to have never been breastfed (17% compared with 7%).

Of those children aged 0–3 years who had been breastfed, Indigenous infants were more likely than non-Indigenous infants to have been breastfed for less than one month (16% compared with 10%). Likewise, Indigenous infants were less likely than non-Indigenous infants

to have been breastfed for 12 months or more (12% compared with 21%).

Breastfeeding rates of Indigenous children aged 0–3 years did not vary significantly by remoteness, with 82% in non-remote areas and 84% in remote areas having been breastfed. Note in 2004–05, breastfeeding rates were higher in remote areas; however, trends analysis is not possible.

Breastfeeding rates of Indigenous children aged 0–3 years varied significantly between jurisdictions. In the ACT the proportion of Indigenous infants who had been breastfed (95%) was on par with the non-Indigenous rate (97%). In contrast, the gap was widest in SA where Indigenous rates were 76% and non-Indigenous rates 93%.

It is not possible to derive exclusive breastfeeding rates from the 2012–13 Health Survey results. In 2010, the Australian National Infant Feeding Survey found comparative rates of exclusive breastfeeding between Indigenous and non-Indigenous were similar when children were aged less than 1 month of age (59% of Indigenous children and 61% of non-Indigenous children). As infants increased in age the proportions of exclusive breastfeeding declined for both Indigenous and non-Indigenous children, but the Indigenous decline was steeper than the drop in non-Indigenous proportions. By the recommended age of up to 6 months, only 7% of Indigenous infants were exclusively breastfed compared with 16% of non-Indigenous infants. The Infant Feeding Survey found that almost a third (31%) of Aboriginal and Torres Strait Islander infants had received soft, semi-solid or solid food by the age of 3 months, compared with 9% of non-Indigenous infants of the same age. By age 5 months similar proportions of Indigenous and non-Indigenous infants had commenced weaning (70%).

In the 2012–13 Health Survey, Indigenous infants aged 0–3 years were more than twice as likely as non-Indigenous infants to be living with a current daily smoker (58% compared with 24%) and 19% of Indigenous infants lived in a household with a daily smoker who smoked at home indoors (see measure 2.03). For Indigenous infants the main reason given for ceasing breastfeeding was ‘not producing any/adequate milk supply’ (24%), followed by ‘felt it was time’ (17%) and ‘baby not satisfied’ (15%); non-Indigenous comparison is

not available. Maternal and paternal/family smoking is negatively associated with breastfeeding outcomes. Smoking affects the mother’s supply of milk, while exposure to passive smoking is also a factor in reduced duration of exclusive breastfeeding (Baheiraei et al. 2014; NHMRC 2012). Research is required to determine whether exclusive breastfeeding duration among Indigenous mothers might be increased by health interventions to reduce exposure to tobacco smoke (see measure 2.21).

Implications

Opportunities to promote breastfeeding in partnership with Aboriginal and Torres Strait Islander families and communities exist in educational settings and within the health sector, particularly in antenatal and postnatal care.

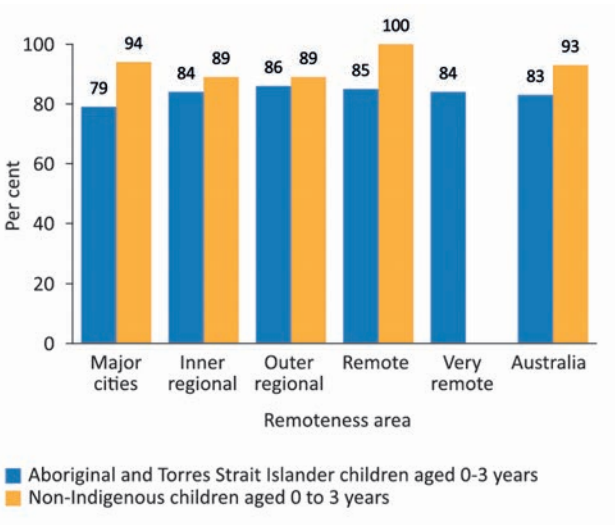
The *Australian National Breastfeeding Strategy 2010–2015* was endorsed by Health Ministers in 2009. The strategy aims to protect, promote, support and monitor breastfeeding in Australia, and recognises the importance of breastfeeding support especially for priority groups. The strategy recognises the contribution of the *New Directions: Mothers and Babies Services* initiative for supporting breastfeeding and parenting skills.

The *New Directions: Mothers and Babies Services* provides Aboriginal and Torres Strait Islander children and their mothers with access to antenatal care, standard information about baby care, practical advice and assistance with breastfeeding, nutrition and parenting; monitors developmental milestones, immunisation status and infections; and undertakes health checks for Indigenous children before starting school. The 2014–15 Federal Budget provides funding of \$54 million from July 2015 to increase the number of sites providing *New Directions: Mothers and Babies Services* from 85 to 136.

The *More Targeted Approach* campaign is aimed at reducing smoking prevalence among high-risk and hard-to-reach groups. Materials featuring Indigenous women have been included in the *Quit For You, Quit For Two* component, targeting pregnant women and their partners.

Figure 2.20-1

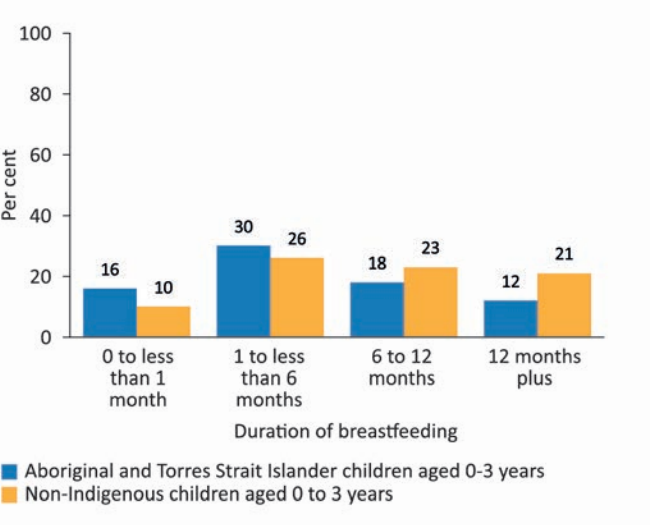
Children aged 0–3 years who were breastfed, by Indigenous status and remoteness, 2012–13



Source: AIHW and ABS analysis of 2012–13 AATSIHS

Figure 2.20-2

Children aged 0–3 years by Indigenous status and breastfeeding duration, 2012–13



Source: AIHW and ABS analysis of 2012–13 AATSIHS

Table 2.20-1

Children aged 0–3 years, breastfeeding status by Indigenous status and state/territory, 2012–13

	NSW	Vic	Qld	WA	SA	Tas	NT	ACT	Australia
Currently breastfeeding	Per cent								
Indigenous	‡ 12	‡ 15	16	31	‡ 13	20	45	n.p.	19
Non-Indigenous	19	19	22	16	15	12	29	17	19
Total breastfed									
Indigenous	83	84	81	85	76	89	85	95	83
Non-Indigenous	94	93	91	93	93	89	93	97	93
	Total Number								
Indigenous children 0–3 years	20,457	4,316	19,200	7,299	3,356	2,187	5,495	534	62,843
Non-Indigenous children 0–3 years	358,263	273,850	228,242	112,569	75,321	24,091	7,769	19,496	1,099,601

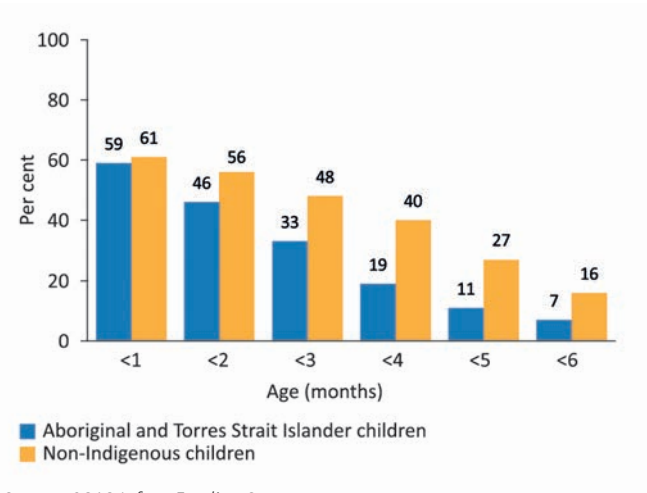
‡ estimates with a relative standard error of 25% to 50% should be used with caution.

*All differences between Indigenous/non-Indigenous children are statistically significant at the p<0.05 level.

Source: AIHW and ABS analysis of 2012–13 AATSIHS

Figure 2.20-3

Duration of exclusive breastfeeding to each month of age, by Indigenous status, 2010



Source: 2010 Infant Feeding Survey



2.21

Health behaviours during pregnancy

Why is it important?

Many lifestyle factors contribute to, and can have adverse effects on, the health and wellbeing of a woman and her baby during pregnancy, birth and beyond.

Smoking tobacco increases the risk of complications such as miscarriage, ectopic pregnancy, placental abruption and gestational diabetes (Laws et al. 2005; England et al. 2004) and is associated with low birthweight, foetal growth restriction, pre-term birth, congenital anomalies and perinatal death (WHO et al. 2012; Sullivan et al. 2006). Passive exposure to smoke is also associated with low birthweight, foetal growth restriction and perinatal death (see measure 2.03) (Crane et al. 2011; Gilligan et al. 2010). There is evidence that smoking cessation, particularly within the first trimester, can reduce these risks (Yan et al. 2014; Scollo et al. 2012).

Drinking alcohol while pregnant may result in low birthweight, pre-term birth and perinatal death (Crane et al. 2011) and has been shown to result in a range of impairments in cognitive, social and emotional functioning over the child's lifetime, collectively referred to as foetal alcohol spectrum disorders (FASD) (NHMRC 2009; France et al. 2010; Fitzpatrick et al. 2012). The true prevalence of FASD for Indigenous Australians is not known; estimates vary from 0.15 to 4.7 per 1,000 births (Burns et al. 2013). While existing research has limitations, risks of harm are said to increase with the amount and frequency of alcohol consumed (O'Leary et al. 2010; France et al. 2010; Bridge 2011). The NHMRC recommends not drinking alcohol during pregnancy as the safest option (NHMRC 2009).

Use of illicit drugs (e.g. heroin, cannabis) and some licit drugs (e.g. medicines) during pregnancy can involve health risks to the mother (including overdose and accidental injuries) as well as significant obstetric, foetal and neonatal complications (Wallace et al. 2007; Kulaga et al. 2009) and behavioural and cognitive outcomes that emerge in later life (Passey et al. 2014; Behl et al. 2013).

Nutrition before and during pregnancy is also critical to foetal development (McDermott et al. 2009; Wen et al. 2010). Pregnant women and women

considering pregnancy are advised to have a balanced diet. Maintenance of folate levels are particularly important to decrease risk of neural tube defects such as spina bifida (AHMAC 2012), which is twice as common among babies born to Indigenous women than non-Indigenous women (AIHW 2011e). In addition to adverse birth outcomes, poor maternal nutrition has been linked with increased risk of developing insulin resistance and obesity (Sloboda 2011).

Findings

Perinatal data for 2011 show that half of Aboriginal and Torres Strait Islander mothers smoked during pregnancy. Since 2005, there has been a small significant decline in smoking rates among Indigenous mothers (from 54% to 50%) (AIHW 2014i). After adjusting for the different age structures of the two populations, Indigenous mothers were 4 times as likely to smoke during pregnancy as non-Indigenous mothers (12%). There was no clear pattern of smoking by age group for Indigenous mothers (and teenage mothers were not the group with the highest rate). For non-Indigenous mothers, those under 20 years of age had the highest rate of smoking (33%) while the lowest rates were in the age groups 30 years and over (all 8%). Smoking rates for Indigenous mothers were lower in major cities (46%) compared with regional and remote areas (51%–53%). In 2012, Indigenous mothers were half as likely to stop smoking during pregnancy as non-Indigenous mothers (12% compared with 23%) (AIHW 2014e).

In the 2008 Social Survey, 42% of the mothers of Indigenous children aged 0–3 years reported using tobacco during pregnancy. Of those, 57% reported using less tobacco while pregnant.

A multivariate analysis of 2009–2011 perinatal data indicates that (excluding pre-term and multiple births), 51% of low birthweight births to Indigenous mothers were attributable to smoking during pregnancy, compared with 19% for other mothers. After adjusting for age differences and other factors, it was estimated that if the Indigenous maternal smoking rate was the same as that of other mothers, the proportion of low birthweight babies could be reduced by 26% (see measure 1.01). Babies born to Indigenous mothers who smoked were 1.4 times as likely to be pre-term as those who did not smoke.

Studies have found that smoking during pregnancy among Indigenous women

is associated with low socio-economic status; stress; social norms, including number of smokers in the household; and lack of knowledge regarding consequences of smoking during pregnancy, which in turn influence incentives and support to quit (Johnston et al. 2011; Wood et al. 2008; Passey et al. 2012; Thrift et al. 2011).

In the 2008 Social Survey, 80% of mothers of Indigenous children aged 0–3 years reported that they did not consume alcohol during pregnancy, with the greatest proportion of abstinence in the NT (85%). Approximately 16% drank less alcohol than usual during pregnancy and 3% drank the same or more. The vast majority (95%) reported that they did not use illicit drugs during their pregnancy. On average, 52% of Indigenous mothers took folate before or during pregnancy, with as few as 39% in remote areas. Mothers of Indigenous children who sought health advice during pregnancy were less likely to smoke during pregnancy (36%) than those who did not (47%), and were more likely to have taken folate.

A study of 476 Aboriginal and Torres Strait Islander women attending 34 Indigenous community health centres across Australia found that 46% of those who smoked received documented advice about smoking cessation (Rumbold et al. 2011). Only 27% of women in this study were prescribed folic acid prior to 20-weeks gestation and even fewer (8%) prior to conception. These findings may reflect later presentation for antenatal care (see measure 3.01) (Robinson 2011).

Implications

Expanding national data on health behaviours during pregnancy will be an important element of monitoring progress in this area.

Studies suggest that pregnant Indigenous women require comprehensive approaches to addressing nutrition and smoking/substance use during pregnancy which: consider environmental contexts, increase knowledge of harm, are tailored to clients' needs, are provided in a way that does not cause distress or embarrassment or deter further antenatal care, and are culturally targeted with community involvement (Gould et al. 2011; Wood et al. 2008; France et al. 2010; Gould et al. 2013; Bridge 2011; Lucas et al. 2014). Concurrent use of multiple substances and clustering of risk, particularly for women of lower socio-economic status, also need to be considered (Passey et al. 2014; Wen et al. 2010; Eades et al. 2012).

National evidence-based antenatal care guidelines have been developed for the first trimester and work is underway on guidelines for the second and third trimesters (see measure 3.01). The guidelines aim to provide culturally appropriate information for the health needs of Indigenous pregnant women and their families. They include advice on health behaviours during pregnancy.

The 2014–15 Federal Budget provides Australian Government funding of \$94 million over three years from July 2015, for the *Better Start to Life approach*. This includes:

- \$54 million to increase the number of sites providing *New Directions: Mothers and Babies Services* from 85 to 136. These services provide Indigenous families with access to antenatal care, practical advice and assistance with parenting, and health checks for children.

- \$40 million to expand the *Australian Nurse Family Partnership Program* (ANFPP) from 3 to 13 sites. The ANFPP aims to improve pregnancy outcomes by helping women engage in good preventive health practices, support parents to improve their child’s health and development, and help parents develop a vision for their own future, including continuing education and finding work.

The 2014–15 Federal Budget also commits \$25.9 million in 2014–15 for a new *Indigenous Teenage Sexual and Reproductive Health and Young Parent Support* measure. Implemented by states and territories, these services will provide information to young people to make informed decisions about their reproductive health and health behaviours during pregnancy.

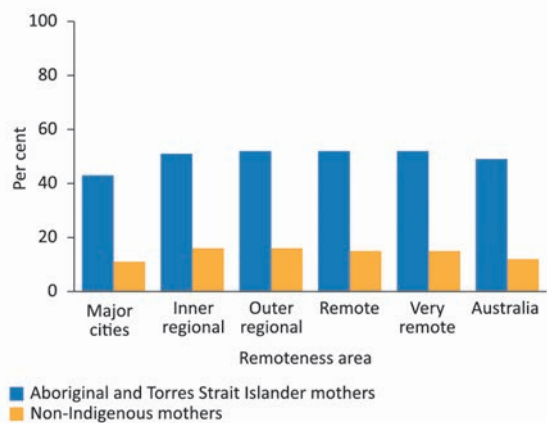
On 25 June 2014, the Australian Government announced funding of \$9.2 million for the *National Fetal Alcohol*

Spectrum Disorders (FASD) Action Plan, which includes funding for Indigenous-specific prevention and promotion activities. The FASD Action Plan is directed at the frontline of dealing with risky alcohol consumption—providing better diagnosis and management, development of best practice interventions and services to support high-risk women. The Australian Government promotes the current NHMRC guidelines that recommend not drinking alcohol is the safest option during pregnancy (NHMRC 2009).

The *National Tobacco Campaign—More Targeted Approach* is aimed at reducing smoking prevalence among high-risk and hard-to-reach groups. Materials featuring Indigenous women have been included in the *Quit for You, Quit for Two* component, targeting pregnant women and their partners. Evaluation research found this campaign effectively promoted positive attitudes and intentions among Indigenous audiences towards not smoking.

Figure 2.21-1

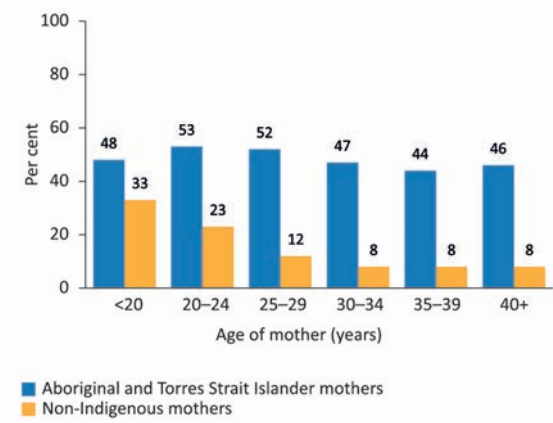
Age-standardised proportion of mothers who smoked during pregnancy, by Indigenous status and remoteness, 2011



Source: AIHW/NPESU analysis of 2011 National Perinatal Data Collection

Figure 2.21-2

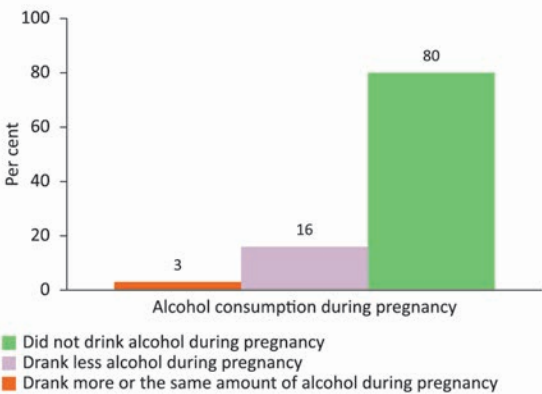
Proportion of mothers who smoked during pregnancy, by Indigenous status and age of mother, 2011



Source: AIHW/NPESU analysis of 2011 National Perinatal Data Collection

Figure 2.21-3

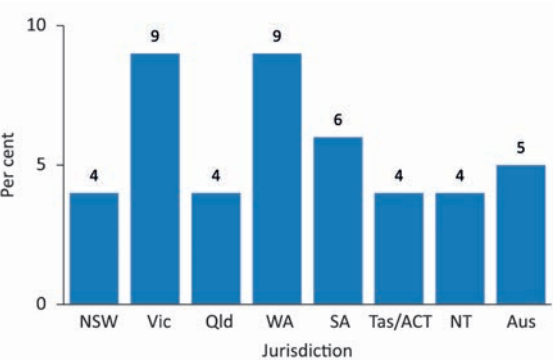
Alcohol consumption during pregnancy, mothers of Indigenous children aged 0–3 years, 2008



Source: AIHW analysis of 2008 NATSISS

Figure 2.21-4

Use of illicit drugs or substances during pregnancy, mothers of Indigenous children aged 0–3 years, by state/territory, 2008



Source: AIHW analysis of 2008 NATSISS



2.22

Overweight and obesity

Why is it important?

Overweight and obesity is a global health problem (OECD 2014). Being overweight or obese increases the risk of a range of health conditions, including coronary heart disease, Type 2 diabetes, some cancers, respiratory and joint problems, sleep disorders and social problems. The excess burden of obesity in the Indigenous population is estimated to explain 1 to 3 years (9% to 17%) of the life expectancy gap in the NT (Zhao et al. 2013a). Obesity is estimated to contribute 16% of the health gap between Aboriginal and Torres Strait Islander peoples and the total Australian population (Vos et al. 2007).

Obesity is associated with risk factors for the main causes of morbidity and mortality among Aboriginal and Torres Strait Islander peoples. It impacts largely through diabetes (half of the obesity burden) and ischaemic heart disease (40%) (Vos et al. 2007).

Findings

The 2012–13 Health Survey included height and weight measurements to allow body mass index (BMI) scores to be calculated. In 2012–13, 66% of Indigenous Australians aged 15 years and over had a BMI score in the overweight or obese range (29% overweight and 37% obese). Indigenous adults were 1.6 times as likely to be obese as non-Indigenous Australians (after adjusting for differences in the age structure of the two populations).

Indigenous obesity rates varied geographically. Obesity was highest in inner regional areas (40%) and lowest in very remote areas (32%). Rates were similar in major cities (37%) and in outer regional and remote areas (38%). By jurisdiction, obesity rates ranged from 41% in NSW to 29% in the NT.

Indigenous women had higher rates of obesity (40%) and lower rates of overweight (26%) compared with Indigenous men (34% and 31% respectively). Of those adult Indigenous women who had an underweight or normal measured BMI, 44% had a waist circumference of 80cm or more, indicating increased risk of developing chronic disease. For both Aboriginal and Torres Strait Islander males and females, the rates for overweight/

obesity increased with age, with 80% of the population aged 55 years and over being overweight or obese. Higher proportions of Torres Strait Islanders were overweight/obese than in the Aboriginal population (73% versus 65%).

The 2012–13 Health Survey showed obesity was strongly associated with chronic disease biomarkers (being obese increased the risk of abnormal test results for nearly every chronic disease tested for in the survey). Indigenous obese adults were 7 times more likely to have diabetes than those of normal weight/underweight (17% compared with 2%). Those who did not meet the physical activity guidelines were more likely to be obese (44%) than those who met the guidelines (36%).

Childhood is a critical period in which inequalities in health determinants such as socio-economic status and overweight/obesity emerge (Jansen et al. 2013). In 2012–13, Aboriginal and Torres Strait Islander children aged 2–14 years were more likely than non-Indigenous children to be underweight (8% compared with 5%); were less likely to be in the normal weight range (62% compared with 70%); and more likely to be overweight or obese (30% compared with 25%). Obesity rates for Indigenous children increased from the age of 5, with the highest rates at 10–14 years of age (12%). High BMI is found to be a predictor of short sleep duration for children (Magee et al. 2014), which impacts on school performance (measure 2.04) and engagement in physical activity (measure 2.18).

It is not possible to compare 2012–13 Health Survey results with previous surveys as the latest results are based on measured BMI rather than self-reported height and weight (as was done before). Research shows rates of overweight/obesity have increased more rapidly in Aboriginal than non-Aboriginal school-aged children in NSW (Hardy et al. 2014).

In December 2013, national Key Performance Indicators data provided by Australian Government-funded Indigenous primary health care organisations, found that 27% of clients aged 25 years and over were overweight, and 41% were obese (AIHW 2014w).

Obesity is associated with other health risk factors and social determinants of health. One example is prolonged financial stress, which is a predictor of obesity (Siahpush et al. 2014) (see measure 2.08). Low income is associated with food security problems

(Markwick et al. 2014) and subsequent dietary behaviour (see measure 2.19). Evidence also shows that incarceration is associated with weight gain and obesity in Indigenous youth (Haysom et al. 2013) (see measure 2.11).

Implications

Given the health risks associated with being obese or overweight, the situation for Aboriginal and Torres Strait Islander peoples requires urgent attention. It is second only to tobacco consumption in terms of contribution of modifiable risk factors to the health gap experienced by Aboriginal and Torres Strait Islander peoples (Vos et al. 2007).

An evaluation of a school-based health education programme for urban Indigenous youth found promising results in physical activity, breakfast intake and fruit and vegetable consumption (Malseed et al. 2014), all of which are core components of healthy weight management. Likewise, opportunities exist for obesity prevention in young children through practice-nurse brief interventions (Denney-Wilson et al. 2014).

Reversal of obesity is difficult even in the absence of environmental and social barriers. Therefore, early intervention to prevent the onset of excessive weight gain is likely to be the most effective strategy (Thurber et al. 2014). Studies reporting success in reducing obesity have a number of common characteristics, including: a focus on physical activity and diet opposed to diet alone; the ability to accommodate the preferences of participants; a group focus; and choice between a number of physical activities. Programmes must also be culturally acceptable, conveniently located, easily incorporated into the daily schedule and show goal attainment that is realistic and appropriate (Canuto et al. 2011).

The Australian Government's *Indigenous Australians' Health Programme* aims to actively promote healthier lifestyle choices with culturally secure community education, health promotion and social marketing activities. A *Healthy Weight Guide* consisting of an interactive website and printed resources is currently being developed to provide guidance and information for consumers to help them achieve and maintain a healthy weight. The guide includes information for Aboriginal and Torres Strait Islander peoples.

In 2014 the Australian Government launched the *Healthy Bodies Need*

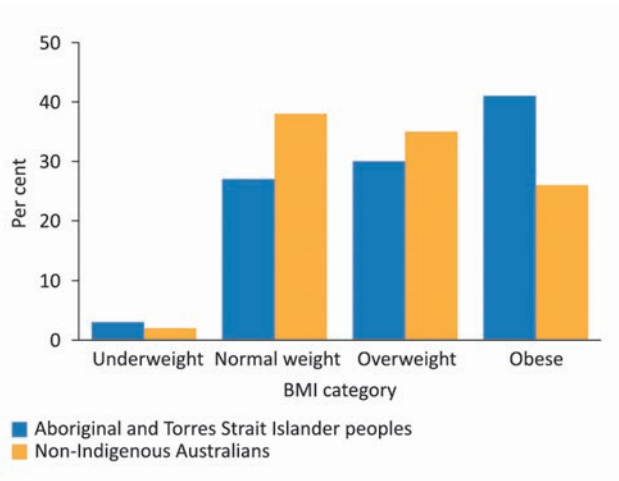
Healthy Drinks resource package. This suite of promotional materials encourages school-aged children, their families and communities to choose water instead of high-sugar drinks in an effort to prevent obesity, chronic disease and dental caries. There is international

evidence that the consumption of sugar-sweetened drinks leads to weight gain. Aboriginal and Torres Strait Islander children consume higher quantities of soft drink per person compared with non-Indigenous children (Thurber et al. 2014). The odds of consuming sugar-

sweetened drinks are significantly higher for Aboriginal and Torres Strait Islander children whose mothers have lower levels of education, who experience housing instability, who are living in urban areas and who are living in disadvantaged neighbourhoods (Thurber et al. 2014).

Figure 2.22-1

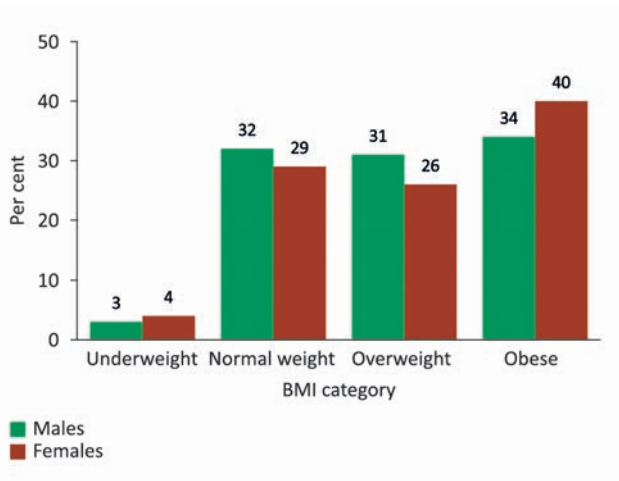
Proportion of persons aged 15 years and over (age-standardised) by BMI category and Indigenous status, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.22-2

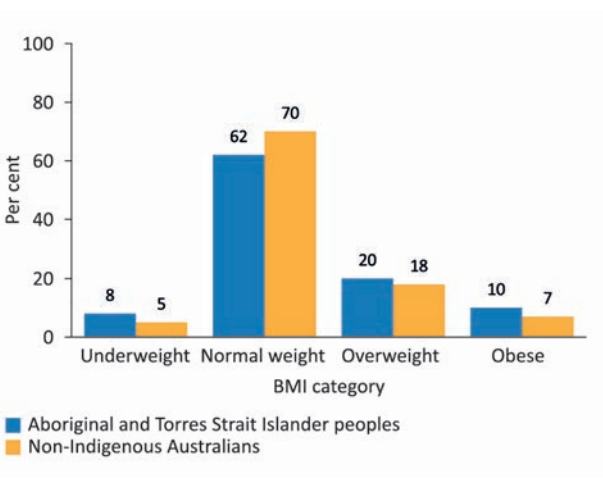
Proportion of Indigenous persons aged 15 years and over by BMI category, by sex, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.22-3

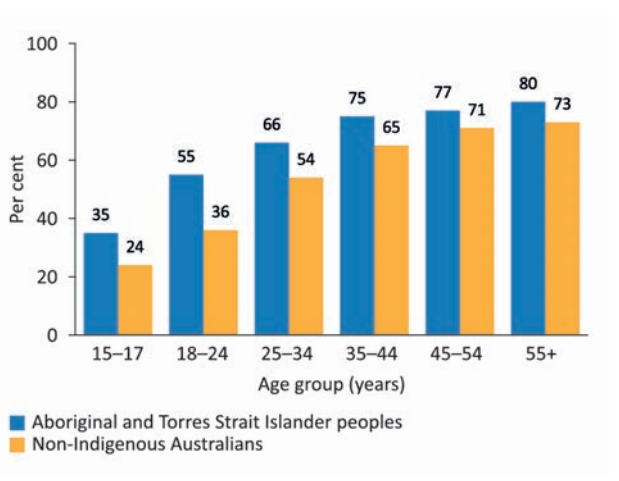
Proportion of children aged 2–14 years by BMI category and Indigenous status, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 2.22-4

Proportion of persons aged 15 years and over who were overweight or obese, by Indigenous status and age, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS





Tier 3 Health system performance

Effective/Appropriate/Efficient

- 3.01 Antenatal care
- 3.02 Immunisation
- 3.03 Health promotion
- 3.04 Early detection and early treatment
- 3.05 Chronic disease management
- 3.06 Access to hospital procedures
- 3.07 Selected potentially preventable hospital admissions
- 3.08 Cultural competency

Responsive

- 3.09 Discharge against medical advice
- 3.10 Access to mental health services
- 3.11 Access to alcohol and drug services
- 3.12 Aboriginal and Torres Strait Islander people in the health workforce
- 3.13 Competent governance

Accessible

- 3.14 Access to services compared with need
- 3.15 Access to prescription medicines
- 3.16 Access to after-hours primary health care

Continuous

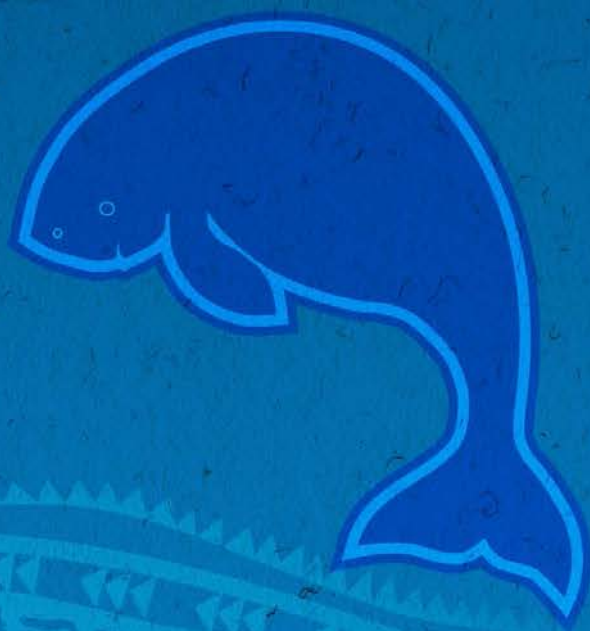
- 3.17 Regular GP or health service
- 3.18 Care planning for chronic diseases

Capable

- 3.19 Accreditation
- 3.20 Aboriginal and Torres Strait Islander peoples training for health-related disciplines

Sustainable

- 3.21 Expenditure on Aboriginal and Torres Strait Islander health compared to need
- 3.22 Recruitment and retention of staff



3.01

Antenatal care

Why is it important?

Antenatal care involves recording medical history; undertaking regular clinical assessments to identify individual needs; screening for a range of infections and abnormalities; providing support and information through pregnancy; offering social, lifestyle and self-care advice; and providing first-line management and referral if necessary (AHMAC 2012; WHO 2007). Regular antenatal care has been found to have a positive effect on, and provide the foundation for, good health outcomes for mothers and babies (Eades 2004; AHMAC 2012).

Antenatal care may be especially important for Aboriginal and Torres Strait Islander women as they are at higher risk of giving birth to pre-term and low birthweight babies and have greater exposure to other risk factors and complications such as anaemia, poor nutritional status, chronic illness, hypertension, diabetes, genital and urinary tract infections, smoking, and high levels of psychosocial stressors (de Costa et al. 2009; AHMAC 2012).

The *Clinical Practice Guidelines: Antenatal Care—Module 1* (AHMAC 2012) provide recommendations to support high-quality antenatal care and contribute to improved outcomes for all mothers and babies. The guidelines cover the first trimester of pregnancy, taking a woman-centred approach and include specific discussion of antenatal care for Aboriginal and Torres Strait Islander women to improve their experience and outcomes of care. Presentation for antenatal care within the first 10 weeks of gestation is suggested due to the high information needs early in pregnancy and to allow for timely assessment of risk factors. Depending on need, a schedule of 10 visits is recommended for a woman's first pregnancy, and 7 visits for subsequent uncomplicated pregnancies.

Many factors influence an Indigenous woman's engagement with, and early presentation for, antenatal care including availability of culturally appropriate services, the frequency (or absence) of local clinics, transport, and educational, socio-economic and financial issues. (Arnold et al. 2009; de Costa et al. 2009).

Findings

Perinatal data show that in 2011, 99% of Aboriginal and Torres Strait Islander

mothers accessed antenatal care services at least once during their pregnancy, which is similar to non-Indigenous mothers. Since 1998, there has been a statistically significant increase of 4% (for jurisdictions with long-term data: NSW, SA and Qld combined).

However, Aboriginal and Torres Strait Islander mothers, on average, accessed services later in the pregnancy and had significantly fewer antenatal care sessions. In 2011, half of all Indigenous mothers had their first antenatal session in the first trimester of pregnancy compared with 66% of non-Indigenous mothers. Access to care in the first trimester varied by state (61% in NSW compared with 36% in WA) and to a lesser degree by remoteness (e.g. 55% in inner regional areas and 47% in major cities and very remote areas). The gap between Indigenous and non-Indigenous mothers was largest in the NT (30 percentage points). Younger Indigenous mothers were less likely (45%) to have their first antenatal visit in their first trimester than those in age groups over 20 years (50–52%). The later a mother received antenatal care, the more likely she was to have a pre-term and/or low birthweight baby. Compared with women who received care in the first trimester, women who received no antenatal care were 3 times as likely to have a pre-term or low-weight baby and 6–7 times as likely to have a pregnancy that resulted in perinatal death, regardless of Indigenous status.

In 2012, for women who gave birth at 32 weeks gestation or more, 84% of Indigenous mothers had attended 5 or more antenatal sessions compared with 95% for non-Indigenous mothers (age-standardised) (AIHW 2014e).

The 2008 Social Survey data show that 11% of Indigenous mothers with children aged 0–3 years gave birth in a hospital or clinic that was 250 kms or more from their home. Most mothers (96%) had pregnancy checkups. These check-ups involved doctors (61%), nurses (48%), obstetricians (17%), and/or Aboriginal health workers (9%).

The national Key Performance Indicators data collection includes items on antenatal care provided by Australian Government-funded Indigenous primary health care organisations. In December 2013, of the 3,715 Indigenous mothers who were regular clients of these organisations, 38% attended their first antenatal visit in the critical first trimester.

Rates were highest in remote areas (44%) and lowest in very remote areas and major cities (32%) (AIHW 2014w).

The National Health Performance Authority reported that the percentage of Indigenous women who had at least one antenatal visit in the first trimester varied across regions ranging from 81% in the Nepean–Blue Mountains region (NSW) to 22% in the Grampians region (Vic) (NHPA 2014).

Implications

Earlier and more regular attendance for antenatal care is required to improve outcomes for Aboriginal and Torres Strait Islander mothers and their babies, as well as continued improvements in the quality of antenatal care received. The features that have been identified for quality primary maternity services in Australia include high quality care that is enabled by evidence-based practice, coordinated according to the woman's clinical needs and preferences, based on collaborative multidisciplinary approaches, woman-centred, culturally appropriate and accessible at the local level (AHMAC 2012).

Reviews of the literature have identified the following key success factors in Aboriginal and Torres Strait Islander maternal health programmes to complement the features detailed above: a specific Aboriginal and/or Torres Strait Islander programme; a welcoming and safe environment; outreach and home visiting; flexibility in service delivery and appointment times; transport; continuity of care and carer integration with other services e.g. AMS or hospital; a focus on communication, relationship building and trust; involvement of women in decision making; respect for Aboriginal and Torres Strait Islander culture; respect for privacy, dignity and confidentiality; family involvement and child care; appropriately trained workforce; Indigenous staff and female staff; informed consent and right of refusal; and tools to measure cultural competency (Dudgeon et al. 2010; Reibel et al. 2010; Herceg 2005; AHMAC 2012).

An audit of antenatal care in WA found that 75% of services failed to provide a model of care consistent with the principals of culturally competent care to Indigenous woman (Reibel et al. 2010). Studies have also demonstrated how sustained access to community-based, integrated, shared antenatal services improves perinatal outcomes for Indigenous women (NSW Health 2006; Panaretto et al. 2007).

Australian governments are investing in a range of initiatives aimed at improving child and maternal health. The *Clinical Practice Guidelines: Antenatal Care—Module 2*, is being developed on behalf of all governments and will cover the second and third trimesters of pregnancy. The guidelines are being developed with input from the Working Group for Aboriginal and Torres Strait Islander Women's Antenatal Care to provide culturally appropriate guidance and information for the health needs of Aboriginal and Torres Strait Islander pregnant women and their families.

The 2014–15 Budget provides Australian Government funding of \$94 million over three years from July 2015, for the *Better Start to Life* approach. This includes:

- \$54 million to increase the number of sites providing *New Directions: Mothers and Babies Services* from

85 to 136. These services provide Indigenous families with access to antenatal care, practical advice and assistance with parenting, and health checks for children.

- \$40 million to expand the *Australian Nurse–Family Partnership Program (ANFPP)* from 3 to 13 sites. The ANFPP aims to improve pregnancy outcomes by helping women engage in good preventive health practices, support parents to improve their child's health and development, and help parents develop a vision for their own future, including continuing education and finding work.

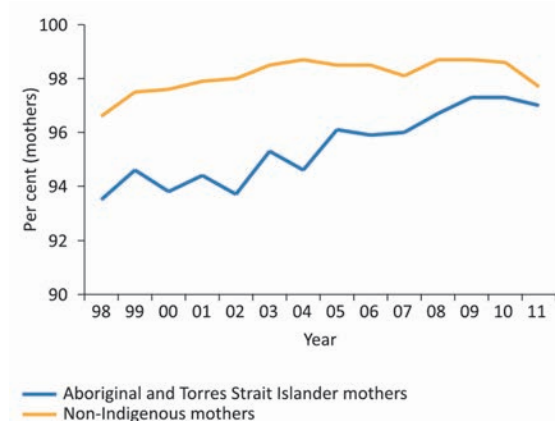
The 2014–15 Federal Budget also commits \$25.9 million in 2014–15 for a new *Indigenous Teenage Sexual and Reproductive Health and Young Parent Support* measure. Implemented by states and territories, these services will

provide information to young people to make informed decisions about their reproductive health and health behaviours during pregnancy.

In WA, the *Aboriginal Maternity Group Practice* programmes provide outreach services for pregnant Aboriginal women. The programmes are underpinned by steering groups in each district, which consist of community members and key local maternal and child health service providers. At the steering group meetings, the planning, implementation and evaluation of each of these programmes is discussed and decisions are made about service delivery. The cultural governance is defined by the community participants through every aspect of the programmes' delivery. The programmes have led to positive sustainable cultural change in practices in hospital as well as community settings.

Figure 3.01-1

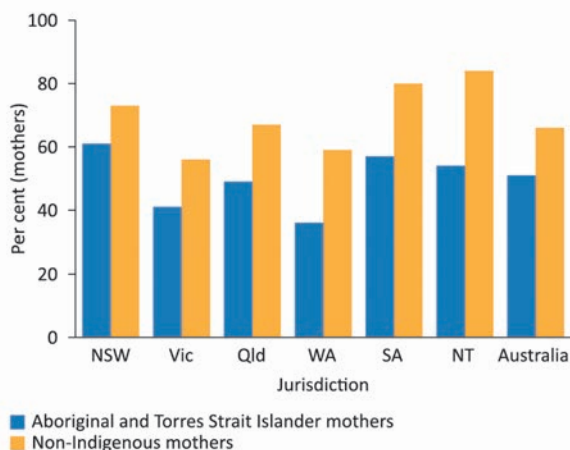
Age-standardised percentage of mothers who attended at least one antenatal care session, by Indigenous status, NSW, Qld and SA combined, 1998 to 2011



Source: AIHW/NPESU analysis of National Perinatal Data Collection

Figure 3.01-2

Age-standardised percentage of mothers whose first antenatal care session occurred in the first trimester, by Indigenous status and jurisdiction, 2011

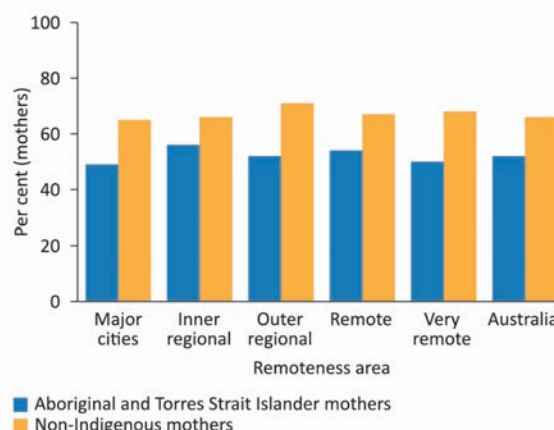


Note: Australia includes ACT and Tas

Source: AIHW/NPESU analysis of National Perinatal Data Collection

Figure 3.01-3

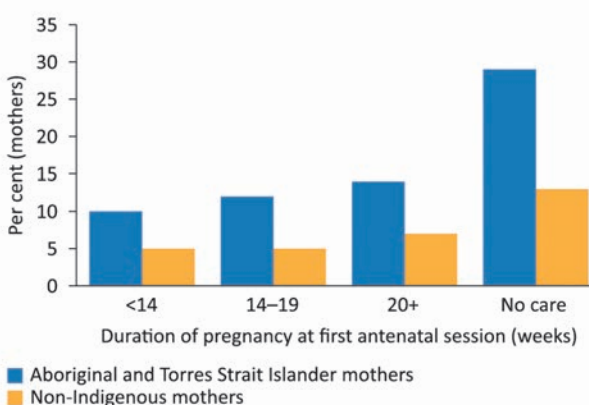
Age-standardised percentage of mothers whose first antenatal care session occurred in the first trimester, by Indigenous status and remoteness, 2011



Source: AIHW/NPESU analysis of National Perinatal Data Collection

Figure 3.01-4

Relationship between duration of pregnancy at first antenatal care session and age-standardised percentage of mothers with low birthweight babies, by Indigenous status, 2011



Source: AIHW/NPESU analysis of National Perinatal Data Collection

3.02

Immunisation

Why is it important?

Immunisation is highly effective in reducing morbidity and mortality caused by vaccine-preventable diseases. Childhood vaccination for diphtheria was introduced in Australia in 1932 and use of vaccines to prevent tetanus, pertussis (whooping cough) and poliomyelitis became widespread in the 1950s, followed by vaccines for measles, mumps and rubella in the 1960s. In more recent years, vaccines have been included for hepatitis B, Haemophilus influenza type b (Hib), pneumococcal disease, meningococcal C, varicella (chicken pox), rotavirus, human papillomavirus (HPV) and influenza. Since the introduction of childhood vaccination, deaths from vaccine-preventable diseases have fallen for the general population by 99%. Vaccinations are estimated to have saved some 78,000 lives (Burgess 2003) and have been effective in reducing the disease disparities between Indigenous and non-Indigenous populations, despite differences in the socio-economic circumstances of these populations (Menzies et al. 2009).

There are variations in Indigenous identification in the immunisation records and enrolments used in the denominator. These variations can affect the accuracy of immunisation data.

Findings

In December 2013, vaccination coverage for Aboriginal and Torres Strait Islander children at 1 year of age was around 4 percentage points lower than other Australian children (86% compared with 90%). By 2 years of age, the difference was within 1 percentage point (91.4% of Indigenous children compared with 92.2% for other children). By 5 years of age the Indigenous rate (92.8%) was slightly higher than for other children (91.7%). Coverage rates for Indigenous children were highest in the NT and lowest in SA for children in all age groups 1, 2 and 5 years.

Between 2001 and 2013 there has been no change detected in the proportion of Aboriginal and Torres Strait Islander children or other Australian children who were fully immunised at 1 year of age. Over the same period, however, there has been a significant increase detected for 2-year-olds (both Indigenous and other children). There was an increase between 2008 and 2013 for Indigenous children

aged 5 years (from 76% to 92%). Note that the age at which older children are assessed has changed from 6 years to 5 years of age and comparisons of trends over time are affected by the introduction of new vaccines on the schedule.

In 2012–13, an estimated 57% of Aboriginal and Torres Strait Islander peoples aged 50 years and over reported they had been vaccinated against influenza in the last 12 months, similar to the proportion in 2004–05 (60%). The 2009 Adult Vaccination Survey collected data on influenza coverage for all Australians. In 2009, coverage in the target group for Australians aged 65 years and over was 75% (AIHW 2011a). In addition, 29% of Indigenous Australians aged 50 years and over had been vaccinated against invasive pneumococcal disease in the last 5 years, a decrease from 34% in 2004–05. Coverage in the target group for all Australians aged 65 years and over was 54% in 2009. A higher proportion of Indigenous Australians aged 50 years and over living in remote areas were vaccinated against influenza in the last 12 months and invasive pneumococcal disease in the last 5 years (68% and 35% respectively) than in non-remote areas (54% and 27% respectively). Adult vaccinations are also targeted at younger Aboriginal and Torres Strait Islander peoples who have various risk factors, such as chronic medical conditions. In 2012–13, 28% of Indigenous Australians aged 15–49 years were vaccinated for influenza in the previous year and 10% had received a pneumococcal vaccination in the previous five years. Indigenous adults who had diabetes or circulatory disease were more likely to have had recent vaccinations than those without those diseases.

Implications

Achieving good immunisation coverage reflects the strength and effectiveness of primary health care. Immunisation coverage for Aboriginal and Torres Strait Islander children is high. There are still gaps in coverage at 1 year of age; however, Indigenous and non-Indigenous children have similar coverage at ages 2 and 5 years. Disparities in the timeliness of vaccinations between Indigenous and non-Indigenous children remain (Naidu et al. 2012).

Vaccinations have contributed to reductions in vaccine-preventable diseases in the Indigenous population, such as hepatitis A, invasive pneumococcal disease (IPD), Meningococcal C and Haemophilus influenza type B (Naidu

et al. 2012). However, increasing rates of IPD in Indigenous Australians aged 50 years and over, high hospitalisation rates for rotavirus in the NT and much higher rates of hepatitis B for Indigenous Australians remain areas for focus.

The *National Immunisation Program* (NIP) provides free childhood vaccines to eligible Australians. In addition to the standard childhood schedule, the NIP provides additional pneumococcal vaccine and hepatitis A vaccine to Indigenous children living in high-risk areas. The NIP also provides free influenza vaccines for all Aboriginal and Torres Strait Islander people aged 15 and over and free pneumococcal vaccines for those aged 50 and over and those medically at risk in the 15–49 age group.

The *National Human Papillomavirus (HPV) Vaccination Program* commenced in 2007 for females and was extended to males in February 2013. It is delivered through an ongoing, school-based programme to students aged 12–13 years. A catch up programme for males aged 14–15 years was available until the end of 2014.

Communication activities to support the *HPV Vaccination Program* and the *Influenza Vaccination Program* include specific components for Aboriginal and Torres Strait Islander communities. These components include distribution of tailored resources to schools and stakeholders, as well as targeted public relations activities and social media engagement.

The Australian Government has provided facilitation incentive payments to state and territory governments through the *National Partnership Agreement on Essential Vaccines* (NPEV) since 2009. The payments encourage states and territories to maintain or increase vaccine coverage for Indigenous Australians. Jurisdictions have shown the greatest improvement in vaccination rates for five-year-olds. A review of the NPEV was conducted in 2013–14 and found that the NPEV has been effective in providing the funding and delivery of a national coordinated and integrated approach to maintaining and improving effective immunisation in Australia.

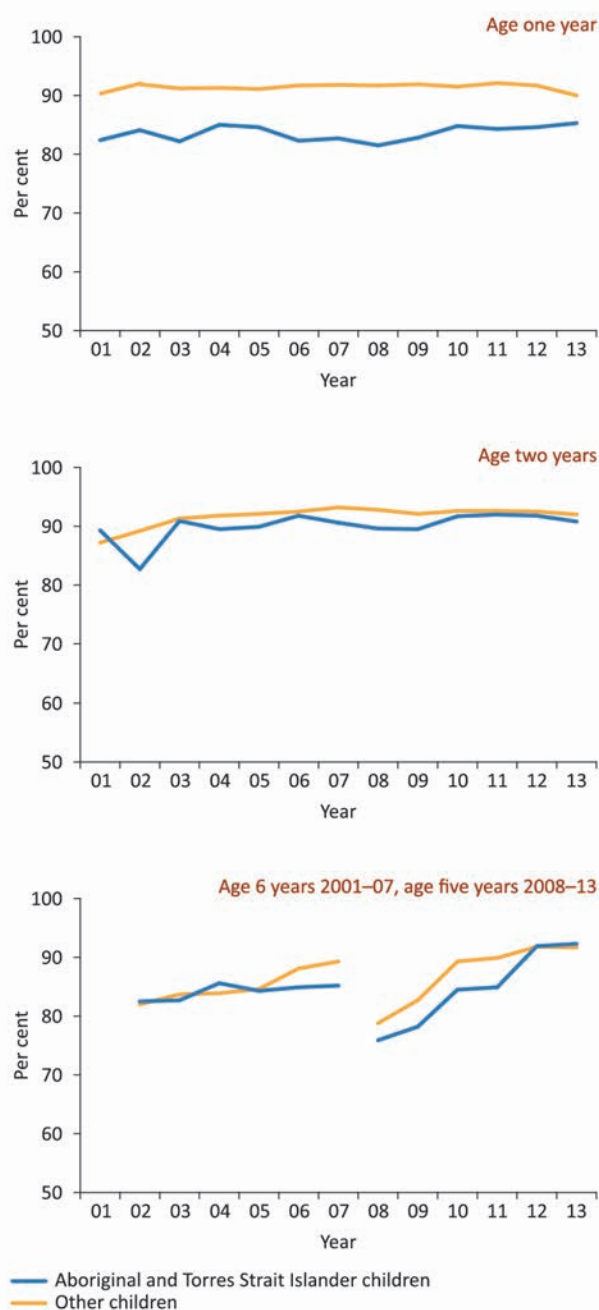
South Australia monitors coverage rates of Indigenous children, particularly at one year of age, given that their rates are lower than national levels for Aboriginal children, but their rates are also considerably lower than rates for non-Aboriginal children. A range of recall

and promotional resources are being developed for clients and primary health providers to increase knowledge and management of vaccination timeliness. The programme closely monitors

quarterly releases from the Australian Childhood Immunisation Register to identify trends and review or develop new approaches aimed at mothers and children most at risk.

Figure 3.02-1

Proportion of children fully vaccinated at age 1 year, 2 years and 5/6 years, NSW, Vic, SA, WA and the NT combined, by Indigenous status, 2001 to 2013



Source: AIHW analysis of Australian Childhood Immunisation Register, Department of Human Services

Table 3.02-1

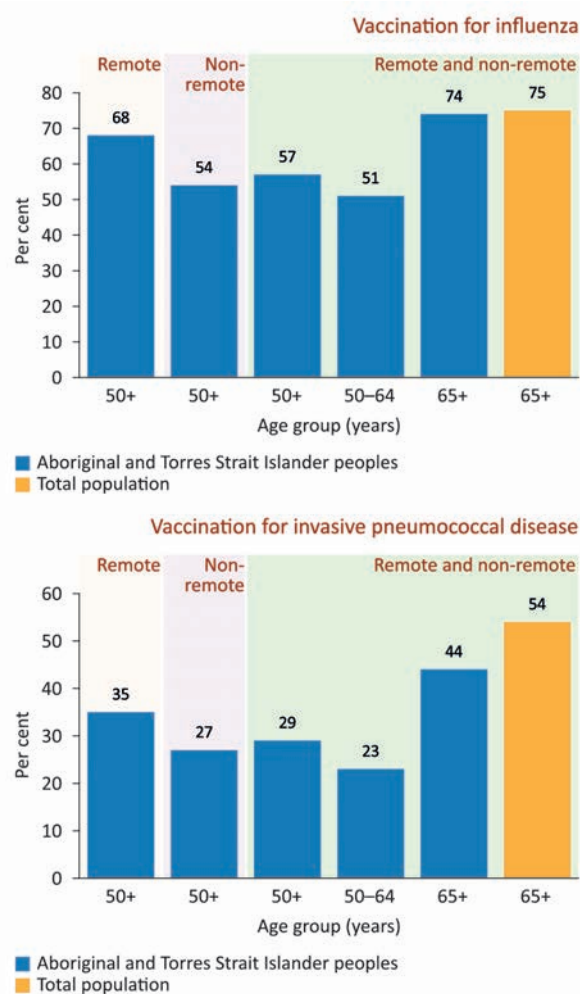
Proportion of children fully vaccinated at age 1 year, 2 years and 5 years, by Indigenous status and state/territory, at 31 December 2013

	Age One Year		Age Two Years		Age Five Years	
	Indig.	Other	Indig.	Other	Indig.	Other
NSW	87.0	89.6	90.7	91.8	93.2	92.0
Vic	82.8	90.6	90.0	92.9	93.4	92.4
Qld	87.9	91.3	92.3	92.9	93.8	91.8
WA	82.2	90.0	89.6	90.2	90.8	89.4
SA	80.0	90.1	87.3	92.5	83.1	91.1
Tas	85.3	89.5	93.2	93.7	93.2	92.7
NT	88.7	90.8	95.7	90.7	96.7	89.5
ACT	82.9	93.6	91.2	93.7	90.5	90.9
Australia	86.1	90.3	91.4	92.2	92.8	91.7

Source: AIHW analysis of Australian Childhood Immunisation Register, Department of Human Services

Figure 3.02-2

Proportion of Aboriginal and Torres Strait Islander persons aged 50 years and over and total persons aged 65 years and over: immunisation status 2012–13 and 2009 for total population



Source: ABS and AIHW analysis of 2012–13 AATSIHS and 2009 Adult Vaccination Survey (AIHW 2011a)

3.03

Health promotion

Why is it important?

Aboriginal and Torres Strait Islander peoples currently experience higher levels of morbidity and mortality from potentially avoidable conditions than other Australians. In 2008–12, 75% of Indigenous deaths before the age of 75 years were potentially avoidable, with half potentially preventable through primary intervention (prevention). Compared with non-Indigenous Australians, mortality rates for avoidable and preventable deaths were 3 times as high (see measure 1.24). Exposures to risk through behaviours such as smoking were also higher (see Health Behaviour measures).

Health promotion is the process of enabling people to increase control over their health and its determinants, and thereby improve their health (WHO 2005). Health promotion activities are designed to improve or protect health within social, physical, economic and political contexts. Health promotion includes public policy interventions (e.g. packaging of cigarettes, seat belt laws), information to support healthy lifestyles (e.g. smoking, alcohol and drug use, physical activity, diet), social marketing (e.g. sunscreen, safe sex) and mass media campaigns (e.g. drink-driving, road safety). Health promotion also includes empowering individuals, strengthening community capacity and addressing determinants of health.

Currently there are limited methods for measuring the nature, level, and reach of health promotion programmes and activities.

Findings

Estimating expenditure on health promotion for Indigenous Australians is difficult as it is often embedded within other funding sources and programmes (e.g. funding for GPs, primary health care and mainstream health promotion activities). In 2010–11, state and territory government expenditure on public health for selected health promotion activities was estimated to be around \$41 for each Indigenous Australian and \$15 for each non-Indigenous Australian. In addition, expenditure for the prevention of hazardous and harmful drug use was estimated to be \$39 per Indigenous Australian and \$6.80 per non-Indigenous Australian. Australian Government expenditure on public health services

was \$106 per person for Indigenous Australians; however, this includes a broad set of activities from which health promotion could not be separated out.

In the 2012–13 Health Survey, 46% of Indigenous Australians aged 15 years and over who had consulted a doctor in the last 12 months reported discussing lifestyle issues. Issues discussed included reaching a healthy weight (50%), improving diet (44%), reducing or quitting smoking (43%), increasing physical activity (30%), drinking alcohol in moderation (16%), safe sexual practices (12%) and family planning (10%). Indigenous Australians in the NT and in remote areas were less likely to have accessed a doctor in the last 12 months and also less likely to have discussed lifestyle issues than those living in other areas. Females were more likely to have discussed lifestyle issues with a doctor than males (50% and 41% respectively), while discussions on drinking alcohol in moderation were more common for males (26%) than for females (8%).

Based on GP survey data for the period April 2008 to March 2013, selected clinical treatments related to health promotion accounted for 31% of all clinical treatments and therapeutic procedures provided by GPs to Indigenous Australians. This included general ‘advice/education’, which accounted for an estimated 11% of all clinical and therapeutic treatments, followed by ‘counselling/advice related to nutrition and weight’ (6%) and ‘advice/education/treatment’ (5%). ‘Counselling/advice related to smoking’ was provided in 3% of all clinical and therapeutic treatments provided to Indigenous Australians. After adjusting for differences in the age structure of the two populations, the rate at which GPs provided counselling, advice and education about smoking was 2.4 times higher, and about alcohol was 2 times higher, at encounters with Indigenous patients than those with other Australian patients. Overall, the rates of GP treatments for selected clinical health promotion were similar between Indigenous and other Australian patients (1.1 times).

In 2012–13, nearly all (99.5%) Aboriginal and Torres Strait Islander primary health care services offered health promotion/education programmes, 88% maternal and child health care, 86% antenatal care, 85% child immunisation, 79% healthy lifestyle programmes, 78% adult immunisation promotion, 69% sexual

health promotion and 65% substance-use/drug and alcohol programmes. Aboriginal and Torres Strait Islander primary health care services offered a range of health promotion activities including antenatal groups (78%), physical activity/healthy weight programme activities (59%), and living skills groups such as dietary and nutrition (55%). Health promotion activities are also a key feature of programmes run by Aboriginal and Torres Strait Islander substance-use-specific services, with 65% running men’s groups and 62% women’s groups, living skills groups and physical activity/healthy weight programmes.

As of June 2011, 88% of organisations funded through the former *Healthy for Life* programme provided brief interventions for smoking and 86% for alcohol, while 93% had programmes for nutrition, and 92% for physical activity and emotional wellbeing.

Implications

Evidence on the effectiveness of health promotion is mixed across a range of settings and disease types with some approaches more effective than others for different population groups (Jackson et al. 2005; Liu et al. 2012). A recent literature review found that while Indigenous health promotion tools were widely available, only 15% had been evaluated, and only half of these evaluations were considered comprehensive (McCalman et al. 2014). While studies can model the continued effectiveness of health promotion interventions, there is limited evidence on long-term behavioural change (Merkur et al. 2013). A small study of urban Indigenous young people found no change in behaviours but some change in knowledge and attitudes following health promotion interventions in school (Malseed et al. 2014). At the heart of health promotion is effective communication that takes into account language and world view to support people to live healthy lives (Vass et al. 2011).

Factors in designing effective health promotion interventions for Indigenous communities include: involving local Indigenous people in design and implementation of programmes; acknowledging different drivers that motivate individuals; building effective partnerships between community members and the organisations involved; cultural understanding and mechanisms for effective feedback to individuals and families; developing trusting relationships, community ownership and

support for interventions (Black 2007). Family-centred approaches across the life course have also been recommended in the prevention of chronic disease (Griew et al. 2007).

Aboriginal and Torres Strait Islander peoples are a major target audience of the *National Tobacco Campaign* (NTC), and specific advertising (*Break the Chain*) has been developed and placed in a range of Indigenous and mainstream media channels. Evaluation of this campaign found that it resonated well with the target audience, with strong levels of recall of messages about smoking affecting others (Department of Health & ORIMA 2013a).

In addition the *Quit for You, Quit for Two* component of the NTC targeting pregnant women and their partners included materials depicting Indigenous women. Evaluation research found that these materials effectively communicated their key messages to Aboriginal and Torres Strait Islander audiences. The campaign successfully promoted positive attitudes and intentions towards not smoking (Department of Health & ORIMA 2013b).

The Regional Tackling Smoking and Healthy Lifestyle teams deployed under the *Tackling Indigenous Smoking* programme, a component of the Australian Government's *Indigenous Australians' Health Programme* aim to actively promote quitting, smoke-free

environments and encourage healthier lifestyle choices through facilitating culturally secure community education, health promotion and social marketing activities. The Government is committed to ensuring that programmes to address high rates of smoking are based on the most up-to-date evidence, and are delivered in a way that is appropriate, effective and efficient. As a result, the Government is undertaking an independent review of the *Tackling Indigenous Smoking* programme in 2014–15. The review will establish a new evidence base and provide recommendations on the best way to reduce Aboriginal and Torres Strait Islander smoking rates.

There was a decline in Indigenous smoking rates between 2002 and 2012–13 (see measure 2.15) following a period of stable Indigenous smoking rates. This decline suggests that the targeted tobacco control measures introduced over this period may be starting to support healthy lifestyle choices by Indigenous Australians.

The *Care for Kids' Ears* initiative aims to increase awareness of ear disease and hearing loss in Aboriginal and Torres Strait Islander communities. It provides information resources for use by health professionals, and in communities and schools. The smartphone apps and kiosks across 32 Aboriginal and Torres Strait Islander primary health

care services provide a resource across 22 Indigenous languages on key ear health information (available from the campaign website). Evaluation research demonstrates a strong level of awareness, with four in ten mothers able to identify the campaign, and those exposed to the messages having had an increased knowledge of key symptoms and preventive behaviours (DoHA 2013).

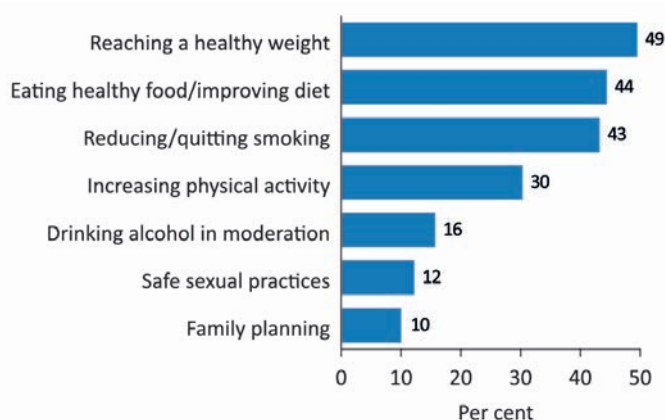
Communications activities to support the *HPV Vaccination Program* and the *Influenza Vaccination Program* include specific components for Aboriginal and Torres Strait Islander communities. These components include distribution of tailored resources to schools and stakeholders, as well as targeted public relations activities and social media engagement.

The *Strong Spirit Strong Future Healthy Women and Pregnancies* project promotes the uniqueness of Aboriginal culture as a central strength in guiding efforts to manage and reduce alcohol and other drug-related harm in Aboriginal communities in WA. Culturally secure resources, workforce development initiatives and community awareness campaigns are key components of the project.

Health services juggle resources for health promotion against the immediate need of patients for treatment and disease management (Baum et al. 2013)

Figure 3.03-1

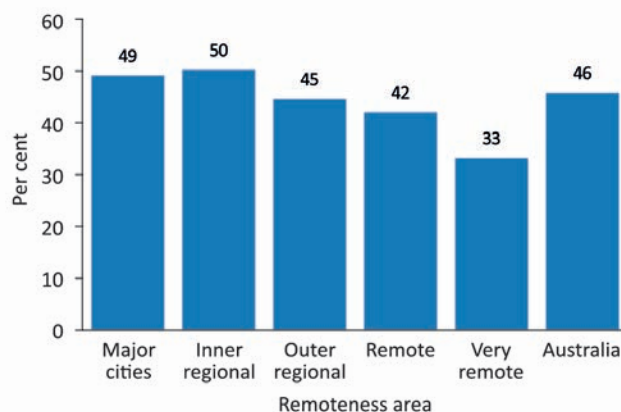
Types of lifestyle issues discussed with GP/health professional in last 12 months, Indigenous Australians aged 15 years and over, 2012–13.



Source: ABS and AIHW analysis of AATSIHS 2012–13

Figure 3.03-2

Proportion of Indigenous Australians aged 15 years and over who discussed lifestyle issues with GP/health professional in last 12 months, by remoteness, 2012–13



Source: ABS and AIHW analysis of AATSIHS 2012–13

3.04

Early detection and early treatment

Why is it important?

Early detection is the discovery of a disease or condition at an early stage of its development or onset, usually before symptoms occur. Early detection may occur for individual patients, where clinically indicated, or for all members of a population through screening programmes. In Australia, primary health care providers, including Aboriginal and Torres Strait Islander health services and GPs, have a key role in early detection and early treatment programmes. Early detection and treatment programmes are most effective when there are systematic approaches to ensuring assessment and screening occurs regularly and at recommended intervals.

Medicare Benefits Schedule (MBS) health assessment items for Aboriginal and Torres Strait Islander peoples aim to encourage early detection, diagnosis and intervention for common and treatable conditions that cause morbidity and early mortality.

Breast, bowel and cervical cancer screening programmes are designed to detect cancer early (breast and bowel cancer) or prevent its occurrence in the first place (bowel and cervical cancer). National programmes for breast and cervical screening were implemented in Australia in the early 1990s, advising two-yearly screening for women aged 50–69 and 20–69 years respectively. The national programme for bowel cancer screening was first implemented in 2006. Lowered mortality rates for each of these cancers have been attributed, at least in part, to these programmes (DoHA 2009; AIHW 2014i; AIHW 2014u). Research shows that biennial bowel cancer screening can save up to 500 lives annually (Pignone et al. 2011).

Participation by Aboriginal and Torres Strait Islander peoples in *BreastScreen Australia*, the *National Cervical Screening Program*, and the *National Bowel Cancer Screening Program* (NBCSP) has been at a lower rate than non-Indigenous participation (Reath et al. 2008; AIHW 2014u; AIHW 2014i).

Findings

Medicare health assessment items for Indigenous Australians aged 55 years and over were introduced in 1999, for those aged 15–54 years in 2004, and for those aged 0–14 years in 2006. Measures to increase take-up of health assessments by those aged 15 years and over were

introduced in 2009–10. Trend analysis shows a statistically significant increase in health assessments for all ages between July 2009 and June 2014 (the rate has nearly tripled). There has been acceleration in the rate of change since 2009–10 (annual average change of 35 per 1,000, compared with 26 per 1,000 for the period 2006–07 to 2013–14).

In 2013–14, around 47,400 health assessments were undertaken for children aged 0–14 years, representing around 19% of children in the target group. There were about 80,600 health assessments provided for Indigenous Australians aged 15–54 years (21% of this population) and 22,300 for those aged 55 years and over (representing 33% of this population). Health assessments through Medicare are also available to all Australians aged 75 years and over, with 32% of this population having an assessment in 2013–14. In this period, there were also 4,440 MBS Healthy Kids Checks claimed for Indigenous children (available to all children in conjunction with their 4-year-old immunisation).

In 2012–13, Indigenous Australians aged 50 years and over with no current diagnosis for diabetes were 1.2 times as likely as non-Indigenous Australians to have been tested for diabetes/high sugar levels in the last three years (67% compared with 55%).

According to the latest available data on screening for breast cancer (2011–12), 33% of Indigenous women aged 50–69 years had participated in screening compared with 55% of other Australian women. Rates for Indigenous women were highest in Qld (43%) and lowest in the NT (26%). In the period 1999–2000 to 2011–12, there was a small (4%) significant increase in the proportion of Indigenous women screened. In the 2012–13 Health Survey, 79% of Indigenous women aged 50–69 years reported ever having a mammogram.

In the 2012–13 Health Survey, 58% of Aboriginal and Torres Strait Islander women aged 20–69 years reported having a pap smear test at least every two years. In 2011–12, 58% of all Australian women aged 20–69 years were recorded in the national cervical screening register (AIHW 2014i). Indigenous women aged 20–69 years living in very remote areas were more likely to report having a regular pap smear test than those in major cities (69% and 60% respectively).

In the latest available data on bowel cancer screening (2012–13), around 321,400 Australians (aged 50, 55 and

65) participated in the NBCSP with 2,018 (0.6%) identifying as Indigenous. Participants recorded as Indigenous were more likely to receive a positive (i.e. potentially abnormal) test result than non-Indigenous participants (11% and 7% respectively). For those who received a positive test result, rates of colonoscopy follow-up were lower for Indigenous than non-Indigenous participants (59% compared with 71%). Rates of follow-up with a primary health care practitioner were similar for both Indigenous and non-Indigenous participants (56% and 60% respectively) (AIHW 2014u). A recent analysis of the NBCSP suggests that factors contributing to the disparity in participation rates include enrolment via Medicare records, disadvantaging those who are not registered; distribution of screening kits by post, disadvantaging those without a fixed address; the nature of the test; cultural perceptions of cancer; and lack of information about bowel cancer and screening (Christou et al. 2010). In the 2012–13 Health Survey, for those aged 50–74 years, 18% of Indigenous males and 11% of Indigenous females reported having ever participated in bowel cancer screening tests. For Indigenous males aged 50 years and over, 64% reported having ever been tested for prostate cancer.

December 2013 national Key Performance Indicators data, from Australian Government-funded Indigenous primary health care organisations, show that 27% of Indigenous children aged 0–4 years who were regular clients of these organisations had received an MBS health assessment in the previous 12 months. For adults aged 25 years and over, 40% of eligible regular clients had received a health check in the previous 24 months. In addition, 32% of regular female clients had a cervical screening in the previous 2 years, 39% in the previous 3 years and 46% in the previous 5 years. The NT and very remote areas had the highest proportions screened (AIHW 2014w).

Implications

Early detection and early treatment through primary health care has significant benefits for those at risk of disease. Identification of Indigenous patients is the first step in providing access to Aboriginal and Torres Strait Islander-specific health initiatives, including the additional MBS, Pharmaceutical Benefits Scheme (PBS), and immunisation programmes.

The Australian Government provides GP health assessments for Aboriginal and Torres Strait Islander peoples under

the MBS, along with follow-on care and incentive payments for improved chronic disease management and cheaper medicines through the PBS. The *Practice Incentives Programme—Indigenous Health Incentive* aims to support general practices and Indigenous health services to provide better health care for Indigenous patients including identifying the Indigenous status of patients and best practice management of chronic disease.

The *Indigenous Australians' Health Programme* commenced 1 July 2014, (consolidating existing primary health care base funding, child and maternal health programmes, *Stronger Futures in the Northern Territory* and the *Aboriginal and Torres Strait Islander Chronic Disease Fund*) to focus on local health needs and better support efforts to achieve health equality between Indigenous and non-Indigenous Australians. Chronic disease activities provided through the *Indigenous Australians' Health Programme* include nationwide tobacco reduction and healthy lifestyle promotion

activities; a care coordination and outreach workforce based in Medicare Locals and Aboriginal Community Controlled Health Organisations; and GP, specialist and allied-health outreach services serving urban, rural and remote communities. All of these services can be used to assist with early detection and treatment of chronic diseases for Indigenous Australians.

Uptake of health assessments by Indigenous Australians across all age groups has increased significantly since July 2009 (now reaching 19%–33% of the population in these age-groups). There has also been an increase in chronic disease management items and other aspects of primary health care (see measures 3.05 and 3.14).

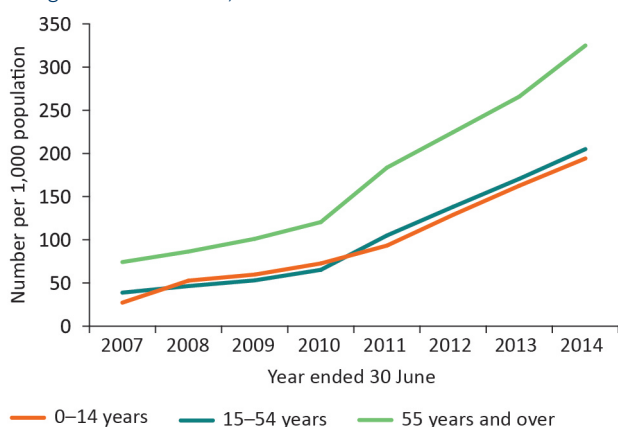
Given the lower rate of participation of Indigenous Australians in the breast, bowel and cervical cancer screening programmes better ways of encouraging regular screening are needed (Christou et al. 2010).

In the 2014–15 Budget, the Australian Government committed to the roll-out of a biennial bowel screening interval for all Australians aged 50–74 years of age from 2015 to 2020. Following the successful Aboriginal and Torres Strait Islander community pilots in 2008–2011, further funding (over three years) has been allocated to pilot the offer of bowel cancer screening to eligible Indigenous Australians aged 50–74 years through integration with existing primary health care/chronic disease prevention mechanisms. The pilot will provide bowel cancer information, risk assessment, and offer of faecal occult blood test screening to individuals across Australia through Indigenous health clinics and medical services.

Cervical screening will remain vital for many decades, as the current HPV vaccines are not effective against all types of the virus that cause cervical cancer. A barrier to reporting on cervical screening is that pathology request forms do not currently include provision for Indigenous status to be recorded in all jurisdictions.

Figure 3.04-1

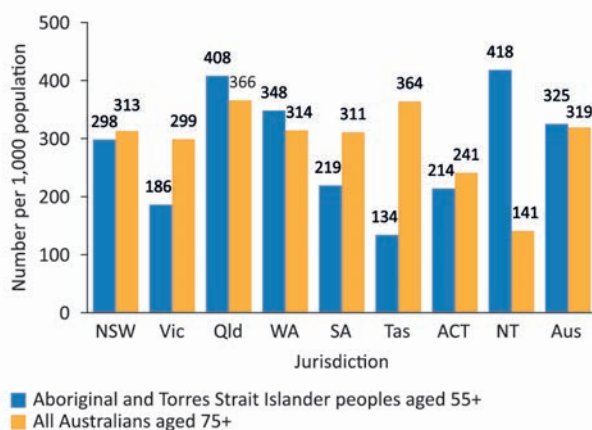
MBS health assessment claim rates, by selected age groups, Indigenous Australians, 2006–07 to 2013–14



Source: AIHW analysis of Medicare Australia data

Figure 3.04-2

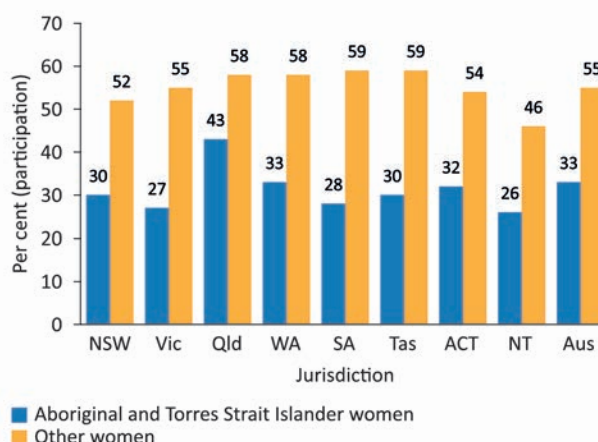
MBS health assessment claim rates, Aboriginal and Torres Strait Islander peoples aged 55 years and over, all Australians aged 75 years and over, by state/territory, 2013–14



Source: AIHW analysis of Medicare Australia data

Figure 3.04-3

Participation rates for BreastScreen Australia, women aged 50–69 years, by Indigenous status and state/territory, 2011–12



Source: AIHW analysis of BreastScreen Australia data

3.05

Chronic disease management

Why is it important?

Chronic diseases are the major causes of morbidity and mortality among Aboriginal and Torres Strait Islander peoples (see measures 1.02 and 1.23). Better management of these conditions is a key factor in meeting the target of closing the life expectancy gap between Indigenous and non-Indigenous Australians within a generation. Chronic disease is estimated to be responsible for 70% of the health gap (Vos et al. 2007). Effective management of chronic disease can delay the progression of disease, improve quality of life, increase life expectancy, and decrease the need for high-cost interventions leading to net savings (Thomas, SL et al. 2014).

Good quality care for people with chronic disease often involves multiple health care providers across multiple settings and the engagement of the client and their family in self-management of the condition (NHPAC 2006). Typically, the primary health care provider plays a central role through: identifying patients with asymptomatic disease through systematic or opportunistic screening; developing a management plan with the patient and their family; regularly assessing the extent to which the chronic illness is well controlled; conducting regular checks to identify early signs of complications; and referring to specialist care where this is warranted. To play an effective role in chronic disease management, primary health care services need to take an organised approach, reflecting evidence-based guidelines, underpinned by participation in clinical quality improvement programmes (Panaretto et al. 2014; Wagner et al. 1996; Bodenheimer et al. 2002). The MBS includes items for GP management plans (GPMPs) and team care arrangements (TCAs) to support a structured approach to management of patients with chronic or terminal conditions.

Findings

Between 2009–10 and 2013–14 there has been a statistically significant increase in the rate of TCAs and GPMPs claimed by Indigenous Australians under Medicare. Over this five-year period, Medicare services claimed by Indigenous Australians for these items have doubled (from 55 to 114 per 1,000 for GPMPs; and from 44 to 96 per 1,000 for TCAs).

In 2013–14, rates were higher for these services for Indigenous Australians than for non-Indigenous Australians (1.6 and 1.7 times respectively). Indigenous Australians also had a higher rate of nurse/Aboriginal health worker consultations claimed (236 per 1,000 compared with 39 per 1,000).

Information on the management of chronic conditions by Indigenous primary health care services is collected in the Online Services Report. In 2012–13, of the 205 services, 79% employed a doctor, 98% provided at least one care planning activity for the management of chronic illness, 95% kept track of clients needing follow-up and 97% used patient information and recall systems that provide reminders for follow-up and health checks.

The national Key Performance Indicators (nKPIs) monitor the performance of the Australian Government-funded Indigenous primary health care organisations against the key process of care and health outcome performance indicators. In December 2013, around 28,000 regular clients of these organisations had Type 2 diabetes. In the six months to December 2013, 49% of these clients had their blood glucose levels tested, with 33% reporting a blood sugar result in the recommended range (the same as in December 2012); and 64% had their blood pressure assessed, with 44% reporting a result in the recommended range (up from 42% in December 2012). Performance against such process of care measures varies widely across organisations. For example, there were 11 organisations that had tested less than 10% of their diabetic patients for HbA1c levels in the previous six months and 9 organisations that had tested more than 90% of their diabetic patients (AIHW 2014w).

Data on care provided to Indigenous clients with coronary heart disease was last provided in June 2011 for the Healthy for Life collection (replaced by the nKPIs). In the six months to June 2011, over 80 Indigenous primary health care organisations provided data on 4,200 Indigenous regular clients with coronary heart disease. Of these clients, 66% had their blood pressure tested in the previous six months and of those, 52% had results in recommended range.

In the 2012–13 Health Survey, 69% of Indigenous Australians with diabetes reported having a blood test to check diabetes control in the previous 12 months and 68% had their feet checked

compared with 72% and 74% respectively for non-Indigenous Australians. To manage their diabetes, 30% reported using insulin and 80% had taken lifestyle actions (diet, weight loss, and exercise). Of those who knew they had diabetes, 61% had blood tests results indicating their diabetes was not well managed (compared with 44% for non-Indigenous Australians). This was more common among Indigenous males (72%) than females (53%). Of those with circulatory conditions, 91% reported having their blood pressure checked and 68% their cholesterol checked in the previous 12 months compared with 94% and 76% respectively for non-Indigenous Australians.

Implications

A range of studies have identified gaps and variation in the quality of chronic disease management in primary care settings for both Indigenous and non-Indigenous patients (Peiris et al. 2009; Webster et al. 2009; Schierhout et al. 2010; Panaretto et al. 2013). Organised chronic disease management in primary health care services can lead to improved health outcomes (Hoy et al. 1999; Hoy et al. 2000; Rowley et al. 2000; McDermott et al. 2003; Bailie et al. 2007). However, there are significant challenges in sustaining improvements in the management of chronic illnesses (Urbis Pty Ltd 2009). Strategies to address these challenges include transparent work-practice systems backed by written disease management guidelines and manuals, systematic support to buffer the effects of local factors, appropriate staffing and training policies, delineated roles for all practitioner types, and raising awareness in communities through education and health promotion with strong local participation (Bailie et al. 2004).

A range of quality improvement approaches are being implemented across general practice and Aboriginal and Torres Strait Islander primary health care services. Both the NT and Qld have developed indicator reporting with Indigenous health services that have recently been harnessed in the development of the nKPI collection. The *Australian Primary Care Collaboratives* and the *Audit and Best Practice for Chronic Disease Program* (now part of *One21seventy*) have a continuous quality improvement focus.

Australian governments are supporting various initiatives to improve chronic disease management. The *Indigenous Australians' Health Programme* started on 1 July 2014, to improve the focus

on local health needs and better support efforts to achieve health equality (see the Policy and Strategies section). Chronic disease programmes provided through the *Indigenous Australians' Health Programme* include nationwide tobacco reduction and healthy lifestyle promotion activities, a care coordination and outreach workforce based in Medicare Locals and Aboriginal Community Controlled Health Organisations, and GP, specialist and allied health outreach services serving urban, rural and remote communities.

The *Practice Incentives Programme—Indigenous Health Incentive* (PIP-IHI) aims to support general practices and Aboriginal and Torres Strait Islander health services to provide better health care for Aboriginal and Torres Strait Islander patients, including best practice management of chronic disease. The PIP-IHI includes payments to GPs for registering with the programme, for

registering Indigenous patients with chronic disease and for providing best practice management of chronic disease.

The Medicare Chronic Disease Management items, including GPMPs and TCAs, are used by doctors to plan and coordinate the care of patients who have chronic or terminal medical conditions. These MBS items support the early identification and management of health issues for both Aboriginal and Torres Strait Islander and non-Indigenous Australians. Indigenous patients are also able to access MBS health assessment items. Following a MBS health assessment, Medicare-rebateable follow-up allied health, practice nurse and Aboriginal and Torres Strait Islander health practitioner service items are also available, on referral from a GP, to people of Aboriginal and Torres Strait Islander descent.

Medicare data has shown an increase in health assessments and chronic disease

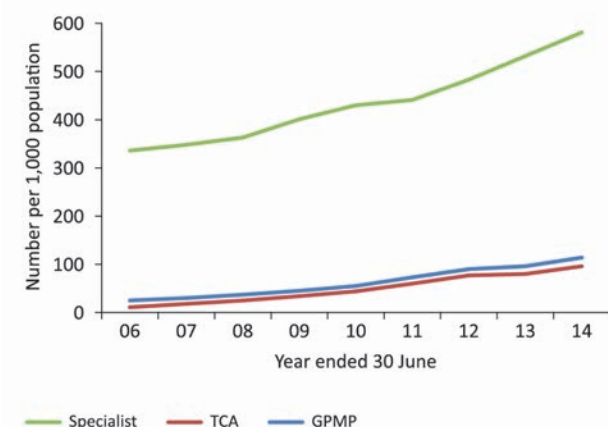
management items for Indigenous Australians over the last 5 years. This rise is due to a number of factors, including activities undertaken as part of the *Indigenous Chronic Disease Package*—now part of the *Indigenous Australians' Health Programme*.

The *Medical Outreach Indigenous Chronic Disease Programme* aims to improve access to medical specialist, GP, allied and other health services for Aboriginal and Torres Strait Islander peoples. A total of \$92.4 million over 3 years from 2013–14 has been committed for this measure.

The *Quality Assurance for Aboriginal and Torres Strait Islander Medical Services* (QAAMS) programme supports culturally appropriate and clinically effective management of diabetes patients in Aboriginal and Torres Strait Islander communities. This occurs through training, technical support and quality assurance for 'point of care' pathology testing (e.g. HbA1c).

Figure 3.05-1

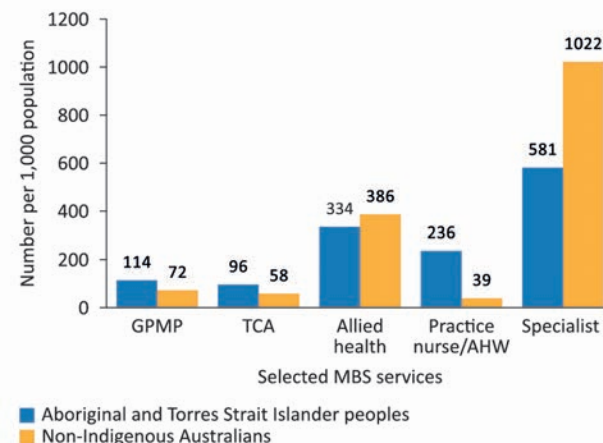
Age-standardised rates of selected MBS services claimed by Indigenous Australians, 2005–06 to 2013–14



Source: Medical Benefits Division, Department of Health

Figure 3.05-2

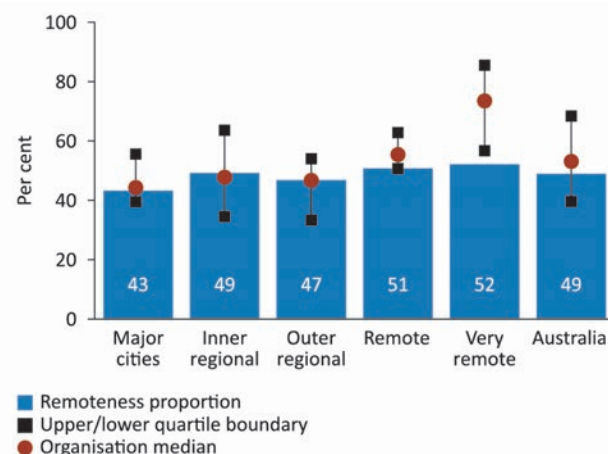
Age-standardised rate of selected MBS services claimed, by Indigenous status, 2013–14



Source: Medical Benefits Division, Department of Health

Figure 3.05-3

Proportion of Indigenous regular clients with Type 2 diabetes who had an HbA1c test in the previous 6 months, Indigenous primary health care organisations, by remoteness, December 2013



Source: AIHW analysis of national Key Performance Indicator data

3.06

Access to hospital procedures

Why is it important?

Studies have shown that while Indigenous Australians are more likely to be hospitalised than other people they are less likely to receive a medical or surgical procedure while in hospital (Cunningham 2002; ABS & AIHW 2008). The disparities are not explained by diagnosis, age, sex or place of residence (Cunningham 2002). For patients admitted to hospital with coronary heart disease, access to coronary angiography can be important in diagnosis and establishment of a course of treatment. Coronary heart disease may be treated with medicines or through repairing the heart's blood vessels, either using a medical procedure (percutaneous coronary interventions) or a surgical procedure (coronary artery bypass grafts). A study of patients admitted to Qld hospitals for acute myocardial infarction (heart attack) between 1998 and 2002 found that rates of coronary procedures among Indigenous Australian patients were 22% lower than rates for other patients (Coory et al. 2005).

Several studies have shown Aboriginal and Torres Strait Islander peoples have poorer survival rates for cancer. This is partly explained by later diagnosis and referral for specialist treatment (Condon et al. 2006; Valery et al. 2006). However, after controlling for stage of diagnosis Indigenous Australians are less likely to have treatment for cancer (surgery, chemotherapy, radiotherapy), tend to wait longer for surgery and have lower survival rates for many cancers (Valery et al. 2006; Hall et al. 2004).

The proportion of Aboriginal and Torres Strait Islander people with end stage renal failure who received a kidney transplant was lower (11%) than other Australians (47%) (see measure 1.10).

Findings

In the two years to June 2013, excluding care involving dialysis, 59% of hospital episodes for Aboriginal and Torres Strait Islander peoples had a procedure recorded, compared with 80% of hospital episodes for other Australians. There has been a significant increase in Indigenous hospitalisation rates with a procedure recorded between 2004–05 and 2012–13 in NSW, Victoria, Qld, WA, SA and the NT combined. The increase for Indigenous Australians was faster than for non-Indigenous and the gap has halved.

For Indigenous Australians, 7% of hospitalisations with a procedure recorded occurred in private hospitals compared with 53% for non-Indigenous Australians in the two years to June 2013. There are many factors associated with the likelihood of receiving a procedure when admitted to hospital. An analysis of the combined impact of a range of factors found that between July 2011 and June 2013 the most significant factors (in order of importance) were:

- whether the hospital was a public or private hospital
- the number of additional diagnoses recorded for a patient
- the principal diagnosis for which a person is admitted
- Indigenous status
- state/territory of residence
- age
- remoteness of usual residence
- sex.

In all states and territories, Indigenous Australians were less likely to receive a procedure. Analysis by remoteness shows a decline in hospitalisations with a procedure recorded as remoteness rises. The gap between the proportions of Indigenous and non-Indigenous Australians receiving a hospital procedure is highest in remote areas and lowest in very remote areas, due, in part, to lower rates of procedures for non-Indigenous Australians in very remote areas.

Between July 2011 and June 2013, among those hospitalised with coronary heart disease, Aboriginal and Torres Strait Islander people were nearly half as likely to receive coronary procedures such as coronary angiography and revascularisation procedures.

For hospitalisations related to diseases of the digestive tract between July 2011 and June 2013, the odds of Aboriginal and Torres Strait Islander patients receiving a corresponding procedure were significantly lower than non-Indigenous patients when the principal diagnosis was appendicitis, complicated or uncomplicated hernias, diseases of the extrahepatic biliary tree, and neoplastic diseases of the anus or rectum. There was no significant difference where the principal diagnosis was malignant neoplasms of the large intestine/rectum.

Implications

Disparities in hospital procedures are likely to reflect a range of factors, including 'systemic practices, not

illintentioned but still discriminatory, and almost invisible in the patient provider encounter' (Fisher et al. 2002). An adequate primary health care system is also a prerequisite for effective hospital and specialist services.

In the 2012–13 Health Survey, 43% of Indigenous adults had incomes in the bottom 20% of Australian incomes. In the same survey, 20% of Indigenous Australians in non-remote areas reported they had private health insurance with the main barrier being affordability (72%). The lower proportion of procedures per hospitalisation is likely to be associated with private health insurance coverage and lower access to private hospitals. This may have impacts on the rate of preventative hospital treatments.

Aboriginal and Torres Strait Islander patients with chronic disease sometimes present later in the course of these illnesses, compared with non-Indigenous Australians, which affects treatment options (Valery et al. 2006). Other factors that have been suggested include: that the presence of comorbidities limits treatment options (although this does not explain the difference in coronary procedures outlined above); clinical judgments concerning post-procedural compliance; communication issues, including difficulties for patients whose main language is not English; and patient knowledge and attitudes, e.g. fatalistic attitudes towards cancer. Physical, social and cultural distance from health services also play a role, along with financial issues patients and their families may face when seeking treatment in specialist referral services (Shahid et al. 2009; Miller et al. 2010). Analysis of 2013–14 Medicare data shows that the rate of non-hospital specialist services for Aboriginal and Torres Strait Islander peoples was below national averages. Effective strategies will require a better understanding of the factors leading to the observed disparities.

The measures presented here suggest that under-provision of specialist services for Indigenous Australians persists, and that further efforts are required to improve access. In addition to governments, clinicians and clinical colleges could also play a role in reviewing decision-making processes and relevant data to identify what drives differential access to procedures and develop strategies to address these issues (Fisher et al. 2002).

Heart and cardiovascular conditions make the greatest contribution to the gap in life expectancy between Aboriginal and

Torres Strait Islander peoples and other Australians. The extent to which access to effective hospital and other cardiac care is sub-optimal for Aboriginal and Torres Strait Islanders is being addressed

in several ways. This includes the *National Recommendations for Better Cardiac Care for Aboriginal and Torres Strait Islander People* and the *Lighthouse Project* (see measure 1.05).

Table 3.06-1

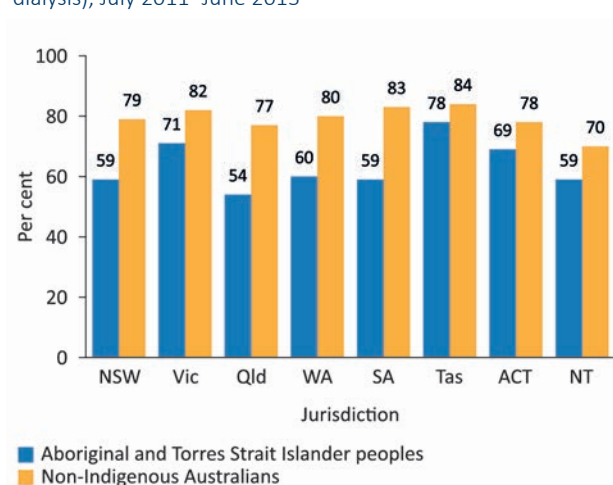
Proportion of separations with a procedure reported, by principal diagnosis and Indigenous status, July 2011–June 2013

Principal diagnosis chapter (excluding dialysis)	Indig.	Other
	Per cent	
Diseases of the eye	92	99
Neoplasms	89	96
Diseases of the blood	88	94
Congenital malfunctions	86	91
Diseases of the ear	75	85
Factors influencing health status	73	93
Certain conditions in perinatal period	73	73
Diseases of the musculoskeletal system	72	91
Pregnancy and child birth	67	81
Diseases of the digestive system	65	88
Endocrine, nutritional & metabolic disorders	65	82
Diseases of the skin	62	71
Diseases of the genitourinary system	62	79
Injury and poisoning	60	70
Diseases of the circulatory system	59	74
Diseases of the nervous system	54	82
Diseases of the respiratory system	45	62
Infectious and parasitic diseases	42	43
Mental and behavioural disorders	37	60
Symptoms and signs and nec	32	54
Any principal diagnosis	59	80

Source: AIHW analysis of National Hospital Morbidity Database

Figure 3.06-1

Proportion of hospitalisations with a procedure performed, by Indigenous status and state/territory (excluding care involving dialysis), July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database

Table 3.06-2

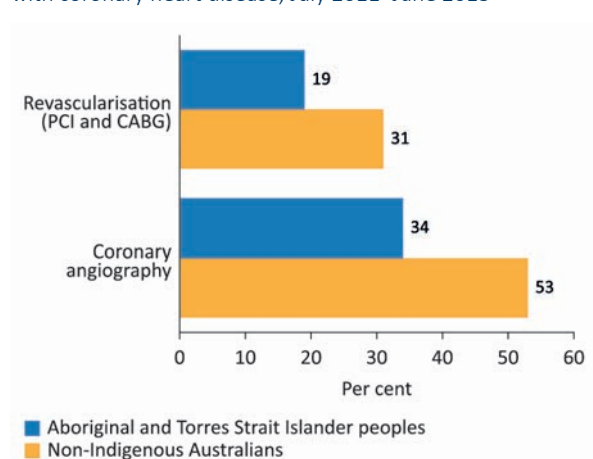
Hospital procedures (age-standardised), by type of procedure reported and Indigenous status, July 2011–June 2013

Procedure type	Indig.	Other
	Per cent	
Non-invasive/cognitive/other interventions	39	53
Procedure on urinary system	39	9
Haemodialysis	38	6
Obstetric procedures	3	3
Procedures on digestive system	4	10
Procedures on musculoskeletal system	3	5
Dermatological and plastic procedures	3	4
Dental services	1	2
Procedures on cardiovascular system	2	3
Gynaecological procedures	1	3
Procedures on respiratory system	1	1
Procedures on eye and adnexa	1	2
Procedures on nose and mouth and pharynx	1	1
Procedures on nervous system	0.6	2
Procedures on ear and mastoid process	0.3	0.4
Imaging services	0.4	0.5
Other	0.7	2
Total (excluding haemodialysis)	62.1	93.6
Total (including haemodialysis)	100.0	100.0

Source: AIHW analysis of National Hospital Morbidity Database

Figure 3.06-2

Age-standardised use of coronary procedures for those hospitalised with coronary heart disease, July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database

3.07

Selected potentially preventable hospital admissions

Why is it important?

Analysis of the conditions for which people are admitted to hospital reveals that, in many cases, the hospital admission could have been prevented through timely and effective care outside of hospital (Li et al. 2009).

Hospitalisations for conditions that can be effectively treated in a non-hospital setting are referred to as 'potentially preventable admissions'. These include conditions for which hospitalisation could potentially be avoided through effective preventive measures or early diagnosis and treatment in primary health care (Page et al. 2007). The list of conditions for which hospitalisation is potentially preventable is subject to debate (Li et al. 2009) and is reviewed from time to time in Australia to reflect advances in health care.

Potentially preventable conditions are usually grouped into three categories:

- vaccine-preventable conditions—including invasive pneumococcal disease, influenza, tetanus, measles, mumps, rubella, pertussis, and polio
- potentially preventable acute conditions—including dehydration/gastroenteritis, kidney infection, perforated ulcer, cellulitis, pelvic inflammatory disease, dental conditions, and ear, nose and throat infections
- potentially preventable chronic conditions—including diabetes, asthma, angina, hypertension, congestive heart failure, and chronic obstructive pulmonary disease.

Systematic differences in hospitalisation rates for Indigenous and non-Indigenous Australians could indicate gaps in the provision of population health interventions (such as immunisation), primary care services (such as early interventions to detect and treat chronic disease), and continuing care support (such as care planning for people with chronic illnesses, e.g. congestive heart failure). Among Indigenous Australians, there is also a higher prevalence for the underlying diseases, and Indigenous Australians are more likely to live in remote areas where non-hospital alternatives are limited (Gibson et al. 2009; Li et al. 2009).

Findings

In the two-year period from July 2011 to June 2013, rates for potentially preventable hospital admissions were 3 times as high for Aboriginal and Torres Strait Islander peoples compared with non-Indigenous Australians. Potentially preventable hospital admissions (excluding those for dialysis) accounted for 21% of all hospital admissions for Indigenous Australians. Differences in hospitalisation rates between Indigenous and non-Indigenous Australians were particularly striking for older age groups.

For Indigenous Australians, vaccine-preventable conditions accounted for around 4% of all selected potentially preventable hospital admissions, acute conditions for 41% of admissions and chronic conditions for 56% of admissions. Diabetes complications were the leading cause of Indigenous potentially preventable hospitalisations (34%), with rates 7.9 times as high as non-Indigenous Australians. Other significant conditions included chronic obstructive pulmonary disease, pyelonephritis, convulsions/epilepsy, dental conditions, and ear, nose and throat infections. For children, the most common conditions were dental conditions, and ear, nose and throat infections, while for adults, diabetes complications were the most prevalent.

Compared with non-Indigenous Australians, hospitalisation rates for selected potentially preventable conditions were 7.3 times as high for Indigenous Australians living in remote areas, 3.5 times as high in very remote areas, 2.8 times as high in outer regional areas, 2.7 times as high in major cities and 2.1 times as high in inner regional areas. Potentially preventable hospitalisations rates for Indigenous Australians were highest in remote areas (254 per 1,000) and very remote areas (118 per 1,000) and lowest in inner regional areas (66 per 1,000) and major cities (72 per 1,000).

Indigenous hospitalisation rates for vaccine-preventable diseases have increased significantly between 2004–05 and 2012–13 in NSW, Victoria, Qld, WA, SA and the NT combined. Due to changes in coding since 2007–08, resulting in an apparent decline for diabetes complication and increase for gastroenteritis, time-series data are not currently available for hospitalisation rates for chronic and acute conditions under this performance measure.

Implications

The most common conditions within the acute group included convulsions and epilepsy, dental, and ear, nose and throat infections. Dental care access issues have been discussed elsewhere in this report (see measures 1.11 and 3.14). The majority of hospitalisations for ear, nose and throat infections occurred in the 0–14 year age group, rates were 2.5 times the non-Indigenous rate for infants (less than 1 year old) and two times the non-Indigenous rate for children aged 1–14. Analysis of data on ear/hearing problems for this age group found self-reported prevalence rates twice that of the non-Indigenous rate, yet GP consultations only 1.1 times as high (see measure 1.15).

Hospitalisation rates for potentially preventable chronic conditions were five times as high for Indigenous Australians as for non-Indigenous Australians. The major conditions within the chronic group were diabetes complications, chronic obstructive pulmonary disease, and asthma. These high rates reflect the higher rate of chronic conditions in the population and the need to strengthen services that intervene earlier in the disease process, including prevention, early detection, and improved chronic disease management (Li et al. 2009).

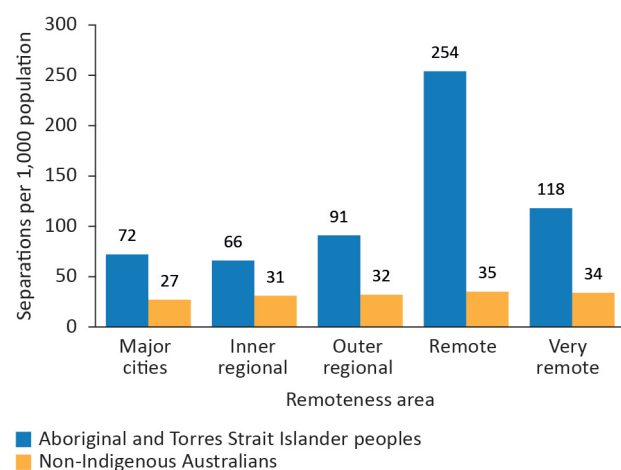
A number of studies have found that improving patient provider communication and collaboration makes it easier for people to navigate, understand and use information and services to take care of their health e.g. matching information to the patient's needs and abilities, recognising the importance of asking questions, shared decision making, and providing a range of avenues for communication (Øvretveit 2012; Hernandez et al. 2012). Changes in hospitalisation rates for vaccine-preventable conditions are linked to population immunisation rates (see measure 3.02).

The *Indigenous Australians' Health Programme*, which started on 1 July 2014, aims to assist in reducing avoidable hospitalisations of Aboriginal and Torres Strait Islander peoples by preventing and managing chronic disease and infectious disease through expanded access to and coordination of comprehensive primary health care. Achieving the objectives of this programme will be influenced and supported by the successful implementation of other Indigenous-specific initiatives including

early childhood reforms, broader health system changes, improvements in identification of Indigenous patients and measures to address the underlying social determinants of poor health.

Figure 3.07-1

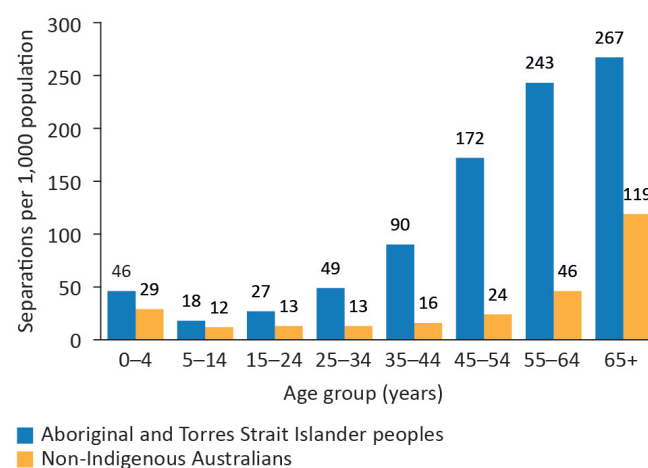
Potentially preventable hospital admissions, by Indigenous status and remoteness, July 2011–June 2013



Source: AIHW Analysis of National Hospital Morbidity Database

Figure 3.07-2

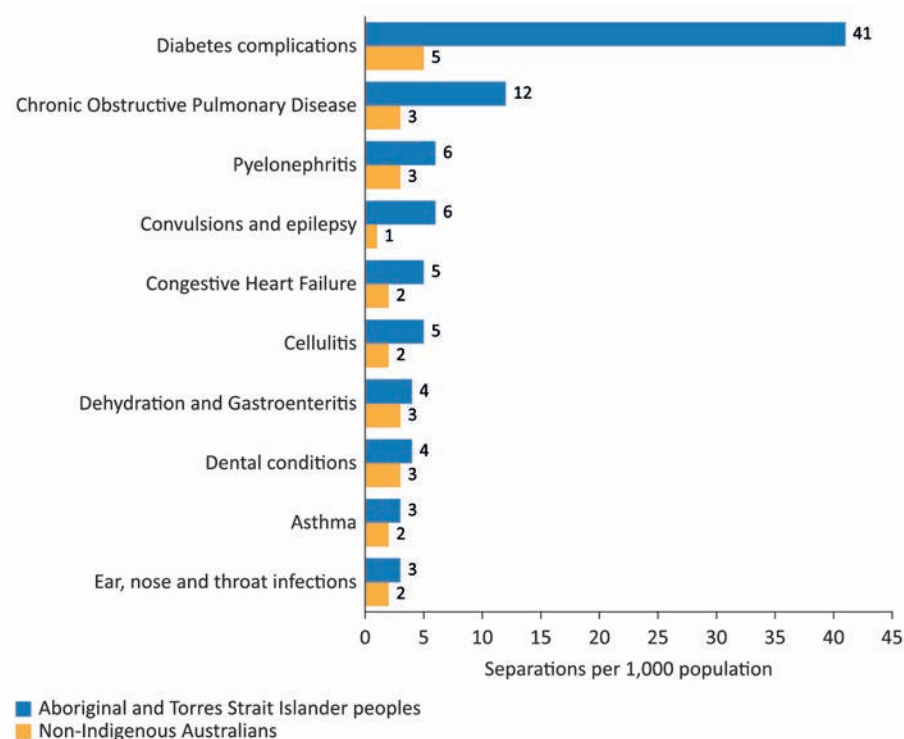
Potentially preventable hospital admissions, by Indigenous status and age group, July 2011–June 2013



Source: AIHW Analysis of National Hospital Morbidity Database

Figure 3.07-3

Top 10 potentially preventable hospital admissions, by Indigenous status, July 2011–June 2013



Source: AIHW Analysis of National Hospital Morbidity Database

3.08

Cultural competency

Why is it important?

Improving the cultural competency of health care services can increase Aboriginal and Torres Strait Islander peoples' access to health care, increase the effectiveness of care that is received, and improve the disparities in health outcomes (Freeman et al. 2014). 'Cultural competency requires that organisations have a defined set of values and principles, and demonstrate behaviours, attitudes, policies and structures that enable them to work effectively cross-culturally.' (Dudgeon et al. 2010). Seven key aspects of cultural competency include: respect and trust, transport, flexibility, time, support, outreach, and working together (Liaw et al. 2011).

Cultural competency can be measured directly (self-reporting on patient experience) or indirectly (discharge against medical advice). However, there is limited data available on the cultural competence of health services (Paradies et al. 2014) or on the effectiveness of interventions to address cultural competency (Truong et al. 2014). The Australian Health Ministers' Advisory Council has developed a framework for measuring cultural competence based on three elements:

1. Organisational cultural competency: leadership and workforce, recruiting and supporting Aboriginal and Torres Strait Islander people in health professions and into leadership positions within health care systems, community engagement in planning and decision-making and development of non-Indigenous staff.
2. Systemic cultural competency: eliminating systemic and institutional barriers to Aboriginal and Torres Strait Islander peoples accessing care, including language barriers, trust, patient dissatisfaction and poor understanding of treatment.
3. Clinical/professional/individual cultural competence: improving the cultural knowledge, skills and behaviours of individuals working in the health system, including clinical and administrative staff, to help patients navigate the health system and become a more active partner in the health care encounter (NT Department of Health unpublished).

Findings

In the 2012–13 Health Survey, 16% of Indigenous Australians reported that they had been treated badly in the last

12 months because they are Aboriginal/Torres Strait Islander. Of those people who felt they had been treated badly, 8% reported this occurred 2–3 times per week and 5% reported this was a daily occurrence. The most common situation of unfair treatment was by members of the public (45%) and applying for work or while at work (29%). Doctors, nurses or other staff at hospitals/surgeries were reported as being discriminatory by 20% of those who felt they had been treated badly. Seven per cent of Indigenous Australians reported that they avoided seeking health care because of being treated unfairly. A study of 755 Aboriginal Victorian adults found one-third (29%) had experienced racism in health settings in the previous 12 months (Kelaheer et al. 2014).

In 2012–13, 30% of Aboriginal and Torres Strait Islander peoples reported they did not access health care when they needed to. Of those people, reasons for not accessing care included: dislikes the service or professional/embarrassed/afraid (22%); felt it would be inadequate (9%); did not trust service or provider (9%); and discrimination/not culturally appropriate/language problems (4%). These types of barriers were higher for counsellors (45%) and hospitals (27%) compared with doctors and dentists (23%). Noting that cost (43%) was the major barrier to accessing dental services, dislike of service/professional/feeling embarrassed or afraid was also a key reason (19%), which has links to poor oral health outcomes (see measure 1.11).

In 2012–13, 70% of Indigenous Australians aged 15 years and over in non-remote areas gave an overall rating of the health care they received in the last 12 months as excellent or very good. However, some reported that their doctor only sometimes or never: listened to them (11%), showed respect for what was said (11%), explained things in a way that could be understood (13%), or spent enough time with them (15%). Comparable data for the total population showed that their doctor only sometimes or never: listened to them (11%); showed respect for what was said (7%); or spent enough time with them (12%) (SCRSP 2013). Indigenous Australians in the lowest income quintile were 1.7 times as likely as those in the top income group to report that their GP only sometimes/never showed respect for what was said. In 2013–14, Australians in the most disadvantaged areas were 2.4 as likely to report that their GP only sometimes/rarely/never showed respect compared

with Australians who were in the least disadvantaged areas (ABS 2014i).

In the 2008 Social Survey, 8% of Indigenous Australians aged 15 years and over disagreed or strongly disagreed with the statement 'Your doctor can be trusted'. In addition, 17% disagreed or strongly disagreed with the statement 'Hospitals can be trusted to do the right thing by you'.

Between July 2011 and June 2013, there were 17,494 hospitalisations of Aboriginal and Torres Strait Islander people where they left hospital against medical advice or were discharged at their own risk. This represented around 5% of all hospitalisations for Aboriginal and Torres Strait Islander peoples compared with 0.5% for non-Indigenous Australians.

In 2011, there were around 8,500 Aboriginal and Torres Strait Islander people employed in health-related occupations. Nursing (2,189) was the largest group followed by nursing support and personal care workers (1,435), and Aboriginal and Torres Strait Islander Health Workers (1,256). Between 1996 and 2011 the rate of Indigenous Australians employed in the health workforce increased from 96 per 10,000 to 155 per 10,000 (see measure 3.12).

Aboriginal and Torres Strait Islander Health Workers play an important role in improving cultural competency in health care delivery (Thompson et al. 2011). A small study in the cardiology unit of a WA hospital (Taylor, KP et al. 2009) found these health workers improved the cultural security of the care provided, reduced the number of discharges against medical advice and increased participation in cardiac rehabilitation. Participation rates in cardiac rehabilitation have been lower for Indigenous Australians although it has been shown to be effective in reducing coronary death by up to 25% (National Heart Foundation and Australian Health Care and Hospitals Association 2010) (see measures 1.05, 1.23, 1.24). In 2012–13, Aboriginal health workers represented 14% of all full-time equivalent (FTE) positions within Aboriginal and Torres Strait Islander primary health care services.

As at 30 June 2013, over half (54% or 3,611) of the FTE paid positions in Australian Government-funded Indigenous primary health care organisations were occupied by Aboriginal and Torres Strait Islander peoples (AIHW 2014a). In 2012–13, 74% of primary health care organisations had a governing committee or board

of which all members were Indigenous Australians, 95% of services had formal mechanisms in place for client and community feedback, 86% had a formal organisational commitment to achieving culturally safe health care and 84% had mechanisms for gaining high-level advice on cultural matters affecting service delivery. Cultural group activities were provided by 36% of Indigenous primary health care organisations. Sixteen per cent of Indigenous primary health care organisations offered bush tucker nutrition programs and 11% offered bush medicine, while 57% of Aboriginal and Torres Strait Islander substance-use-specific services also ran cultural groups (e.g. art, hunting, bush outings).

A private GP practice in Qld found that by working in partnership with the Indigenous community the number of Indigenous patients increased from 5 to 40 Indigenous patients per month. Strategies introduced included bulk billing, one session per week specifically for Indigenous patients, and a bus to the clinic. In addition, cultural safety training was undertaken by staff and an Indigenous health worker attended the clinic assisting with cultural safety and referrals (Johanson et al. 2011).

Implications

Effective identification of Aboriginal and Torres Strait Islander peoples and accountability at all levels of the health system are vital to any initiative to improve cultural competency. Australian governments have focused on improving the cultural competency of health services in several ways.

Australian Government funding is provided to the Leaders in Indigenous Medical Education Network, which focuses on improving the quality and effectiveness of teaching and learning of Indigenous health in medical education through a nationally agreed curriculum framework and for promoting best practice in the recruitment and retention of Indigenous medical students.

The Department of Health is funding the *Aboriginal and Torres Strait Islander Health Curriculum Framework* project, which aims to develop a culturally inclusive, interdisciplinary Aboriginal and Torres Strait Islander health curriculum framework for integration into entry-level health profession training. The framework will improve the knowledge and capabilities of health professionals to work with Aboriginal and Torres Strait Islander peoples and subsequently contribute to better health outcomes.

The *Practice Incentives Programme—Indigenous Health Incentive* (PIP-IHI) aims to support general practices and Indigenous health services to provide better health care for Aboriginal and Torres Strait Islander patients including best practice management of chronic disease. Payments are made to practices that register for the PIP-IHI and meet certain requirements, including establishing and using a mechanism to ensure their Aboriginal and Torres Strait Islander patients aged 15 years and over with a chronic disease are followed up (e.g. through use of a recall and reminder system or staff actively seeking out patients to ensure they return for ongoing care) and at least two staff members from the practice (one of whom must be a GP) completing appropriate cultural awareness training. In 2013–14, 2,821 general practices and Indigenous health services had signed on to the incentive. Around 61,600 patients were registered in 2013.

The Australian Commission of Safety in Health Care is developing a guide on strategies and best practice for mainstream services (including acute care) in the delivery of care for Indigenous Australians.

The Australasian College for Emergency Medicine has developed a series of education tools and resources designed for doctors to enhance culturally competent communication and overall care for Aboriginal and Torres Strait Islander patients in the emergency department.

The Aboriginal and Torres Strait Islander Healing Foundation found that understanding and addressing trauma can have a positive effect on people's lives, relationships and workplaces. Recognising the need for a trauma informed workforce, the Foundation has invested \$4 million in workforce and community development projects across almost 50 communities, including supporting accredited and non-accredited training to increase the capability, resilience and retention of social and emotional wellbeing staff (see measures 1.18 and 3.10).

In the NT, the *Aboriginal Cultural Security Policy* was launched in 2007 and is an ongoing commitment that the services offered to Aboriginal Territorians by the NT Department of Health respectfully combine the cultural rights and values of Aboriginal people with the best that health service systems have to offer.

In 2014, the NT Department of Health has been busy reviewing, developing and

implementing a suite of initiatives that underpin the delivery of culturally secure services. They include the:

- development and implementation of the Cross Cultural Training Framework for staff
- Aboriginal Interpreter Policy
- Acknowledgement of Country and Welcome to Country Policy
- Aboriginal People and Communities Preferred Terminology Policy;
- Aboriginal and Torres Strait Islander and Health Practitioner Cultural Statement
- Cultural Competence Self-Assessment and Audit Tool continues to be trialled and further refined.

The NSW Health *Aboriginal Health Impact Statement* is designed to ensure the needs and interests of Aboriginal peoples are embedded into the development, implementation and evaluation of all NSW Health initiatives. The *Impact Statement Guidelines* (NSW Government 2007) recommend considering questions such as whether a policy includes initiatives that reflect Aboriginal health principles such as a whole-of-life view of health, a holistic approach to health, Aboriginal self-determination, working in partnership, and cultural respect and whether recommendations for policy implementation include the adaptation of programs, campaigns and materials that are culturally respectful to the needs of Aboriginal communities. The guidelines also recommend that evaluation plans for health policies and programmes affecting Aboriginal people should include indicators on issues such as cultural security and responsiveness of services to community needs.

The Victorian Department of Human Services has established *Building Aboriginal Cultural Competence Training Programs* that aim to embed cultural respect and understanding into policy development, service delivery and people management. Programme participants will gain a range of insights, including a better understanding of:

- historical and contemporary Aboriginal leadership
- the strengths of Aboriginal identity, culture and people
- the impact of past and current government policies and practices on the lives and outcomes of Aboriginal people
- how government and Aboriginal community networks can engage in the process of policy and partnership development.

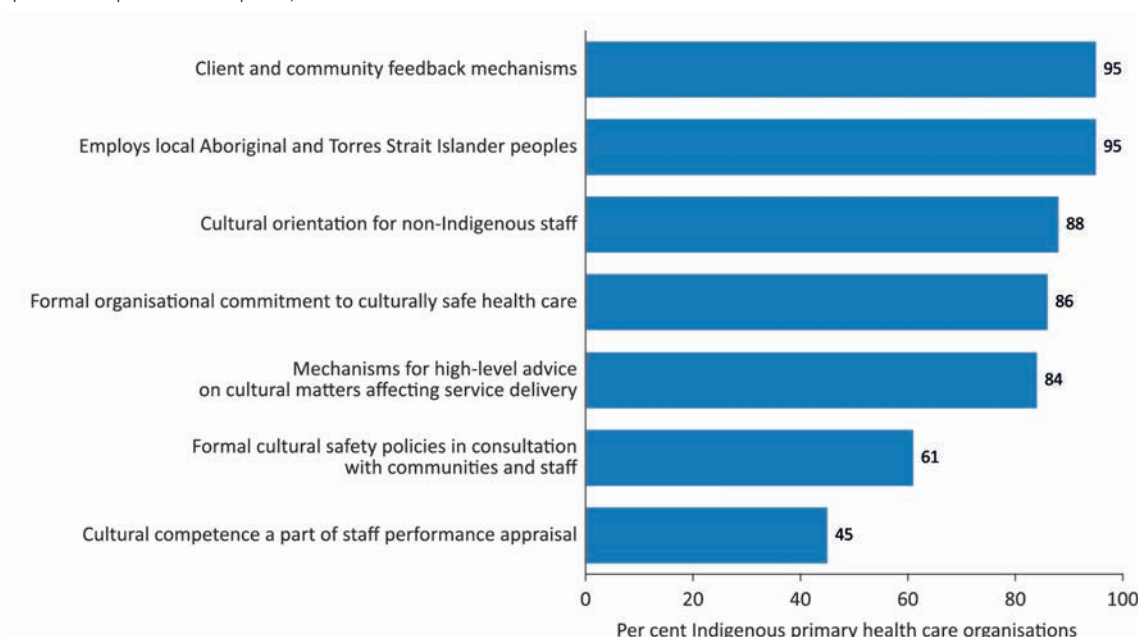
The Victorian Department of Health established the *Improving Care for Aboriginal and Torres Strait Islander Patients*, which is underpinned by a 30% loading on health service funding for Aboriginal inpatients. To demonstrate quality care for Aboriginal patients, health services are required to report progress against four key result areas in annual quality of care reports: relationships with Aboriginal communities, culturally aware staff, discharge planning, and primary care referrals.

A WA report on cancer care (Thompson et al. 2011) made several practical recommendations to improve the cultural competency of care for Aboriginal patients including: providing a welcoming environment through welcome to country services, yarning places and access to traditional foods; facilitating the return of Aboriginal patients to their homelands for continued care where possible; ensuring that there is access to Aboriginal interpreters for Aboriginal people who are not confident speakers of English, and that staff understand differences in Aboriginal

verbal and non-verbal communication styles; and ensuring service providers are familiar with, acknowledge and respect Aboriginal family structures, culture and life circumstances. 'Moorditj Koort' (Aboriginal Health and Wellness Centre) was a vision of the local WA Aboriginal community that recognised the need for culturally appropriate services at a local level. Hundreds of Aboriginal people have registered and attended regularly for medical care, self-management, referral and follow-up.

Figure 3.08-1

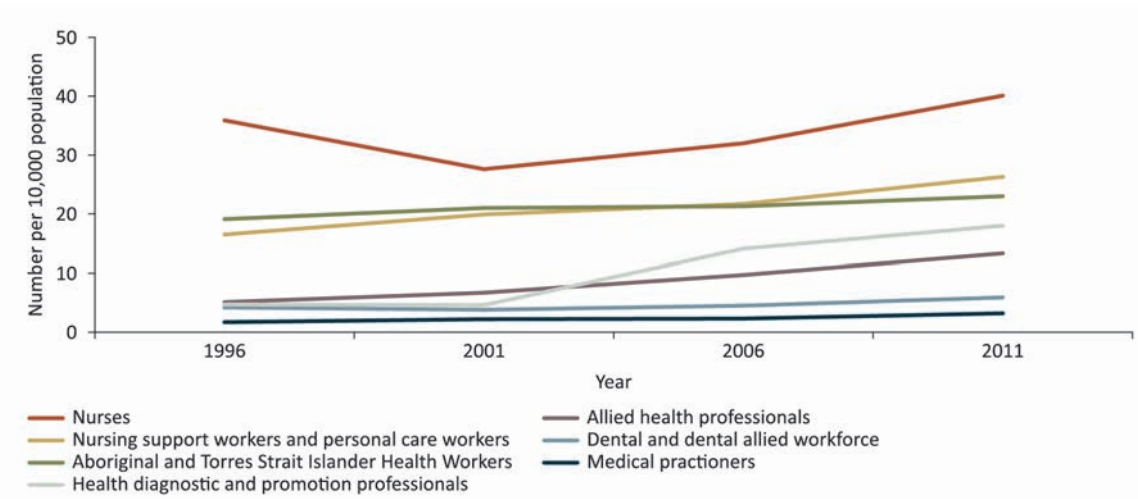
Aboriginal and Torres Strait Islander primary health care organisations, by proportion of services with cultural safety policies or processes in place, 2012–13



Source: AIHW OSR data collection

Figure 3.08-2

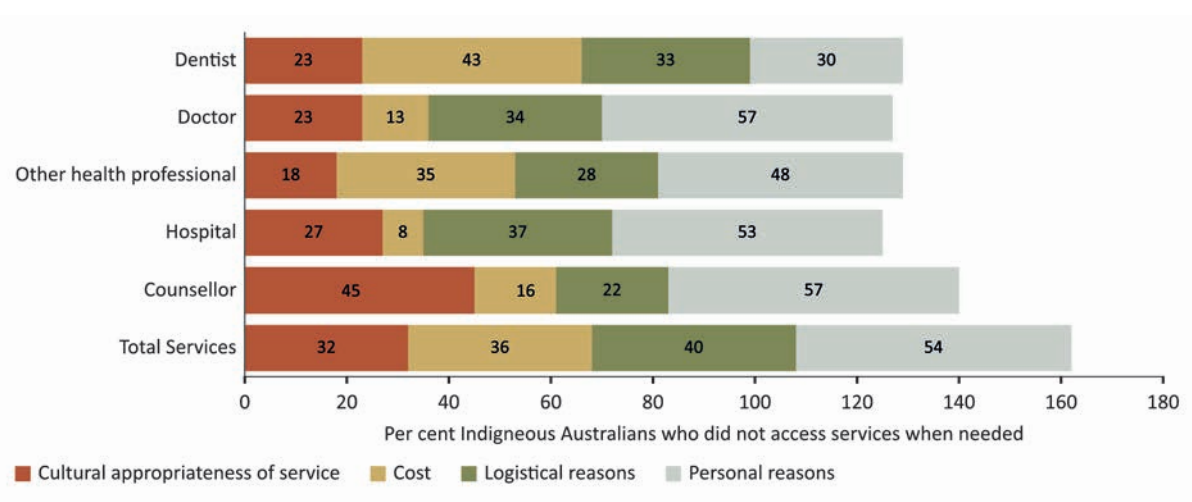
Aboriginal and Torres Strait Islander people employed in select health-related occupations, rates (per 10,000), 1996, 2001, 2006 and 2011



Source: AIHW analysis of the ABS Census data

Figure 3.08-3

Reasons Indigenous Australians did not access health services when needed to, 2012–13



Note: more than one response allowed, sum may exceed 100%

Source: ABS and AIHW analysis of 2012–13 AATSIHS

Table 3.08-1

Indigenous Australians who did not access health services when needed to, and reasons relating to cultural appropriateness, 2012–13

	Dentist	Doctor	Other health professional	Hospital	Counsellor	Total health services
Per cent						
Did not access service when needed to in last 12 months	21	14	9	6	9	30
Reason(s) did not access service						
Discrimination/not culturally appropriate/language problems	2†	3†	2†	4†	4†	4
Dislikes service/professional, embarrassed, afraid	19	14	13	14	27	22
Felt it would be inadequate	1†	9	5	9	18	9
Does not trust service provider	4	6	3	8	12	9
<i>Cultural appropriateness of service (subtotal)</i>	23	23	18	27	45	32

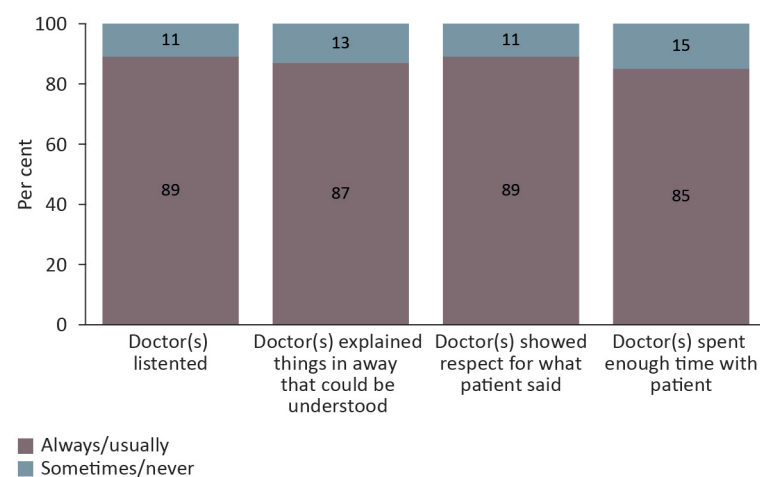
Note: Comprehensive significance testing results are published in the Detailed Analyses

† Estimate has a relative standard error between 25% and 50% and should be used with caution.

Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 3.08-4

Patient experience, Indigenous Australians aged 15 years and over who saw a doctor or specialist, non-remote areas, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

3.09

Discharge against medical advice

Why is it important?

Feedback on patient experiences, and community views of health care services and providers are important for shaping health services and policy. It is important to closely monitor consumer satisfaction, as it is believed to impact on health-related behaviours. For example, satisfied consumers may be more likely to cooperate with treatment, continue using services, maintain a relationship with a specific provider, and actively participate in their own treatment. Australia has a mixed history of systematically seeking feedback from the people whom health services are intended to benefit. A review of patient satisfaction and experience surveys found jurisdictions had adopted a range of methods for seeking feedback on patient experiences of hospitals and related services (Pearse 2005). Surveying the experiences of Aboriginal and Torres Strait Islander patients poses challenges that have been investigated by some jurisdictions.

The measure reported here is based on the extent to which Aboriginal and Torres Strait Islander people 'vote with their feet' (i.e. in discharging themselves from hospital against medical advice). The measure provides indirect evidence of the extent to which hospital services are responsive to Indigenous Australian patients' needs.

Findings

Between July 2011 and June 2013, there were 17,494 hospitalisations where Aboriginal and Torres Strait Islander people left hospital against medical advice or were discharged at their own risk. This represented around 5% of all hospitalisations for Aboriginal and Torres Strait Islander peoples compared with 0.5% for non-Indigenous Australians.

In the two years to June 2013, Indigenous Australians were discharged from hospital against medical advice at 8 times the rate of non-Indigenous Australians. Discharges from hospital against medical advice are most common for Aboriginal and Torres Strait Islander peoples aged 15–44 years. They are also more common for Indigenous people living in remote and very remote areas. The proportion of discharge against medical advice for Aboriginal and Torres Strait Islander peoples was highest in the NT (11% of all

hospitalisations) and lowest in Tasmania, the ACT, and Victoria (around 1–2%).

Among Indigenous Australians who were discharged against medical advice, the most common principal diagnoses for hospitalisations were injury and poisoning (3,985 hospitalisations), followed by diseases of the respiratory system (2,154 hospitalisations). These two groups of diagnoses represented 35% of all hospitalisations for which Indigenous patients were discharged against medical advice. As a proportion of all hospitalisations of Indigenous Australians for each specific diagnoses group, discharge against medical advice was highest for injury and poisoning and external causes (7.4%), followed by endocrine, nutritional and metabolic disorders (including diabetes) (7.3%).

An analysis of the relative impact of a range of factors over the period July 2011 to June 2013 found that Indigenous status was the single most significant variable contributing to whether a patient would discharge themselves from hospital against medical advice, even after controlling for the other factors. Other factors that were significant in order of importance after Indigenous status were:

- remoteness of hospital
- sex
- principal diagnosis
- age
- state of hospital
- remoteness of usual residence
- state/territory of usual residence.

Implications

The elevated levels of discharge against medical advice suggest that there are significant issues in the responsiveness of hospitals to the needs and perceptions of Aboriginal and Torres Strait Islander peoples (see measure 3.08). Mechanisms for obtaining feedback from Aboriginal and Torres Strait Islander patients will assist in responding and planning in relation to these rates of discharge against medical advice. The data suggest these issues are important for all age groups, although the issues are most evident for those aged 15–44 years.

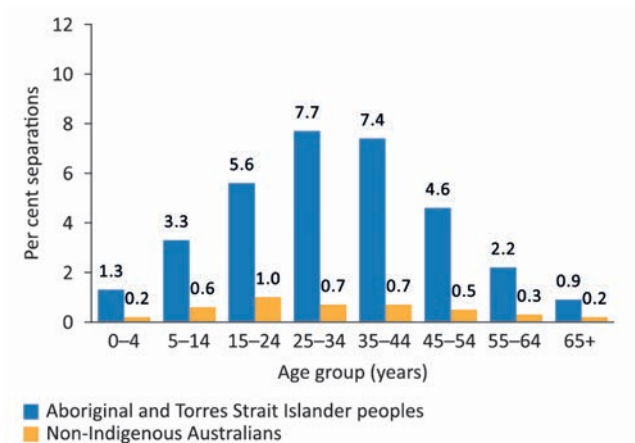
There are several questions for health service researchers and health service managers to tackle in devising strategies to achieve more responsive and respectful service delivery. More needs to be known about the reasons for the high rates of discharge against medical advice across individual factors (such as personal circumstances, health and wellbeing, and

cultural issues); community level factors (such as levels of trust or mistrust in system); and hospital level factors (such as staff attitudes, hospital policies and the environment). Historical issues, such as segregation and hospital being seen as a place to go to die are also factors to be investigated.

The experience of Aboriginal and Torres Strait Islander peoples of health services needs to be routinely evaluated but the mechanisms for doing this need to be better researched. Hospitals and health services that have implemented successful programs to reduce discharge against medical advice need to be studied and lessons disseminated.

Figure 3.09-1

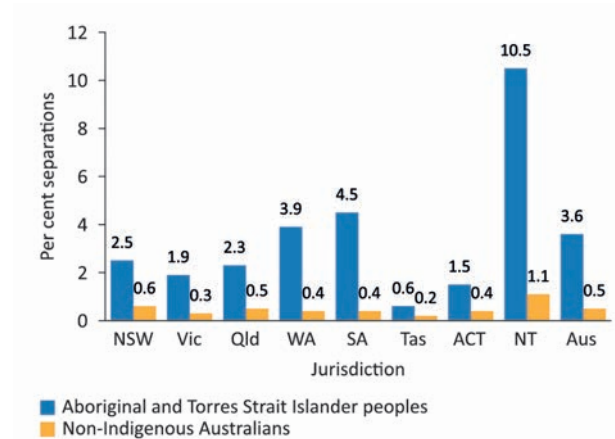
Proportion of hospitalisations ending in discharge against medical advice, by Indigenous status and age group, July 2011–June 2013



Source: AIHW National Hospital Morbidity Database

Figure 3.09-2

Proportion of hospitalisations ending in discharge against medical advice, by Indigenous status and jurisdiction, July 2011–June 2013

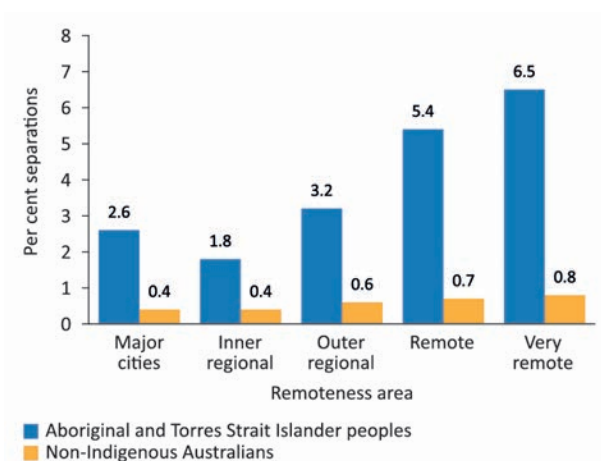


Note: proportions are age-standardised

Source: AIHW National Hospital Morbidity Database

Figure 3.09-3

Proportion of hospitalisations ending in discharge against medical advice, by Indigenous status and remoteness, July 2011–June 2013

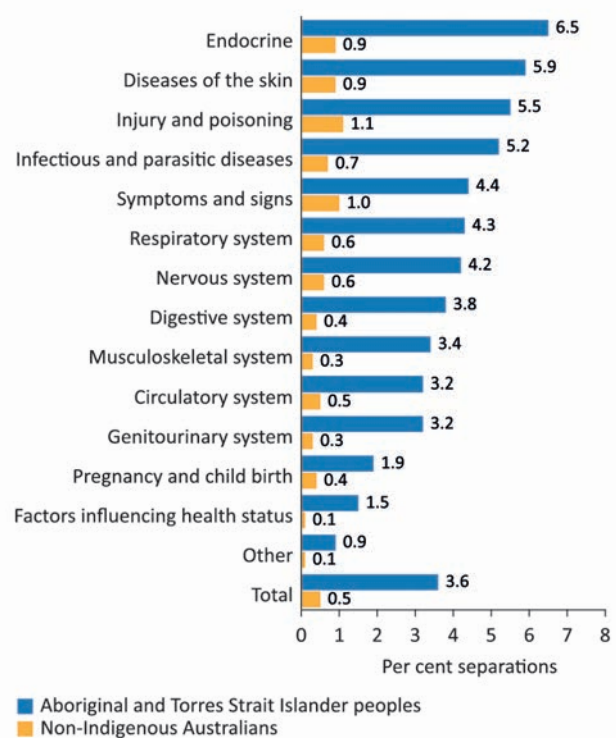


Note: proportions are age-standardised

Source: AIHW National Hospital Morbidity Database

Figure 3.09-4

Proportion of hospitalisations ending in discharge against medical advice, by Indigenous status and principal diagnosis, July 2011–June 2013



Note: proportions are age-standardised

Source: AIHW National Hospital Morbidity Database

3.10

Access to mental health services

Why is it important?

Aboriginal and Torres Strait Islander people experience higher rates of mental health issues than other Australians with: mortality rates for mental health and behavioural disorders 1.2 times as high; deaths from suicide twice as high; hospitalisation rates for intentional self-harm more than twice as high; and rates of psychological distress nearly 3 times as high (see measure 1.18). While Indigenous Australians use mental health services at higher rates than other Australians, it is hard to assess whether this use is as high as the underlying need.

Social, historical and economic disadvantage contribute to high rates of physical and mental health problems, high adult mortality, high suicide rates, child removals and incarceration rates, which in turn lead to higher rates of grief, loss and trauma (see measure 1.18). Most mental health services address mental health conditions once they have emerged rather than addressing the underlying causes of distress. Even so, early access to effective services can help diminish the consequences of these problems and help restore people's emotional and social wellbeing.

Mental health care may be provided by specialised mental health care services (e.g. private psychiatrists, and specialised hospital, residential or community services), or by general health care services that supply mental health related care (e.g. GPs and Indigenous primary health care organisations).

Findings

In the 2012–13 Health Survey, 27% of Indigenous Australian adults with high/very high levels of psychological distress had seen a health professional about their distress in the previous 4 weeks. Rates were higher for females (30%), and those living in non-remote areas (29%).

The latest available data on Medicare-subsidised mental health care services, (provided by consultant psychiatrists, clinical psychologists, GPs and allied health professionals) are from 2012–13. In that year, 8% of Indigenous Australians accessed Medicare-subsidised clinical mental health care services, as did 8% of non-Indigenous Australians (SCRGSP 2015).

GP survey data from April 2008 to March 2013 indicate that 11% of all problems managed by GPs among Indigenous patients were mental health related. Depression (48%) and anxiety (20%) were the main mental health related problems treated. After adjusting for differences in the age profiles of the two populations, GPs managed mental health problems for Indigenous Australians at 1.3 times the rate for other Australians.

The majority of the 205 Australian Government-funded Indigenous primary health care organisations provided care in relation to social and emotional wellbeing (SEWB) and mental health issues. In 2012–13, these organisations employed 533 FTE SEWB staff (44% Indigenous). These staff provided 205,300 client contacts. Anxiety and stress (78%), family or relationship issues (74%), depression (72%), grief and loss issues (65%), and family/community violence (54%) were the most common issues managed in terms of staff time and organisational resources.

In 2012–13, there were 98 organisations funded by the Australian Government to provide SEWB or Link Up counselling services to Indigenous Australians (84 of which were also funded for primary health care and included above). In 2012–13, these organisations provided 89,100 client contacts to around 17,700 clients (an average of 5 contacts for each client) (AIHW 2014a).

State/territory-based specialised community mental health services reported 597,300 service contacts for Indigenous clients in 2012–13 (11% of client contacts). Rates for Indigenous Australians were 3 times the rates for non-Indigenous Australians and were higher across all age groups, particularly those aged 25–44. Community mental health care contact rates for Indigenous Australians were highest in the ACT (1,711 per 1,000) and lowest in the NT (375 per 1,000) (noting data were not available for Victoria or Tasmania). The rate of residential mental health care episodes in the same period was 41 per 100,000 for Indigenous Australians—1.5 times the rate for non-Indigenous Australians.

Access to specialist psychiatry in rural and remote Australia is particularly problematic (Hunter 2007). In 2012 there were 34 FTE psychologists per 100,000 people in remote and very remote areas compared with 99 per 100,000 in major cities (AIHW 2013a). In 2013–14,

Indigenous Australians were less likely than non-Indigenous Australians to have claimed through Medicare for psychologist care (108 compared with 172 per 1,000) and also psychiatric care (48 compared with 94 per 1,000).

In the two years to June 2013, the hospitalisation rate for mental health issues for Indigenous men was 2.3 times the rate for non-Indigenous men, and the rate for Indigenous women was 1.7 times the rate for non-Indigenous women. Indigenous rates were highest in SA (4.6 times the non-Indigenous rate). Between 1998–99 and 2012–13, hospitalisation rates for mental health related conditions significantly increased for Indigenous Australians—by 61% for females and 39% for males (for Qld, WA, SA, and NT). Short-term trends since 2004–05 (for NSW, Vic, Qld, WA, SA and NT) also indicate significant increases (47% for females and 33% for males).

Hospitalisations for mental health care can be divided into two main categories: ambulatory-equivalent (comparable to care provided by community mental health care services) and admitted patient care. In the two years to June 2013, ambulatory-equivalent separation rates were lower for Indigenous Australians than for non-Indigenous Australians where separations involved specialised psychiatric care (rate ratio of 0.3) and 3 times as high for separations without specialised psychiatric care. Separation rates for admitted patient mental health care for Indigenous Australians were more than twice those for non-Indigenous Australians (2 times as high with specialised psychiatric care and 3.3 times as high without).

The rate of available psychiatric beds in public psychiatric hospitals ranged from 10 per 100,000 in major cities to 1.3 per 100,000 in outer regional areas and none in remote and very remote areas. For mental health care provided in hospitals, the average length of stay was 11 days for Indigenous patients and 9 days for non-Indigenous Australians. In 2011–12, 4% of all emergency department presentations for Indigenous patients were mental health related, as were 3% for other patients (AIHW 2014t). Barriers to accessing mental health services include perceived potential for unwarranted intervention from government organisations, long wait times (more than one year), lack of inter-sectorial collaboration and the need for culturally competent approaches including in diagnosis (Williamson et al. 2010).

Implications

These findings suggest that Indigenous Australians are accessing primary care level mental health services more readily than specialist services, particularly in comparison to non-Indigenous Australians.

The National Mental Health Commission has reviewed all existing mental health services and programmes across government, non-government and private sectors, assessing whether services are effective, properly targeted, not being duplicated, and not being unnecessarily burdened by red tape. The Commission's final report (submitted 30 November 2014) will inform the government's future decisions on mental health. The Australian Government has in the meantime committed to:

- \$18 million over four years for the Orygen Youth Health Research Centre to establish the *National Centre of Excellence in Youth Mental Health*

- \$5 million over three years to the Young and Well Co-operative Research Centre to establish a comprehensive new youth e-mental health platform
- \$22 million additional in 2014–15 to maintain *Mental Health Nurse Incentive Programme* services at current levels (165,000 sessions for people with severe and persistent mental illness)
- expanding *headspace* to 100 centres across Australia.

Work to renew the *Aboriginal and Torres Strait Islander Social and Emotional Wellbeing Framework* is also underway, more clearly acknowledging the importance of culture and identity to the health and wellbeing of Indigenous Australians.

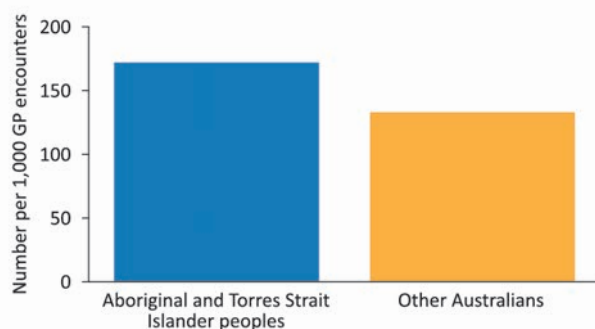
Key issues to be considered in addressing gaps include ensuring services are well linked into primary health care, and that Indigenous Australians are able to access effective treatment through specialist psychiatrists and psychologists. Primary

mental health care services are available through *Access to Allied Psychological Services (ATAPS)* and *Mental Health Services in Rural and Remote Areas* programmes. In 2013–14, 8% of ATAPS services (6,300 clients) were provided to Indigenous Australians (Department of Health unpublished).

In WA, access to mental health services is being addressed through the *Statewide Specialist Aboriginal Mental Health Service* and delivery of holistic model of care through service-level agreements, art therapy programs, enhancing mainstream mental health service, and partnerships with Aboriginal alcohol and drug services and Aboriginal health services to provide better interagency services. Cultural learning sessions have been provided to more than 400 health professionals and community members. Other mental health care and suicide prevention initiatives are detailed in measure 1.18 and Policies and Strategies section.

Figure 3.10-1

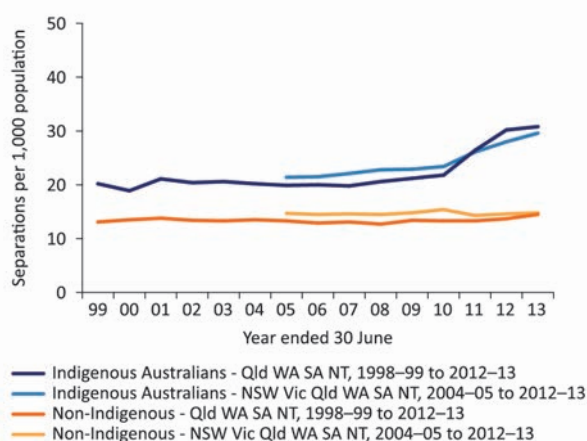
Age-standardised mental health related problems managed by GPs per 1,000 encounters, by Indigenous status of the patient, April 2008–March 2013



Source: Family Medicine Research Centre, University of Sydney analysis of BEACH data.

Figure 3.10-3

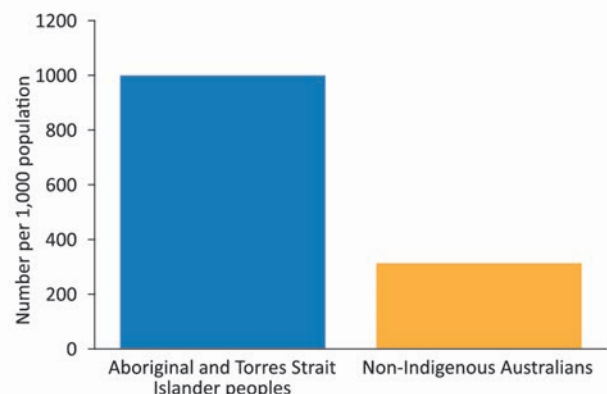
Age-standardised hospitalisation rates for mental health related conditions, by Indigenous status, 1998–99 to 2012–13



Source: AIHW analysis of National Hospital Morbidity Database

Figure 3.10-2

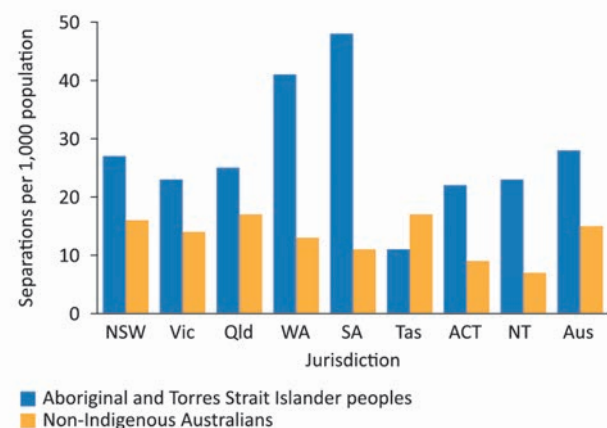
Age-standardised community mental health care service contacts per 1,000 population, by Indigenous status and state/territory, 2012–13



Source: AIHW analysis of National Community Mental Health Care Database

Figure 3.10-4

Age-standardised hospitalisation rates for mental health related conditions, by Indigenous status and jurisdiction, July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database

3.11

Access to alcohol and drug services

Why is it important?

The 2012–13 Health Survey found that just over half (54%) of Indigenous Australians aged 15 years and over reported exceeding the alcohol guidelines for single occasion drinking and 23% reported using substances in the previous 12 months (see measures 2.16 and 2.17). The range of harms from alcohol and substance misuse includes chronic disease, such as liver disease; injuries from motor vehicle accidents and assaults; incarceration; and social disruptions including family breakdown. Mental health issues are a common comorbidity and, along with poly-drug use, means that people presenting to alcohol and drug services typically have complex, multiple needs (NIDAC 2014).

Alcohol and substance-use services provide a variety of interventions and support that seek to address harmful alcohol and other drug use, and restore the physical, social and emotional wellbeing of clients and their families (NIDAC 2014). The term ‘other drugs’ includes illegal drugs (e.g. heroin and cannabis); misuse of medicines (e.g. pain-killers); and use of psychoactive substances in a harmful way (e.g. petrol inhalation) (AIHW 2014c). Services are delivered in residential and non-residential settings, in stand-alone facilities or as part of primary care services. Treatment types include detoxification and rehabilitation programs, information and education courses, counselling and pharmacotherapy (AIHW 2014c).

Access to these services by Aboriginal and Torres Strait Islander peoples may be impacted by geography (e.g. physical distance to health services, availability of transport and quality of roads); the cultural competency of services (see measure 3.08); affordability (e.g. of services, pharmaceuticals, and travel costs); and availability of services and health professionals. Additional barriers include cultural beliefs and attitudes concerning alcohol and drug use, such as shame associated with seeking treatment, concern about getting into trouble with the law and fear of losing their children (NIDAC 2014).

Findings

In 2012–13, 63 Australian Government-funded Indigenous-specific organisations

providing substance-use services were included in the Online Services Report. These organisations provided around 305,000 episodes of care to 49,700 clients. The apparent increase in reported episodes of care from 2011–12 is mainly due to a few organisations with large client bases reporting for the first time. Most episodes of care (90%) were provided to Indigenous clients. Distribution of organisations by remoteness was fairly even with 25% in very remote areas and 17–21% elsewhere. The NT (25%) and NSW (22%) had the highest proportion of organisations (AIHW 2014a).

All organisations reported alcohol as a principal drug of concern, followed by marijuana (97% of organisations), tobacco (64%), multiple drug use (54%) and amphetamines (43%). Information and education (98%), counselling (95%), and support and case management (94%) were the most common treatment types. Depression/hopelessness (86%), family/relationship issues (78%) and grief and loss issues (73%) were key social and emotional wellbeing issues reported in terms of staff time and organisational resources (AIHW 2014a). Services provided to Indigenous clients included around 2,100 residential episodes of care; 23,600 sobering-up, residential respite and short-term episodes of care; and 246,300 non-residential, follow-up and aftercare episodes of care.

In 2012–13, there were around 22,700 treatment episodes for Indigenous Australians in publicly funded drug and alcohol services included in the Alcohol and Other Drug Treatment Services National Minimum Dataset (AODTS-NMDS). These episodes accounted for 15% of all treatment episodes. Note that 27 substance-use-specific services reported under both the AODTS-NMDS and the Online Services Report, so these data include some double counting (AIHW 2014a). Indigenous clients tended to be younger than non-Indigenous clients, with the proportion of episodes in the 10–19 and 20–29 year age groups higher for Indigenous clients. There was little difference in the proportion of main treatments provided by Indigenous status. The largest difference was for withdrawal management, which was more likely to be provided to non-Indigenous clients (18%) than to Indigenous clients (10%) (AIHW 2014c).

In addition, the majority of the 205 Australian Government-funded Indigenous primary health care

organisations provided care in relation to drug and alcohol issues. Tobacco, alcohol, cannabis, multiple drug use and amphetamines were the most common conditions managed in terms of staff time and organisational resources.

After adjusting for differences in the age structure of the two populations, GPs managed mental health related problems for drug abuse and alcohol abuse for Indigenous patients at 3 and 4 times the rate respectively of other patients during the period April 2008 to March 2013. In the same period, GPs offered counselling or advice on alcohol at 2 times the rate for Indigenous patients than for other patients. Alcohol counselling or advice represented 1.6% of all clinical and therapeutic treatments provided to Indigenous people.

During the period July 2011 to June 2013, there were approximately 10,000 hospitalisations related to alcohol use for Indigenous Australians and 6,900 due to drug use. After adjusting for difference in the age structure of the two populations, Indigenous males were 5 times as likely to be hospitalised for alcohol use as non-Indigenous males and Indigenous females were 4 times as likely as non-Indigenous females. Indigenous Australians were also 2.5 times as likely to be hospitalised for diagnoses related to drug use as non-Indigenous Australians.

In 2013, on a ‘snapshot day’, over 2,800 Aboriginal and Torres Strait Islander clients received pharmacotherapy treatment for opioid dependence (NSW, Qld, SA, Tas, ACT and NT combined). Indigenous clients accounted for 10% of all clients in these jurisdictions and were around 3 times as likely to have received pharmacotherapy treatment as other Australians.

Implications

The *National Drug Strategy 2010–2015* provides the framework for an integrated and coordinated approach across all levels of government to reduce the prevalence of drug-related harm and drug use in Australia (MCDS 2011). Since the Strategy began in 1985, the principle of harm minimisation has formed the basis of the approach. Under the Strategy, seven sub-strategies will be developed, including the *National Aboriginal and Torres Strait Islander peoples Drug Strategy* (NATSIPDS). The NATSIPDS will be informed by the other sub-strategies, including the *National Alcohol Strategy*, which will

aim to prevent and minimise alcohol-related harm to individuals, families and communities through the development of a safer drinking culture in Australia.

In 2014–15, approximately 40 Aboriginal and Torres Strait Islander service providers across Australia were funded by the Department of Health through the *Substance Misuse Service Delivery Grants Fund* and *Non-Government Organisation Treatment Grants Programme* to provide, or support, alcohol and other drug treatment and rehabilitation services. Services provide a variety of treatment

models including rehabilitation in a residential setting and drug and alcohol workers in Aboriginal and Torres Strait Islander primary care services.

The *Alcohol Treatment Guidelines for Indigenous Australians* provide an evidence-based resource to assist health professionals understand and manage alcohol-related issues experienced by their Indigenous clients.

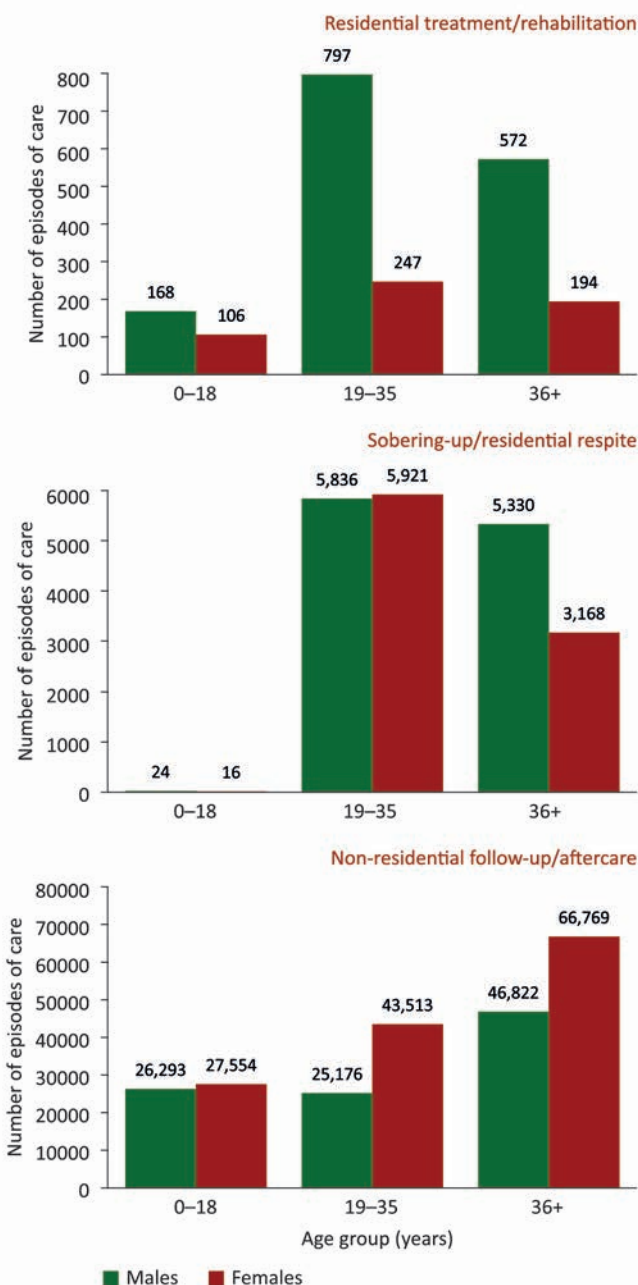
The *Indigenous Advancement Strategy–Safety and Wellbeing Programme* provides funding for strategies known

to enhance community safety, including combatting alcohol and other substance misuse. In 2014–15, this included funding to improve access to culturally appropriate substance use and prevention, treatment, rehabilitation and aftercare services for Indigenous Australians, including those in rural and remote areas.

The Policies and Strategies section and measures 2.16 and 2.17 include further detail on government initiatives to address alcohol and substance-use harms among Aboriginal and Torres Strait Islander peoples.

Figure 3.11-1

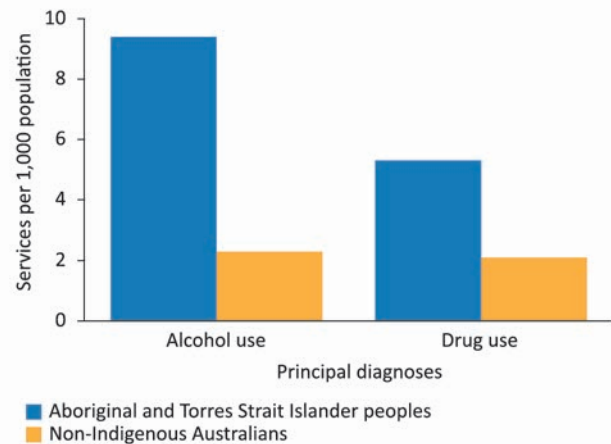
Episodes of care provided to Indigenous clients of Australian Government-funded organisations providing substance-use services, by age and sex, 2012–13



Source: AIHW OSR data collection

Figure 3.11-2

Age-standardised hospitalisations with principal diagnoses related to alcohol use and drug use, by Indigenous status, July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database

3.12

Aboriginal and Torres Strait Islander people in the health workforce

Why is it important?

Aboriginal and Torres Strait Islander peoples are significantly under-represented in the health workforce. This potentially contributes to reduced access to health services for the broader Indigenous Australian population. International studies suggest that people prefer seeing health professionals from the same ethnic background (Powe et al. 2004).

The Indigenous Australian workforce is integral to ensuring that the health system has the capacity to address the needs of Aboriginal and Torres Strait Islander peoples. Indigenous health professionals can align their unique technical and sociocultural skills to improve patient care, improve access to services and ensure culturally appropriate care in the services that they and their non-Indigenous colleagues deliver (West et al. 2010; Anderson et al. 2009). In one clinic, the numbers of Aboriginal and Torres Strait Islander patients attending increased markedly following the arrival of an Aboriginal doctor and in response to other changes in the service designed to make it more welcoming. Indigenous patients reported that an Indigenous doctor was 'more understanding of their needs' (Hayman 1999). The gender of the health provider is also important (Ware 2013).

Findings

Analysis of the 2011 Census indicates that, at that time, there were around 8,500 Aboriginal and Torres Strait Islander people employed in health-related occupations. Between 1996 and 2011 the rate of Indigenous Australians employed in the health workforce increased from 96 per 10,000 to 155 per 10,000. In 2011, about 1.6% of the Indigenous population was employed in health-related occupations. However, this is below the proportion of the non-Indigenous population employed in the health workforce (approximately 3.4%).

In 2011, the health occupations with the largest number of Indigenous employees were nursing (2,189), followed by nursing support and personal care workers (1,435), and Aboriginal and Torres Strait Islander Health Workers (1,256).

The health occupations with the largest gap between rates of Indigenous and non-Indigenous employees were nurses, medical practitioners and allied health professionals.

South Australia had the highest proportion of its Indigenous population employed in the health workforce (2%) and the NT had the lowest (1%). The 35–44, 45–54 and 55–64 year age groups had the highest rates of Indigenous Australians in the health workforce. Females accounted for 76% of the Indigenous health workforce—similar to the proportion of females in the total health workforce (75%).

Aboriginal and Torres Strait Islander peoples made up 54% of the workforce in Indigenous primary health care organisations as at June 2013 (AIHW 2014a).

Implications

Increasing the size of the Aboriginal and Torres Strait Islander health workforce is fundamental to closing the gap in Indigenous life expectancy.

In February 2011, the Australian Health Ministers' Advisory Council endorsed the *National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework (2011–2015)*. The framework underpins state and territory and Aboriginal community controlled health sector workforce strategic plans across all health disciplines. The framework embraces the aspirational target of 2.6% of the Australian health workforce being Aboriginal or Torres Strait Islander by 2015 (equal to the proportion of Indigenous Australians in the working age population).

The *Health Heroes* campaign (also known as the Attracting More People to Work in Aboriginal and Torres Strait Islander Health measure) was a component of the *Aboriginal and Torres Strait Islander Chronic Disease Fund*. The aim of this initiative was to encourage consideration of study and employment in the Indigenous health sector. Evaluation research found that 36% of the target audience was aware of the campaign messages, and as a result many have explored entering the sector through conversations with career counsellors, parents and teachers.

Under the *National Registration and Accreditation Scheme*, Aboriginal and Torres Strait Islander Health Practitioners commenced registration on 1 July 2012. As at 1 April 2014 there were

324 practitioners registered, with the majority of those being in the NT.

Improving the representation of Indigenous Australians in the health workforce will require collaboration between the health and education sectors and success across a range of fronts. Educational disadvantages faced by Aboriginal and Torres Strait Islander children can reduce options for further training (see measures 2.04 and 2.05). Strategies to address barriers to entry into health professional training, and strengthen support while in training, need to be implemented (see measure 3.20). Improved opportunities for employment, advancement, and retention also require attention.

Aboriginal and Torres Strait Islander health professionals should have access to employment in a broad range of settings within the health sector and attention to the type of occupation is required to avoid under-representation in better remunerated, more skilled and managerial positions.

Table 3.12-1

Employed persons aged 15 years and over, by selected health-related occupation, by Indigenous status, Australia, 1996, 2001, 2006 and 2011

Occupation	No.	Rate (per 10,000)					Rate difference 2011 (per 10,000)	Period linear % change
	2011	1996	2001	2006	2011	2011		
		Indigenous				Non Indig.		
Aboriginal and Torres Strait Islander Health Worker	1,256	19.1	21.0	21.3	23.0	0.1	-23.0	19.1*
Nurses	2,189	35.9	27.6	32.0	40.1	129.0	88.9	16.1
Registered nurses	1,713	18.3	20.5	24.5	31.4	103.0	71.6	75.9*
Nurse managers and nursing clinical directors	94	0.6	0.9	1.3	1.7	7.5	5.7	204.2*
Midwives	76	0.8	1.0	1.1	1.4	7.0	5.7	77.2*
Enrolled and mothercraft nurses	284	16.1	5.0	4.8	5.2	8.8	3.6	-77.7
Nurse Educators and Researchers	22	0.2	0.3	0.4	0.4	2.6	2.2	104.6*
Medical practitioners	171	1.7	2.2	2.3	3.2	35.0	31.8	78.2*
Generalist medical practitioners	123	1.2	1.4	1.8	2.3	21.8	19.5	103.3*
General medical practitioner	93	0.8	1.2	1.3	1.7	16.9	15.2	100.5*
Resident medical officer	30	0.3	0.2	0.5	0.6	4.9	4.3	112.1
Other medical practitioners	48	0.6	0.8	0.4	0.9	13.2	12.3	31.3
Allied health professionals	724	5.1	6.7	9.7	13.3	43.9	30.6	179.9*
Dietitians	25	n.p.	0.4	0.2	0.5	1.8	1.4	n.a.
Optometrists	6	n.p.	n.p.	0.2	0.1	1.8	1.7	n.a.
Psychologists	82	0.4	0.5	1.0	1.5	9.3	7.8	478.9*
Physiotherapist	75	0.5	0.7	1.2	1.4	8.0	6.6	215.3*
Podiatrist	6	0.2	0.2	0.1	0.1	1.4	1.3	-39.2
Speech professionals and audiologists	17	0.2	0.2	0.4	0.3	3.4	3.1	62.8*
Occupational therapist	24	n.p.	n.p.	0.3	0.4	4.6	4.2	n.a.
Social Worker	463	3.2	4.1	5.9	8.5	8.3	-0.2	189.6*
Other health therapy professionals	26	0.3	0.3	0.5	0.5	5.2	4.8	60.5
Dental and dental allied workforce	323	4.2	3.8	4.5	5.9	18.0	12.1	46.4
Dental practitioner	24	0.3	0.3	0.4	0.4	5.5	5.1	34.7*
Dental hygienists, technicians and therapists	32	0.5	0.4	0.3	0.6	3.2	2.6	7.4
Dental assistant	267	3.3	3.1	3.8	4.9	9.3	4.4	54.2*
Health diagnostic and promotion professionals	981	4.7	4.6	14.1	18.0	29.6	11.6	510.2
Medical imaging professionals	21	0.2	0.3	0.4	0.4	6.6	6.3	77.9*
Pharmacists	29	0.2	0.2	0.2	0.5	10.0	9.5	237.1*
Occupational health and safety adviser	193	0.6	0.6	1.1	3.5	7.6	4.0	3,114.4*
Health promotion officers	567	n.a.	n.a.	9.7	10.4	2.2	-8.2	n.a.
Environmental health officer	104	3.5	2.8	2.2	1.9	1.7	-0.2	-47.5*
Other health diagnostic & promotion professionals	67	0.2	0.5	0.5	1.2	1.5	0.2	573.6*
Other	2,812	25.6	32.6	43.4	51.6	88.4	36.8	106.9*
Health service managers	54	0.6	n.p.	0.4	1.0	1.3	0.3	n.a.
Nursing support worker and personal care workers	1,435	16.5	19.9	21.7	26.3	34.5	8.2	56.9*
Ambulance officers and paramedics	216	1.4	2.0	3.4	4.0	5.9	1.9	201.6*
Drug and alcohol counsellor	156	2.3	2.4	2.6	2.9	0.7	-2.2	26.2*
Other	951	4.7	6.8	15.3	17.4	46.0	28.5	342.6*
Total health occupations	8,456	96.3	98.6	127.3	155.1	344.1	189.0	69.5*

*represents results that are statistically significant

Source: ABS and AIHW analysis of ABS census data

3.13

Competent governance

Why is it important?

‘Governance’ involves having the processes and institutional capacity to be able to exercise control by making and applying rules, mobilising and managing resources and through sound decision making. ‘Competent governance’ requires the means to establish good governance arrangements with the ultimate aim of achieving the social, cultural, and economic developments sought by constituents (Hawkes 2001; de Alcántara 1998; Westbury 2002; Dodson et al. 2003). The manner in which governance functions are performed has a direct impact on the wellbeing of individuals and communities.

The governance model of Aboriginal Community Controlled Health Organisations (ACCHOs) was first established in the 1970s, and by the 1990s, ACCHOs were an important provider of comprehensive primary health care services for Aboriginal and Torres Strait Islander peoples (Larkins et al. 2006; DoHA 2001). While the capabilities and capacity of ACCHOs vary, this model of care provides important options for Indigenous Australians (Moran et al. 2014).

Competent governance includes mainstream service delivery for Indigenous clients and effective participation of Indigenous people on decision-making boards, management committees and other bodies, as relevant (see measure 3.08). The stewardship role of governments to improve the health of Aboriginal and Torres Strait Islander peoples is also critical. Attention should be given to assessing not only the levels of access to appropriate care but also the experiences of Aboriginal and Torres Strait Islander peoples in receiving care.

Findings

The Office of the Registrar of Indigenous Corporations (ORIC) helps to administer the *Corporations (Aboriginal and Torres Strait Islander) (CATSI) Act 2006*, which superseded the *Aboriginal Councils and Associations (ACA) Act 1976*. In 2012–13, 91 out of the 93 Indigenous health corporations incorporated under the CATSI Act and registered with ORIC were compliant with the required provision of documents.

In 2012–13, 170 Australian Government-funded Indigenous primary health care organisations provided data on governance through the Online Services Report. Of these organisations, 98% reported that their committee/board had met as frequently as required of the constitution; 97% had presented income and expenditure reports to the committee or board on at least two occasions during the year; 74% had a committee or board who were all Aboriginal and/or Torres Strait Islander peoples; and 85% had committee/board members who had received training related to governance issues. In 2012–13, 95% of organisations had formal mechanisms in place for client and community feedback.

In 2012–13, 62 Australian Government-funded organisations providing Indigenous substance-use-specific services provided data through the Online Services Report. All of these organisations reported that the governing committee or board met as frequently as required in the constitution; 98% of services had income and expenditure statistics presented to the committee or board on at least two occasions; 53% had a governing committee or board comprised entirely of Aboriginal and/or Torres Strait Islander peoples; and 82% had governing committee/board members who had received training related to governance issues.

In 2012–13, of the 205 Australian Government-funded Indigenous primary health care services in the Online Services Report, 57% had representatives on external boards (e.g. hospitals) and 87% participated in regional health planning processes.

As at June 2011, 86% of services funded under the former *Healthy for Life* programme reported having meetings of reference groups or other advisory committees to involve their service population in planning and 86% had a formal complaint mechanism.

The 2012–13 Health Survey included questions on patient experience and reasons for not accessing health care when needed in the previous 12 months. According to these data, 21% of Indigenous Australians reported needing to, but not, going to a dentist, 14% to a doctor, 9% to a counsellor, 9% to other health professionals, and 6% to hospital (see measure 3.14). Some of the reasons people did not access services reflect failures in health services

to adequately address the needs of these patients. For example, 13–27% did not attend services because they disliked the service/professional or felt embarrassed/, 1%–18% felt the service would be inadequate and 2%–4% were concerned about discrimination and cultural appropriateness. These reasons were highest for those needing to, but not accessing counsellors. In addition, a range of other reasons people did not access health care when they needed to reflect potential failures in the governance of the health system as a whole (e.g. cost, transport/distance, or the service was not available in the area).

In the 2012–13 Health Survey, 16% of Indigenous Australians reported they had been treated badly in the last 12 months because they are Aboriginal or Torres Strait Islander. Of those, 20% felt they had been treated unfairly by doctors, nurses or other staff in hospitals or doctors’ surgeries. Around 7% of Indigenous Australians reported that they avoided seeking health care because they had been treated unfairly. Most Aboriginal and Torres Strait Islander peoples aged 15 years and over living in non-remote areas that saw a GP or specialist in the previous 12 months, reported the doctor always or usually: listened carefully to them (89%), showed respect to them (89%) and spent enough time with them (85%).

In the 2008 Social Survey, 8% of Indigenous Australians aged 15 years and over disagreed or strongly disagreed with the statement ‘Your doctor can be trusted’. In addition, 17% disagreed or strongly disagreed with the statement ‘Hospitals can be trusted to do the right thing by you’.

Implications

Organisations are more effective in delivering services and achieving development outcomes when there is strong governance in place. Key challenges include the demands placed on Indigenous health services by their constituents and their funders (Moran et al. 2014).

The *Indigenous Advancement Strategy* started on 1 July 2014, replacing more than 150 programmes and services with five broad, flexible programmes: *Jobs, Land and Economy*; *Children and Schooling*; *Safety and Wellbeing*; *Culture and Capability* and *Remote Australia Strategies*. These programmes seek to foster a new engagement with Aboriginal and Torres Strait Islander peoples and make funding more flexible and better designed to meet the aspirations and

priorities of individual communities. The *Culture and Capability Programme* will support Indigenous Australians to maintain their culture, participate equally in the economic and social life of the nation and aims to ensure that Indigenous organisations are capable of delivering quality services to their clients. The programme will fund a range of activity that will achieve outcomes such as, but not limited to:

- improved leadership and governance capacity of Indigenous people, families, organisations and communities
- strengthening the capacity of Indigenous organisations so that they are able to effectively deliver Government services to Indigenous people and communities
- engaging Indigenous Australians on decisions over matters that affect them.

The Australian Government Department of Health aims to support effective clinical and organisational governance

through continuous improvement in Indigenous-specific service delivery and sector capacity by:

- continuous improvement in the business planning and management systems of existing services
- a robust risk management framework
- targeted support to organisations in difficulty
- providing an online system for improved reporting of service activity and client health status and supporting the use of electronic Patient Information Recall Systems
- supporting quality service delivery through organisational and GP accreditation
- ensuring that cultural security is recognised in Australian health-care standards.

The *National Health Reform Agreement* included the establishment of new health governance structures: Local Hospital

Networks (LHNs) and primary health care organisations. Responsibility for hospital management has been devolved to LHNs to increase local autonomy and flexibility so that services are more responsive to local needs, and provide more flexibility for local managers and clinicians to drive innovation, efficiency and improvements for patients. A total of 136 LHNs were established in all states and territories by 1 July 2012. LHNs will continue to engage with local primary health care providers and aged care services to enable their views to be considered when making decisions on service delivery at the local level, and to deliver better integration and smoother transitions for patients across the health system.

As part of the 2014–15 Federal Budget, the Australian Government announced that Primary Health Networks (PHNs) would be established and would replace Medicare Locals from 1 July 2015. Service continuity will remain a priority.

Table 3.13-1

Number and proportion of health corporations incorporated under the CATSI Act 2006 by compliance, 2012–13

Compliance status	Number	Per cent
Compliant	91	98
Not compliant	2	2
Total	93	100

Source: AIHW analysis of The Office of the Registrar of Indigenous Corporations (unpublished data)

Table 3.13-2

Number and proportion of Indigenous primary health care organisations participating in mainstream processes, 2012–13

Process	No.	Per cent
Representation on external boards (e.g. hospitals)	117	57
Participation in regional health planning processes	179	87
Total number of services	205	100

Note: a service is recorded as having conducted an activity if that activity was conducted by either the service itself or by one of its auspiced entities.

Note: total number of services that provided information

Source: AIHW analysis of OSR data collection, 2012–13

Table 3.13-3

Governing committee/board use by organisations providing primary health care services and substance-use services to Aboriginal and Torres Strait Islander peoples, 2012–13

Governing Committee /Board attribute	Primary health care services		Substance use services	
	No.	%	No.	%
Frequency of governing committee or board meeting met the requirement of the constitution	167	98	62	100
Income and expenditure statements were presented to committee or board on at least 2 occasions	165	97	61	98
All of the governing committee or board members were Aboriginal and/or Torres Strait Islander	125	74	35	53
Governing committee or board received training	144	85	51	82
Total number of services	170	100	62	100

Source: AIHW analysis of OSR data collection, 2012–13

3.14

Access to services compared with need

Why is it important?

Data presented in this measure examine the level of access to health care for Aboriginal and Torres Strait Islander peoples compared with their need for health care. Indigenous Australians currently experience significantly poorer health status than non-Indigenous Australians. Their life expectancy at birth is 10.6 years less for males and 9.5 years less for females, and Indigenous Australians are twice as likely to rate their health as 'fair' or 'poor' compared with non-Indigenous Australians.

While the causes of illness and injury for any community operate within broad environmental, social and personal factors, the health system can: assist with prevention through population health programs (see measure 3.03); provide an immediate response to acute illness and injury (see measure 1.02); and protect good health through screening, early intervention and treatment (see measures 3.04 and 3.05) (Dwyer et al. 2004). Evidence from Australia, the United States and New Zealand indicate that health care can contribute to closing the gap in life expectancy between Indigenous and non-Indigenous populations (Griew 2008). Inequalities in health care access and use may act to further exacerbate inequalities in health status (OECD 2009). Access to health care when needed is therefore essential to closing the gap in life expectancy.

Findings

Self-reported use of services

The 2012–13 Health Survey provides the most up-to-date picture of the whole health system. In 2012–13, 44% of Indigenous Australians accessed health care in the previous two weeks (or previous 12 months for hospital). In the two weeks prior, 22% of Indigenous Australians had consulted a doctor or specialist, 19% had consulted other health professionals, 5% had visited casualty/outpatient services and 5% had seen a dentist. In the past 12 months, 18% had been admitted to hospital.

Around 83% of Indigenous Australians had consulted a GP in the previous 12 months, ranging from 88% in the ACT to 77% in the NT.

Indigenous Australians with a disability, multiple long-term health conditions and/or high/very high psychological distress were more likely to have visited a doctor/hospital than those without these conditions.

Services claimed through Medicare

In 2013–14, Indigenous Australians had 7.6 million Medicare claims, of which 3.6 million were for GP services (note: not all care delivered through Indigenous primary health care services can be claimed through Medicare). Between 2003–04 and 2013–14, there has been a significant increase in GP Medicare items claimed by Indigenous Australians; the rate has doubled and is now higher than the non-Indigenous rate. There have also been significant increases in health assessments claimed since 2009–10 and a doubling in GP management plan (GPMP) and team care arrangement (TCA) services. In 2013–14, rates for these chronic disease management items were higher for Indigenous Australians (1.6 to 1.7 times) than for non-Indigenous Australians.

The two most common Medicare items claimed by Indigenous Australians were standard GP consultations (2.3 million) and pathology (2.6 million). In 2013–14, out-of-pocket costs for services claimed through Medicare were lower for Indigenous Australians (8% of fees claimed) than non-Indigenous Australians (22% of fees claimed). Out-of-pocket costs were minimal for health assessments, GPMPs and Aboriginal Health Worker (AHW) items, and higher for specialists (21%), diagnostics (10%), allied health (8%) and imaging (6%).

Indigenous Australians were more likely than non-Indigenous Australians to have received longer GP consultations, TCAs and GPMPs as well as nurse/AHW consultations. Service claims for specialist, psychologist and dental services were lower for Indigenous Australians.

There was a clear gradient, reducing by remoteness, in rates of Medicare service claims for GP, allied health and specialist services for both Indigenous and non-Indigenous Australians. Against this gradient, rates of claims for nurse/AHW services increased by remoteness for Indigenous Australians. This also reflects types of services available in remote areas.

Medicare claim rates for private specialist care among Indigenous Australians were highest in major cities (544 per 1,000) and lowest in very remote areas (107 per 1,000).

For GP services, Indigenous Australians claimed at a higher rate across all remoteness areas compared with non-Indigenous Australians (with the greatest difference in inner regional areas and the smallest in very remote areas). The rate of GP services claimed through Medicare was lowest in the NT (3,772 per 1,000) and highest in Victoria and NSW (7,064 and 7,065 per 1,000 respectively).

Indigenous women had higher rates of total services claimed per 1,000 through Medicare than Indigenous men (1.7 times). Indigenous Australians had higher rates of services claimed in the 15–29 and 40–64 year age groups compared with non-Indigenous Australians and lower rates in the 0–14 and 65 years and over age groups.

Indigenous primary health care services

There has been a steady rise in the number of Australian Government-funded Indigenous primary health care organisations, from 108 in 1999–2000 to 205 organisations in 2012–13. Between 1999–2000 and 2012–13, episodes of health care provided to clients of these organisations have more than doubled from 1.2 million to 3.1 million. Equivalent full-time staff (both paid by the service and visiting) tripled over the same period.

Hospital care

During the two years to June 2013, there were an estimated 453,000 hospital separations for Indigenous Australians (excluding dialysis). After adjusting for age, Indigenous Australians were hospitalised at 1.3 times the rate of non-Indigenous Australians. Hospital separation rates for Indigenous Australians were highest in remote areas, lower in very remote areas and lowest in major cities.

Palliative care

Indigenous Australians were hospitalised for palliative care at 1.5 times the rate of non-Indigenous Australians between July 2011 and June 2013. Aboriginal and Torres Strait Islander peoples accounted for 1.6% of all hospitalisations for palliative care.

In 2012–13 Online Services Report data, 42% of the 205 Australian Government-funded Indigenous primary health care organisations provided palliative care (AIHW 2014a).

Elective surgery

In 2012–13, the overall rate of elective surgery for Indigenous Australians (59 per 1,000 persons) was markedly lower

than for other Australians (88 per 1,000 persons) (AIHW 2014f). In 2013–14, there were 21,377 hospitalisations from public hospital waiting lists for elective surgery for patients identified as Aboriginal and/or Torres Strait Islander. Overall, the median waiting time for Indigenous Australians was greater than the median waiting time for other Australians (41 days and 36 days respectively) (AIHW 2014g).

Emergency care

In 2013–14, 73% of Indigenous Australians who presented to an emergency department were treated within national benchmarks for emergency department waiting times compared with 74% of other Australians. In terms of performance across triage categories, 100% of Indigenous Australians were treated within national benchmarks for triage category 1 (need for resuscitation), compared with 68% and 71% for triage categories 3 and 4 (urgent and semi-urgent), respectively (AIHW 2014h).

Self-reported barriers

In 2012–13, 30% of Aboriginal and Torres Strait Islander peoples reported that they needed to, but did not see a health care provider in the previous 12 months. This varied by type of service with 21% not going to a dentist, 14% to a doctor, 9% to a counsellor, 9% to other health professionals and 6% to hospital when needed. Indigenous Australians living in non-remote areas (32%) were more likely to report not seeking care when needed than those living in remote areas (22%).

Reasons for not seeking health-care in the last 12 months varied according to the type of care needed. For some services cost was the main reason for not seeking care, for others waiting times were more of a barrier. Reasons for not going to a doctor when needed included:

- being too busy (30%)
- waiting time too long/service not available at time required (22%)
- transport/distance (14%)
- dislikes service/professional or is embarrassed/afraid (14%)
- cost of service (13%)
- felt service would be inadequate (9%).

Cost was a major barrier to accessing dentists (43% overall and 32% in relation to children).

Service/provider availability

In 2013, there was a decline in full-time equivalent (FTE) medical practitioners

as remoteness increased, from 426 per 100,000 population in major cities to 257 in remote/very remote areas (AIHW 2014s). For nurses, FTE per 100,000 population ranged from 1,265 in very remote areas to 1,111 in outer regional areas (AIHW 2014x). A geographic index of access and need developed by the AIHW showed that for Indigenous Australians access to GPs relative to need worsened with increasing remoteness (AIHW 2014b).

Private health insurance

In non-remote areas, 20% of Indigenous Australians were covered by private health insurance (up from 15% in 2004–05). The most common reason reported by Indigenous Australians for not having private health insurance was that they could not afford it (72%); up from 65% in 2004–05. Among all Australian adults, a higher proportion of adults with insurance made a dental visit in the previous 12 months (71%) than adults without insurance (48%) (Brennan et al. 2012). In the two years to June 2013, 7% of hospitalisations with a procedure recorded for Indigenous Australians occurred in private hospitals compared with 53% for non-Indigenous Australians.

Patient experience

In the 2012–13 Health Survey, 16% of Indigenous Australians reported they had been treated badly in the previous 12 months because they are Aboriginal or Torres Strait Islander. Of those, 20% felt they had been treated unfairly by doctors, nurses or other staff in hospitals or doctors' surgeries. Around 7% of Indigenous Australians reported that they avoided seeking health care because they had been treated unfairly. Most Indigenous Australians aged 15 years and over living in non-remote areas that saw a GP or specialist in the previous 12 months, reported the doctor always or usually: listened carefully to them (89%), showed respect to them (89%), and spent enough time with them (85%).

Implications

Access rates vary by type of care. GP care now shows similar rates between Indigenous and non-Indigenous Australians while rates are higher for hospital care. Indigenous Australians currently experience significantly poorer health and therefore we should expect to see access to health services 2–3 times the non-Indigenous rate.

Variations in access are associated with factors such as cost, cultural

competency, and geographic barriers. Indigenous Australians have much lower levels of private health insurance, are more likely to use public hospital services and have lower rates of elective and preventive surgery. Barriers to accessing care when needed vary between remote and non-remote areas, suggesting that strategies need to be adapted for local circumstances. Recruitment and retention of staff including in rural and remote areas is also an issue (see measure 3.22).

Analysis of the data presented finds an increase in health assessments, GP management plans, team care arrangements and allied health items claimed through Medicare since the introduction of the former *National Partnership Agreement on Closing the Gap in Indigenous Health Outcomes*. This partnership agreement included a range of initiatives designed to support best practice management of chronic disease.

This report also finds a continuation of the increase in funding for Indigenous-specific health services and the number of episodes of care delivered through these services.

In May 2010, the Medicare *Practice Incentives Programme—Indigenous Health Incentive* was introduced and aims to support general practices and Indigenous health services to provide better health care for Aboriginal and Torres Strait Islander patients, including best practice management of chronic disease.

As part of the 2014–15 Budget, the Australian Government announced that it would adopt the recommendations of the Review of Medicare Locals (MLs). Accordingly, Australian Government funding to MLs will cease on 30 June 2015, with Primary Health Networks (PHNs) commencing operations from 1 July 2015. PHNs will be outcomes-focused to improve the efficiency and effectiveness of medical services delivered to individual patients and funded by the Australian Government.

The personally controlled electronic health (eHealth) record was introduced in July 2012. Indigenous Australians have been identified as a key group for specific communication and training. The electronic health record in the NT is providing access to health summary information, pathology results and increasing coordination of health care across large distances.

The *Rural Health Outreach Fund (RHO)* consolidates rural health outreach programmes (including the *Medical Specialist Outreach Assistance Program*) to provide a large flexible funding pool for initiatives aimed at improving access to medical specialists, GPs, allied health and other health providers in regional, rural and remote locations. Up to \$101.8 million will be provided under the RHO from 2013–14 to 2015–16.

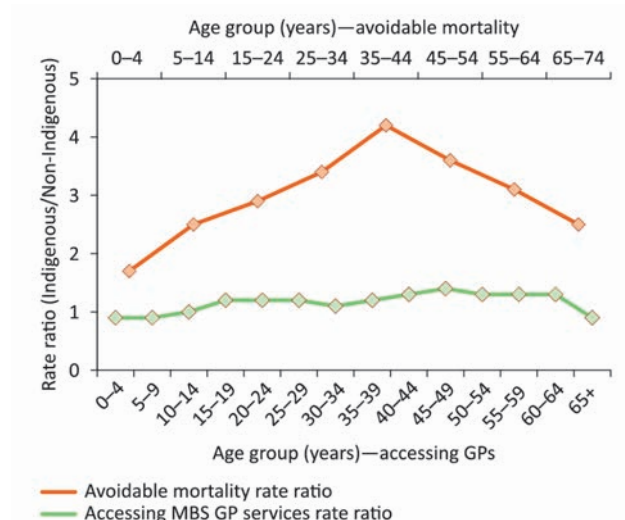
In 2013–14, 190,460 Australians accessed services through this programme.

The Australian Government will provide up to \$92.5 million under the *Medical Outreach Indigenous Chronic Disease Programme* from 2013–14 to 2015–16 to deliver a wide range of medical specialist, general practice and allied health outreach services to Indigenous Australians, with a focus on regional, rural and remote

Australians who have a chronic disease. Services are focused on patients with diabetes, cancer, renal, cardiovascular and respiratory diseases. In 2013–14, more than 123,136 Australians accessed services through this Programme (Department of Health unpublished).

Figure 3.14-1

Comparing avoidable mortality rate ratios (2008–12) with accessing MBS GP services rate ratio (2013–14) by age group

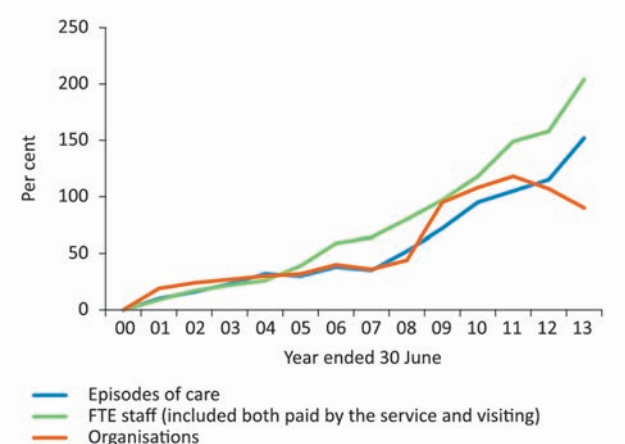


Note: avoidable mortality rate ratio includes people aged 0–74 years, NSW, Qld, WA, SA and NT.

Source: AIHW analysis of National Mortality Database and Medical Benefits Division, Department of Health Medicare Data

Figure 3.14-3

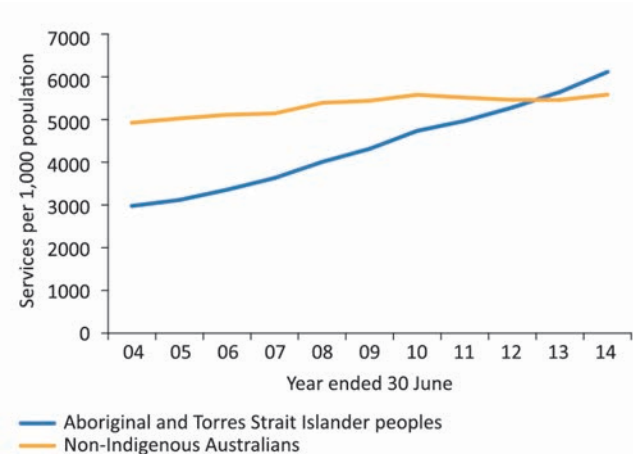
Number of organisations, FTE staff and episodes of care, Indigenous primary health care organisations, 1999–2000 to 2012–13



Sources: SAR, DSR and AIHW OSR data collections

Figure 3.14-2

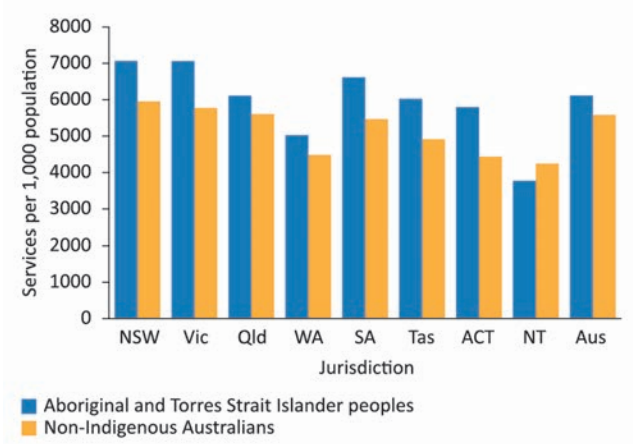
Age-standardised rates of GP services claimed through Medicare, by Indigenous status, 2003–04 to 2013–14



Source: Medical Benefits Division, Department of Health

Figure 3.14-4

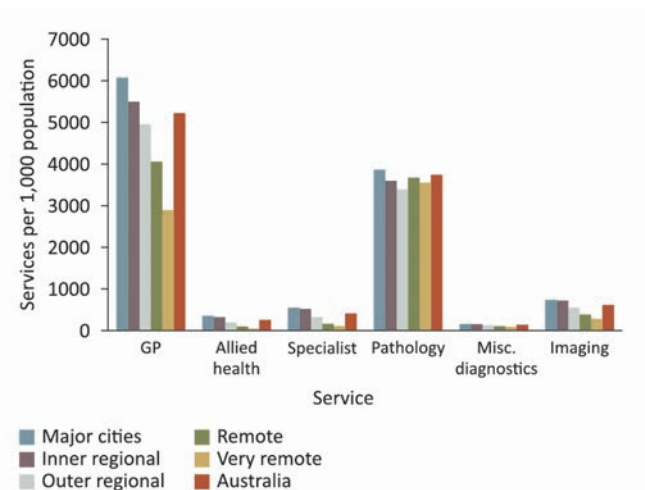
Age-standardised rate of GP MBS services claimed through Medicare, by Indigenous status and state/territory, 2013–14



Source: Medical Benefits Division, Department of Health

Figure 3.14-5

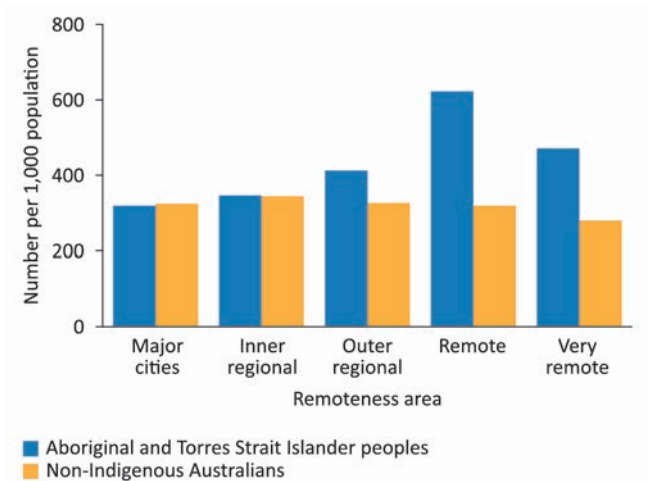
Selected MBS services claimed by Indigenous Australians per 1,000 population, by remoteness, 2013–14



Source: Medical Benefits Division, Department of Health

Figure 3.14-6

Age-standardised hospitalisation rates (excluding dialysis) by Indigenous status and remoteness, July 2011–June 2013



Source: AIHW analysis of National Hospital Morbidity Database

Table 3.14-1

Selected health services by reasons for not going to health care provider when needed, Indigenous Australians aged 2 years and over, 2012–13

	Doctors			Other health professionals			Hospitals		
	Non remote	Remote	Total	Non remote	Remote	Total	Non remote	Remote	Total
Per cent									
Total needed to go to health provider in last 12 months but didn't	15	9	14	10	4	9	6	5	6
Reasons for not going to health care provider									
Cost of service	15	4†	13	39	5‡	35	8	6†	8
Waiting time too long or not available at time required	23	19	22	16	19†	17	25	22	25
Transport/distance	14	17	14	12	19†	13	16	19	17
Service not available in area	4†	7†	5	6†	9†	6†	2‡	8†	3†
Discrimination/not culturally appropriate/language problems	3†	2‡	3†	3†	2‡	2†	4†	3‡	4†
Dislikes services/professions, embarrassed, afraid	15	10	14	13	8†	13	16	8†	14
Felt it would be inadequate	9	6	9	5	4†	5	10	8†	9
Did not trust service/provider	6	4	6	3†	4‡	3	8	7†	8
Too busy (work, personal or family responsibilities)	31	25	30	32	36	33	24	18	23
Decided not to seek care	34	34	34	19	24	20	37	31	36

	Dentists			Counsellor			Total health services		
	Non remote	Remote	Total	Non remote	Remote	Total	Non remote	Remote	Total
Per cent									
Total needed to go to health provider in last 12 months but didn't	22	15	21	10	4	9	32	22	30
Reasons for not going to health care provider									
Cost of service	47	25	43	16	15†	16	39	19	36
Waiting time too long or not available at time required	20	24	20	11	26†	12	27	27	27
Transport/distance	9	22	11	11	7†	10	15	22	16
Service not available in area	5	31	9	5	14†	6	6	25	9
Discrimination/not culturally appropriate/language problems	2†	1	2†	3	8‡	4†	4	3†	7
Dislikes services/professions, embarrassed, afraid	19	16	19	28	18†	27	23	17	22
Felt it would be inadequate	1†	1†	1†	19	12†	18	10	6	9
Did not trust service/provider	4	4†	4	12†	14†	12	9	7	9
Too busy (work, personal or family responsibilities)	21	19	21	35	29†	34	34	28	33
Decided not to seek care	11	10	11	31	40	31	29	26	29

† Estimate has a relative standard error between 25% and 50% and should be used with caution.

‡ Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.

Note: comprehensive significance testing results are published in the Detailed Analyses

Source: ABS & AIHW analysis of 2012–13 AATSIHS

3.15

Access to prescription medicines

Why is it important?

Essential medicines save lives and improve health when they are available, affordable, quality-assured and properly used (WHO 2004b). Affordable access to medicines is important for many acute and chronic illnesses. For chronic illnesses such as diabetes, hypertension, heart disease and renal failure, multiple medications may be required for many years to avoid complications (WHO 2004b). It is important to ensure that Aboriginal and Torres Strait Islander peoples, who experience high rates of acute and chronic illnesses, are able to access appropriate prescription medications when they are required. In Australia, the main mechanism for ensuring reliable, timely and affordable access to a wide range of prescription medications is the Australian Government's Pharmaceutical Benefits Scheme (PBS). In 2013–14, the PBS subsidised the cost of 209.8 million prescriptions, at a cost of approximately \$9.15 billion.

Findings

In 2010–11, total expenditure on pharmaceuticals per Aboriginal and Torres Strait Islander person was around 44% of the amount spent per non-Indigenous person (\$369 compared with \$832). In 2010–11, average PBS expenditure per person was \$291 for Indigenous Australians and \$366 for non-Indigenous Australians. In 2001–02, per person pharmaceuticals expenditure was estimated to be 33% of the amount spent on non-Indigenous people. This suggests that the gap in spending between Indigenous and non-Indigenous Australians is closing. Note that changes over time may partly be explained by methodological changes and increase in Indigenous identification.

Mainstream arrangements account for 66% of payments for Aboriginal and Torres Strait Islander peoples. The remainder are Section 100 and other special supply PBS drugs. The gaps between expenditures for Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians are greatest in non-remote areas. In remote and very remote areas, per person pharmaceutical expenditures for Aboriginal and Torres Strait Islander peoples are higher, largely due to the

impact of the special provisions for remote area Aboriginal health services. In 2010–11, pharmaceutical expenditures in these areas were \$349 per person for Aboriginal and Torres Strait Islander peoples, compared with \$236–\$296 in other areas.

In 2012, the number of full-time equivalent pharmacists per 100,000 population declined with remoteness, from 97 per 100,000 in major cities to 60 per 100,000 in remote areas (AIHW 2014aa).

A recent evaluation of use of prescription medicines by Indigenous Australians showed that PBS Co-payment subsidy beneficiaries increased their use of medicines between 2009 and 2012 (KPMG 2014). Aboriginal and Torres Strait Islander peoples aged 0–14 years had a 39% increase in use of PBS medicines in 2012 above the historical trend rates with between 25% and 33% of this increase being attributable to the Indigenous Chronic Disease Package. Similarly, Indigenous Australians aged 15–54 years had a 29% increase in use of PBS medicines above the historical trend rate, with between 13% and 21% of the increase being attributable to the *Indigenous Chronic Disease Package*.

Implications

There is a large gap between PBS pharmaceutical expenditures for Aboriginal and Torres Strait Islander peoples and other Australians, although this gap appears to have reduced between 2001–02 and 2010–11. Estimation of this gap is complicated by the absence of high-quality data sources on Indigenous pharmaceutical usage and expenditures.

Access needs to be addressed at multiple levels. Prescription medicines are prescribed by primary care and specialist practitioners, and barriers to accessing these services in the first place may result in under use of medications. In 2012–13, 14% of Indigenous Australians reported that they needed to see a doctor but did not in the previous 12 months (see measure 3.14). Once a prescription has been issued, access to pharmacies may be limited, particularly in rural and remote areas. Financial barriers, particularly for people on low incomes, can be important, despite safety net schemes. It is estimated that in 2012–13, 34% of Indigenous Australians who did not fill a prescription gave cost as a reason. Ongoing compliance is important for all patients with chronic illnesses.

The following range of programmes and special arrangements allow intervention at multiple levels to improve access to PBS pharmaceuticals for Aboriginal and Torres Strait Islander peoples in both remote and non-remote areas.

Special supply arrangements administered under Section 100 of the *National Health Act 1953*, allow for PBS medicines to be provided to remote area Aboriginal and Torres Strait Islander primary health care services. The PBS medicines are dispensed to patients of the health care service by a suitably qualified and approved health professional, without the need for a prescription and at no cost. In 2013–14, the Government expenditure for this programme was \$43.1 million. This programme has played an important role in addressing medicines access problems in remote areas.

The PBS Co-payment Measure under the *Indigenous Chronic Disease Package* was introduced on 1 July 2010 to help address the financial barriers Aboriginal and Torres Strait Islander peoples may face in accessing PBS medicines in non-remote locations. These arrangements provide assistance with the cost of PBS medicines for eligible Aboriginal and Torres Strait Islander peoples living with, or at risk of, chronic disease. The identification of Indigenous clients is an important step in reaching the target population. Prior to implementation, it was estimated that over 70,000 people were expected to benefit from the new arrangements by the end of 2012–13. The uptake of the measure has far exceeded this estimate and as of 30 June 2014, approximately 280,885 Aboriginal and Torres Strait Islander patients had accessed the initiative and 8.8 million prescriptions had been dispensed.

Medicines are listed on the PBS on recommendation of the Pharmaceutical Benefits Advisory Committee (PBAC). The expertise on the PBAC is broad and encompasses experts in community settings, including for rural and Indigenous health as well as specialists.

Under the relevant regulations, cost recovery fees for applications to the PBAC may be waived when the application is in respect of medicines for Aboriginal and Torres Strait Islander peoples.

Under the *5th Community Pharmacy Agreement* funding is provided to assist pharmacies operating in rural and remote areas through the Rural Pharmacy Maintenance Allowance. Programmes specific to Indigenous

health have also been funded including the *Quality Use of Medicines Maximised for Aboriginal and Torres Strait Islander People* programme. The primary aim of this programme is to improve medication compliance and quality use of medicines and consequently the health outcomes of Aboriginal and Torres Strait Islander peoples that attend participating Aboriginal Community Controlled Health Organisations in rural and urban areas of Australia.

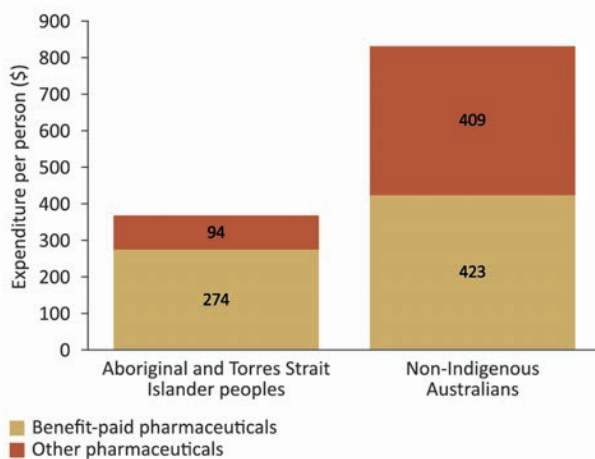
The Pharmaceutical Society of Australia's *Guide to providing pharmacy services to Aboriginal and Torres Strait Islander people* (PSA 2014) was released in 2014 to assist pharmacists and pharmacy staff to be responsive to health beliefs, practices, culture and linguistic needs of Aboriginal and Torres Strait Islander people, families and communities. The guide encourages increased engagement with Indigenous health services and key Indigenous organisations and includes an overview of Aboriginal and Torres Strait

Islander specific medicine programmes and a resource list from which pharmacists can gather more in-depth information.

It is important to develop a better understanding of how the various barriers impact on Indigenous Australians to better target strategies. As data improve, better analysis of gaps in the PBS arrangements will be possible to inform programmes and policies.

Figure 3.15-1

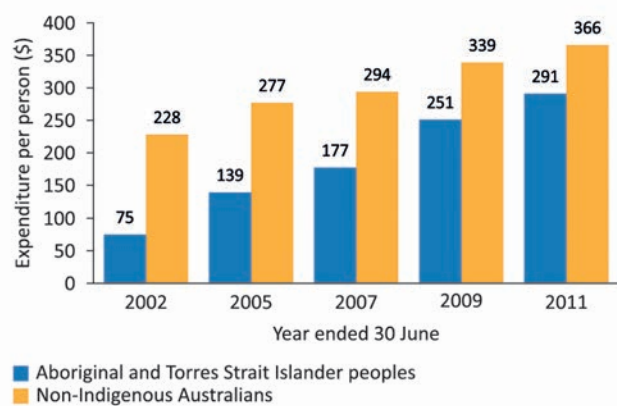
Average pharmaceutical expenditure per person, 2010–11



Source: AIHW health expenditure database (AIHW 2013c)

Figure 3.15-2

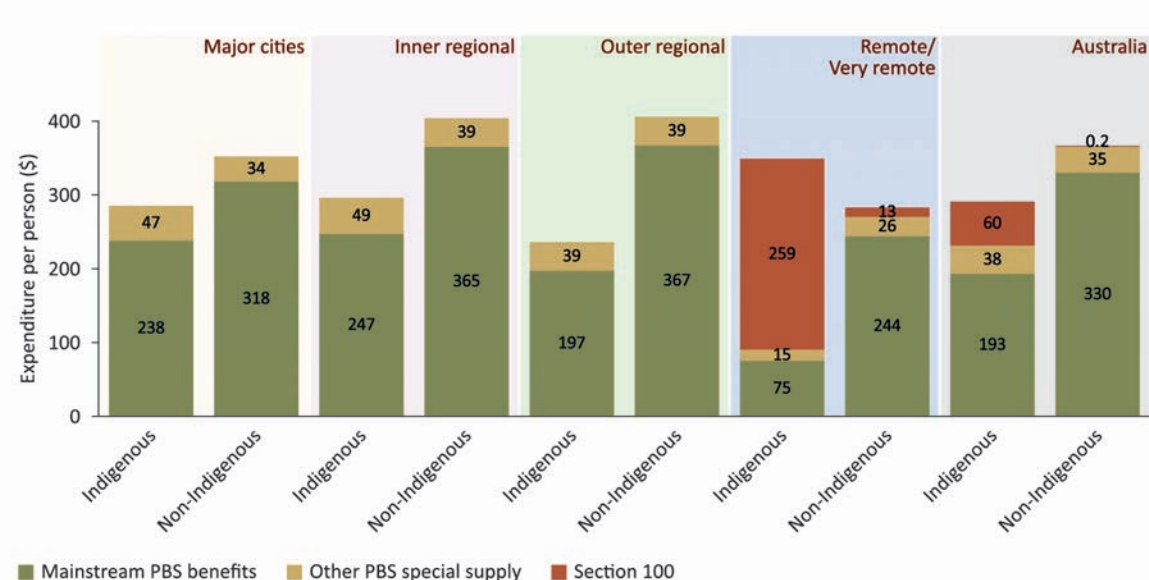
Average health expenditure per person by the Australian Government on the Pharmaceutical Benefits Scheme, constant prices, by Indigenous status, 2001–02 to 2010–11



Source: AIHW health expenditure database (AIHW 2013c)

Figure 3.15-3

Average health expenditure per person by the Australian Government on the PBS, Indigenous Australians, by remoteness, 2010–11



Source: AIHW health expenditure database (AIHW 2013d)

3.16

Access to after-hours primary health care

Why is it important?

'After-hours' services are usually services provided on Sunday, before 8 am and/or after 12 pm on Saturday, or at any time other than 8 am to 6 pm on weekdays.

An important component of comprehensive primary care services is the capacity for patients to access services after hours. In the absence of after-hours primary health care, patients with more urgent needs may delay seeking care. Many patients are provided with after-hours primary care services by their regular GP or at their usual health service. Common approaches include extended hours clinics, on-call arrangements, the provision of home visits, and co-operative arrangements that involve GPs from several practices participating in a shared roster system.

It is often preferable for after-hours primary care to be provided by a patient's usual GP, as they are more likely to know about the patient's condition and history, and to be able to make an informed judgment about the treatment required. However, as this is not always possible, a number of other after-hours primary care arrangements exist. These include medical deputising services (where GPs contract another service to provide after-hours services on their behalf), dedicated after hours services (GP and/or nurse-led clinics that only open during the after-hours period) and telephone triage and advice services (which involve telephone based nurses and/or GPs providing advice and directing people to the most appropriate point of care). Many patients also attend emergency departments during the after-hours period.

The Medicare Benefits Schedule (MBS) includes after-hours items that provide increased benefit rates to medical practitioners. Rates are highest for urgent after-hours consultations where practitioners are required to provide a home visit, or return to the clinic specifically for that consultation.

Findings

Self-reported data from the 2012–13 Health Survey indicate 9% of Indigenous Australians reported accessing a doctor outside normal business hours.

According to 2013–14 Medicare data on MBS services claimed for after-

hours care items, there were around 228,000 after-hours services provided to Indigenous Australians, representing 2.5% of all services (note these data may double-count after-hours care provided in selected emergency departments). After adjusting for the age differences in the two populations, the Indigenous rate was 318 per 1,000 population compared with 390 per 1,000 population for non-Indigenous Australians.

For Aboriginal and Torres Strait Islander peoples, claims for after-hours services were highest in major cities (533 per 1,000) and lowest in remote areas (119 per 1,000) and highest in SA and lowest in the NT (673 and 84 per 1,000). Indigenous rates were 1.9 times as high as non-Indigenous rates in very remote areas and only 29% as high in the NT.

GP survey data collected from April 2008 to March 2013 indicate 87% of GP encounters among Indigenous Australians were with practices that had after-hours care arrangements in place. This compared with 97% of GP encounters among other Australians.

Online Services Report data for 2012–13 indicate 45% of Australian Government-funded Indigenous primary health care organisations provided care outside of normal operating hours. The most common services provided outside of normal operating hours were transport (provided by 70% of services) followed by treatment of injury (60%), emotional and social wellbeing/mental health services (53%), and diagnosis and treatment of infectious illness/disease (52%). Other services provided include: diagnosis and treatment of chronic illness/disease (50%), antenatal care (42%), care in police station/lock-up/prison (42%), maternal and child care (23%), and hospital admitted patient/outpatient care (15%).

Data on services provided by emergency departments are limited to large public hospitals, mainly located in major cities. In these hospitals, in the period 2011–12 to 2012–13, there were about 696,600 emergency department presentations provided to Aboriginal and Torres Strait Islander patients, representing 5% of all presentations. Around 59% (408,706) of these episodes occurred after hours. This was similar for non-Indigenous patients (56%). For Aboriginal and Torres Strait Islander patients, around 57% (233,870) of emergency department presentations provided after-hours were classified as semi-urgent or non-urgent

(triage categories 4 and 5) as were 53% of non-Indigenous after-hours emergency department episodes of care.

Implications

Aboriginal and Torres Strait Islander peoples have a lower rate of MBS after-hours services claimed than non-Indigenous Australians (rate ratio of 0.8). Note: not all care delivered through Indigenous primary health care services can be claimed through Medicare. Rates were particularly low in remote and very remote areas for Indigenous and non-Indigenous Australians and the largest gap was in the NT (rate ratio of 0.3).

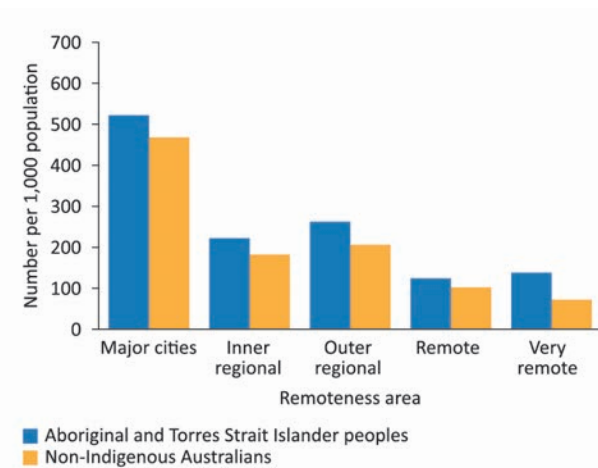
While Indigenous Australians make up 3% of the population, they represent 5% of emergency department presentations in hospitals for which data are collected. Over half of these presentations occurred after-hours. A better understanding is required of the needs of Aboriginal and Torres Strait Islander peoples for health services after-hours, and the best ways of providing coverage.

The *after-hours GP helpline* is an after-hours telephone-based GP medical advice service provided by Healthdirect Australia for people who require medical advice and cannot access their usual health service. The *after-hours GP helpline* started on 1 July 2011 and enables people who require after-hours medical advice to speak to a GP over the telephone when necessary. As of 30 June 2014 the helpline has taken over 500,000 calls (2.5% of the callers identified as Indigenous).

The Australian Government is conducting a review of current after-hours service arrangements. The *After-Hours Review* is in response to the recommendations of the *Review of Medicare Locals*. This review will help inform the Government of the most appropriate and effective delivery mechanisms to support ongoing after-hours service provision nationally. The implementation of new after-hours service arrangements will be in place by 1 July 2015.

Figure 3.16-1

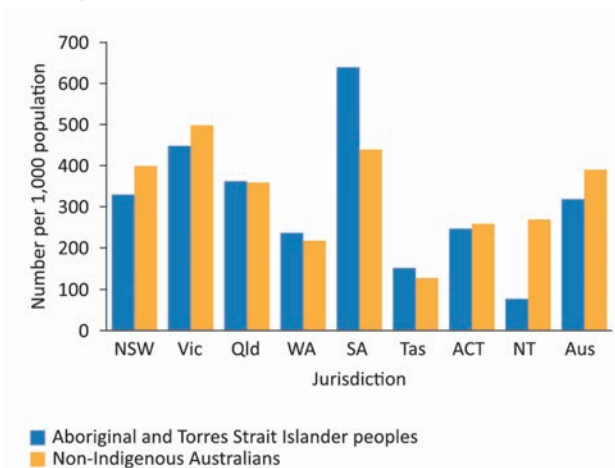
Age-standardised rate of MBS services claimed for after-hours care, by Indigenous status and remoteness, 2013–14



Source: Medical Benefits Division, Department of Health

Figure 3.16-2
Figure 3.16-2

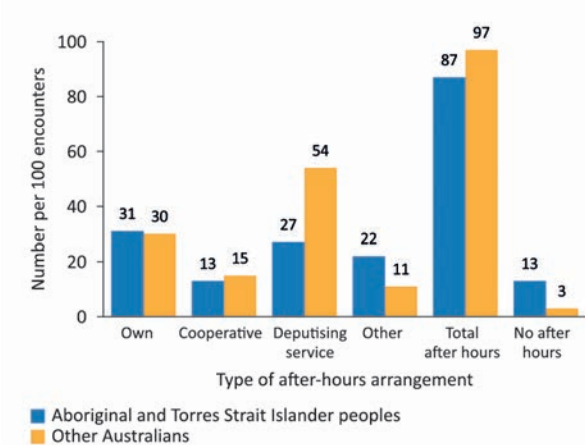
Age-standardised rate of MBS services claimed for after-hours care, by Indigenous status and state/territory, 2013–14



Source: Medical Benefits Division, Department of Health

Figure 3.16-3

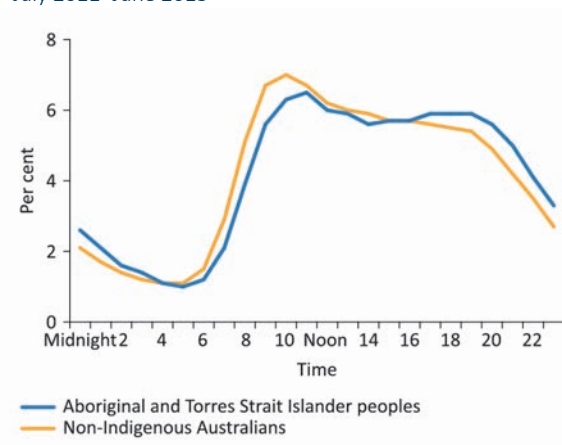
Rate of GP encounters, by whether the GP has afterhours arrangements in place, by Indigenous status of the patient, April 2008–March 2013



Source: Family Medicine Research Centre, University of Sydney analysis of BEACH data.

Figure 3.16-4

Non-admitted patient emergency care episodes for triage categories 4 (semi-urgent) and 5 (non-urgent) by time of day and Indigenous status, July 2011–June 2013



Note: These data are limited to public hospitals mainly located in major cities classified as principal referral, specialist women's and children's hospitals or large hospitals.

Source: AIHW analysis of National Non-admitted Patient Emergency Department Care Database

Table 3.16-1

Emergency Department presentations after hours, by Indigenous status, 2011–12 to 2012–13

Time of presentation	Number		Per cent	
	Indigenous	Non Indigenous	Indigenous	Non Indigenous
All emergency department presentations				
On Sundays	102,270	1,842,576	15	15
Before 8am or after 12pm on Saturday	82,045	1,345,650	12	11
Before 8am or after 6pm on a weekday	224,391	3,530,795	32	29
Total after hours	408,706	6,719,021	59	56
Not after hours	287,881	5,270,375	41	44
Total	696,587	11,989,396	100	100
Semi-urgent or non-urgent (triage category 4 and 5) emergency department presentations				
On Sundays	61,939	1,048,984	15	16
Before 8am or after 12pm on Saturday	47,612	727,496	12	11
Before 8am or after 6pm on a weekday	124,319	1,805,777	30	27
Total after hours	233,870	3,582,257	57	54
Not after hours	178,067	2,999,479	43	46
Total	411,937	6,581,736	100	100
Proportion of all after hours presentations			57	53

Note: These data are limited to public hospitals mainly located in major cities classified as principal referral, specialist women's and children's hospitals or large hospitals.

Source: AIHW analysis of National Non-admitted Patient Emergency Department Care Database

3.17

Regular GP or health service

Why is it important?

Having a usual primary health care provider is associated with good communication between the patient and provider, greater levels of trust and satisfaction with providers (Mainous et al. 2001; Schers et al. 2005), and better health outcomes for patients (Starfield 1998; Starfield et al. 2004). Those with a usual primary care provider are more likely to receive: care based on guidelines, preventative care, and better coordination of care with other providers to meet patient need (Forrest et al. 1996; Atlas et al. 2009). Other benefits of having a continuous doctor–patient relationship include improved diagnoses, better medication management, avoidance of repeat tests or other interventions, and fewer hospitalisations, particularly for people with complex health care needs (Hollander et al. 2009).

Findings

Based on self-reported data from the 2012–13 Health Survey, 86% of Aboriginal and Torres Strait Islander peoples have a usual place to go for health problems and advice. Most Aboriginal and Torres Strait Islander peoples usually went to a doctor if they had a problem with their health (54%) followed by Aboriginal Medical Services (AMS) (17%), community clinics (10%) and hospitals (5%). Note: some caution is needed as respondents may not clearly differentiate between an AMS and a community clinic (ABS 2013b) or between a doctor at an AMS or another practice (i.e. it is estimated that 3% of those that usually went to a ‘doctor’ went to an AMS doctor). In 2012–13, 14% of Indigenous Australians had no regular source of health care. Use of AMS and community clinics increased by remoteness, from 13% in major cities to 66% in very remote areas.

The survey asked where people would like to go if they were sick or needed advice about their health. In 2012–13, 53% of Indigenous Australians reported they would prefer to go to a doctor, 26% to an AMS, and 9% to a community clinic. In most instances Indigenous Australians expressed a preference for the services they currently use and services available in their local area. Preferences varied by remoteness with GPs preferred mostly by Indigenous Australians in major cities

(68% compared with 10% in very remote areas) and community clinics preferred mostly by Indigenous Australians in very remote areas (50% compared with 2% in major cities). Nationally, 27% of Indigenous Australians who said they would like to go to an AMS did not have an AMS available in their local area.

Availability of services varied across Australia. Around 95% of those living in major cities reported GPs being available compared with 31% in very remote areas. AMS were reported as being locally available by 61% of those living in outer regional areas and 26% of those in very remote areas. In 2012–13, 77% of Indigenous Australians living in very remote areas reported that there were community clinics available compared with 33% of those living in major cities.

Nationally, 5% of Aboriginal and Torres Strait Islander peoples usually go to hospital if there is a problem with their health. See measure 3.07 for analysis of hospitalisations for conditions that could be prevented if primary health care services were better able to meet the needs of Aboriginal and Torres Strait Islander peoples. A higher use of hospitals for regular health care was reported in WA and Qld (both 10%) than in other jurisdictions (1%–3%).

In the 2012–13 Health Survey, 16% of Indigenous Australians reported being treated badly in the previous 12 months because they are Aboriginal or Torres Strait Islander. Of those, 20% reported being treated unfairly by doctors, nurses or other staff in hospitals or doctors’ surgeries. About 7% of Indigenous Australians reported that they had avoided seeking health care because they had been treated unfairly. Further analysis of this issue is discussed in the context of cultural competency (see measure 3.08).

In the same period, 70% of Aboriginal and Torres Strait Islander peoples rated their health care experience as ‘excellent’ or ‘very good’ in the previous 12 months. The majority of Indigenous Australians aged 15 years and over living in non-remote areas reported that doctors listened to them (89%), explained things in a way that could be understood (87%), showed respect for what was said (89%) and spent enough time with them (85%). The 2012–13 Patient Experience Survey provides comparable data for the total Australian population: GP listened (89%), showed respect (93%) and spent enough time (88%) (SCRGSP 2013).

Indigenous Australians with no usual GP/medical service reported lower rates of satisfaction than those with a regular doctor/GP (61% reporting excellent or very good compared with 73%).

In the 2008 Social Survey, 80% of Indigenous Australians aged 15 years and over agreed that their doctor can be trusted.

Implications

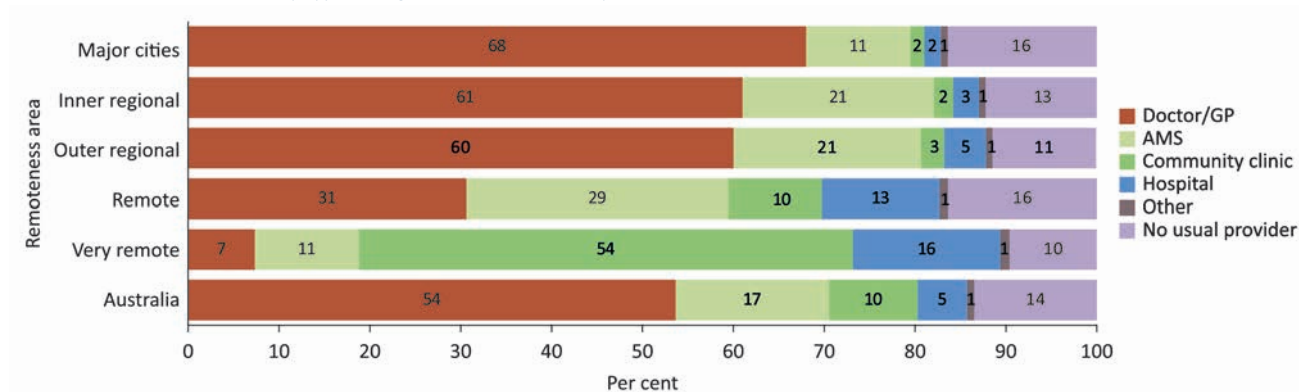
Most Aboriginal and Torres Strait Islander peoples have a usual source of health care. This finding is encouraging as access to a usual source of care is one of the foundations for a good primary health care system. The main sources of primary health care for Indigenous Australians are GPs, AMSs and community clinics. While mainstream general practice is a significant source of care for Indigenous Australians, for most GPs, Indigenous clients will remain a small proportion of their clients. Some mainstream practices have implemented strategies explicitly focused on their Indigenous patients (Hayman et al. 2009; Spurling et al. 2009).

Australian Government initiatives include the *Practice Incentives Programme—Indigenous Health Incentive (PIP–IHI)* to support general practices and Indigenous health services to provide better health care for Aboriginal and Torres Strait Islander patients. Payments are made to practices that register for the PIP–IHI and meet certain requirements, including establishing and using a mechanism to ensure Indigenous patients aged 15 years and over with a chronic disease are followed up (e.g. use of a recall/reminder system or staff actively seeking out patients to ensure they return for ongoing care), and at least two staff members from the practice (one of whom must be a GP) completing appropriate cultural awareness training. In 2013–14, about 3,500 general practices and Indigenous health services had signed on to the incentive. Around 56,000 patients were registered in 2013 (Department of Health unpublished).

The Australian Government will boost GP training places by 300 (from 1,200 to 1,500 new places) in 2015. As many of these places as possible will be in regional and rural Australia.

Figure 3.17-1

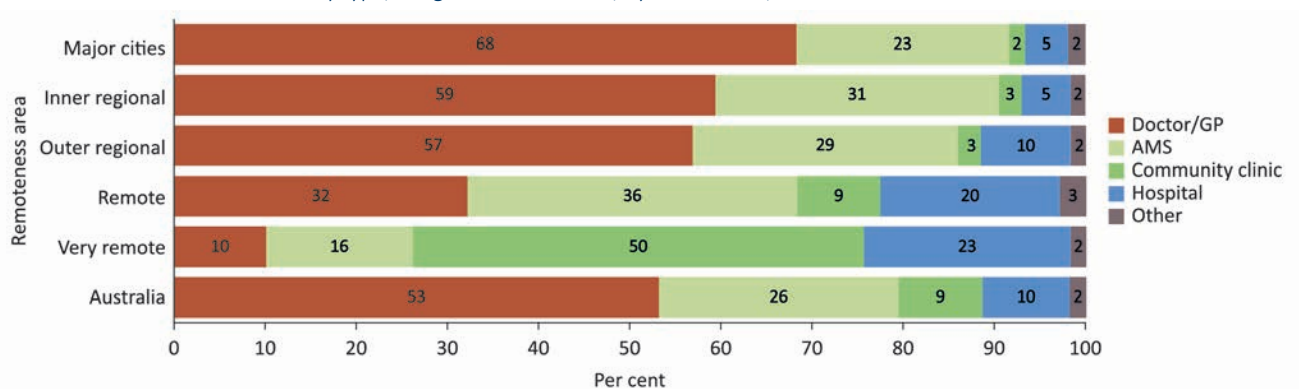
Usual source of health care by type, Indigenous Australians, by remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 3.17-2

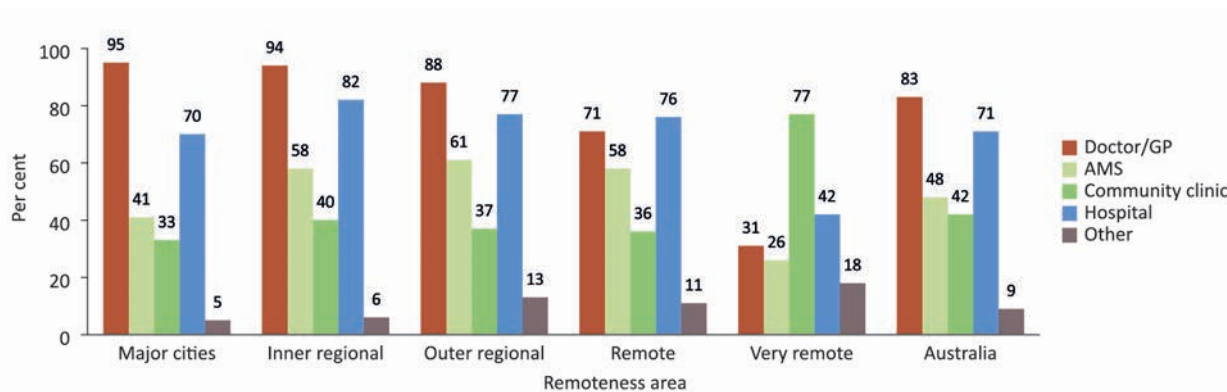
Preferred source of health care by type, Indigenous Australians, by remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 3.17-3

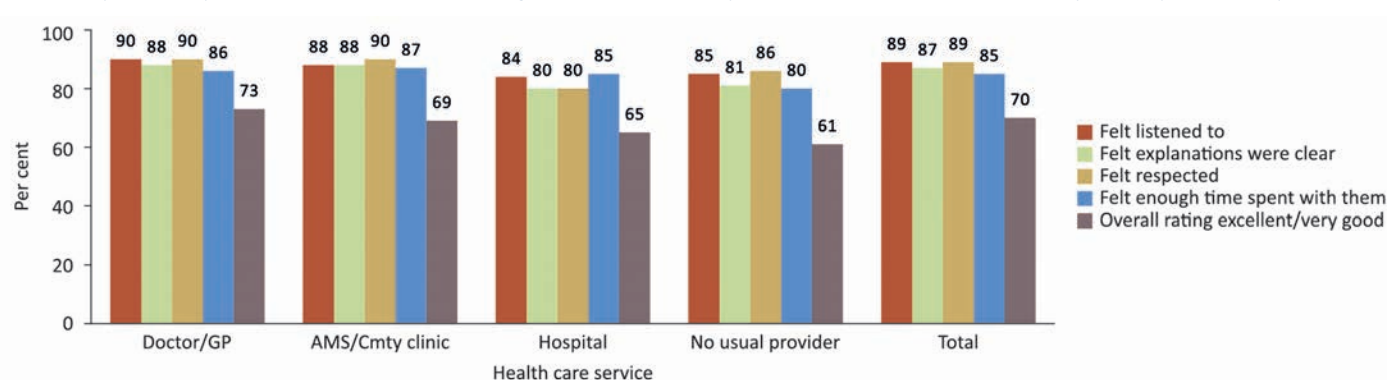
Available sources of health care by type, Indigenous Australians, by remoteness, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 3.17-4

Patient experience by usual source of health care, Indigenous Australians 15 years and over who saw a doctor or specialist (non-remote) 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

3.18

Care planning for chronic diseases

Why is it important?

Chronic diseases are the major causes of morbidity and mortality among Aboriginal and Torres Strait Islander peoples (see measure 1.02 and 1.23). Effective management of chronic disease can delay the progression of disease, decrease the need for high-cost interventions, improve quality of life, and increase life expectancy. As good quality care for people with chronic disease generally involves multiple health care providers across multiple settings, the development of care plans is one way in which the client and primary health care provider can ensure appropriate care is arranged and coordinated.

A care plan is a written action plan containing strategies for delivering care that address an individual's specific needs, particularly patients with chronic conditions and/or complex care needs. A care plan can be used to record information about the patient's condition, actions the patient needs to take and the various services required to achieve management goals for the patient. Development of a care plan can also help encourage the patient to take informed responsibility for their care, including actions to help achieve the treatment goals. A care plan may involve one health professional (usually a GP or other primary health care doctor), or may be negotiated with several service providers (e.g. GP, nurse, Aboriginal health worker, allied health professionals, community services providers) in consultation with the patient.

A number of reviews have found that the chronic disease interventions most likely to be effective in the Australian context include: engaging primary care services in self-management support through education and training for GPs and practice nurses, and including self-management support in care plans linked to multidisciplinary team support (Kowanko 2012; Dennis et al. 2008). A study of general practice patients with Type 2 diabetes found that, following implementation of care plans, the proportion of patients involved in multidisciplinary care and in the adherence to diabetes care guidelines increased. There were also improvements in patients' metabolic control and cardiovascular risk factors (Zwar et al. 2007).

GPs are encouraged to develop care plans through a number of items under the Medicare Benefits Schedule. In July 2005, new Chronic Disease Management items were introduced specifically focused on patients with chronic or terminal conditions who will benefit from a structured approach to management of their care needs. These include an item related to the development of GP Management Plans (GMPs), an item for Team Care Arrangements (TCAs) where planning involves a broader team, and items for where GPs contribute to care plans developed by another service provider or to a review of those plans.

Findings

In 2013–14, there were around 53,600 Medicare GMP claims and 44,400 TCA claims for Indigenous Australians—a steady increase in uptake since these items were introduced in July 2005. In the five years from 2009–10 to 2013–14, rates of services claimed by Indigenous Australians have doubled for GMPs (from 55 to 114 per 1,000) and more than doubled for TCAs (from 44 to 96 per 1,000).

In 2013–14, the Indigenous rate was higher than the non-Indigenous rate for both GMPs (114 per 1,000 compared with 72 per 1,000) and TCAs (96 per 1,000 compared with 58 per 1,000). This higher rate for Indigenous Australians has been particularly noticeable from 2009–10 when the Indigenous chronic disease initiatives were introduced. In 2013–14, Indigenous Australians also had a higher rate of practice nurse/Aboriginal health worker consultations claimed (236 per 1,000 compared with 39 per 1,000).

Australian Government-funded Indigenous primary health care organisations provide national Key Performance Indicators data on a range of process of care measures related to chronic disease management. In December 2013, around 28,000 regular Indigenous clients of these organisations had Type 2 diabetes. Of these clients, 47% had a GMP in the two years to December 2013. This was an increase of 6 percentage points from December 2012. In that period, inner regional and very remote areas showed improvement of over 6 percentage points. Of clients with diabetes, 44% had a TCA in the two years to December 2013. This was an increase of 7 percentage points from December 2012. Improvements were seen in most jurisdictions; outer regional was the only area not to show an improvement (AIHW 2014w).

In 2012–13, Online Services Report data from Australian Government-funded Indigenous primary health care organisations included organisation-level data on chronic disease management. Of the 205 organisations, 98% provided care planning. Of those, 63% reported that discharge planning was well coordinated between the hospital and the organisation and 62% provided or facilitated shared-care arrangements for managing people with chronic conditions.

Key elements of effective asthma management include a written asthma action plan and regular use of medications that control the disease and prevent exacerbations of the condition (AIHW 2011b). Self-reported data from the 2012–13 Health Survey, indicate that 29% of Aboriginal and Torres Strait Islander peoples with asthma living in non-remote areas had a written asthma action plan. After adjusting for differences in the age structures of the two populations, this rate was similar to the proportion for non-Indigenous Australians. Rates were highest for children aged 0–14 years. Indigenous Australians were more likely to go to hospital or an emergency department due to their asthma than non-Indigenous Australians, particularly in the age groups over 25 years. Indigenous Australians with asthma living in the NT had the highest proportion with a written asthma plan (37%) and the lowest proportion was in the ACT (22%). Based on self-reported data from the 2012–13 Health Survey, 18% of Indigenous Australians had asthma—twice the non-Indigenous rate.

Implications

As discussed in relation to measure 3.05, organised chronic disease management in Aboriginal and Torres Strait Islander primary health care services has been demonstrated to result in improvement in various health outcomes (Hoy et al. 2000; Hoy et al. 1999; Rowley et al. 2000; McDermott et al. 2003; Bailie et al. 2007). Working with clients and their families to support proactive management of health conditions is vital (Griew et al. 2007).

Currently the Australian Government provides funding through the *Practice Incentives Programme—Indigenous Health Incentive*, which aims to support general practices and Indigenous health services to provide better health care for Aboriginal and Torres Strait Islander patients, including best practice management of chronic disease.

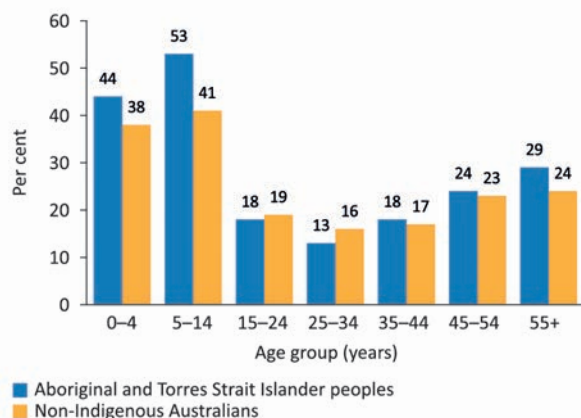
Other local arrangements also exist. For example, the NT Department of Health Chronic Condition Management Model seeks to improve coordination

and delivery of services, and has demonstrated an increase in the proportion of chronic condition clients with a GPMP (increasing from 40% in

June 2012, to 51% in May 2014) (NT Department of Health 2014).

Figure 3.18-1

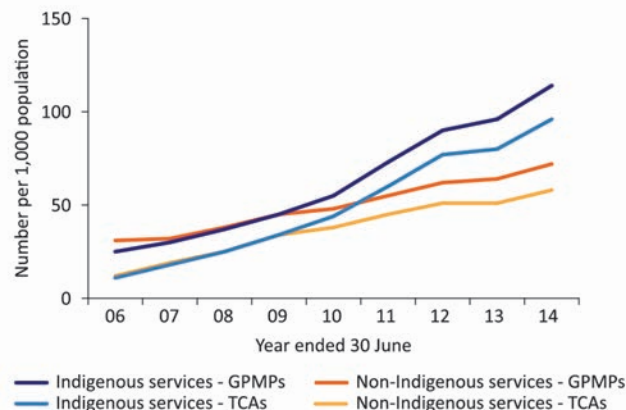
Proportion of people with asthma reporting they have a written asthma action plan, by Indigenous status and age group, non-remote areas, 2012–13



Source: ABS and AIHW analysis of 2012–13 AATSIHS

Figure 3.18-2

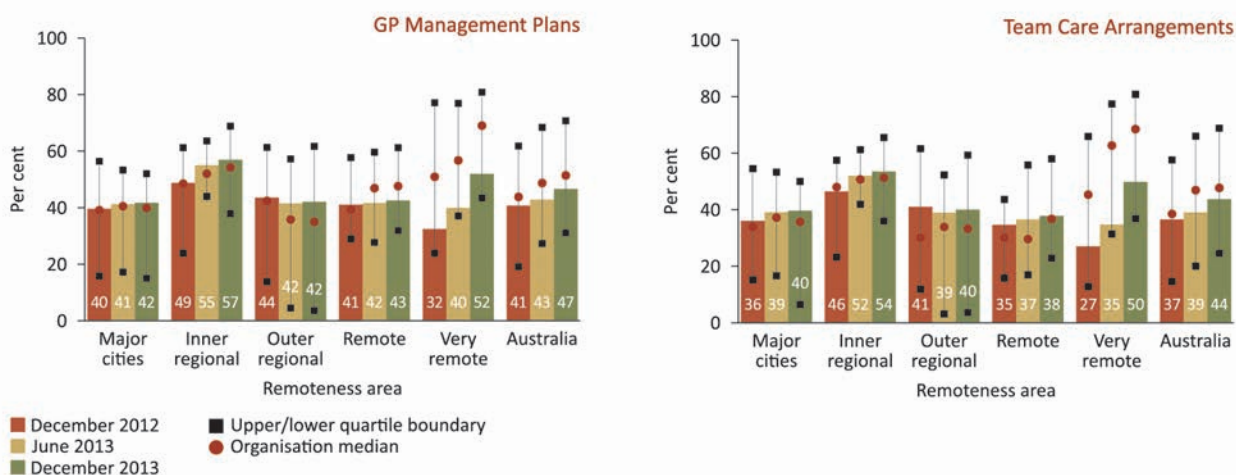
Age-standardised rates of GPMPs and TCAs claimed through Medicare, by Indigenous status, 2005–06 to 2013–14



Source: Medical Benefits Division, Department of Health

Figure 3.18-3

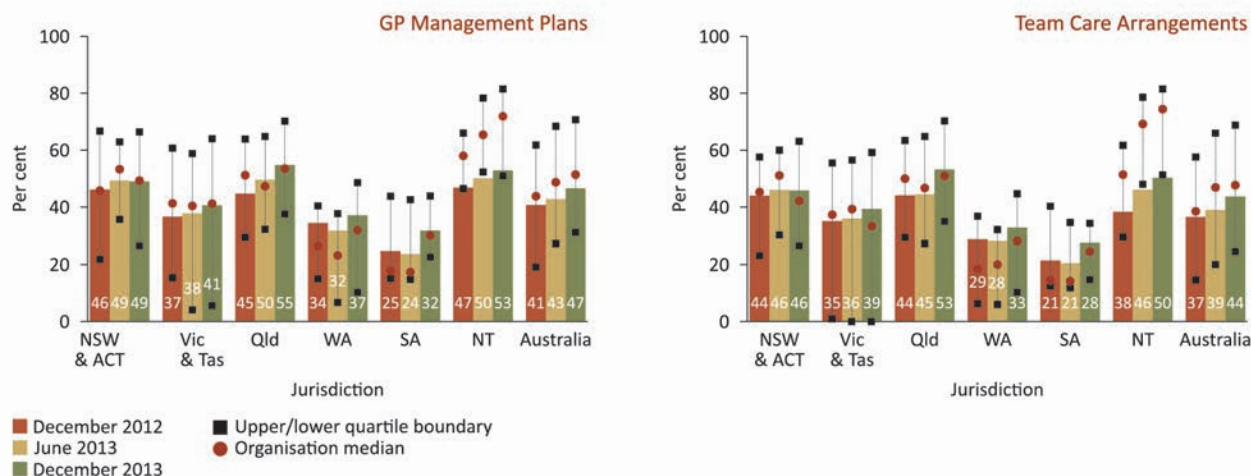
Proportion of Indigenous regular clients with Type 2 diabetes who had a GPMP and TCA in the last 2 years, by remoteness area, Indigenous primary health care organisations, December 2012, June 2013 and December 2013



Source: AIHW, national Key Performance Indicators for Aboriginal and Torres Strait Islander primary health care data collection

Figure 3.18.4

Proportion of Indigenous regular clients with Type 2 diabetes who had a GPMP and TCA in the last 2 years, by jurisdiction, Indigenous primary health care organisations, December 2012, June 2013 and December 2013



Source: AIHW, national Key Performance Indicators for Aboriginal and Torres Strait Islander primary health care data collection

3.19

Accreditation

Why is it important?

Accreditation is a process, usually voluntary, through which a recognised external body assesses the extent to which a health care organisation meets applicable quality standards. Quality standards typically address issues such as governance of the organisation, management of safety issues such as infection control, handling of care processes such as discharge planning, general management issues such as human resource management, quality of the physical infrastructure, and issues such as handling of patient complaints. Assessments of quality often result in recommendations for action. The assessment outcome may also be reported publicly in a summarised form.

The services accessed by Aboriginal and Torres Strait Islander peoples should be able to demonstrate a comparable level of quality when compared with other health services in Australia. While accreditation status is a broad measure, it provides one measure of the capability of services, based on their skills and knowledge, to provide quality health services to Aboriginal and Torres Strait Islander peoples.

In Australia, there are accreditation systems for both hospitals and general practice. Public and private hospitals are accredited against the *National Safety and Quality Health Service Standards (NSQHSS)*. Accreditation is provided by a number of bodies, including the Australian Council of Health-care Standards Evaluation and Quality Improvement Program, and the Quality Improvement Council. There are currently 1,352 public and private hospitals and day procedure services in Australia eligible to be assessed against the NSQHSS. Of these health service organisations, 57% (770) are in the public sector and 43% (582) are in the private sector. In 2013, 750 health service organisations were assessed against the Standards (Department of Health unpublished).

In 2012–13, 93% of public hospitals, accounting for 98% of public hospital beds were accredited (AIHW 2014f). Accreditation is less common for small hospitals located in regional and remote areas. Achieving accreditation generally requires a considerable ongoing investment of time and resources, which is not always easy for smaller hospitals. It

is not possible to draw conclusions about the quality of care in hospitals that do not have accreditation.

Accreditation in general practice involves assessment against standards set by the Royal Australian College of General Practitioners (RACGP) in five key areas: practice services; rights and needs of patients; safety, quality improvement and education; practice management; and physical factors (RACGP 2010). There are two registered accreditation providers: Australian General Practice Accreditation Limited (AGPAL) and General Practice Accreditation Plus (GPA+). Most general practices are accredited by AGPAL.

Findings

Between July 2011 and June 2013, 99% of public hospital separations for Aboriginal and Torres Strait Islander peoples occurred in accredited hospitals (as did 99% of public hospital separations for non-Indigenous Australians). Rates were similar across remoteness areas.

Since 1998–99, the proportion of care provided to Indigenous Australians in accredited public hospitals has increased significantly (by 59%) for jurisdictions with adequate data for time series (Qld, WA, SA and the NT combined). In the same period, the proportion for other Australians increased by 19%.

In 2012–13, an estimated 94% of general practices registered for accreditation were accredited through AGPAL or GPA+. The proportion of practices that were accredited ranged from 92% for practices in areas where Aboriginal and Torres Strait Islander peoples make up 10% or more of the population to 95% in areas where 4–10% of the population is Indigenous.

As at July 2014, of the 185 Australian Government-funded Aboriginal Community Controlled Health Organisations surveyed, 77 (42%) had achieved organisational accreditation and a further 85 (48%) were pursuing this accreditation (Department of Health unpublished). Of the 129 Australian Government-funded Aboriginal Community Controlled Health Organisations employing a GP, 119 (92%) achieved clinical accreditation under the RACGP Standards for General Practices (Department of Health unpublished).

Implications

The RACGP standards indirectly address issues for Aboriginal and Torres Strait Islander peoples. For example, in assessing whether patient care is effective,

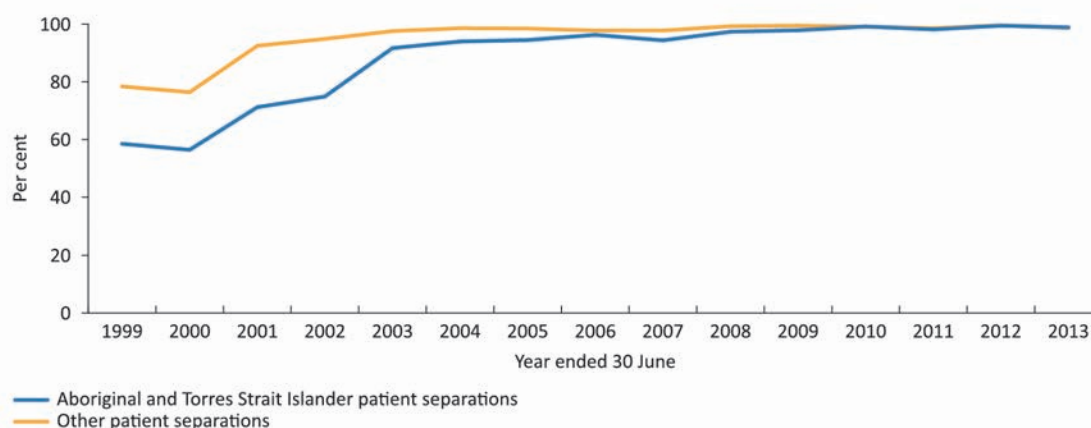
accreditation assessors ask GPs if they ‘can access guidelines for specific clinical care of patients who self-identify as Aboriginal and Torres Strait Islanders’. Under the RACGP standards, practices are required to demonstrate that patient information records routinely record Aboriginal and Torres Strait Islander status in active patient health records. This information is important in ensuring Aboriginal and Torres Strait Islander peoples receive the most appropriate care.

The Australian Government continues to implement activities to raise awareness of the value of accreditation and promote uptake and achievement of accreditation for services delivering care to Indigenous Australians. In 2014–15 the following dedicated supports were available to eligible organisations to achieve clinical or organisational accreditation under mainstream services.

- Accreditation facilitation services: Funding is available for accreditation facilitators to provide ongoing expert support and advice to organisations to help them achieve first time clinical and/or organisational accreditation.
- Gap assessments: Organisations can receive a gap assessment undertaken by a licensed assessment agency at the start of their accreditation process to assist them in identifying any essential barriers to achieving accreditation.
- Sector support: Funding is provided to the National Aboriginal Community Controlled Health Organisation and its state and territory affiliates to provide accreditation support to organisations.

Figure 3.19-1

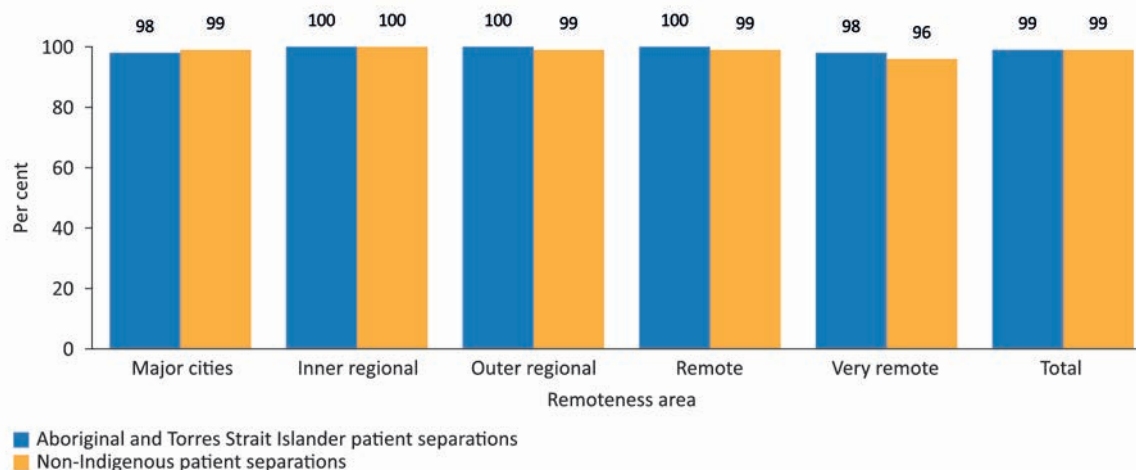
Proportion of hospital separations in accredited public hospitals, by Indigenous status, Qld, WA, SA and NT combined, 1998–99 to 2012–13



Source: AIHW analysis of National Hospital Morbidity Database and National Public Hospitals Establishment Database

Figure 3.19-2

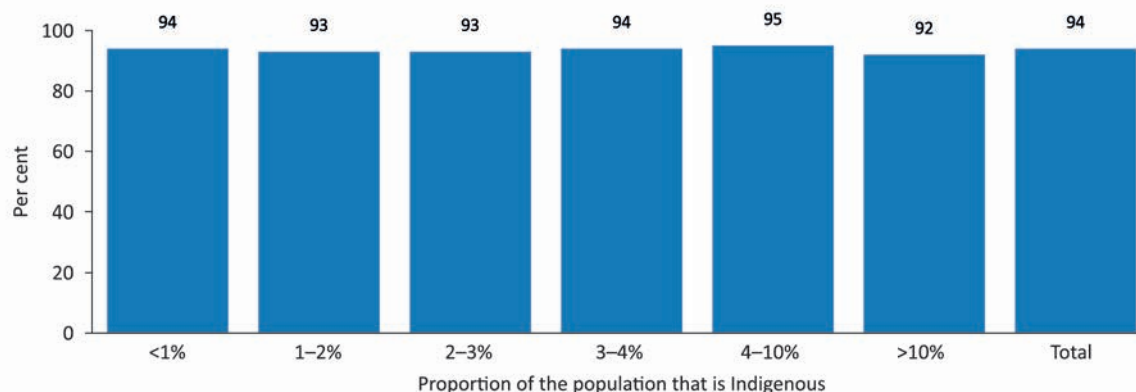
Proportion of hospital separations in accredited hospitals, by Indigenous status and remoteness, Australia, 2011–12 to 2012–13



Source: AIHW analysis of National Hospital Morbidity Database and National Public Hospitals Establishment Database

Figure 3.19-3

Proportion of general practices accredited through AGPAL and GPA+, by proportion of the population that is Indigenous, 2012–13



Source: AIHW analysis of AGPAL and GPA+ data

3.20

Aboriginal and Torres Strait Islander peoples training for health-related disciplines

Why is it important?

Aboriginal and Torres Strait Islander peoples are significantly under-represented in the health workforce (see measure 3.12). Improving and supporting the participation of Aboriginal and Torres Strait Islander people in tertiary education for health-related disciplines is vital to increasing Aboriginal and Torres Strait Islander participation in the health workforce.

Findings

In the Higher Education Student Statistics collection for 2012, an estimated 2,037 current enrolments for health-related courses were for Aboriginal and Torres Strait Islander tertiary students, as were 353 health-related course completions. Enrolment rates for Indigenous university students have increased from 29 per 10,000 in 2001 to 46 per 10,000 in 2012. There has also been an increase in completion rates over this period, from 5.6 per 10,000 to 8 per 10,000. Enrolment rates increased at a faster rate than completion rates (75% compared with 68%). The gap between Indigenous and non-Indigenous student rates has increased for both enrolment and completion rates.

The success rate for Indigenous university students studying health-related courses in 2012 was 77% compared with 92% for non-Indigenous students. Health-related course enrolments for Indigenous undergraduate students in 2012 were highest for nursing (943 enrolments, and 115 completions). In the same year, there were 208 Indigenous students enrolled in public health courses (of these, 142 were in a specific Indigenous health course) and there were 65 completions. There were an estimated 249 Indigenous enrolments for medicine and 17 completions. Enrolment rates remained very low in dental studies, pharmacy, radiography and optical science. Indigenous student enrolment and completion rates were lower than non-Indigenous student rates in the younger age groups, but exceeded non-Indigenous student rates in the older age groups (35 years plus for enrolments and 45 years plus for completions).

Vocational Education and Training (VET) attracts the highest proportion of Indigenous students studying and completing health-related courses. In 2012 there were 5,078 Indigenous student enrolments in health-related courses in the VET sector and 901 completions. Indigenous students were nearly twice as likely to be enrolled in health-related courses as other students (121 per 10,000 compared with 68 per 10,000). Rates for completions were also higher for Indigenous students (22 per 10,000 compared with 15 per 10,000). The most common type of health-related course for Aboriginal and Torres Strait Islander VET students was public health (2,494 enrolments and 609 completions) followed by nursing (482 enrolments and 87 completions). Enrolment rates remained very low in pharmacy, optical science and medical studies.

In 2012, there were 521 VET-sector completions for Aboriginal and Torres Strait Islander health worker occupations in Australia. Women accounted for 78% of the student completions in these courses. The VET load pass rate for Indigenous students studying health-related courses was 75% compared with 83% for non-Indigenous students.

Implications

Trends to 2012 show significant success in the VET sector but a widening of the gap for numbers of students enrolled in, or completing health related higher education courses.

Funding is provided to Aboriginal and Torres Strait Islander peak health professional organisations to promote health careers in schools and colleges, and for mentoring and support of Indigenous university and VET students.

Funding is also provided to the *Leaders in Indigenous Medical Education network*, which focuses on improving the quality and effectiveness of teaching and learning of Indigenous health in medical education through a nationally agreed curriculum framework, and for promoting best practice in the recruitment and retention of Indigenous medical students.

The *Aboriginal and Torres Strait Islander Health Worker Skills Recognition and Upskilling Project* is assisting to increase the number of health workers in training to meet the required qualification standard to enable registration as an Aboriginal and Torres Strait Islander health practitioner.

The *Aboriginal and Torres Strait Islander Health Worker Certificate IV Training*

and *Assessment Project* is increasing the number of qualified trainers to provide quality, accessible training for Indigenous health workers.

The *Puggy Hunter Memorial Scholarship Scheme* continues to provide scholarships for Indigenous students in all health disciplines. In 2014, there were over 380 Indigenous students receiving training support under this scheme.

Increasing opportunities for Aboriginal and Torres Strait Islander students in health disciplines is a priority under the Australian Government's *Rural Clinical Training and Support Program* and the University Departments of Rural Health. Additionally, the Flinders University NT *Indigenous Transition Pathways to Medicine Project* assists students to make a successful transition into the medical programme. Nurses working in Aboriginal Medical Services are prioritised for scholarships under the *Nursing and Allied Health Scholarship and Support Scheme*.

The *Health Heroes campaign* (also known as the Attracting More People to Work in Aboriginal and Torres Strait Islander Health measure) is a component of the *Indigenous Australians Health Programme*. The aim of this initiative is to encourage study and employment in the Indigenous health sector. Evaluation research found that 36% of the target audience is aware of the campaign messages, and as a result many have explored entering the sector.

The *Aged Care Workforce Fund* will provide training, education and support for the aged care workforce and facilitate collaboration between the aged care training and research sectors. It will also support targeted training for the delivery of culturally appropriate care.

Strategies are required to increase enrolment in courses for the health disciplines in which Indigenous students are under-represented. Some medical schools have been significantly more successful in attracting and retaining Indigenous medical students. These schools have adopted comprehensive approaches including: locally based strategies involving personal contact and community engagement, building relationships with potential students and their families and communities, and Indigenous medical or health support units. Fifty-seven per cent of Indigenous Australian medical students reported the presence of a support unit as their main reason for choosing a university. The presence of Indigenous staff within the school was also important, along with

mentoring, curriculum and cultural safety (Minniecon et al. 2005). Improvements in school educational retention and attainment are also necessary (see measure 2.05).

Table 3.20-1

Student enrolments and completions in health-related courses in the tertiary education sector by Indigenous status, 2012

	Enrolments				Completions			
	Number		Number per 10,000		Number		Number per 10,000	
	Indig.	Non Indig.	Indig.	Non Indig.	Indig.	Non Indig.	Indig.	Non Indig.
Nursing	943	42,164	21.3	23.4	115	8,714	2.6	4.8
Public health	208	8,009	4.7	4.5	65	1,237	1.5	0.7
Indigenous health	142	35	3.2	0.0	51	6	1.2	0.0
Medical studies	249	15,109	5.6	8.4	17	2,889	0.4	1.6
Rehabilitation therapies	126	14,575	2.8	8.1	17	2,519	0.4	1.4
Dental studies	43	2,719	1.0	1.5	10	555	0.2	0.3
Pharmacy	23	5,116	0.5	2.8	<5	1,082	n.p.	0.6
Radiography	26	2,278	0.6	1.3	<5	572	n.p.	0.3
Optical science	<5	712	n.p.	0.4	0	132	0.0	0.1
Total domestic undergraduate	1,614	88,092	36.5	49.0	230	17,337	5.2	9.6
Total	2,037	140,645	46.0	78.2	353	33,776	8.0	18.8

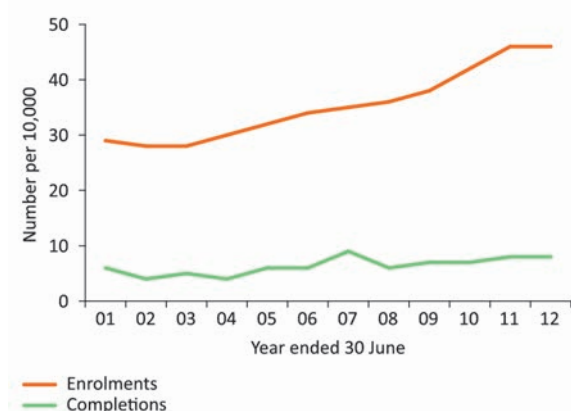
Note: for enrolments, persons may be studying in more than one field of education

Note: total includes undergraduate, postgraduate, domestic and international students

Source: AIHW analysis of Higher Education Student Statistics Collection

Figure 3.20-1

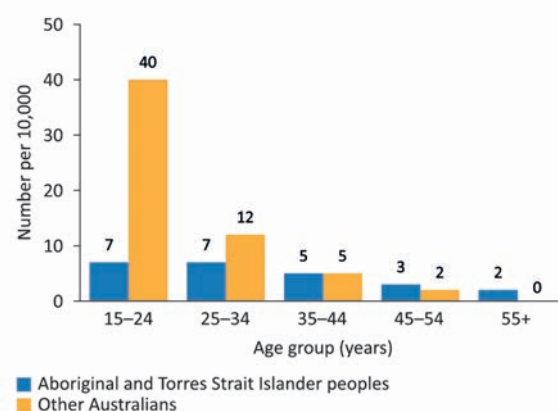
Indigenous Australian university student enrolments and completions in health-related courses, 2001 to 2012



Source: AIHW analysis of Higher Education Student Statistics Collection

Figure 3.20-2

Undergraduate domestic health-related course completions by Indigenous status and age group, 2012



Source: AIHW analysis of Higher Education Student Statistics Collection

Table 3.20-2

Vocational education and training (VET) sector student enrolments and completions in health-related courses, 2012

	Enrolments ^(a)				Completions			
	Number		Number per 10,000		Number		Number per 10,000	
	Indig.	Other	Indig.	Other	Indig.	Other	Indig.	Other
Public health	2,494	27,693	59.6	18.7	609	6,353	14.6	4.3
Nursing	482	25,137	11.5	17.0	87	6,396	2.1	4.3
Dental studies	86	4,920	2.1	3.3	26	1,908	0.6	1.3
Complementary therapies	56	5,888	1.3	4.0	18	2,179	0.4	1.5
Rehabilitation therapies	39	258	0.9	0.2	14	32	0.3	0.0
Medical studies	32	647	0.8	0.4	0	71	0.0	0.0
Optical science	10	686	0.2	0.5	2	117	n.p.	0.1
Pharmacy	0	121	0.0	0.1	0	24	0.0	0.0
Other health	1,879	35,458	44.9	24.0	145	4,890	3.5	3.3
Total	5,078	100,808	121.4	68.2	901	21,970	21.5	14.9

(a) Students may enrol in more than one course

Source: AIHW analysis of NCVER, National VET Provider Collection, 2012

3.21

Expenditure on Aboriginal and Torres Strait Islander health compared to need

Why is it important?

A basic principle of equity is that health expenditure should reflect the relative needs for health services (Whitehead 1992). Health expenditure for population groups with higher levels of need should be proportionately higher. A broad assessment of how well this principle is implemented is provided by comparing differentials in health status with differences in per capita health expenditure.

Findings

On a per person basis, average health expenditure for Aboriginal and Torres Strait Islander peoples in 2010–11 was estimated to be \$7,995, which was \$1.47 for every \$1.00 spent per non-Indigenous Australian. This was an increase from \$1.39 in 2008–09 and \$1.20 in 2001–02 (CPI adjusted), indicating expenditures for Indigenous Australians increased at a greater rate than for non-Indigenous Australians over this period. Some of the change since that time will reflect improvements in the accuracy and quality of estimates, rather than actual expenditure increases.

During 2010–11, Australian governments provided an estimated 91% of the funding used to pay for health goods and services for Aboriginal and Torres Strait Islander peoples compared with 68% for non-Indigenous Australians. From 2001–02 to 2010–11 Australian governments' health expenditure per Indigenous Australian grew by 65%. Those on lower incomes rely more on publicly provided services and spend less money on private services than people with higher incomes and are much more likely to present to hospitals, even for primary health care (Deeble 2009). For Indigenous Australians, expenditure on hospitals was 5.8 times the expenditure for medical services (e.g. MBS services provided by a medical practitioner) compared with a ratio of 2.1 for non-Indigenous Australians. This reflects different usage patterns and costs.

Australian Government funding was low for Medicare and medication and high for community health services. Per-person funding provided by the Australian Government for Aboriginal and Torres Strait Islander peoples was

\$2,149 compared with \$1,558 for non-Indigenous Australians, a ratio of 1.38:1. Per-person funding provided by state and territory governments for Aboriginal and Torres Strait Islander peoples was \$5,460 compared with \$2,129 for non-Indigenous Australians, a ratio of 2.6:1, with the greatest expenditure in public hospitals followed by community health services.

Estimated expenditure per Aboriginal and/or Torres Strait Islander person by state and territory governments varies across jurisdictions, with the highest expenditures per person in the NT. Most variation between jurisdictions may be explained by differences in the proportion of Indigenous Australians within the jurisdiction living in remote and very remote areas. For the main health programmes, in 2010–11, expenditures were an estimated \$6,616 per Indigenous Australian in remote and very remote areas compared with \$4,460 in outer regional, \$3,835 in inner regional areas and \$3,899 in major cities. The higher expenditures in rural and remote areas are largely related to hospital services and grants to Indigenous health services, and partly reflects higher costs of delivering health care services in those areas (AIHW 2013d).

MBS expenditure per person was higher for non-Indigenous Australians than for Indigenous Australians across all remoteness areas. The gap for expenditure between Indigenous and non-Indigenous Australians was greatest in outer regional and remote areas and was smallest in major cities. PBS expenditure per person was lower for Indigenous Australians in all non-remote areas, with the biggest expenditure gap occurring in outer regional areas. PBS expenditure per person was higher for Indigenous Australians in remote areas (see measure 3.15).

By disease, the greatest difference in per person expenditure for hospital separations was due to non-communicable diseases such as mental and behavioural disorders and genitourinary diseases (including dialysis) and injuries. However, expenditure for non-Indigenous Australians was higher than for Indigenous Australians for treatment of neoplasms and musculoskeletal and connective tissue disorders. For expenditure on potentially preventable hospital separations, the greatest difference is attributable to chronic conditions such as diabetes complications, chronic obstructive

pulmonary disease and rheumatic heart disease (AIHW 2013c).

In 2010–11, expenditure for primary health care services was \$3,602 per person for Aboriginal and Torres Strait Islander peoples compared with \$2,447 for non-Indigenous Australians. Primary health care expenditure on medical services, including those paid through the MBS, was \$406 per person for Aboriginal and Torres Strait Islander peoples compared with \$626 for non-Indigenous Australians. Per person expenditure on pharmaceuticals in the primary care sector was also much lower for Aboriginal and Torres Strait Islander peoples (\$244 versus \$751). Per person expenditure on community health services was eight times higher for Indigenous Australians—\$1,967 per person compared with \$236 per person for non-Indigenous Australians. Community health expenditure accounted for \$1.1 billion in 2010–11 or 55% of total primary health care expenditure for Indigenous Australians. Per person expenditure on dental services for Aboriginal and Torres Strait Islander peoples was 42% lower than that for non-Indigenous Australians.

Australian Government Indigenous-specific health programme expenditure through the Department of Health has increased from \$115 million in 1995–96 to \$693 million in 2012–13, a growth in real terms of 292%.

In 2010–11, expenditure for secondary and tertiary health care services (excluding high-level residential care) was \$4,113 per person for Indigenous Australians compared with \$2,339 for non-Indigenous Australians. Hospital expenditure is the largest single expenditure item in secondary/tertiary health care services, accounting for \$3,525 per Indigenous Australian. Expenditure on secondary/tertiary care medical services (mainly specialist care) was estimated to be \$255 per person for Aboriginal and Torres Strait Islander peoples compared with \$385 per person for other Australians.

Implications

There has been an increase in Aboriginal and Torres Strait Islander health expenditure and this expenditure has increased at a faster rate than for non-Indigenous Australians. In 2010–11, 91% of Indigenous health expenditure was government expenditure (47% state and territory and 45% Australian Government). On a per person basis, average health expenditure for Indigenous Australians

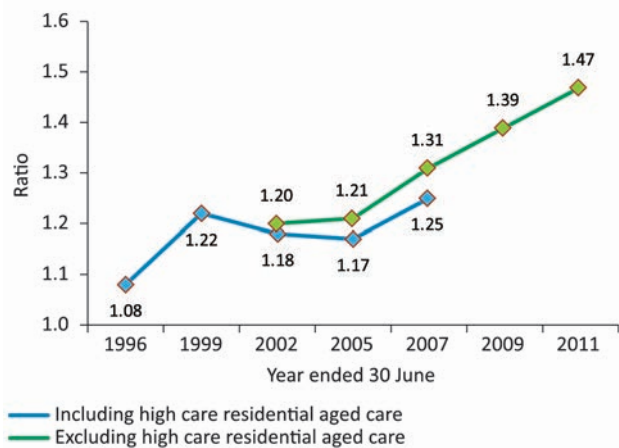
in 2010–11 was 1.47 times that for non-Indigenous Australians. However, Indigenous Australians are currently experiencing rates nearly twice that of non-Indigenous Australians on a range of health measures such as mortality rates and prevalence of disease.

Funding levels for Indigenous health care will continue to grow over the next four years. From 2014–15 to 2017–18, the Australian Government will invest \$3.1 billion in Indigenous-specific health programmes and activities—an increase of over \$500 million compared

with 2009–10 to 2012–13. In 2014–15 more than \$920 million will be spent on the provision of health programmes specifically for Aboriginal and Torres Strait Islander people.

Figure 3.21-1

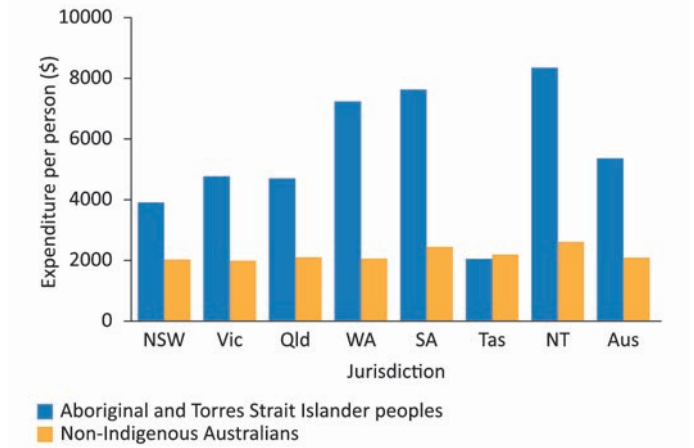
Estimated per person health expenditure ratio of Indigenous to non-Indigenous Australians, 1995–96 to 2010–11



Source: (AIHW 2005b; AIHW 2008b; AIHW 2009; AIHW 2013c)

Figure 3.21-2

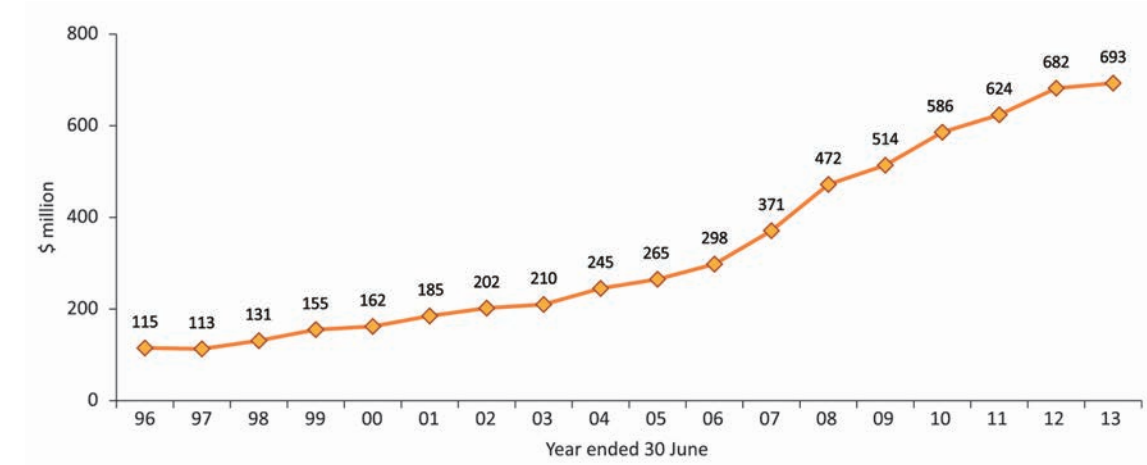
Estimated state and territory health expenditure per person, by Indigenous status, 2010–11



Source: AIHW health expenditure database (AIHW 2013c)

Figure 3.21-3

Expenditure by the Australian Government on Indigenous-specific health programs, nominal \$m, 1995–96 to 2012–13



Source: Australian Government Department of Health

Figure 3.21-4

Average health expenditure per person for primary health care and secondary/tertiary health care services, by Indigenous status, 2010–11

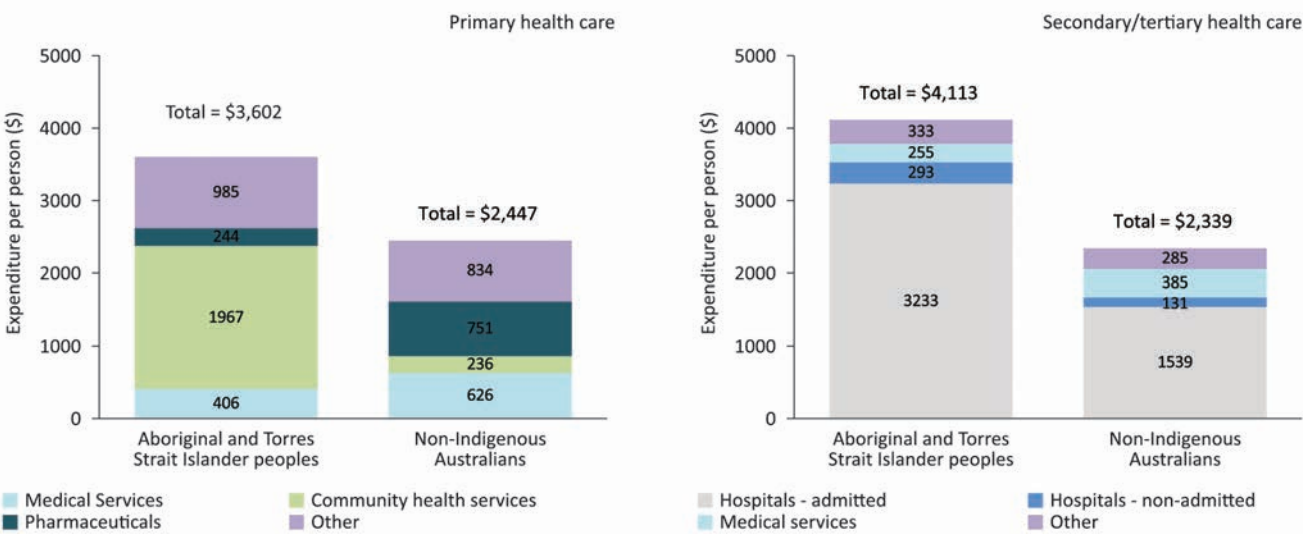
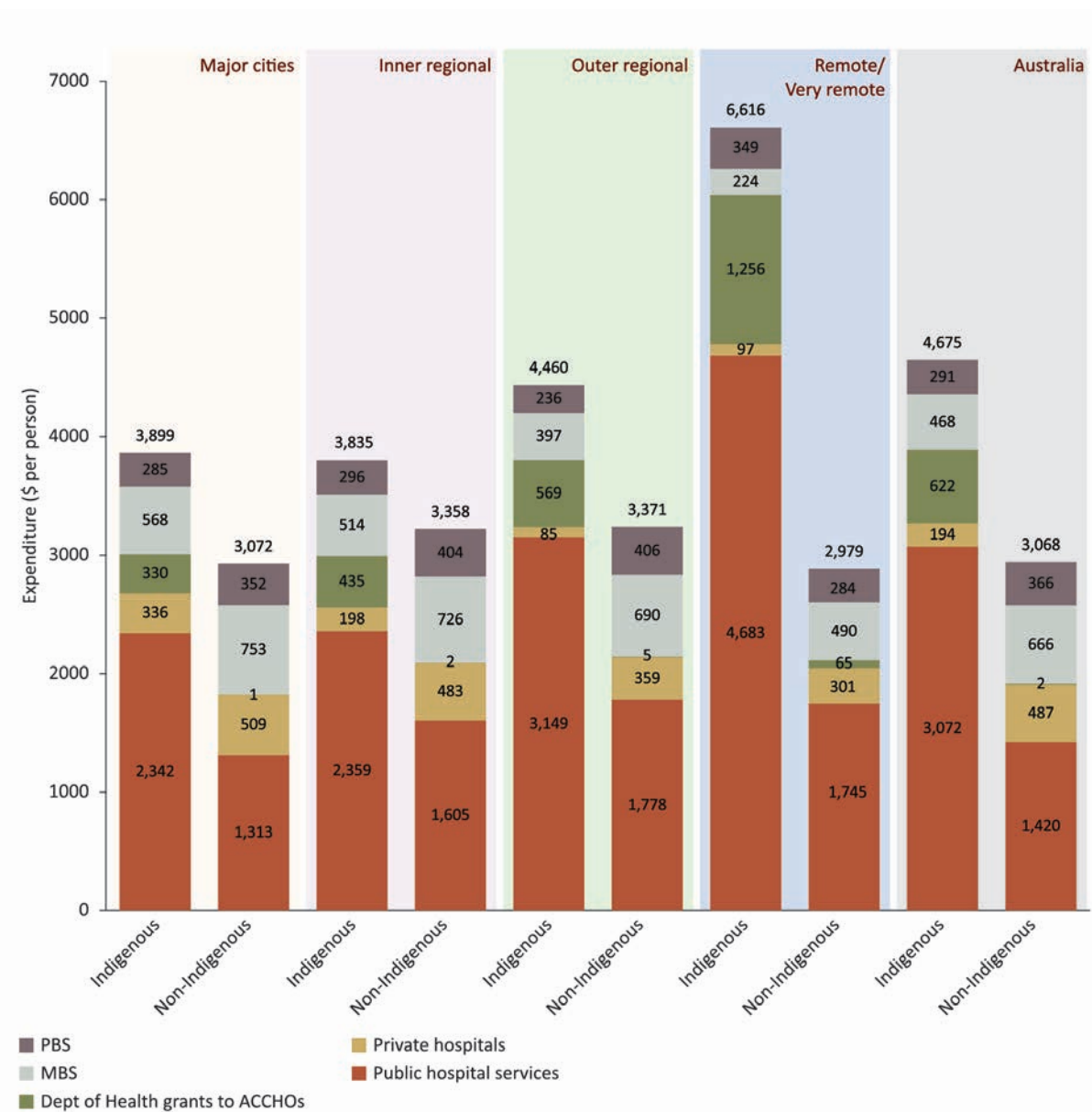


Figure 3.21-6

Health expenditure per person on selected health services, Indigenous and non-Indigenous Australians, by remoteness area of patient's residence, 2010–11



Note: excludes health expenditure on non-admitted patient services, patient transport, dental services, community health services other than ACCHOs, other professional services, public health, aids and appliances, research and health administration.

Note: MBS excludes allied health services, optometry and dental services.

Note: PBS excludes highly specialised drugs dispensed from public and private hospitals.

Source: AIHW health expenditure database (AIHW 2013d)

3.22

Recruitment and retention of staff

Why is it important?

The capacity to recruit and retain appropriate staff is critical to the appropriateness, continuity and sustainability of health services including Aboriginal and Torres Strait Islander primary health care services. Staff recruitment and retention is particularly important in rural and remote areas as 65% of Indigenous Australians live outside the major cities.

Findings

In 2013, there were 91,467 medical practitioners registered in Australia (excluding provisional registrants), of whom 90% were currently employed in medicine. Many of those not working in medicine were overseas, retired or on extended leave. The overall supply of clinicians increased between 2004 and 2013 (from 299 to 365 FTE per 100,000 population). Supply was not uniform across the country; it was greater in major cities (426 FTE per 100,000 population) than in remote/very remote areas (257 FTE per 100,000 population). While GP rates per 100,000 were similar across geographic areas, the main differences were in the supply of specialists—with lower rates in remote/very remote areas (AIHW 2014s).

A survey of the rural workforce in November 2013 found that of the 7,638 GPs working in rural Australia, an estimated 38% had been in their current practice for less than two years. In remote and very remote areas, 42–44% of GPs had been working in their current practice for less than two years.

National Health Workforce Data indicate that in 2013, 86% of nurses were currently employed in nursing (AIHW 2014x). In 2012, 89% of dental and oral health therapists were employed in dentistry. For other health professionals, the proportions working in their field were as follows: physiotherapists (84%), pharmacists (85%), psychologists (87%), Aboriginal and Torres Strait Islander health practitioners (88%), optometrists, chiropractors and osteopaths (89%), and occupational therapists and podiatrists (92%) (AIHW 2013a). Many of those not working in their field were not looking for work in their field.

In 2013, the number of employed psychologists was lowest in areas

with high proportions of Indigenous Australians in the population (49 per 100,000 in areas with 20% or more Indigenous Australians in the population compared with 112 per 100,000 in areas with less than 1%). The pattern was similar for pharmacists.

As at 30 June 2013, there were around 4,000 full-time equivalent health (clinical) staff and 2,600 full-time equivalent administrative and support staff positions within Aboriginal and Torres Strait Islander primary health care organisations funded by the Australian Government. In the period 1999–2000 to 2012–13, there was an increase of 238% in the workforce of the Australian Government funded Aboriginal and Torres Strait Islander primary health care organisations. Despite this growth, the vacancy rate has remained steady with an estimated 6% of health positions and 2% of administrative and support staff positions vacant at 30 June 2013, compared with 7% and 3% at June 2000.

The highest number of health staff vacancies in June 2013 was for Aboriginal health workers (58) followed by emotional and social wellbeing workers (35), and nurses (30). In June 2013, the proportion of health staff positions that were vacant ranged from 9% in outer regional areas to 4% in major cities and very remote areas. For other positions, 3% were vacant in remote areas to 1% in outer regional areas.

A senate inquiry into factors affecting the supply of health services and medical professionals in rural areas (SCARC 2012) has identified a complex interplay between environmental, personal and work-related factors. For medical practitioners, professional considerations include: heavy workloads and on-call hours, limited professional development opportunities, and inadequate remuneration. Other factors include loss of anonymity, professional isolation, and lack of opportunities for spouses and children. A growing trend towards medical specialisation was also identified as reducing generalist training pathways—the area of medical practice most required in rural and regional areas.

A 2007 study identified doctors who were satisfied with their current medical practice intended to remain in rural practice for 40% longer than those who were not satisfied (11.5 years compared with 8.2 years). GPs content with their life as a rural doctor intended to remain in rural practice 51% longer than those who were not content (11.8 years compared

with 7.8 years) (Alexander et al. 2007).

Recruitment and retention of allied health professionals is also influenced by opportunities for training, development and career progression; remuneration and recognition; supervision and support; and workload/task variety. Additional challenges in delivering services in non-metropolitan areas include funding arrangements, social barriers and isolation, employment for spouses and schooling/childcare for children, and access to appropriate, affordable and secure accommodation (SCARC 2012). Many of these factors can, at least in part, be addressed by effective management and community support (Schoo et al. 2005). Rural lifestyle, diverse caseloads, autonomy and community connectedness have been cited as positive influences (Campbell et al. 2012).

A study of drug and alcohol workers found that Indigenous workers experienced above average levels of job satisfaction and relatively low levels of exhaustion; however, they also experienced lower levels of mental health and wellbeing and greater work/family imbalance. The report highlighted the importance of workforce development strategies that focus on culturally appropriate, equitable and supportable organisational conditions including addressing stress, salaries, benefits and opportunities for career and personal growth (Roche et al. 2012).

Implications

Better national data are needed on this important issue. The statistics analysed here focus on a few aspects of a complex set of issues. Recruitment and retention issues are significant for health services located in rural and remote Australia. Little is known about the turnover of staff in Aboriginal and Torres Strait Islander primary health care services and how this compares with mainstream services. Another issue is achieving incomes for doctors in rural and remote locations that are competitive with incomes earned by GPs in metropolitan private practice.

The *National Aboriginal and Torres Strait Islander Health Workforce Strategic Framework (2011–2015)* provides a mechanism to assist planning, prioritising, target setting, monitoring and reporting of progress in Aboriginal and Torres Strait Islander health workforce capacity building. One of the key aims of the framework is to support the recruitment and retention of the Aboriginal and Torres Strait Islander health workforce

and non-Indigenous health practitioners working in Aboriginal and Torres Strait Islander health settings.

In the *Health and Hospitals Fund Regional Priority Rounds*, funding of \$53.4 million was allocated for 8 projects to specifically attract, train and retain health practitioners and students by building staff accommodation in rural, regional, and remote areas.

The Remote Area Health Corps has been in operation since October 2008. The programme assists delivery of primary health care services in

remote NT Indigenous communities by supplementing the efforts of Aboriginal Medical Services and the Northern Territory Department of Health to recruit health professionals from urban-based practices and deploy them for short-term placements in remote NT communities, where health resources are in high demand.

The *Indigenous Australians' Health Programme*, which started on 1 July 2014, consolidates existing funding streams for primary health care, child and maternal health programmes, *Stronger Futures in*

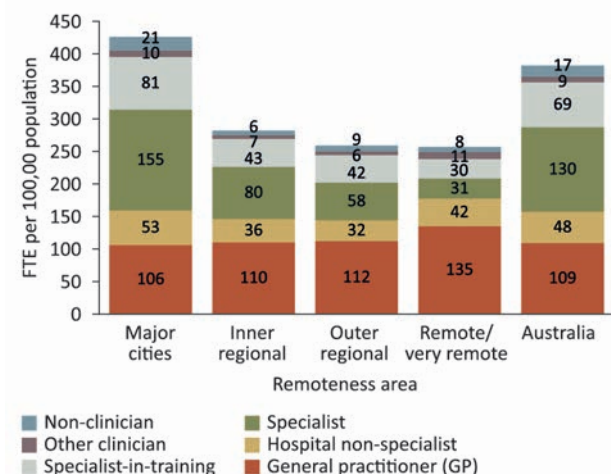
the Northern Territory and the *Aboriginal and Torres Strait Islander Chronic Disease Fund* (see Policies and Strategies section).

The Australian Government provides GP registrar training posts in Aboriginal health services.

Recognition of Aboriginal and Torres Strait Islander health as an identifiable specialty is also considered to be important in improving services and retaining highly skilled clinicians. Strong cooperation and collaboration between the health and education portfolios is vital for improving recruitment and retention of health staff.

Figure 3.22-1

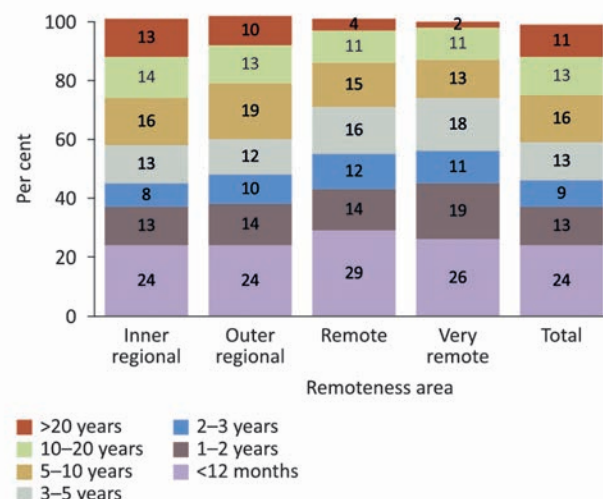
Employed medical practitioners: FTE per 100,000 population by remoteness area and main field of medicine, 2013



Source: National Health Workforce Data Set: Medical Practitioners 2013 (AIHW 2014s)

Figure 3.22-2

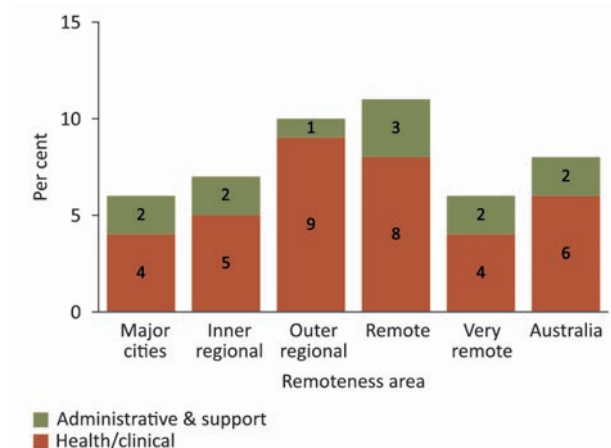
Proportion of GPs in rural and remoteness area, by length of stay in current practice and remoteness, 30 November 2013



Source: AIHW analysis of Rural Workforce Agencies NMDS

Figure 3.22-3

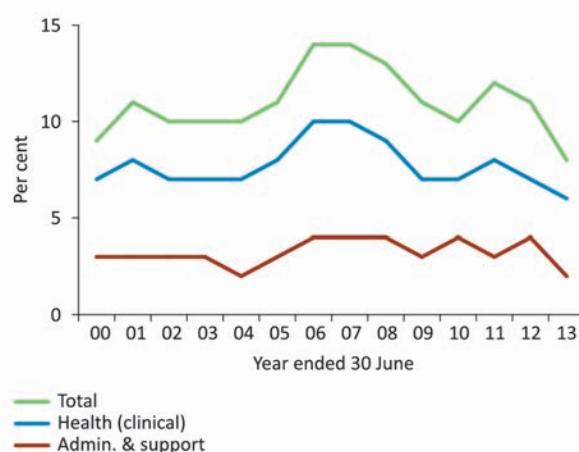
Vacancies as a per cent of total positions, by position type and remoteness area, Indigenous primary health care organisations, as at 30 June 2013



Source: AIHW OSR data collection (AIHW 2014a)

Figure 3.22-4

Vacancies as a per cent of total positions, by position type, Indigenous primary health care organisations, 30 June 2000 to 30 June 2013



Source: AIHW analysis of SAR, DSR and OSR data collections



Technical Appendix

This appendix provides more detailed information on data sources, caveats and statistical methods.





Statistical terms and methods

Aboriginal and Torres Strait Islander peoples and non-Indigenous population descriptors

'Aboriginal and Torres Strait Islander peoples' is the preferred descriptor used throughout the report. 'People' is an acceptable alternative to 'peoples' depending on context, but in general, the collective term 'peoples' is used. The 'Indigenous Australians' descriptor is inclusive of all Aboriginal and Torres Strait Islander groups, and is also used where space is limited.

The 'non-Indigenous' descriptor is used where the data collection allows for the separate identification of people who are neither Aboriginal nor Torres Strait Islander. The label 'other Australians' is used to refer to the combined data for non-Indigenous people, and those for whom Indigenous status was not stated.

Crude rates

A crude rate is defined as the number of events over a specified period (for example, a year) divided by the total population at risk of the event.

Age-specific rates

An age-specific rate is defined as the number of events for a specified age group over a specified period (for example, a year) divided by the total population at risk of the event in that age group. Age-specific rates in this report were calculated by dividing, for example, the number of deaths in each specified age group by the corresponding population in the same age group.

Age-standardisation

Age-standardisation controls for the effect of age, to allow comparisons of summary rates between two populations that have different age structures. Age-standardisation is used throughout this report when comparing Aboriginal and Torres Strait Islander peoples with non-Indigenous Australians for a range of variables where age is a factor e.g. health-related measures. The main disadvantages with age-standardisation are that the resulting rates are not the real or 'reported' rates for the population. Age-standardised rates are therefore only meaningful as a means of comparison.

Age-standardised rates are generally derived using all age groups. However, in some cases in the Health Performance Framework report, the age-standardised rates were calculated for a particular age range to support study of a specific population group (for instance, the age-standardised data for some mortality indicators were derived for the age range 0–74).

Rate ratio

Rate ratios are calculated by dividing the rate for Indigenous Australians with a particular characteristic by the rate for non-Indigenous Australians with the same characteristic.

A rate ratio of 1 indicates that the prevalence of the characteristic is the same in the Indigenous and non-Indigenous populations. Rate ratios of greater than 1 suggest higher prevalence in the Indigenous population and rate ratios of less than 1 suggest higher prevalence in the non-Indigenous population.

Rate difference

Rate difference is calculated by subtracting the rate for Indigenous Australians from the rate for non-Indigenous Australians for the characteristic of interest.

Relative standard error

Relative standard error (RSE) is a measure of sampling error, which is obtained by expressing the standard error as a percentage of the estimate.

$$RSE(\text{estimate}) = 100 \times \left(\frac{SE(\text{estimate})}{(\text{estimate})} \right)$$

The ABS considers that only estimates with relative standard errors of less than 25%, and percentages based on such estimates, are sufficiently reliable for most purposes. Relative standard errors between 25% and 50% should be used with caution. Estimates with relative standard errors greater than 50% are considered too unreliable for general use.

Confidence intervals

The observed value of a rate may vary due to chance even where there is no variation in the underlying value of the rate. A 95% confidence interval (CI) for an estimate is a range of values that is very likely (95 times out of 100) to contain the true unknown value. CIs have not been presented for all administrative datasets as investigative work is underway into the validity of using CIs for these datasets.

Where the 95% CIs of two estimates do not overlap it can be concluded that there is a statistically significant difference between the two estimates.

As with all statistical comparisons, care should be exercised in interpreting the results of the comparison. If two rates are statistically significantly different from each other, the difference is unlikely to have arisen by chance. Judgement should, however, be exercised in deciding whether or not the difference is of any practical significance.

The standard method of calculating CIs has been used in this report. Typically in the standard method, the observed rate is assumed to have natural variability in the numerator count (for example, deaths, hospital visits) but not in the population denominator count. Also, the rate is assumed to have been generated from a normal distribution (Bell curve). Random variation in the numerator count is assumed to be centred around the true value; that is, there is no systematic bias.

The formulas used to calculate 95% confidence intervals using the standard method are:

Crude rate:

$$CI(CR)_{95\%} = CR \pm 1.96 \times \frac{CR}{\sqrt{\sum_{i=1}^I d}}$$

Where d = the number of deaths or other events

Age-standardised rate:

$$CI(ASR)_{95\%} = ASR \pm 1.96 \times \sqrt{\sum_{i=1}^I \frac{w_i^2 d_i}{n_i^2}}$$

Where w_i = the proportion of the standard population in age group i

d_i = the number of deaths or other events in age group i

n_i = the number of people in the population in age group i



Significance testing

Annual change and per cent change were only calculated for series of 4 or more data points. The 95% CIs for the standard error of the slope estimate (annual change) based on linear regression are used to determine whether the apparent increases or decreases in the data are statistically significant at the $p < 0.05$ level. The formula used to calculate the CIs for the standard error of the slope estimate is:

$$95\%CI(x) = x \pm t^*_{(n-2)} \times SE(x)$$

Where x is the annual change (slope estimate)

$t^*_{(n-2)}$ is the 97.5th quantile of the t_{n-2} distribution.

If the upper and lower 95% confidence intervals do not include zero, then it can be concluded that there is statistical evidence of an increasing or decreasing trend in the data over the study period.

Significant changes are denoted with a * against the annual change statistics included in relevant tables.

Testing rate differences and rate ratios

If the 95% CIs of the difference in rates do not include zero, then it can be concluded that there is statistical evidence of a difference in rates. If the 95% CIs of the rate ratio do not include 1, then it can be concluded that there is statistical evidence of a difference in the rates contributing to the rate ratio.

Tables include a * next to the rate ratio and rate difference to indicate that rates for the Indigenous and non-Indigenous populations are statistically different from each other at the $p < 0.05$ level (based on 95% CIs). Where results of significance testing differed between rate ratios and rate differences, caution should be exercised in the interpretation of the tests.

The word 'significant'

Statistically significant differences, for example between jurisdictions or over time, are denoted as 'significant'. The word 'significant' is not used outside its statistical context.

Significance of trends rate ratios

Significance testing of rate ratio time-trends was not done in the 2014 HPF as the accuracy of this testing may be low. In the HPF, time-series analysis use linear regression analysis to determine whether there have been significant increases or decreases in the observed rates. As rate ratios do not increase or decrease linearly, applying linear regression to rate ratios may over-estimate the significance of any changes.

Annual change and per cent change

The annual change in rates and rate differences are calculated using linear regression, which uses the 'least squares' method to calculate a straight line that best fits the data. The simple linear regression line ($Y = a + bX$, or 'slope' estimate) was used to determine the annual change in the data over the period.

Per cent change is calculated taking the difference between the first and last points on the regression line, dividing by the first point on the line and multiplying by 100.

Main Data Sources

The data in this report are mainly drawn from national data collections and surveys. These include the following:

Australian Aboriginal and Torres Strait Islander Health Survey

The 2012–13 Australian Aboriginal and Torres Strait Islander Health Survey AATSIHS included a sample of 12,000 Aboriginal and Torres Strait Islander people for the core sample and sub-samples for various components of the survey such as voluntary biomedical data for adults. The AATSIHS sample was specifically designed to select a representative sample of Aboriginal and Torres Strait Islander peoples and therefore overcome the problem inherent in most national surveys (i.e. small and unrepresentative Indigenous samples). Survey results are subject to sampling errors as only a small proportion of the population is used to produce estimates that represent the whole population—see RSEs above. Non-sampling errors may occur where there is non-response to the survey or questions in the survey, misunderstanding of questions or errors in recording, coding or processing the survey. Information recorded in this survey is 'as reported' by respondents. Responses may be affected by imperfect recall or individual interpretation of survey questions. Any data that are self-reported are also likely to under-estimate circumstances about which the respondent is unaware, or may be reluctant to report (e.g. certain health conditions, weight, drug use). Selected non-Indigenous comparisons are available from the 2011–13 Australian Health Survey (AHS). The AHS was conducted in major cities, regional and remote areas, but very remote areas were excluded from the sample. Further information on AATSIHS data quality issues can be found in the User Guide for the survey ABS cat. no. 4727.0 (ABS 2013b). Time-series comparisons for some indicators are available from the 2004–05 NATSIHS, 2008 NATSISS, 2002 NATSISS, 2001 NHS and the 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS).

The National Aboriginal and Torres Strait Islander Social Survey

The 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) was conducted between August 2008 and April 2009. Information was collected by personal interview from approximately 13,300 Aboriginal and Torres Strait Islander people; 5,500 aged 0–14 years and 7,800 aged 15 years and over in both non-remote and remote parts of Australia. The NATSISS sample was specifically designed to select a representative sample of Aboriginal and Torres Strait Islander peoples. The NATSISS uses the standard Indigenous status question to identify Aboriginal and Torres Strait Islander households from which the sampling process is then undertaken. Information recorded in this survey is 'as reported' by respondents, or from child proxies (usually parents), on behalf of selected children aged 0–14 years. Data may differ from those that might be obtained from other sources or by using other collection methodologies. Responses may also be affected by imperfect recall or individual interpretation of survey questions. Selected non-Indigenous comparisons are available from the 2007–08 National Health Survey and a range of other surveys. Further details can be obtained from ABS cat. no. 4714.0 (ABS 2009). Time-series comparisons for some indicators are available from the 2002 NATSISS and the 1994 National Aboriginal and Torres Strait Islander Survey (NATSIS).



Census

The Census uses the standard Indigenous status question and it is asked for each household member.

There are 4 principal sources of error in Census data: respondent error, processing error, partial response and undercount. Quality management of the Census programme aims to reduce error as much as possible, and to provide a measure of the remaining error to data users, to allow them to use the data in an informed way.

The Census form may be completed by one household member on behalf of others. Incorrect answers can be introduced to the Census form if the respondent does not understand the question or does not know the correct information about other household members. Many of these errors remain in the final data.

The processing of information from Census forms is now mostly automated. Quality assurance procedures are used during Census processing to ensure processing errors are minimised. Sample checking is undertaken during coding operations, and corrections are made where necessary.

When completing their Census form, some people do not answer all the questions that apply to them. In these instances, a 'not stated' code is allocated during processing, with the exception of non-response to age, sex, marital status and place of usual residence. These variables are needed for population estimates, so they are imputed using other information on the Census form, as well as information from the previous Census.

Other Census data issues relate to the accuracy of the Census count itself, e.g. whether people are counted more than once, or not at all.

The significant volatility in Aboriginal and Torres Strait Islander Census counts and the variable quality of data on births, deaths and migration of Aboriginal and Torres Strait Islander peoples do not support the use of the standard approach to population estimation. Due to the inherent uncertainties in estimating the Aboriginal and Torres Strait Islander population, data that use these estimates should be interpreted with caution (e.g. life-expectancy estimates, mortality rates). Given these uncertainties, changes in health outcomes such as mortality rates are difficult to assess.

Following each Census, assumptions are made about past levels of mortality to produce back cast population estimates.

In the 2011 Census, the ABS implemented improvements to the 2011 Census Indigenous enumeration procedures and enhanced the Census Post-Enumeration Survey. There was a 30% increase in the estimate of the Indigenous population between the 2006 and 2011 Censuses. The trends involving population rates have needed to be revised for this edition of the HPF based on these updated population estimates (ABS 2014g).

National Perinatal Data Collection

Birth notification forms are completed for all births of 20 weeks or more gestation, or a birthweight of 400 grams or more. The Perinatal National Minimum Data Set includes all births in Australia in hospitals, birth centres and the community. Jurisdictional-level data in the HPF are based on place of mother's usual residence rather than place where birth occurred. A standard data item for Indigenous status is specified in the Perinatal National Minimum Data Set for the mother. Work is underway to include the Indigenous status of

the baby with data released from 2015. Data on Indigenous status are not reported for Tasmania prior to 2005, as the 'not stated' category for Indigenous status was included with the non-Indigenous category. Numbers are small in jurisdictions such as ACT and Tasmania and therefore need to be interpreted with caution.

Studies in Australia linking perinatal data with birth registration data and hospital admissions show that Aboriginal and Torres Strait Islander data are underreported (Taylor et al. 2000; Comino et al. 2007; Kennedy et al. 2009). In 2007, the AIHW completed an assessment of the quality of Indigenous status information in perinatal data in each state and territory. This involved a survey that was sent to the midwifery managers across Australia to determine how many hospitals in each jurisdiction obtain Indigenous status information of mothers giving birth from admission records and how many collect this information independently. The assessment also involved analysis of the variability in the number and proportion of mothers recorded as Aboriginal and/or Torres Strait Islander in the perinatal data collection over time and across jurisdictions for the period 1991–2004. The outcomes of this assessment showed that Indigenous status data from NSW, Vic, Qld, WA, SA and the NT are suitable for trends analysis and national reporting. Perinatal data from Tasmania, although improving, were deemed to be of insufficient quality. Although the most recent data in the ACT were of publishable quality, the data were not yet of sufficient stability to support trends analysis (Leeds et al. 2007).

All jurisdictions are working towards improving the quality of Indigenous status in perinatal data collections. States and territories have agreed to improve Aboriginal and Torres Strait Islander data collection procedures in key data collections including implementation of the *Best Practice Guidelines for the collection of Indigenous status in health data sets*.

AIHW is working with the states and territories in the development of an enhanced Perinatal National Minimum Data Set (NMDS) to include nationally consistent data items on antenatal care, smoking and alcohol use during pregnancy, and Indigenous status of the baby. Nationally consistent data items on smoking during pregnancy, gestational age at first antenatal visit, Indigenous status of the baby have been added to the Perinatal NMDS (from 1 July 2009, 1 July 2010, and 1 July 2012 respectively). A data item on number of antenatal visits was included in the Perinatal NMDS from 1 July 2013, although Victoria was not able to commence collection until 1 January 2015.

National Hospital Morbidity Data

This data collection includes all completed admitted patient episodes in public and private hospitals across Australia. For 2012–13, almost all public hospitals provided data for the NHMD. The exception was a mothercraft hospital in the ACT. The great majority of private hospitals also provided data, the exceptions being the private free-standing day hospital facilities in the ACT, the single private free-standing day hospital in the NT, and a private free-standing day hospital in Victoria.

The number and pattern of hospitalisations can be affected by differing admission practices among the jurisdictions and from year to year, and differing levels and patterns of service delivery. Some jurisdictions have slightly different approaches to the collection and storage of the standard Indigenous status question and categories in their hospital collections.



The incompleteness of Indigenous identification means the number of hospital separations recorded as Aboriginal and Torres Strait Islander is an under-estimate of hospitalisations involving Aboriginal and Torres Strait Islander people.

Between 2006 and 2008, the AIHW completed an assessment of the level of Indigenous under-identification in selected public hospitals in all states and territories. Results from this assessment indicated that NSW, Vic, Qld, WA, SA and the NT have adequate Indigenous identification (20% or less overall under-identification of Aboriginal and Torres Strait Islander patients) in their hospital separations data.

In 2011–12, the AIHW completed another study to reassess the level of under-identification in public hospitals data. The study found that all jurisdictions now have sufficient quality Indigenous identification for reporting and a correction factor of 1.09 is used at the national level to adjust for underidentification in hospital data.

Interpretation of results should take into account the relative quality of the data from the jurisdictions.

Time-series analysis may be affected by changes in the quality of Indigenous identification over time. An AIHW study estimated that 89% of Indigenous patients were correctly identified in Australian public hospital admission records in 2007–08 (AIHW 2010c). A more recent study of public hospital data from 2011–12 found no statistically significant change in identification rates at the national level, although there were some changes at the jurisdictional level (AIHW 2013f). Time-series presentations in this report include data from both public and private hospitals across several jurisdictions, so the overall effect of changes in Indigenous identification over time is unclear. This should be taken into account when interpreting the results of time-series analysis.

Between 2009–10 and 2010–11, there were significant changes in the coding of diagnoses for diabetes and obstetrics and for imaging procedures. There were also significant changes made to coding practices for diabetes and related conditions for the 2012–13 year, resulting in increased counts for these conditions. Caution should be used in comparing 2011–12 and 2012–13 data with data from previous HPF reports. For more information about these issues, please refer to Database quality statement summaries in the 'Australian Hospital Statistic 2012–13' report, available at www.aihw.gov.au.

For more information on the quality of emergency department care data, please refer to the data quality statement in the 'Australian hospital statistics 2012–13: emergency department care' report, available at www.aihw.gov.au.

Hospitalisations for which the Indigenous status of the patient was not reported are excluded from hospitalisations data for non-Indigenous Australians, apart from WA where records with an unknown status are recorded as non-Indigenous.

National Mortality Database

The count of deaths for Aboriginal and Torres Strait Islander peoples can be influenced by the accuracy of identification of Aboriginal and Torres Strait Islander deaths, late registration of deaths, as a result of coronial inquiry, and changes to death forms and/or processing systems. Due to the small size of the Aboriginal and Torres Strait Islander population, these factors can significantly impact on trends over time and between jurisdictions.

All jurisdictions broadly comply with the standard wording for the Indigenous status question for their death registration forms. However, the response categories tend to differ between a number of jurisdictions, most notably WA provides an additional 'Unknown' response category and the NT does not provide clear instructions on how to select both Aboriginal and Torres Strait Islander origin (e.g. by ticking both boxes) (ABS & AIHW 2005).

Almost all deaths in Australia are registered. However, the Indigenous status of the deceased is not always recorded/ reported and/or recorded correctly. The incompleteness of Indigenous identification means the number of deaths registered as Aboriginal and Torres Strait Islander is an under-estimate of deaths occurring in the Aboriginal and Torres Strait Islander population (ABS 2013d). As a result, the observed differences between Aboriginal and Torres Strait Islander and non-Indigenous mortality are under-estimates of the true differences. While the identification of Aboriginal and Torres Strait Islander peoples in deaths data is incomplete in all state and territory registration systems, 5 jurisdictions (NSW, Qld, WA, SA and the NT) have been assessed by the ABS and the AIHW as having adequate identification. Longer-term mortality trend data are presented for these jurisdictions from 1998 onwards. The ABS calculated the identification rate of Aboriginal and Torres Strait Islander deaths for the period 2011–12 through data linkage between the Census and death registration records to examine differences in reporting of Indigenous status across the two datasets (ABS 2013f).

[Aboriginal and Torres Strait Islander deaths identification rate, state/territory and Australia, 2011–2012](#)

State/territory	Identification rate
NSW	0.70
Qld	0.80
WA	0.88
NT	1.04
Vic, SA, Tas, ACT, overseas territories	0.40
Australia (not age-adjusted)	0.72
Australia (age-adjusted)	0.82

Source: (ABS 2013f)

Mortality rates use the count of deaths in the numerator and population estimates in the denominator. Analysis of trends in mortality rates is therefore also influenced by the assumptions made about mortality in the population backcast and projections, which is somewhat circular. The 2011 Census based backcast mortality assumptions were that Aboriginal and Torres Strait Islander life expectancy at birth at the Australia level increased by 0.2 years per year for males and 0.15 years per year for females for the period 30 June 1996 to 30 June 2006 and then increased by 0.3 years per year for males and 0.15 years per year for females for the 2006–2011 period. Under this assumption, life expectancy at birth in 1996 would be 65.5 years and 71.4 years for Aboriginal and Torres Strait Islander males and females respectively. Whether Aboriginal and Torres Strait Islander life expectancy at birth has changed at a faster or slower rate is unknown (ABS 2014g).

The AIHW is also undertaking a project to develop an Enhanced Mortality Database by linking death registration records to several additional data sources that contain information on Aboriginal and Torres Strait Islander deaths (see details in Data Development section).



BEACH

The Bettering the Evaluation And Care of Health (BEACH) survey collects information about consultations with GPs, including GP and patient characteristics, patient reasons for the visit, problems managed and treatments provided. The survey has been conducted annually since April 1998. Information is collected from a random sample of approximately 1,000 GPs from across Australia each year. Each participating GP provides details of 100 consecutive consultations.

Although the questionnaire contains an Indigenous identifier, it is unknown whether all GPs ask their patients this question. In a sub-study, Supplementary Analysis of Nominated Data of approximately 9,000 patients, it was found that if the question on Indigenous status was asked within the context of a series of questions about origin and cultural background, 1.3% identified as Aboriginal and Torres Strait Islander. This is twice the rate routinely recorded in BEACH, indicating that BEACH may under-estimate the number of Aboriginal and Torres Strait Islander consultations.

Under the *National Indigenous Reform Agreement (NIRA)*, governments have agreed to the implementation of the *Best Practice Guidelines for the collection of Indigenous status in health data collection*, which include recommended strategies for local service providers such as GPs and practice nurses to improve Indigenous identification data.

General practices and Aboriginal and Torres Strait Islander health services that meet accreditation requirements are eligible for financial incentives when they sign on to the *Practice Incentives Program—Indigenous Health Incentive (PIP IHI)*, obtain consent from their Aboriginal and Torres Strait Islander clients to be registered for chronic disease management through the IHI, and provide a targeted level of care for each registered patient. Participation in the PIP IHI also provides eligibility for other initiatives under Medicare.

Medicare

A Voluntary Indigenous Identifier was introduced into the Medicare database from November 2002. By July 2014, 415,730 people had identified as Aboriginal, Torres Strait Islander, or both.

Data development

There are well-documented problems with the quality and availability of data about Aboriginal and Torres Strait Islander health issues. These limitations include the quality of data on all key health measures including mortality and morbidity, uncertainty about the size and composition of the Aboriginal and Torres Strait Islander population and a paucity of available data on other health-related issues such as access to health services.

The following information has been provided by the jurisdictions to provide information on action being undertaken in relation to data development.

Australian Government

The Australian Government is committed to improving the availability of good-quality Aboriginal and Torres Strait Islander health data. Through the National Advisory Group on Aboriginal and Torres Strait Islander Health Information Development (NAGATSIHID), the Australian Government is actively engaged with key stakeholders, state and territory Governments, the ABS

and the AIHW to improve the availability of quality Aboriginal and Torres Strait Islander health data. Further, the Health Performance Framework has established priorities for data development linked to policy objectives.

In July 2009, COAG committed to a range of activities to improve the quality of Aboriginal and Torres Strait Islander data, including a Australian Government commitment of \$46.4 million over four years to June 2013 under the NIRA (COAG 2008). This work covers the key datasets required for NIRA Indigenous reporting, e.g. mortality, morbidity, perinatal data and population estimates. Jurisdictions have committed to undertaking the work outlined under Schedule F to the NIRA, in liaison with the AIHW and the ABS.

Data development projects already completed

The ABS have made improvements to the Census Indigenous enumeration procedures and expansion of the Census Post-Enumeration Survey.

The AIHW released the *National best practice guidelines for collecting Indigenous status in health data sets* in April 2010.

The AIHW's National Indigenous Data Improvement Support Centre (NIDISC) has been established to support jurisdictions and service providers to implement the guidelines.

The ABS currently has a 6-yearly cycle for the Indigenous Social Surveys and Health Surveys. The timing of these surveys is scheduled in order to provide 3-yearly estimates for key statistics collected in both surveys.

The ABS has linked 2011 Census records with death registration records to assess the level of Indigenous identification.

The AIHW has finalised reports on the assessment of the quality of Indigenous identification in labour-force data collections, the National Cancer Registry, and the National Diabetes Register.

The AIHW report *The inclusion of Indigenous status on pathology request forms* was published on 1 November 2013 outlining work towards the inclusion of Indigenous status on pathology request forms as a way to improve Indigenous identification in national cancer, communicable disease and cervical screening registries.

The ABS and AIHW in partnership with jurisdictions developed national best practice guidelines for linking data relating to Indigenous people. The guidelines for linking Indigenous data covered linkage methods and protocols, privacy protocols, quality standards, and procedures. *The National Best Practice Guidelines for Data Linkage Activities Relating to Aboriginal and Torres Strait Islander People* (AIHW & ABS 2012) were released on 9 July 2012. Two attachments to the Guidelines were released on 14 June 2013. The attachments review the current and recent body of data linkage activities relating to Aboriginal and Torres Strait Islander people, along with a thematic listing of these activities. In describing and comparing data linkage practices to date, these documents provide an evidence base for the national data linkage guidelines.

Ongoing data development projects

ABS and AIHW work in partnership with jurisdictions to lead analysis of the level of Indigenous identification in key datasets, including a baseline report and ongoing five-yearly studies to monitor identification over time. States and territories have agreed to adopt the standard Indigenous status question and



recording categories on data collection and information systems for key data sets. States and territories have agreed to improve Aboriginal and Torres Strait Islander data collection procedures in key data collections including implementation of the Best Practice Guidelines.

States and territories have agreed to develop and implement a programme to raise the Aboriginal and Torres Strait Islander community's awareness about the importance of identifying as Indigenous.

The AIHW released the *National best practice guidelines for collecting Indigenous status in health data sets* (the Guidelines) in April 2010. Under Schedule F of the NIRA jurisdictions undertook to implement the Guidelines across the health sector by December 2012.

To assist states and territories with their efforts to improve Indigenous data collection, the AIHW has provided leadership and ongoing support to service providers. The AIHW established and maintained the National Indigenous Data Improvement Support Centre (NIDISC). The NIDISC provides promotional posters and brochures, training material and phone advice to a range of service providers including hospitals and Medicare Locals.

The AIHW conducted an extensive investigation of Guidelines implementation and published its findings in the *Towards better Indigenous health data* report in 2013. The report documented implementation activities across jurisdictions and sectors, collected status information about the sectors and datasets in scope, and identified barriers and facilitators to implementation.

As part of this investigation, the AIHW identified the general-practice sector as a high priority because it has a unique role in providing access to health measures specific to Aboriginal and Torres Strait Islander people, as well as in providing input to data collections. Responsibility for Guidelines implementation in the general practice sector is not clear. As state and territory governments do not control this sector, the work of the Australian Government and the role of non-government stakeholders are paramount. The AIHW conducted national stakeholder workshops on the identification of Indigenous status in general practice in 2011 and 2012, and published its consolidated findings in the *Taking the next steps: identification of Aboriginal and Torres Strait Islander status in general practice* report in 2013.

The AIHW has advanced the recommendations of the *Taking the next steps* report through its development of the online Indigenous health check (MBS 715) data tool. This innovative tool draws together 715 MBS billing data and Indigenous population data to show numbers of health checks and usage rates (the proportion of Indigenous people who have had a health check) by quarter and financial year. These are presented at national, jurisdiction, peer group and Medicare Local levels, and the tool displays make it easy to compare numbers and rates across different areas and over time.

AIHW is working with the states and territories in the development of an enhanced Perinatal National Minimum Data Set:

- Nationally consistent data items on smoking during pregnancy were included in the Perinatal NMDS from 1 July 2010.
- A data item for the Indigenous status of the baby was added to the Perinatal NMDS from 1 July 2012.
- A data item on gestational age at first antenatal visit was added to the Perinatal NMDS from 1 July 2010 and a data

item on number of antenatal visits will be included in the Perinatal NMDS from 1 July 2013.

- At their 15 October 2014 meeting, the National Health Information Standards and Statistics Committee (NHISSC) agreed to recommend to National Health Information and Performance Principal Committee (NHIPPC) the addition of Indications for induction of labour to the Perinatal Data Set Specification (DSS) for 2015–16. On 13 November NHIPPC members endorsed the implementation of the new and revised data elements in the Perinatal DSS from 1 July 2015. Some states and territories will progressively implement indicators for induction of labour in their perinatal data collections from 1 July 2015 with the intention of adding it to the Perinatal NMDS from 2016.
- Data development has been deferred for 'alcohol consumption in pregnancy' due to the jurisdictions' inability to implement a nationally standardised data item.

As part of the NIRA, the COAG agreed that the Department of Health (formerly Department of Health and Ageing), in partnership with the state and territory health departments and in collaboration with the AIHW, would develop a set of national Key Performance Indicators for Indigenous specific primary health care services. The AIHW receives funding from the Department of Health to collect, manage and report on the nKPIs.

The scope of services providing nKPI data has increased over time. In the trial collection in February 2012, only services participating in the Australian Government's *Healthy for Life* programme submitted data (about 80 services). In January 2013, the scope expanded to include all Indigenous primary health services funded by the Australian Government. Data from over 200 organisations are now collected every six months.

The nKPIs are designed to enable monitoring of the contribution of this part of the health system in achieving Closing the Gap targets. They can also be used to help improve the delivery of primary health care for Aboriginal and Torres Strait Islander people and to improve health outcomes.

The nKPIs focus on health service specific outputs and clinical outcomes. Twenty-four indicators were given in-principle endorsement by AHMAC in early 2011. Implementation and collection of these indicators has been staged over a three year period, with 11 indicators implemented in 2011–12 and further eight in 2012–13.

The ABS continues to conduct various engagement and education activities, liaise with government departments about best practice in Indigenous data collection, and conduct data linkage programmes to assess and improve Indigenous identification status.

The ABS continues to use an Indigenous Community Engagement Strategy to improve the collection and dissemination of statistics, in partnership with Aboriginal and Torres Strait Islander communities. Through the use of Indigenous Engagement Managers in ABS offices across Australia, the ABS is building relationships with communities to improve the quality and relevance of Aboriginal and Torres Strait Islander statistics.

More information on ABS key directions in Aboriginal and Torres Strait Islander statistics can be obtained in the *ABS Annual Report, 2012–13* cat. no. 1001.0 (ABS 2013a).



The AIHW in collaboration with the Australian Institute of Family Studies delivered the Closing the Gap Clearinghouse. The Clearinghouse is an online collection of research and evaluation evidence on what works to overcome Indigenous disadvantage, focusing on 7 subject areas: early childhood; schooling; health; economic participation; healthy homes; safe communities; and governance and leadership. It aims to support policy-makers and service providers involved in overcoming Indigenous disadvantage by providing access to and synthesising the evidence on particular topics.

The contract for the Clearinghouse ended in June 2014. All resources and publications currently on the website will continue to be publicly available. However, once all commissioned issues papers and resource sheets have been released (towards the end of 2014), no new material will be added to the website.

The AIHW is undertaking a project to develop an Enhanced Mortality Database to improve information on Indigenous status on the registered deaths data set by linking it to several additional data sources that contain information on Aboriginal and Torres Strait Islander deaths and Indigenous identification. The enhanced data are expected to enable more accurate estimates of Aboriginal and Torres Strait Islander mortality, including life expectancy, to be made. A report on the results of the first phase of the project which linked death registration data to hospital data, perinatal data and residential aged care data for the period 2001 to 2006 was published by the AIHW in July 2012—*An enhanced mortality database for estimating Indigenous life expectancy: a feasibility study*.

Two more phases of the Enhanced Mortality Database project are currently in progress. In Phase 3, the AIHW is linking the Enhanced Mortality Database with the NSW Native Title Services Corporation Database to validate the quality of the derived Indigenous status variable on the Enhanced Mortality Database. In Phase 4, the Enhanced Mortality Database is being extended to cover all deaths from 2006, with data linkage and data analysis taking place as new deaths data become available. Phase 4 is also exploring the use of additional algorithms other than the 'ever Indigenous' algorithm alone, to derive enhanced Indigenous status from the linked data.

The AIHW Linked Perinatal, Births, Deaths Dataset Project will create a national ongoing linked perinatal, birth and death dataset for the purposes of analysing the factors affecting infant and child health outcomes in Australia. Infant and child mortality rates are important markers of population health. At the national level, aggregate data demonstrate that there are significant differences in infant and child mortality rates within Australia by factors such as Indigenous status. Currently, however, there is no way to link information on antenatal characteristics/behaviours with birth outcomes, and birth outcomes to infant and child deaths and so we cannot analyse these factors simultaneously. The dataset will be created by linking unit record level data across jurisdictions from perinatal data collections, birth records, and death records covering all births from 2003 to 2010, and deaths within this cohort of births from 2003 to 2015. Work on this project commenced in May 2013. The project has applied for, and received, ethics approval from the AIHW Ethics Committee. Ethics approval for the project has also been received from Health Research Ethics Committees in Victoria, SA, Tasmania, the NT and the ACT, while agreements have also been reached with the Registrars in all jurisdictions,

and with the perinatal data custodians of NSW, Victoria, SA and Tasmania for the supply of perinatal data for the project.

The National Prisoner Health Data Collection was first conducted in 2009, based on a set of indicators aligned to the National Health Performance Framework, and designed to monitor the health of prisoners. Subsequent data collections were held in 2010 and 2012. The collection provides information on the health of people entering prison (prison entrants), health conditions managed at prison clinics, medications administered at the clinics and operations of the clinics. In 2012, indicators relating to the health of people about to be released from prison (prison discharges) and deaths post-release from prison were added to the collection. Major reports relating to each data collection have been released by the AIHW, supplemented by smaller bulletins focused on important topics such as mental health. All of these reports include analysis of the health of Aboriginal and Torres Strait Islander prisoners. In 2015, the data collection will be conducted in an electronic format for the first time.

The Australian Capital Territory

The ACT Department of Health continues to undertake a number of data quality improvement activities regarding Aboriginal and Torres Strait Islander data. These activities include:

- An information and education strategy encouraging ACT Government Health Directorate staff to identify Aboriginal and Torres Strait Islander clients and patients to identify, based on the AIHW's 'One simple question could help you close the gap' campaign is being implemented across the Directorate. Information sessions together with posters and pamphlets have been delivered across both hospitals and in the community health space. The ACT Patient Administration System has been upgraded to ensure the Aboriginal and Torres Strait Islander identification question is a mandatory field. All pathology forms and all out patient collection stations within the hospital now collect the information. The Epidemiology Branch will monitor improvements in identification data and report outcomes.
- ACT Pathology project. The under-identification of Aboriginal and Torres Strait Islander patients in administrative data leads to a biased estimation of the true use of health services, which impacts on estimates of health expenditures and affects accurate planning and delivery of health services to Aboriginal and Torres Strait Islander peoples. ACT Health has entered an Aboriginal and Torres Strait Islander identifier as a mandatory field on ACT Pathology forms. Training has been conducted with Pathology staff on how best to ask clients to identify and a handout and brochure that encourages clients to identify has been made available in waiting areas. Improving identification on pathology forms has flow-on effects of improving identification in other data sets, e.g. ACT Cancer Registry, Communicable Disease Register and hospital data.
- ACT Health Patient Master Index (PMI) Hub project. To improve quality of Aboriginal and Torres Strait Islander identification in key vitals and administrative data sets, ACT Health has commenced collection of the Aboriginal and Torres Strait Islander identifier within the PMI, which will enable the identification status of a person to be shared throughout ACT Health IT systems. ACT Health is working to ensure that adherence to standards ensuring ethical and privacy considerations are taken into account.



New South Wales

Under the NIRA, NSW has committed to data quality improvement activities that will improve the accuracy and reliability of Closing the Gap reporting.

A summary of key activities include:

- NSW Health has adopted the standard ABS Indigenous status question and recording categories, and has issued this revision to the NSW Health system to mandate that the standard question is incorporated into all data collection forms and information systems for key data sets.
- NSW Health has employed a Project Officer Aboriginal Data Quality to the Health Systems Information & Performance Reporting Branch. The position supports the development of policies, protocols and strategies to enhance the quality of health data pertaining to the Aboriginal population of NSW. The position is responsible for routine data profiling of data collections to identify data quality issues. It is also responsible for supporting the State-wide implementation of data quality processes and programmes and will support the development of data collection standards.
- *Respecting the Difference: An Aboriginal Cultural Training Framework* for NSW Health outlines a mandatory cultural training framework for all staff working in health, and includes information on collecting Indigenous status information.
- The NSW Health Hospitals Identification Project will be completed and evaluated during 2014. The project aims to improve the cultural competency of services provided to Aboriginal people in NSW Hospitals, by developing a framework based on continuing quality improvement processes. The effectiveness of the framework in improving cultural competency will be assessed by improved Aboriginal identification in routinely collected data sets.
- NSW Health has completed a project titled 'Improved Reporting of Aboriginal and Torres Strait Islander peoples on population datasets using record linkage'. The project: (1) developed methods for improving reporting of Aboriginal and Torres Strait Islander peoples on population datasets using record linkage; (2) described the improvements in reporting achieved by record linkage; and (3) explored the impact of any changes in reporting due to record linkage on a selection of indicators of health status and health service utilisation. The method is being used to monitor the level of reporting of Aboriginal people on selected administrative datasets.
- Local Health Districts (LHDs) are implementing initiatives to raise awareness about the importance of identifying as an Aboriginal person. The programmes are designed and implemented locally. An example includes:
 - The Mid-North Coast LHD has implemented the MTEC 'Closing the Gap'—Innovation in Emergency Departments project that aims to create a better patient journey for Aboriginal people using the hospital and to reduce the number of 'Did Not Wait' patients. It is focused on the Emergency Department (ED) environment, training of staff on identification, getting clinicians involved in cultural awareness programmes, and addressing barriers that prevent people from waiting. Various strategies are included e.g. amusements for children, information on why identification is important, resources, posters including a triage poster, DVD, and cultural awareness information. The District has also established a new 'ALERT' system, where the Aboriginal Liaison Officer receives a message that an Aboriginal patient is in ED. The programme has shown a reduction of 'Did Not Wait' patients in ED by about 50%.

The Northern Territory

The NT Department of Health (DoH) has rolled out a number of ehealth initiatives across the NT that will have major implications for the use and collection of data. These improvements assist in the provision of seamless care for health consumers. Brief outlines for these initiatives are as follows:

My eHealth Record service (rebranded from Shared Electronic Health Record)

As at 30 June 2014, the *My eHealth Record* service ensured access to important health information was available with consent 24 hours per day, 7 days per week for 65,000 patients (up from 60,700 as at 30 June 2013). These patients include an estimated 78% of Aboriginal and Torres Strait Islander peoples living in rural and remote communities in the NT at any of the 137 participating health centres. These health centres include correctional facilities and public hospitals in the NT, Aboriginal Community Controlled Health Organisations (ACCHOs) in SA and public hospitals in the Kimberley Region of WA. During 2013–14, *My eHealth Record* was used by over 1,000 authorised clinical users each month, sending an average of 166,900 health-care event summaries (up from 145,400 in 2012–13) and accessing on an average of 48,800 occasions (up from 35,900 in 2012–13), as part of providing health-care. *My eHealth Record* has proved to be of major benefit for mobile populations, and people from rural and remote areas accessing services in regional towns or cities, by ensuring up-to-date information is easily accessible at the point of care, whether that is at a remote health centre operated by DoH or an ACCHO, or at a public hospital in a regional or major urban centre. In relation to this population, *My eHealth Record* has achieved 100% effective coverage of all health-care providers delivering services to people in rural and remote areas of the NT.

Secure Electronic Messaging Service

Secure Electronic Messaging Service (SEMS) ensures that specific information regarding clinical referrals can be communicated electronically securely between service providers. This assists in a seamless care in relation to managing transition from GPs/health centres to appointments with specialists or hospital outpatient clinics. Electronic medications and discharge summary information is forwarded by hospitals to communities of residence, so that information is available locally for consumers on their return to country. In 2011–12, the *Continuity of Care* project was completed, upgrading the messaging solutions used by DoH and ACCHOs in the NT to compliance with national specifications approved by the National eHealth Transition Authority (i.e. the Australian Technical Specification for Secure Message Delivery—[SMD ATS 5822-2010](#)). In April 2013, DoH commenced using the National Health Services Directory as its electronic address book for secure messaging and in early 2014 a project was initiated to improve outpatient referral and appointment management at Alice Springs Hospital with the aim of all referrals being undertaken electronically.

Primary Care Information System

In 2009–10, DoH completed the rollout of the Primary Care Information System (PCIS) to the 22 remaining remote health centres, making a total of 54 Departmental health centres transitioned to using fully electronic health records (eliminating the use of paper records) integrated with the eHealthNT MEHR service and Secure Messaging Delivery for eReferrals and eDischarge. As at 31 December 2010, PCIS had expanded its coverage to include health services in the two NT Prisons, three Juvenile Detention facilities, and two Living Skills Units.



Between December 2011 and March 2012 PCIS was introduced into Police Watch Houses in Darwin, Katherine and Alice Springs. PCIS includes a number of tools to assist in patient care, e.g. automatic alerts for service providers about patients to be recalled for follow-up treatments/services, providing a technological advantage to making service delivery easier.

In 2013–14, PCIS was implemented into the DoH Alcohol Mandatory Treatment Facilities in Central Australia with those in the Top End to follow early in 2014–15. In 2013–14, PCIS was also implemented in Renal Services with the Chronic Disease Nurses in the Top End and Central Australia being the first users in December 2013, following by the Peritoneal Dialysis Unit following in April 2014.

The Pen Computer Systems Clinical Audit Tool (Pen CAT) has been integrated with PCIS data in the DoH data warehouse. The Pen Cat is used to analyse and report on clinical information from primary health care systems. It translates data into statistical and graphical information that is easy to understand and action. This allows practitioners to assess and improve both the quality and completeness of patient information. This benefits a primary health care practice by assisting with ongoing accreditation and providing opportunities to grow practice income. The emphasis of the tool is to enable practice staff to take specific action to improve patient coverage in chronic disease management and prevention. Other benefits of the Pen CAT include:

- targeting patients with particular needs
- targeting patients with specific health risk profiles
- improved compliance with statistical data collection requirements
- extracting data to meet a specific need
- meeting statutory reporting requirements.

Statistics required for the Australian Primary Care Collaboratives (APCC) Programme and the Commonwealth Department of Health Future Directions Key Performance Indicators for Divisions are able to be easily identified and collated by the Pen CAT.

The PCIS Team works closely with clinical reference groups and programme areas to continually develop new and update existing care plans to reflect best practice standards and CARPA protocols. PCIS facilitates extensive coded clinical data collection for each service episode with the capacity to capture all required national Aboriginal and Torres Strait Islander health performance indicator data. These data sets are used to improve the delivery of primary health care services by supporting continuous quality improvement (CQI) activity among service providers. These data sets also support policy and planning at the national and state/territory level by monitoring progress and highlighting areas for improvement.

Aboriginal Health Key Performance Indicator (AHKPI) project

Initiated by the Aboriginal Health Forum (AHF) to develop a structure for collection and reporting of 19 agreed KPIs that cover both DoH Remote Health Centres and ACCHOs. The project is managed co-operatively by DoH, the Commonwealth Department of Health and Aboriginal Medical Services Alliance Northern Territory (AMSANT) under the auspices of the AHF Banner and maintains the NT Aboriginal Health KPI collection covering the government and non-government sectors to improve the quality and robustness of data for use in service

planning and management through continuous quality improvement.

The goal of the system is to contribute to improving primary health care services for Aboriginal Australians in the NT by building capacity at the service level and the system level to collect, analyse and interpret data that will:

- inform understanding of trends in individual and population health outcomes
- identify factors influencing these trends
- inform appropriate action, planning and policy development.

Processes for data collection from the various organisations information systems have been defined and developed, and data delivery from all NT community health centres commenced on 1 July 2009. Reports are produced bi-annually, six weeks after end-of-financial and calendar year. The AHKPI definitions go through continuous cycles of quality improvement with approved changes to the existing NT AHKPI definitions, or new KPIs completed twice a year.

East Arnhem Health Services Delivery Area (EAHSDA) Communicare Project

Between August 2011 and January 2012 the Commonwealth and NT Departments of Health jointly funded the implementation of Communicare (now known as HealthConnex) into the four EAHSDA centres of Yirrkala, Ramingining, Milingimbi and Gapuwiyak. Yirrkala health centre transitioned to Miwatj Aboriginal Health 1 July 2012 and remains on the DoH Central East Arnhem Database in support of a central East Arnhem database and the spirit of regionalisation.

Telehealth NT

In 2010–11 the DoH commenced the Health eTowns Program jointly funded with the Australian Government under the Digital Regions Initiative. The Health eTowns Program aimed to deliver improvements in health and education outcomes for predominantly Indigenous populations living in remote communities across the Northern Territory and the Kimberley Region. Through the Program the following initiatives have been implemented:

- TelehealthNT—a comprehensive telehealth network with over 50 telehealth-enabled health centres in major cities and towns, regional areas and remote locations, enabling clinical and diagnostic services to be delivered remotely, connecting NT Public Hospitals, remote primary care health centres, interstate tertiary hospitals and private specialists, and providing a range of telehealth services, including:
 - tele-burns clinics and urgent reviews
 - pre-admission clinics
 - tele-oncology patient reviews
 - tele-cardiology
 - trauma and critical care support
 - post-surgical review clinics.
- Internet Protocol Patient Monitors into emergency rooms and resuscitation areas enabling specialists to provide advice to assist clinicians in dealing with emergencies.
- A high-speed fibre, data communications network in 17 Territory Growth Towns.
- An eLearning Framework and system to support online training and professional development activities as part of continuing workforce development.



Queensland

Burden of Disease and Injury in Aboriginal and Torres Strait Islander People in Queensland

The Queensland Government has a bipartisan commitment to closing the gap in health status and life expectancy between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians and much work has been undertaken on this path.

In recent years in Queensland, significant effort has been directed to quantify and understand the characteristics of the health gap between Aboriginal and Torres Strait Islander peoples and other Australians. Measuring improvement in health outcomes against established benchmarks and better targeting health services and interventions have been the primary objectives of this work.

The first complete national assessment of the burden of disease in the Aboriginal and Torres Strait Islander population was released in 2007 (reference year 2003) (Vos et al. 2007). Equivalent results have been generated for Queensland by combining burden of disease analysis for whole-of-Queensland (Qld Health et al. 2008a; Qld Health 2008b) with the results of the national Indigenous study (Vos et al. 2007) to provide 2003 and 2006 broad estimates for Aboriginal and Torres Strait Islander Queenslanders (Qld Health et al. 2008a; Qld Health et al. 2008b).

The 2008 Queensland Government commitment to close the gap in health status and life expectancy between Aboriginal and Torres Strait Islander peoples and non-Indigenous Queenslanders (Queensland Government, 2008), along with the recent development of experimental life tables for Indigenous Queenslanders by remoteness for 2005–2007 (unpublished), provided the impetus to refresh the burden of disease and injury estimates for Queensland's Aboriginal and Torres Strait Islander peoples.

In 2012, Queensland Health undertook a refresh of burden of disease and injury results specifically for Queensland's Aboriginal and Torres Strait Islander peoples (reference year 2007). This study is the first comprehensive description of the burden of disease in Queensland's Aboriginal and Torres Strait Islander population. The results aid prioritisation of health programmes, services and policies by highlighting areas with the largest health loss and those with the largest potential for health gain.

This study also acts as a baseline for an updated study for Queensland that will include small area estimates (reference year 2011 — to be released in 2015). The production of ongoing burden of disease and injury estimates will allow improved understanding of changes in the disease and injury burden, thus guiding future investment for improving the health of Aboriginal and Torres Strait Islander peoples.

Quantifying the cost of excess hospitalisations for Indigenous Queenslanders

Aboriginal and Torres Strait Islander people in Queensland have higher morbidity and mortality rates compared with the non-Indigenous population. Higher rates of morbidity and mortality are present and have been since an Indigenous identifier has been included in Queensland morbidity and mortality data collections in the mid-1990s.

Significant work from researchers both working outside Queensland Health, and from public and population health staff from within Queensland Health, has gone into quantifying

the health gap for Aboriginal and Torres Strait Islander peoples in Queensland using morbidity and mortality data sets. This has included publicly accessible research that clearly documents morbidity and mortality differentials for Aboriginal and Torres Strait Islander peoples across a wide variety of conditions including chronic disease, namely cardiovascular disease, chronic respiratory disease, Type 2 diabetes, mental illness, accident and injury and child and maternal health.

However, less work has been undertaken around quantifying the financial impact of the burden of disease for Aboriginal and Torres Strait Islander peoples. Queensland Health is currently undertaking a project that looks at estimating the cost of excess hospital separations for Aboriginal and Torres Strait Islander peoples in Queensland (who are hospitalised at almost twice the rate of non-Indigenous Australians).

Due to differences in casemix cost weights, the key drivers of the health gap (mental disorders, cardiovascular disease, diabetes mellitus, chronic respiratory disease and cancer) may not necessarily equal the key drivers of excess hospital cost, hence the need to understand cost implications of excess hospitalisations.

The key aim of this work is to support the focussed purchasing of activity which addresses both the health gap and the key drivers of excess cost to ensure that Department of Health in Queensland is in a position where it could significantly reduce health disadvantage for Aboriginal and Torres Strait Islander people.

The analysis will also contribute to meeting the two key COAG targets of closing the gap in life expectancy by 2033 and halving the gap in child mortality by 2018, as well as reducing the financial impact of the health gap on the system.

Indigenous identification

In 2010–2011 Queensland Health conducted a \$1.25 million project aiming to improve the identification of Aboriginal and Torres Strait Islander people accessing health services. A central project team developed a suite of resources and partnered with the then health service districts (now Hospital and Health Services (HHSs) to investigate and understand local barriers to identification, and undertake targeted approaches to improvement. The overall identification rate in admitted patient data at the commencement of the project was 83.4%; following the project the identification rate improved to 88.5% (by 2013–14).

The Department of Health has been using the learnings gained from the project to continue to work with individual HHSs to help them to improve the identification of Aboriginal and Torres Strait Islander people accessing their health services.

South Australia

Improving Aboriginal and Torres Strait Islander Identification

The ABS was funded through SA Health's Council of Australian Governments investment to develop a training package for recording the 'Indigenous identifier' in health data collections; as well as training staff who manage data and/or perform data entry about the importance of collecting the Indigenous identifier information; the correct way of asking the standard question and recording the response; and strategies for dealing with special circumstances, such as determining the Indigenous status of children and patients who are unconscious. The training targeted frontline staff working across hospital sites in metropolitan Adelaide and regional communities, as well as



various mainstream primary care services throughout SA. This training approach was informed by the AIHW's Best Practice Guidelines for Collecting Indigenous Status. The first state-wide training programme concluded in late 2011. Over 430 frontline staff attended training sessions held in 40 locations spread through the state.

SA Health has also indicated that it supports feeding this initiative into the AIHW and ABS National Data Linkage Project on Indigenous identification. SA Health continues to operate a case mix payment system, which applies a 30% loading to hospital separations of Aboriginal and Torres Strait Islander peoples, and this provides an incentive for improved Indigenous identification.

SA Pathology (trading as IMVS Pathology) provides a comprehensive diagnostic pathology service delivered via a network of 18 state-wide laboratories and more than 71 patient collection centres. It is the sole provider of pathology in the public hospital sector and a major provider to the private GP and specialist market. The SA Department for Health and Ageing and SA Pathology have recently completed the first part of the project to address 'Aboriginal Identification Requirements in Pathology Systems'.

The initial emphasis of the project has been to ensure the Indigenous Identifier is included on pathology forms. This involved extensive consultation with SA Pathology providers and other jurisdictional providers. This enabled information sharing and identifying lessons learnt from other jurisdictions implementing similar projects, and resulted in the Indigenous Identifier being introduced into pathology forms as well as metropolitan-based hospital systems. While pathology forms have been addressed, a greater emphasis is now on linking the Indigenous identification data to an IT solution, as this is a significant gap requiring attention. The procurement of SA Pathology's new Laboratory Information System, which aims to be implemented from early 2016, is a key IT solution that will integrate the Indigenous Identifier information, and enable the appropriate use of captured data.

Further project work is being undertaken to review the downstream impacts on affected registries, which include input and advice from ACCHOs, GP Clinics, Medicare Locals and Well Women's Screening programmes. SA Health is determining how best to ensure systems provide consistent and continuous transfer of Aboriginal identification data across SA Health. Additional systems training will be required to support staff to collect information.

In 2007, SA participated in the National Audit of Indigenous Identification in Public Hospitals project, coordinated by the AIHW. Surveys were conducted in metropolitan and regional hospitals across SA, and the results contributed to reports from other jurisdictions to calculate adjustment factors to be applied to hospital separations data for Expenditure on Health reporting. A follow-up audit was conducted in 2011. The audit independently verified the Indigenous status of a sample of patients in selected metropolitan and country hospitals through face-to-face interviews. The results were matched against data held in hospital systems, to assess the quality of identification by hospital staff. More than 1,250 patient interviews were conducted during the audit. An estimated 91% of Indigenous patients were correctly identified, an increase of 4 percentage points compared with the 2007 audit. SA's completeness rate of 91% was the third highest nationally, behind the NT and WA. SA was only one of four state/territories to report an improvement in the identification of Indigenous people between the two audits.

Aboriginal and Torres Strait Islander Life Expectancy Measures

The SA Strategic Plan tracks improvements in key outcomes over time. Life expectancy for Aboriginal South Australians continues to be one of these key outcomes. SA Health produces a life expectancy estimate for SA, in the absence of the AIHW and ABS producing an estimate.

Data sets

Having identified the need for improvements in the way that the health sector describes and measures primary health care activities, SA has established an Out-of-Hospital Services Minimum Data Set, which includes the National Data Dictionary definition of 'Indigenous status', represents the agreed core elements that are collected for describing out-of-hospital care services in SA. A central repository of out-of-hospital services data has been operational for several years covering: community health, community mental health, public dental services, drug and alcohol services, child and family services, district nursing services and palliative care. One use is the measurement of the use of the above services by Aboriginal and Torres Strait Islander peoples.

SA has recently established a patient level collection on outpatient department services. The collection includes the Indigenous Status data item as per the national standard.

Cancer Data and Aboriginal Disparities (CanDAD)

The University of South Australia; South Australian Health and Medical Research Institute (SAHMRI); Aboriginal Health Council of South Australia; Cancer Council SA; Beat Cancer Project; SA NT DataLink; and SA Health are partnering in research that addresses the related issues of CanDAD. Governance for this important initiative is led by Professor Alex Brown, a prominent Aboriginal health researcher, Professor David Roder, an eminent cancer epidemiologist, and an Aboriginal Community Reference Group who are resolved that the data be used for health and health-system improvement.

CanDAD has two components, the first of which is the Advanced Cancer Data System Pilot (ACaDS). ACaDS seeks to develop an integrated, comprehensive cancer monitoring system with a particular focus on Aboriginal people in SA. This brings together cancer registry, hospital, radiotherapy, clinical and screening data to comprehensively monitor cancer trends, cancer management and survival. In collaboration with AIHW the integration of PBS data from the Commonwealth is also being sought.

Uniquely, CanDAD is also striving to incorporate Aboriginal patients' experiences with cancer and cancer services to guide continuous service improvement, community engagement, advocacy and outcomes research, providing data infrastructure for health services, population research, and for training Aboriginal (and non-Aboriginal) researchers.

The purposeful relating of accurate registry and administrative data alongside narratives of Aboriginal people with cancer will facilitate assessment of existing service quality and appropriateness, secular trends in cancer risk, burden and determinants will highlight areas of immediate need and provide a robust system for performance monitoring and evaluation. Even at an early stage in its course, CanDAD is providing Aboriginal specific input to the developing Statewide Cancer Control Plan 2016–2020.



The Aboriginal Health Landscape: Identifying and monitoring Aboriginal health disparities in South Australia

The Aboriginal Health Landscape is a population health initiative funded by the Wardliparingga Aboriginal Research Unit of SAHMRI. The aim of Landscape is to provide and report on health-related risk factor prevalence, health outcomes and social determinants of health of Aboriginal people compared with non-Aboriginal people at small area levels of geography that combined comprise the state of SA. Recent reports on health outcomes and the social determinants of health for Aboriginal people in SA, present only state or regional level information. Information related to more localised areas may be more meaningful and useful to local needs.

Broad questions:

- What is the demographic profile of Aboriginal people within each cluster and where, within each cluster, are health services located relative to where people live?
- Are there disparities in health status and outcomes, social determinants of health and burden of disease in the Aboriginal population compared with the non-Aboriginal population in SA, between clusters?
- Are there disparities in health status and outcomes, social determinants of health and burden of disease in the Aboriginal population compared with the non-Aboriginal population in SA, within clusters?

This piece of work will provide an up-to-date baseline health profile so we can collaboratively target and monitor our efforts in service provision, research, and policy settings. The information would be available to assist Aboriginal communities, government and non-government service providers with:

- setting targets for better health outcomes in local areas
- determining funding priorities for a fairer distribution of health programmes
- advising partners and responsible organisations on gaps to target their efforts
- prioritising health and health-related research based on health needs and gaps
- advocating for health improvements in an informed way, by Aboriginal communities and organisations on behalf of Aboriginal communities
- fostering informed debate on the work needed to achieve Aboriginal health equity
- informing policy
- monitoring and reporting against targets.

It will also assist communities and organisations with determining research priorities.

An Advisory Group will govern the Landscape project. It will comprise of Aboriginal people in SA who can provide advice and guidance on what and how health information is reported and interpreted from a health service, local community or local government perspective. A Technical Panel will be formed to provide advice and guidance on technical aspects of data analysis and reporting for the Landscape project. Both will be convened prior to 2015 and data custodian representation will be sought from SA Health.

Twenty individual Landscapes have been defined based on where Aboriginal and non-Aboriginal people in SA live. Each Landscape has between 1,000–2,000 Aboriginal residents, as identified in the 2011 census. Several custodians in SA Health have provided data and negotiations are continuing and will commence with additional custodians.

Data sharing

The Aboriginal Health Council of South Australia (AHCSA) Inc. has been funded since 2010 for two data sharing initiatives under SA Health's COAG investment: the *Enhancement of Information and Management in the Aboriginal Community Controlled Health Sector in SA*; and the *Audit and Best Practice for Chronic Disease (ABCD)* project (funded since 2011). AHCSA is the peak body for Aboriginal health in SA representing Aboriginal Community Controlled Health and Substance Misuse Organisations and Aboriginal Health Advisory Committees at a state and national level.

The *Enhancement of Information and Management in the Aboriginal Community Controlled Health Sector in SA* was initially used to develop a set of standard Patient Information Management System procedures and templates across ACCHOs to achieve standardised and consistency of data. This project included the investigation and implementation of methods for cross-sectoral data sharing between the ACCH Sector.

This programme continued to receive further funding in 2013–2014 and 2014–2016 and specifically targets patient information systems at the local health service level to lead to better patient outcomes. The programme will continue to provide health information support to the AHCSA Public Health and Primary Health Care programmes with implementation of processes relating to PIMS across the ACCH Sector to enable continuous quality improvement and programme evaluation. AHCSA will continue to advise ACCHOs on how to best optimise their PIMS supportive of clinical governance, including AGPAL Accreditation, reporting obligations, accessing Medicare revenue, quality improvement initiatives and aspects of health service management.

Some of the Key Performance Indicators include:

- support for the development of Health Information Management Systems in the Aboriginal Community-Controlled Sector through provision of orientation and training sessions for ACCH Sector staff
- support a consistent approach to health information management in terms of building capacity across the health system to provide comprehensive information management systems to contribute to improved Aboriginal health outcomes
- contribute to the development of a state wide Aboriginal health information initiative to inform cross sectoral Aboriginal health planning and priority setting.
- The ABCD project was funded to enhance the capacity of AHCSA to support the ACCHOs participating in the ABCD National Research Partnership. The funding worked to achieve the following:
 - building the capacity to provide services, including the acquisition of the One21Seventy tool for ABCD auditing
 - facilitation of ABCD audit training to ACCHOs staff.

The ABCD project was initially funded from 2011–2013 then 2013–2014 and funding ceased from SA Health although the National Research Partnership has continued.



ABCD NRP background

Over the past two decades there has been growing use of continuous quality improvement (CQI) initiatives within Australian Aboriginal and Torres Strait Islander primary health care with the aim of improving the quality of care and improving health outcomes.

Fifteen SA primary health care services participated in the ABCD National Research Partnership (2010–2014), and supported to implement a CQI initiative and to participate in a regionally relevant research project that supports the process of embedding CQI in every day practice. Since its inception (2011), the SA project was set up to conduct research around local CQI implementation activities. A regional research project emerged from these initial activities with the participating primary health care services that aimed to understand the barriers and enablers to CQI to identify strategies to strengthen its effectiveness in the South Australian setting.

Tasmania

The collection of Indigenous status is mandatory in core Tasmanian health data collections such as admitted, non-admitted and perinatal data collections. Notwithstanding this, there is room for improvement and Tasmanian Government agencies are working with Australian Government agencies to improve Indigenous identification in key administrative datasets. While this work is focusing on hospital and deaths administrative data, it will also address improvements to a broad range of data collections. Implementation of the Best Practice Guidelines for the collection of Indigenous status in health data sets forms part of this body of work.

The Department of Health and Human Services has employed an Aboriginal Health Development Officer. This position sits within the Aboriginal Health Unit in Population Health Priorities. One of the requirements of this position is to develop and deliver Cultural Safety training. One component of this training package focuses on improving the collection of Indigenous data throughout the Agency. This training package has been successfully delivered since June 2006.

Victoria

Data collection

In Victoria, Aboriginal and Torres Strait Islander status is a mandatory field in all major health datasets. The Victorian Admitted Episodes Dataset (VAED), the Victorian Emergency Minimum Dataset (VEMD), and the Victorian Perinatal Data Collection (VPDC) contain good-quality data on Indigenous identification. Aboriginal identification is also collected through the Alcohol and Drug Information System (ADIS), infectious diseases (PHESS), aged care (HACC and ACAS) and community health direct care databases.

The Aboriginal population of Victoria forms a small proportion of a large, mainly urban population. Correct identification of Aboriginal people in Victoria is challenging in all datasets.

Measures to improve data

Improving Care for Aboriginal and Torres Strait Islander Patients (ICAP) programme includes 30% case-mix co-payment to hospitals for acute, sub-acute and mental health patients identified as Aboriginal. The programme encourages an outcomes focus leading to improved identification and health care.

Victorian hospital datasets include two additional fields in the standard Indigenous status question: 'Question unable to be asked' and 'Patient refused to answer'. The addition of these fields has enabled the Department of Health to identify instances of misuse of either field very quickly. This has contributed to the improving rate of Aboriginal identification.

Changes in access to data systems have also meant that more frequent monitoring of Aboriginal hospital separations is possible, and errors can be discovered and rectified.

In January 2009, the VPDC allowed the recording of the Indigenous status of babies as separate from the mother. This has enabled the large proportion of Aboriginal babies born in Victoria who have an Aboriginal father and non-Aboriginal mother to be recorded as Aboriginal. The quality of the data recorded in this dataset has been improving each year.

The Department of Health and PapScreen Victoria have developed a system for recording and reporting the Aboriginal status of women participating in pap screens. A pilot study has been completed and was successful in training nurses to collect Aboriginal status. The system will be extended to GP providers. The identification of Aboriginal status in all cancer screening systems is being investigated.

Work to encourage GPs to record Aboriginal status has continued. This has been assisted by the use of the Aboriginal health check, Medicare item 715, which requires identification as Aboriginal.

Victoria participated in the audit of hospital inpatient data coordinated by AIHW in 2011. This confirmed the level of identification of Aboriginal and Torres Strait Islander patients in Victorian hospitals and highlighted areas of greater need. The same methodology has been used subsequently to audit individual hospitals.

Data improvement across multiple government departments

The Victorian Aboriginal Child Mortality Study, based at the University of Melbourne, has brought together birth and death information from the VPDC and the RBDM to ascertain the number of Aboriginal babies born between 1988 and 2008, and the number and causes of death for Aboriginal children who died during this period. The linked datasets have also provided an assessment of the coverage of the individual datasets. The Births Report has been released, as has the Deaths Report.

The Overarching Bilateral Indigenous Partnership Data Reform Group has surveyed educational and promotional activity for Aboriginal identification in Victorian datasets. The Data Reform Group has also worked on the development of a Victorian Aboriginal life expectancy estimate.

The Victorian Auditor-General's Office reviewed the access of Aboriginal people to mainstream services in Victoria and recommended improvements in data and reporting, which will be implemented by the relevant departments.

The Department of Human Services and the Commission for Aboriginal Children and Young People are conducting a project examining the needs of Aboriginal children in out-of-home care, which will include a review of the datasets relevant to these children and their ability to identify Aboriginal children in out-of-home care. All health datasets are included.



Western Australia

In WA, Aboriginal and Torres Strait Islander status is collected in a range of health data collections, including the admitted patient data collection, the emergency department data collection, the outpatient care data collection, the Notifiable Disease Data Collection, the WA Health and Well Being Surveillance System, the Midwives Data Collection, the Breast screening Data Collection, the Mental health Information System and the Cancer Registry. It is also stored on ABS Mortality data held by the Department of Health.

The WA Non-admitted State-wide Data Collection is being expanded to capture missing activity. The data item that identifies Aboriginal and Torres Strait Islander people is a mandatory part of the data provision specification.

WA Health is also planning to introduce a chapter on Aboriginal mothers and babies in its *WA Mothers and Babies Annual Report*.

The Western Australian Department of Health (WA Health) collects data on Indigenous status in accordance with the ABS Indigenous status question. The basis for the question is the national standard set out in the National Health Data Dictionary, Metadata Online Registry (METeOR) and the WA Health Hospital Morbidity Data System Reference Manual.

The WA Health Hospital Morbidity Data System Reference Manual, which sets out the rules for collection of inpatient data, states the following:

- Indigenous identification is extremely important in health data collections throughout Australia. It is used not only to direct funds into Aboriginal medical programs, but also to identify causes of perinatal and adult mortality within the Aboriginal population.
- There are three components to this definition: descent, self-identification and community acceptance. All three should be satisfied for a person to be Aboriginal. However, it is not possible to collect proof of descent or community acceptance in the hospital setting. If a person identifies himself or herself as Aboriginal, then assign the most appropriate code (1-3):
- The following question must be asked of all patients:
 - 'Are you of Aboriginal or Torres Strait Islander origin?'
 - In circumstances where it is impossible to ask the patient directly, such as in the case of death or lack of consciousness, the question should be asked of a close relative or friend if available to do so.
 - If the Admission Clerk is unable to speak directly with the patient, the ward staff should ask the patient the above question, or ask a close relative or friend if the patient is not able to provide the information.

Each health service will have a Patient Administration System administrator, and a liaison officer whose role it is to train staff in how to interpret data elements for entry to the system. This includes training staff on how to properly answer the Indigenous status questions.

WA Health has already adopted the two items (smoking during pregnancy and antenatal care) and they will be ready to report by 2016.

WA Health has developed a communication strategy to raise awareness of health staff and the Indigenous community about the importance of Indigenous status identification. Pamphlets and posters consistent with the Indigenous status information have been developed and will be trialled in one of the four area health services. It will then be made available across WA.



Notes to tables and figures

Health Status and Outcomes (Tier 1)

1.01 Low birthweight

Data on birthweight is collected as part of the Perinatal National Minimum Data Set. Low birthweight data are reported for live births of 20 weeks gestation or more, or of 400 grams or more birthweight. Low birthweight is defined as less than 2,500 grams. Data excludes babies with unknown birthweight. Data relates to the Indigenous status of the mother only and therefore underestimates Aboriginal and Torres Strait Islander births. Unless otherwise stated, Indigenous and non-Indigenous data exclude births where the mother's Indigenous status is not stated.

Figure 1.01-1: Data are by place of usual residence of the mother. Excludes non-residents, external territories and not stated state/territory of residence. Time-series rates are calculated for low birthweight singleton babies (as inclusion of multiple births in trend analysis could confound results) and are presented for single years from 2000 to 2011. Excludes data for Tasmania and the ACT as these data are not considered stable enough to be included in trend analysis.

Figure 1.01-2: Data are by place of usual residence of the mother. Excludes non-residents, external territories and not stated state/territory of residence. Includes all live-born low birthweight babies.

Figure 1.01-3: Data are presented by age of mother. Indigenous and non-Indigenous data exclude women with not stated age/date of birth. Includes all live-born low birthweight babies.

Figure 1.01-4: Data are presented by remoteness category. Indigenous and non-Indigenous data exclude women with a not stated state/territory of residence. Includes all live-born low birthweight babies.

1.02 Top reasons for hospitalisation

Data for this measure come from the AIHW's analysis of the National Hospital Morbidity Database. Data are from public and most private hospitals in all jurisdictions. Care types 7.3, 9 & 10 (Newborn—unqualified days only, organ procurement, hospital boarder) have been excluded from analysis.

Rates have been directly age-standardised using the 2001 Australian standard population. Rates for Indigenous Australians are calculated using backcast population estimates and projections (Series B) based on the 2011 Census.

Categories are based on the ICD10-AM seventh edition (National Centre for Classification in Health 2010). Data related to principal diagnosis are reported by state/territory of usual residence of the patient hospitalised. Unless otherwise stated, hospital separations for dialysis are excluded from the analysis.

For total separations at a national level, the jurisdictions' hospitalisation numbers and rates have been adjusted for Indigenous under-identification using a national adjustment factor of 1.09. This factor was derived from a study undertaken by the AIHW in 2011 and 2012, which assessed the level of Indigenous under-identification in hospital data in all states and territories by comparing information gathered from face-to-face interviews in public hospitals with results from hospital records. By applying this factor, the number of Indigenous hospitalisations was increased by 9% and these additional hospitalisations were then subtracted from the number of hospitalisations for non-Indigenous Australians. For further information see AIHW (2013f). This adjustment factor cannot

be applied to separations presented by cause as identification may vary by principal diagnosis.

Current period data are presented from July 2011 to June 2013. Data are combined for two years due to small numbers when disaggregating separation data (e.g. by principal diagnoses, age or jurisdiction).

For jurisdictional breakdowns age-standardised rates for NSW, Vic, Qld, WA, SA, the NT and Australia have been calculated using the direct method, age-standardised by 5-year age groups to 75+. Age-standardised rates for Tasmania and the ACT have been calculated using the direct method, age-standardised by 5-year age group to 65+. As different age-groupings were used, caution must be used when comparing rates for Tasmania and the ACT, with rates for NSW, Vic, Qld, WA, SA, the NT and Australia.

Time-series rates are age-standardised using the 2001 standard population and are presented for single years. Long term trends are reported from 1998–99 to 2011–13 and includes Qld, WA, SA and the NT combined while short term trends are reported from 2004–05 to 2011–13 and include NSW, Victoria, Qld, WA, SA and the NT combined. The jurisdictions included differ between trends due to historical data quality issues.

Remoteness area is based on the ABS' 2011 Australian Statistical Geography Standard (ASGS) and relates to the patient's usual residence. Total includes hospitalisations where remoteness area of residence is unknown. Rates by remoteness are calculated using AIHW derived populations using ABS population estimates and projections based on the 2011 Census.

Figure 1.02-3: 'Other' includes: diseases of the musculoskeletal system and connective tissue; neoplasms; diseases of the nervous system; certain conditions originating in the perinatal period; diseases of the ear and mastoid process; diseases of the eye and adnexa; diseases of the blood and blood-forming organs and certain disorders involving the immune system; congenital malformations, deformations and chromosomal abnormalities; and factors influencing health status and contact with health services (except dialysis).

1.03 Injury and poisoning

Data for this measure come from the AIHW's analysis of the National Hospital Morbidity Database. Refer to notes for measure 1.02 regarding these data. Cause of injury is based on the first reported external causes where the principle diagnosis was injury, poisoning and certain other consequences of external causes (ICD-10-AM codes S00–T98).

Table 1.03.1: 'Other accidental exposures' includes: exposure to electrical current, radiation and extreme ambient air temperature and pressure (W85–W99), smoke, fire and flames (X00–X09), contact with heat and hot substances (X10–X19), contact with venomous animals and plants (X20–X29), exposure to forces of nature (X30–X39). 'Other external causes' includes: event of undetermined intent (Y10–Y34), legal intervention and operation of war (Y35–Y36), sequelae of external causes of morbidity and mortality (Y85–Y89), supplementary factors classified elsewhere (Y90–Y98).

Figure 1.03-4: Data are reported by state/territory of usual residence of the patient hospitalised. Age-standardised rates for NSW, Vic, Qld, WA, SA, the NT and Australia have been calculated using the direct method, age-standardised by 5-year age groups to 75+. Age-standardised rates for Tasmania and the ACT have been calculated using the direct method,



age-standardised by 5-year age group to 65+. As different age-groupings were used, rates for Tasmania and the ACT cannot be compared with the rates for NSW, Vic, Qld, WA, SA, the NT and Australia. In addition, rates for the ACT and Tasmania will fluctuate from year to year due to small number of hospitalisations for some conditions and should therefore be interpreted with caution.

1.04 Respiratory disease

Data for this measure mainly come from the AIHW's analysis of the National Hospital Morbidity Database. Refer to notes for measure 1.02 regarding these data. Exceptions are noted below. Categories are based on the ICD-10-AM seventh edition (ICD-10-AM codes J00–J99).

Figure 1.04-1: 'Outer regional' includes remote Victoria. 'Remote' excludes remote Victoria. Remoteness area is based on the ABS' 2011 Australian Statistical Geography Standard ASGS and relates to the patient's usual residence. Rates by remoteness are calculated using AIHW derived populations using ABS population estimates and projections (Series B) based on the 2011 Census.

Figure 1.04-3: Rates for NSW, Vic, Qld, WA, SA and the NT have been age-standardised by 5-year age groups to 75+. Age-standardised rates for Tasmania and the ACT have been calculated by 5-year age groups to 65+. Comparisons between jurisdictions should therefore be interpreted with caution.

Figures 1.04-5 and 1.04-6: Mortality data are derived from the ABS National Mortality Database. See technical appendix entry for measure 1.22 for more information.

1.05 Circulatory disease

Data for this measure come from the ABS and AIHW analysis of 2012–13 AATSIHS, AIHW's analysis of the National Hospital Morbidity Database, and ABS and AIHW analysis of the National Mortality Database. Refer to notes for measure 1.02 regarding hospitalisation data and notes for measure 1.23 regarding mortality data.

Categories for hospitalisations and mortality are based on the ICD10-AM seventh edition (National Centre for Classification in Health 2010): ICD10-AM codes I00–I99.

Figure 1.05-1 and 1.05-2: Data reported in these figures is for people who reported having a current heart/circulatory problem which has lasted, or is expected to last, for 6 months or more. Data are from the AATSIHS core sample, which consists of the NATSIHS and NATSINPAS.

1.06 Acute rheumatic fever and rheumatic heart disease

Data for this measure come from the NT, Qld and WA Rheumatic Heart Disease Control Program registers. The SA register is currently under development. The NT RHD register has been operating in the Top End since 1997 and in Central Australia since 2001 and currently provides the strongest source of data on ARF and RHD. Comparisons between jurisdictions should not be made given registers are at different stages of coverage and completion. Data for other Australians are not currently available from the WA register. Crude rates per 1,000 are calculated using the total number of registrations for 2010–2013 divided by the summed 30 June 2010, 2011, 2012 and 2013 populations based on the 2011 Census (series B estimates and projections).

Figure 1.06-1: Time-series rates are crude and calculated using the 2011 estimated resident Aboriginal and Torres Strait Islander population.

Figure 1.06-2: Based on patients usually resident in NSW, Vic, Qld, WA, SA and the NT. Other Australians include peoples whose Indigenous status was 'Not stated'.

1.07 High blood pressure

The majority of the data in this measure is from the 2012–13 AATSIHS. This survey collected both measured blood pressure and self-reported blood pressure. The total prevalence of high blood pressure is the total people who reported having high blood pressure/hypertension (regardless of measured blood pressure) plus people who did not report having high blood pressure/hypertension but who had a measured blood pressure of 140/90 mmHg or above. The denominators used in calculating prevalence rates exclude those persons who did not report having high blood pressure/hypertension whose blood pressure was not measured.

Refer to notes for measure 1.02 for information on hospitalisation data. ICD-10-AM codes I10–I15.

Figure 1.07-2: This figure presents the percentage Indigenous adults with a measured blood pressure of 140/90 mmHg or above (the number above each bar), and splits this into the percentage of those who reported having high blood pressure and those that did not.

Figure 1.07-3: This figure presents age-specific rates of those who had measured blood pressure of 140/90 mmHg or above and does not include self-report data. Total is age-standardised.

1.08 Cancer

Data for this measure come from the AIHW Australian Cancer Database and from ABS and AIHW analysis of the National Mortality Database. For information on the National Mortality Database, see notes for measure 1.22. For the AIHW Australian Cancer Database, data are reported for NSW, Qld, WA and the NT only. These four states and territories are currently considered to have adequate levels of Indigenous identification in cancer registry data for these periods. Data are presented in 5-year groupings because of small numbers each year.

Figure 1.08-1: ICD-10 Codes for malignant neoplasms (cancer) include: C00–C97, D45, D46, D47.1, D47.3. Other malignant neoplasms includes neoplasms of bone and articular cartilage (C40–C41); melanoma & other neoplasms of skin (C43–C44); neoplasms of mesothelial and soft tissue (C45–C49); neoplasms of eye, brain and other parts of central nervous system (C69–C72); neoplasms of thyroid and other endocrine glands (C73–C75); C9 malignant neoplasms of independent (primary) multiple sites (C97).

Figure 1.08-2: Refer to notes for measure 1.2 for information on mortality time-series data.

Figures 1.08-3 and 1.08-4: Results reported in this table may differ from those in jurisdictional reports because the underlying data may have been extracted from the master databases at different times. Jurisdictional results reported in these figures may be affected by variations in self-reported Indigenous status. Incident rates are directly age-standardised using the 2001 Australian Standard Population, by 5-year age group to 75+.

Figure 1.08-6: The 5-year crude survival rate is the percentage of people who are still alive 5 years after their cancer diagnosis. The rates were calculated by the cohort method based on all diagnoses in 1997–2007, followed to the end of 2010 see AIHW (2013b), for more detail on methodology.



1.10 Kidney disease

Data for this measure come from the Australian and New Zealand Dialysis and Transplant Registry. Indigenous identification in the Registry is based on self-identification in hospital records. However, because of the heightened awareness of the extent of renal disease in Aboriginal and Torres Strait Islander peoples and the prolonged and repeated contact with renal units in hospitals, it is believed that Indigenous identification in the Registry is more complete than in general hospital data. Uses calendar year reporting. Total rates are directly age-standardised using the Australian 2001 standard population. Age-standardised rates have been calculated using the direct method, age-standardised by 5-year age groups to 65 years and over (except for time series which use 5-year age groups to 75 years and over). Data are presented in 3-year groupings because of small numbers each year, except for time series in which single years are reported.

1.11 Oral health

Data for this measure come from the 2012–13 AATSIHS, 2008 NATSISS, 2011–13 National Hospital Morbidity Database and the 2010 Child Dental Health Survey.

Figure 1.11-1: Data are from the 2012–13 AATSIHS. Self-reported data, consisting of persons reporting whether they have lost any of their adult teeth (excluding wisdom teeth), and if so, how many. 'Complete tooth loss' is comprised of persons who responded they have lost all of their adult teeth. 'Loss of one or more teeth' doesn't include complete tooth loss. Excludes not stated responses.

Figure 1.11-2: Refer to notes for measure 1.02 for information on hospitalisation data. Dental problem categories are based on ICD-10-AM codes K02, K81, 2012. Data includes public and private hospitals in all jurisdictions. Data are directly age-standardised using the Australian 2001 standard population. Rates calculated based on 2011 Census. Excludes separations with care types 7.3, 9 and 10.

Figures 1.11-3 and 1.11-4: Data are from the 2010 Child Dental Health Survey. Data are for NT, Qld, SA, Tas, WA and ACT. Data for NSW and Victoria are not available.

1.12 HIV/AIDS, hepatitis and sexually transmissible infections

Data for this measure (except for HIV/AIDS data) come from the National Notifiable Disease Surveillance System. A major limitation of the notification data is that, for most diseases, they represent only a proportion of the total cases occurring in the community, that is, only those cases for which health care was sought, a test conducted and a diagnosis made, followed by a notification to health authorities. The degree of under-representation of all cases is unknown and is most likely variable by disease and jurisdiction. 'Diagnosis date' was used to define the period of analysis. This date represents either the onset date or where the date of onset was not known, the earliest of the specimen collection date, the notification date, or the notification received date. In interpreting these data it is important to note that changes in notifications over time may not solely reflect changes in disease prevalence or incidence. Changes in testing policies; screening programmes, including the preferential testing of high risk populations; the use of less invasive and more sensitive diagnostic tests; and periodic awareness campaigns may influence the number of notifications that occur over time. Rates have been directly age-standardised using the Australian 2001 standard population using 5-year

age groups up to age 65+. Uses calendar year reporting. Data are presented in two-year or three-year groupings due to small numbers each year. 'Other Australians' includes notifications for non-Indigenous Australians and those for whom Indigenous status was not stated.

Not all notifications of chlamydial infection, gonococcal infection, and syphilis are sexually acquired. The national case definitions for these infections do not specifically distinguish between sites of infection or modes of transmission.

Figure 1.12-1: The supplied data for Chlamydia for NT is for genital infections only. From 1 July 2013, the national case definition for Chlamydia excludes ocular infections. Hepatitis C data includes 'newly acquired' and 'unspecified' infections identified under two disease codes '040' and '053'. Hepatitis B data includes 'newly acquired' and 'unspecified' infections identified under two disease codes '039' and '052'. Hepatitis B data is presented from 2005–07—prior to this period data is considered insufficient quality for reporting.

Figure 1.12-2: Data are from the National HIV Registry. Data are presented in three-year groupings because of small numbers each year. Rates have been directly age-standardised using the 2001 Australian population.

Figure 1.12-3: Chlamydia data are reported for Qld, WA, SA, the NT and Tasmania. Gonorrhoea data are reported for Victoria, Qld, WA, SA, the NT, Tasmania and the ACT. These jurisdictions are considered to have adequate levels of Indigenous identification in the respective data. They do not represent a quasi-Australian figure.

Figure 1.12-4: Hepatitis B data are reported for WA, SA, the NT, the ACT and Tasmania and includes 'newly acquired' and 'unspecified' infections identified under two disease codes ('039' and '052'). Hepatitis C data are reported for WA, SA, the NT and Tasmania and includes 'newly acquired' and 'unspecified' infections identified under two disease codes ('040' and '053').

1.13 Community functioning

Data for this measure come from the 2002 and 2008 NATSISS.

Table 1.13-1: Unless otherwise indicated percentages are of the estimated total Aboriginal and Torres Strait Islander population aged 15 years and over.

1.14 Disability

The key data for this measure come from the 2012–13 Health Survey and the 2011 Census. The 2012–13 Health Survey collected data on a broad definition of disability (i.e. those reporting a limitation, restriction, impairment, disease or disorder that has lasted, or expected to last, for 6 months or more which restricts everyday activities). Results are self-reported and therefore could be under-stated.

The 2011 Census collected data on one element of disability — those reporting the need for assistance with core activities. Results therefore may understate the proportion of people with a disability. The Census measure of 'need for assistance with core activities' is conceptually comparable to the SDAC measure of severe or profound core or activity limitation.

The 2012–13 Health Survey, 2011 Census and 2012 Survey of Disability, Ageing and Carers data provide prevalence rates while the Disability Services NMDS is service use rate.

Figure 1.14-1: Data for this figure come from the self-reported data from the 2012–13 Health Survey. Totals are directly age-standardised.



Table 1.14-1: Note that more than one disability type may be reported and thus the sum of the components may add to more than the total.

1.15 Ear health

Figure 1.15-1: Refer to notes for measure 1.02 for information on hospitalisation data. ICD-10-AM codes H60–H95.

Figure 1.15-2: Data come from the annually conducted Bettering the Evaluation And Care of Health (BEACH) survey. Data from five combined BEACH years April 2008–March 2009 to April 2012–March 2013 inclusive. Classified according to ICPC-2 codes: H00–H99—Acute otitis media/myringitis = H71; other ear infections = H70, H72, H73, H74; hearing loss = H28, H84, H85, H86; other diseases of the ear = H01–H27, H29–H69, H75–H83, H87–H99.

Table 15.1-1: Data for the National Aboriginal and Torres Strait Islander Health Survey 1995 are available for non-remote regions only. The estimate for remote areas and the 2001 non-remote data for males have a relative standard error between 25% and 50% and should be used with caution.

1.16 Eye health

Data in this measure are mainly from self-reported data from the Australian Aboriginal and Torres Strait Islander Health Survey 2012–13 and from eye examinations from the National Indigenous Eye Health survey.

The National Indigenous Eye Health survey was conducted in 2008 by the Indigenous Eye Health Unit at the University of Melbourne in collaboration with the Centre for Eye Research Australia and the Vision Co-operative Research Centre. The survey was designed to assess the prevalence of the main eye conditions causing vision loss including cataract, diabetic retinopathy, refractive error and trachoma/trichiasis, as well as the prevalence of glaucoma and age-related macular degeneration. Note: 62% of the sample was in remote areas with estimates weighted to the national Indigenous population.

Additionally, data are used from the annually conducted (BEACH) survey. Classified according to ICPC-2 chapter codes: F01–99. Data from five combined BEACH years April 2008–March 2009 to April 2012–March 2013 inclusive.

Figure 1.16-1: Data come from the 2008 National Indigenous Eye Health Survey for adults by cause of vision loss and remoteness.

Figure 1.16-2: Data come from the National Trachoma Surveillance and Reporting Unit (NTSRU) and was collected from screening in remote Aboriginal communities during 2012 in the NT, SA, WA and Qld. Caution must be taken when interpreting trachoma prevalence as screening was undertaken in predominantly remote and very remote communities designated as being at risk of endemic trachoma.

1.17 Perceived health status

Data from this measure are based on self-report data from ABS and AIHW analysis of the 2012–13 AATSIHS.

Figure 1.17-4: Long-term health conditions is based on self-reported data consisting of persons reporting a current medical condition which has lasted, or is expected to last, for six months or more.

1.18 Social and emotional wellbeing

Figure 1.18-1: Level of psychological distress is based on the Kessler-5 (K5) measure of psychological distress. Overall levels of distress are based on frequency responses to the following five questions about feelings in the last 4 weeks: About how often did you feel nervous?; About how often did you feel without hope?; About how often did you feel restless or jumpy?; About how often did you feel everything was an effort?; and About how often did you feel so sad that nothing could cheer you up? 'Low/moderate' includes persons who said they had not had any of these feelings in the last 4 weeks (score of 5).

Figure 1.18-4: AIHW National Mortality Database. See measure 1.22 for notes. ICD-10 codes: X60–X84, Y87.0

Figure 1.18-6 and 1.18-7: Categories are based on the ICD-10-AM seventh edition (National Centre for Classification in Health 2010) and previous editions: ICD-10-AM codes F00–F99, G30, G47.0, G47.1, G47.2, G47.8, G47.9, 099.3, R44, R45.0, R45.1, R45.4, R48, Z00.4, Z03.2, Z04.6, Z09.3, Z13.3, Z50.2, Z50.3, Z54.3, Z61.9, Z63.1, Z63.8, Z63.9, Z65.8, Z65.9, Z71.4, Z71.5, Z76.0. Refer to notes for measure 1.02 regarding hospital data.

1.19 Life expectancy at birth

Data for this measure is sourced from ABS Life Tables for Aboriginal and Torres Strait Islander Australians, 2010–12, Cat. No. 3302.0.55.003

Life expectancy at birth is the average number of years that a group of newborn babies would be expected to live if current death rates remain unchanged. This is a modelled estimate and serves as a guide to the health of the population.

Almost all deaths in Australia are registered; however, the quality of Indigenous status in deaths data varies over time and between jurisdictions. The volatility of Indigenous status recording in the Census also contributes to uncertainty in population estimates. These data issues, together with the small size of the Indigenous population, have led to problems calculating accurate Indigenous life expectancy estimates. As a result of improvements in methods of addressing data quality issues, there have been difference estimates of the gap in life expectancy over the last decade, including 20 years, 17 years and 10–12 years. The latest publication includes revised estimates for 2005–07 and, for the first time, a time series. For details of technical issues refer to the ABS publication.

1.20 Infant and child mortality

Data for this measure come from the ABS National Mortality Database (see notes for measure 1.22). Infant mortality rates are per 1,000 live births. 'Infant' includes persons with an age at death of under 1 year. For child mortality tables (0–4 years), the denominator for single year time-series data is a three-year rolling average to account for an anomaly in the 2011 Indigenous population estimate for this age group. For current period reporting (2008–2012), the denominator is the average of the population estimates for these five years.

Table 1.20-2: 'Other conditions' include: neoplasms; diseases of blood and blood-forming organs; endocrine, nutritional and metabolic diseases; mental and behavioural disorders; diseases of the nervous system; diseases of the eye and adnexa; diseases of the ear and mastoid process; diseases of the digestive system; diseases of the musculoskeletal system and connective tissues; diseases of the genitourinary system; and diseases of the skin and subcutaneous tissue.



1.21 Perinatal mortality

Data for this measure come from the ABS National Mortality Database. This database contains details of all deaths registered in Australia including information on foetal (stillbirths) and neonatal deaths (deaths occurring in live births up to 28 days of age) by age of the baby, sex, state/territory of birth, Indigenous status and cause of death (ICD-10). Also, refer to notes for measure 1.22 for more information on mortality data. Perinatal deaths are all foetal deaths (at least 20 weeks gestation or at least 400 grams birthweight) plus all neonatal deaths (death of a live-born baby within 28 days of birth). Perinatal death rates are calculated per 1,000 births for the calendar year.

1.22 All-causes age-standardised deaths rates

Mortality data are derived from the ABS National Mortality Database. Current period data cover the period 2008–2012 and is reported for NSW, Qld, WA, SA and the NT combined. Data are presented in 5-year groupings because of small numbers each year. Time trends are also presented for the five jurisdictions for 1998–2012. These states and territories are considered to have adequate levels of Indigenous identification in mortality data for these periods. Time-series data are presented for single years.

Death rates are age-standardised death rates per 100,000 population, using the 2001 Australian Estimated Resident population, by 5-year age group to 75 years and over. Non-Indigenous estimates are available for Census years only. In the intervening years, Indigenous population figures are derived from assumptions about past and future levels of fertility, mortality and migration. In the absence of non-Indigenous population figures for these years, it is possible to derive denominators for calculating non-Indigenous rates by subtracting the projected Indigenous population from the total population. Non-Indigenous population estimates have been derived by subtracting the 2011 Census-based Indigenous population projections from the 2011 Census-based total persons estimated resident population (ERP). Such figures have a degree of uncertainty and should be used with caution, particularly as the time from the base year of the projection series increases.

Age-specific death rates per 100,000 are not age-standardised. Care should be taken when interpreting mortality rates for Qld due to recent changes in the timeliness of birth and death registrations. Qld deaths data for 2010 have been adjusted to minimise the impact of late registration of deaths on mortality indicators.

Although most deaths of Aboriginal and Torres Strait Islander peoples are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to under-estimate the Indigenous mortality rate. Time-series analysis may also be affected by variations in the recording of Indigenous status over time. It is also difficult to identify the exact difference between the Indigenous and non-Indigenous mortality rates because of these data quality issues. Deaths prior to 2007 are by year of registration and state/territory of usual residence. Deaths from 2007 onwards are by reference year and state/territory of usual residence. Registration year prior to 2007 is equivalent to reference year from 2007 onwards. All causes of death data from 2007 onward are subject to a revisions process; once data for a reference year

are 'final', they are no longer revised. Affected years are: 2007–2010 (final), 2011 (revised), and 2012 (preliminary).

Table 1.22-1: Data for these five jurisdictions over-represent Indigenous populations in less urbanised and more remote locations. Mortality data for the five jurisdictions should not be assumed to represent the experience in the other jurisdictions.

Figure 1.22-2: Data are reported for Australia-level remoteness areas as a breakdown of remoteness areas by state/territory is not available for Aboriginal and Torres Strait Islander population estimates or projections. Remote areas include very remote and remote areas of Australia.

Figure 1.22-3: Potential years of life lost (PYLL) is an estimate of the number of additional years a person would have lived had they not died before a certain age, such as 75 years. Consequently, PYLL give greater weight to deaths in younger age groups. The impact these early deaths have at the population level can be measured by the PYLL number per 1,000 people, which totals all the potential years of life lost for all the deaths at each age group, divided by the number of people in that age group. The 'gap' is the difference between the PYLL rate for Indigenous and non-Indigenous populations.

1.23 Leading causes of mortality

Refer to notes for measure 1.22 for more information on mortality data. Causes of death are based on the tenth revision of the International Classification of Diseases (ICD-10). It should be noted that different causes may have different levels of under-identification that differ from the 'all-cause' coverage rates. It should also be noted that the quality of the cause of death data depends on every step of the process of recording and registering deaths (including the documentation available at each step of the process) from certification of death to coding of cause of death.

Chronic conditions is select ICD-10-AM mortality groups as defined by the Office for Aboriginal and Torres Strait Islander Health, 2009 and includes circulatory disease, cancer, endocrine/metabolic/nutritional disorders (including diabetes), respiratory diseases, digestive diseases, kidney diseases and nervous system diseases. The gap in mortality due to chronic conditions is for 2012 and is calculated as the difference in the rate of chronic disease between Indigenous and non-Indigenous Australians as a proportion of the rate difference for all causes. Chronic conditions account for 70% of Indigenous deaths in the time period 2008–12.

Table 1.23-1: Data for lung cancer, cervical cancer and digestive organ cancers are a subset of the data presented for all cancers. Data for diabetes are a subset of data presented for all endocrine, metabolic and nutritional disorders. Data for cervical cancer are for females only. 'Other causes' includes: diseases of the blood and bloodforming organs and certain disorders involving the immune system, mental & behavioural disorders, diseases of the eye and adnexa, diseases of the ear and mastoid process, diseases of the skin & subcutaneous tissue, diseases of the musculoskeletal system and connective tissue, diseases of the genitourinary system (excluding kidney diseases), pregnancy, childbirth & the puerperium, congenital malformations, deformations and chromosomal abnormalities; and symptoms, signs and abnormal clinical findings not elsewhere classified.



Figure 1.23-1: Some of the cells within this figure have been randomised to ensure confidentiality of data. ABS recommends cells with small values be interpreted with caution. ICD-codes for external causes cover V01–Y98 with the categories: Intentional selfharm (X60–X84, Y870), Transport accidents (V01–V99), Accidental drowning or accidental threats to breathing (W65–W84), Accidental poisoning by and exposure to noxious substances (X40–X49), and Assault (X85–Y09, Y87.1). ‘Other external causes’ includes all other external causes of death not presented elsewhere in this table.

Table 1.23-2: Data presented for acute myocardial infarction are a subset of data presented for ischaemic heart disease. Data presented for stroke are a subset of data presented for cerebrovascular disease in this table. Data presented for bowel cancer are a subset for all cancers of the digestive organs. Data presented for bronchus and lung cancer are a subset of data presented for all respiratory and intrathoracic organs. Data presented for cancer of the cervix are a subset of data presented for all cancers of the female genital organs in this table. ‘Other malignant neoplasms’ includes neoplasms of bone and articular cartilage; melanoma and other neoplasms of skin; neoplasms of mesothelial and soft tissue; neoplasms of eye, brain and other parts of central nervous system; neoplasms of thyroid and other endocrine glands; and malignant neoplasms of independent (primary) multiple sites. Data presented for COPD and asthma are a subset of data presented for all chronic lower respiratory diseases.

1.24 Avoidable and preventable deaths

Refer to notes for measure 1.22 and 1.23 for information on mortality data. This measure presents data for avoidable mortality as defined in the National Health-care Agreement (Indicator P-20).

Figure 1.24-2: This figure presents primary, secondary and tertiary weighted data as defined in Table 3 of the 2005 Report of the NSW Chief Health Officer. Primary, secondary and tertiary weightings by cause do not always add to 100%, therefore primary, secondary and tertiary death counts may not add to the number of avoidable deaths. Unavoidable mortality is all causes other than those specified as avoidable mortality.

Table 1.24-1: Data for lung cancer, cervical cancer and digestive organ cancers are a subset of the data presented for all cancers. The avoidable mortality classification includes some causes for only specific age groups. They are: childhood vaccine-preventable diseases (0–14 years), asthma (0–44 year) and chronic obstructive pulmonary disease (COPD, 45–74). Rates for COPD are age-specific death rates. Deaths due to childhood-vaccine-preventable deaths and asthmas within the specified age groups have been included in the ‘other’ category, and all three causes have been included in the total.

Determinants of Health (Tier 2)

2.01 Housing

Households are considered overcrowded if one or more additional bedrooms are required to satisfy the Canadian National Occupancy Standard. Proportions have been calculated on all occupied private dwellings excluding those where number of bedrooms was not stated and includes not stated state/territory if the categorisation is not based on state/territory. Persons exclude visitors and persons in households for which housing utilisation could not be determined.

Figures 2.01-3 and 2.01-4: ‘Private/other’ renter includes dwellings being rented from a real estate agent, parent/other relative or other person, dwellings being rented through a residential park (includes caravan parks and marinas), government employer (includes Defence Housing Authority) and other employer (private).

2.02 Access to functional housing with utilities

Data for this measure are derived from the 2012–13 Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS). Comparable data for non-Indigenous households is not available.

Figure 2.02-3: Indigenous households reporting a lack of working facilities for each of the first 4 Healthy Living Practices: ‘Washing people’ comprises households lacking a working bath or shower. ‘Washing clothes/bedding’ comprises households lacking washing machine and/or laundry tub. ‘Storing/preparing food’ comprises households without working stove/oven/cooking facilities or a kitchen sink or a working refrigerator. ‘Sewerage facilities’ comprises households lacking a working toilet. Excludes households for which information about working facilities was not reported.

Figure 2.02-4: An acceptable standard of housing is defined as a household with four working facilities (for washing people, for washing clothes/bedding, for storing/preparing food and sewerage) and not more than two major structural problems.

2.03 Environmental tobacco smoke

Table 2.03-1: The question of ‘Whether any regular smokers smoke at home indoors’ was only asked of respondents with a daily smoker in the household. Therefore, the ‘No’ category for ‘Whether any regular smokers smoke at home indoors’ does not include non-smoking households or households where smoking occurs less than daily.

All figures exclude households in which the smoking status of members was not stated. Results only represent daily smokers in household (do not include smoking that is less than daily).

2.04 Literacy and numeracy

The data from this measure are from the National Assessment Program—Literacy and Numeracy (NAPLAN). Equating one test with another is a complex procedure and involves some degree of statistical error. For this reason, there may be minor fluctuations in the average NAPLAN test results from year to year when, in reality, the level of student achievement has remained essentially the same. It is only when there is a meaningful change in the results from one year to the next, or when there is a consistent trend over several years, that statements about improvement or decline in levels of achievement can be made confidently. Some caution is required when interpreting changes in the performance across years as a new persuasive writing scale was introduced in 2011. The persuasive writing results for 2011 should not be



directly compared with the narrative writing results from earlier years. Therefore, time-series data for writing have not been presented. Data for this report have been based on the annual NAPLAN results for 2008 to 2013. It is important to note that trends in results for Indigenous students will be impacted by changes in the levels of participation in NAPLAN. Participation rates are generally lower for Indigenous students, particularly in jurisdictions with more people living in remote areas.

2.05 Education outcomes for young people

Data for this measure come from the AIHW analysis of ABS National Schools Statistics Collection (NSSC). Apparent retention rate is Year 10 or 12 students as a proportion of the corresponding cohort from the first year of secondary schooling (Year 7/8). NSSC data is sourced from the administrative records of relevant state and territory education systems. Accordingly, changes in administrative methods and systems can impact on the coherence of these statistics over time. In particular the accuracy of identification of Aboriginal and Torres Strait Islander students can vary significantly between jurisdictions and over time. The following factors have not been taken into account in these statistics: students repeating a year of education; migration and other net changes to the school population, enrolment policies (including year starting high school which contributes to different age/grade structures between states and territories); and inter-sector transfer and interstate movements of students. In small jurisdictions, relatively small changes in student numbers can create apparently large movements in retention rates.

Table 2.05-1: The inclusion or exclusion of part-time students can also have a significant effect on apparent retention rates, especially in SA, Tasmania and the NT, which have relatively large proportions of part-time students. Data in various jurisdictions may be affected by changes in scope and coverage or processing methodology over time. Some rates, particularly those in the ACT may exceed 100%, largely reflecting the movement of students from non-government to government schools in Years 11 and 12, and of residents who choose to enrol in a school in a different state or territory to which they reside e.g. NSW residents from surrounding areas enrolling in ACT schools.

2.06 Educational participation and attainment of adults

Figure 2.06-1: 'Technical or Further Education Institution' includes TAFE/VET/technical college, business college, and industry skills centre.

Figure 2.06-2: 'Completed year 9 or below' includes persons never attended school. Excludes those still attending secondary school.

Figure 2.06-4: The data come from the National Centre for Vocational Education Research. Rates are calculated using the 2012 population projections based on the 2011 Census for aged 15 and over. Data represent number of completions and students may complete more than one course.

Figure 2.06-5: Qualifications are as classified under the ABS Classification of Qualifications. 'Bachelor degree or above' includes bachelor degree, doctorate, masters, graduate diploma, graduate certificate.

2.07 Employment

The labour force comprises all people contributing to, or willing to contribute to, the supply of labour. This includes the employed (people who have worked for at least 1 hour in the reference week) and the unemployed (people who are without work, but have actively looked for work in the last four weeks and are available to start work). The remainder of the population is not in the labour force. The labour force participation rate is the number of people in the labour force as a proportion of the working age population (15–64 years). The unemployment rate is the number of unemployed people as a proportion of the labour force. The employment to population ratio, also referred to as the employment rate, is employed people as a proportion of the population aged 15–64 years.

The Community Development Employment Program (CDEP) is included in the ABS classification of employment.

All figures exclude 'Labour force status not stated' (except in Total age-standardised).

2.08 Income

Figure 2.08-1: Equivalised household income quintile boundaries for Indigenous Australians were derived from the 2011–13 Australian Health Survey (AHS) and adjusted for Consumer Price Index (CPI) increases between the 2011–12 enumeration period of the National Health Survey (NHS) and National Nutrition and Physical Activity Survey and the 2012–13 enumeration period of the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS). These are: lowest quintile less than \$407 per week; second quintile \$407–\$651 per week; third quintile \$652–\$978 per week; fourth quintile \$979–\$1,467 per week; highest quintile \$1,468 or more per week. Equivalised household income quintile boundaries for the total population as derived from the 2011–13 AHS are: lowest quintile less than \$399 per week; second quintile \$399–\$638 per week; third quintile \$639–\$958 per week; fourth quintile \$959–\$1,437 per week; highest quintile \$1,438 or more per week.

Figure 2.08-2: Equivalised household income quintile boundaries for the total population as derived from the 2004–05 NHS are: lowest quintile less than \$295 per week; second quintile \$295–\$478 per week; third quintile \$479–\$688 per week; fourth quintile \$689–\$996 per week; highest quintile \$997 or more per week. These have been applied to both the Indigenous and non-Indigenous populations.

Equivalised household income quintile boundaries for the total population as derived from the 2008–09 Survey of Income and Housing are: lowest quintile less than \$330 per week; second quintile \$330–\$561 per week; third quintile \$562–\$835 per week; fourth quintile \$836–\$1 240 per week; highest quintile \$1,241 or more per week. These have been applied to both the Indigenous and non-Indigenous populations.

Figure 2.08-3 and 2.08-4 — see notes for Figure 2.08-1.

Figure 2.08-5: Adjusted for changes in the CPI. Factor applied to change 2002 NATSISS and 2002 General Social Survey data to 2012–13 dollars is 1.314831. Factor applied to change 2004–05 NATSIHS and 2004–05 NHS data to 2012–13 dollars is 1.250382. Factor applied to change 2008 NATSISS and 2007–08 NHS data to 2012–13 dollars is 1.105007. Factor applied to change 2011–12 AHS to 2012–13 dollars is 1.02583.



2.09 Index of Disadvantage

The population of some states/territories was unable to be split into exact quintiles based on the SEIFA index of advantage/disadvantage. In all except one of these cases, the best approximate quintiles were calculated.

2.10 Community safety

Figure 2.10-1: Data are from the AIHW's analysis of the National Hospital Morbidity Database. Refer to notes for measure 1.02 regarding these data. Causes of injury are based on the first reported external cause as 'assault' (ICD-10-AM codes X85–Y08), where the principal diagnosis was 'injury and poisoning' (S00–T98).

Figure 2.10-2: Refer to notes for measure 1.22 for information on mortality data. ICD-10 codes X85–Y09.

Table 2.10-1: In the 2012–13 AATSIHS, Aboriginal and Torres Strait Islander peoples were asked about 25 separate family stressors. In the 2011–13 AHS non-Indigenous Australians were asked about 13 separate family stressors.

Figures 2.10-3 and 2.10-4: sourced from *Recorded Crime—Victims, Australia 2013* (ABS cat. no. 4510.0) published in June 2014.

2.11 Contact with the criminal justice system

Figures 2.11-1, 2.11-2 and 2.11-4: Data are from the AIHW Juvenile Justice National Minimum Dataset. Rates are based on AIHW juvenile justice data. Aboriginal and Torres Strait Islander peoples in juvenile justice are calculated using population estimates based on the 2006 Census (Series B). Age is calculated at the start of the financial year if the period of detention began before the start of the financial year. Otherwise age is calculated as at the start of the period of detention. For the ACT, single year of age population data was not available for rate calculations. Excludes WA and the NT.

Figure 2.11-5 and Table 2.11-1: Data are from the ABS National Prison Census. The ABS collects data from administrative records on people in prison custody on 30 June each year in all jurisdictions. This Census includes all prisoners in adult corrective services, but not persons in juvenile institutions, psychiatric care or police custody. These data provide a picture of persons in prison at a point in time and does not represent the flow of prisoners during the year.

Table 2.11-1: Rates are number per 100,000 adult population.

Figure 2.11-5: Age-standardised to the 2001 Australian population. In June 2013, the ABS 'recast' the historical ERP data for the September 1991 to June 2011 period, as a response to a methodological improvement in the Census Post-Enumeration Survey. In April 2014, the ABS 'recast' the historical estimates for Aboriginal and Torres Strait Islander populations. As a result, the rates per 100,000 adult persons in the source table have been recast, and all now use final ERP data based on the 2011 Census. In all states and territories except Qld, persons remanded or sentenced to adult custody are aged 18 years and over. Persons under 18 years are treated as juveniles in most Australian courts and are only remanded or sentenced to custody in adult prisons in exceptional circumstances. Prior to 2006, in Victoria, an adult referred to persons aged 17 years and over. Prior to 2000, in Tasmania, an adult referred to persons aged 17 years and over. In Qld, adult continues to be defined as persons aged 17

years and over. Individual state and territory data and national data reflect the age scope that applied to these jurisdictions in the relevant years. Apparent increases in 2006 may be due to changes in collecting and recording Indigenous information, or in the willingness of Indigenous people to self-identify.

2.12 Child protection

Rates are calculated using Indigenous projections based on the 2011 Census of Population and Housing and should not be compared with rates calculated using ERPs or projections based on previous Censuses.

Figure 2.12-1: WA is currently unable to report a child's characteristics based on their first substantiation. As a result a small number of children may be double-counted in this table where they have more than one substantiation and the notifications had differing characteristics such as age or abuse type. In WA, Tasmania and the ACT, the proportion of substantiations for children with an unknown Indigenous status affects the reliability of these data. Indigenous populations sourced from ABS' 2014 *Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001–2026* Series B. (ABS cat. no. 3238.0). December Indigenous populations are calculated as the average of the June population projections either side of the December. For example, the December 2012 population for Indigenous children is the average of the June 2012 and June 2013 population projections. All children populations are derived from the ABS' 2014 *Australian Demographic Statistics, December 2013* release (ABS cat. no. 3101.0). Non-Indigenous populations are derived by subtracting the Indigenous projection count from the 'all children' ERP.

Figure 2.12-2 and Table 2.12-1: Indigenous populations sourced from ABS' 2014 *Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001–2026* Series B. (ABS cat. no. 3238.0). All children counts are derived from the ABS' 2013 *Australian Demographic Statistics, June 2013* release (ABS cat. no. 3101.0). Non-Indigenous counts are derived by subtracting the Indigenous projection count from the 'all children' ERP.

Figure 2.12-3: This figure does not include Aboriginal and Torres Strait Islander children who were living independently or whose living arrangements were unknown. Family group homes and residential care are reported under 'other caregiver'.

2.13 Transport

Table 2.13-2: 'Total' for use of public transport in last two weeks includes persons who were housebound. Main reason for not using public transport were asked of people who had not used public transport in last 2 weeks but who had access to public transport in their area. 'No suitable services' includes no services available at night, service not convenient or not available for destination. 'Personal reasons' includes concerns about personal safety, treated badly/discrimination and health reasons. 'Total' for main reason for not using public transport excludes not known responses.

2.14 Indigenous people with access to their traditional lands

Data for this measure are derived from the 2012–13 AATSIHS. Results represent only those people who answered on behalf of themselves, and excludes refusals and not asked. Estimates have been rounded and discrepancies may occur between sums of component items and totals.

Figure 2.14-1: excludes not known responses.



2.15 Tobacco Use

The two figures and table present self-reported data for Aboriginal and Torres Strait Islander peoples from the 2012–13 AATSIHS. ‘Current smoker’ includes persons who smoke daily, persons who smoke at least once a week but not daily, and those who smoked less than weekly.

Figure 2.15-1: Data for non-Indigenous Australians are from the AHS 2011–13 (2011–12 Core component). Proportions have been age-standardised to the 2001 Australian ERP to account for differences in the age structure of the two populations.

Figure 2.15-2: Also includes data from the 2002 and 2008 NATSISS. The rate difference between the 2002 and 2012–13 rates for each category are statistically significant.

Table 2.15-1: Also includes data from the 1994 NATSIS, and the 2002 and 2008 NATSISS. For the 1994 NATSIS, respondents were not asked how frequently they smoked cigarettes; for the other years presented, data are based on current smokers as defined above.

2.16 Risky alcohol consumption

Data from this measure are sourced from the ABS AATSIHS 2012–13 (2012–13 NATSIHS component) and 2011–12 AHS (2011–12 National Health Survey component). Risk level calculated on exceeding the NHMRC Australian Alcohol Guidelines 2009. For short-term/single occasion risk this is 5 or more standard drinks on any day over the last 12 months. For lifetime risk this is consuming more than two standard drinks per day on average.

Figure 2.16-4: Refer to notes for measure 1.22 regarding mortality data. ICD-10 codes: K70, F10, X45, X65 and Y15.

2.17 Drug and other substance use including inhalants

Data for this measure come from the 2012–13 Health Survey, non-Indigenous data from the 2010 AIHW National Drug Strategy Household Survey, and various other sources including the Drugs Use Monitoring in Australia (DUMA) programme run by the Australian Institute of Criminology (AIC) with funding by the Australian Government. The data used in this publication were made available through the AIC and were originally collected by the AIC by an independent data collector with the assistance of the NSW, NT, Qld, SA, Vic and WA Police. Neither the collectors, the police, nor the AIC bear any responsibility for the analysis or interpretations presented herein.

Table 2.17-1: In non-remote areas, substance-use questions were self-completed by respondents whereas in remote areas respondents were asked questions in a personal interview. Proportions exclude not stated responses (people who accepted the substance-use form but did not state if they had ever used substances) and 9% of Aboriginal and Torres Strait Islander people who did not complete the substance use module. ‘Total used substances in last 12 months’ includes heroin, cocaine, petrol, LSD/synthetic hallucinogens, naturally occurring hallucinogens, ecstasy/designer drugs, other inhalants and methadone. Sum of components may be more than total as the same person may have reported more than one type of substance used in the last 12 months.

2.18 Physical activity

Physical activity was collected as part of the AATSIHS 2012–13 in the National Aboriginal and Torres Strait Islander Nutrition and Physical Activity Survey (NATINPAS) and the NATSIHS. Comparison data for non-Indigenous have been sourced from the National Nutrition and Physical Activity Survey (NNPAS), 2011–12 component of the AHS.

Current physical activity guidelines (released by the Department of Health) recommend the following:

Supervised floor-based play in safe environments should be encouraged from birth to one year. Toddlers (1–3 years) and pre-schoolers (3–5 years) should be physically active every day for at least three hours, spread throughout the day. Children aged 5–17 years should accumulate at least 60 minutes of moderate to vigorous intensity physical activity every day. Adults aged 18–64 years should accumulate 150 to 300 minutes (2 ½ to 5 hours) of moderate intensity physical activity or 75 to 150 minutes (1 ¼ to 2 ½ hours) of vigorous intensity physical activity, or an equivalent combination of both moderate and vigorous activities, each week. Adults aged 65 years and over should aim to be physically active for 30 minutes every day.

The Guidelines also provide recommendations around sedentary behaviours:

Children younger than 2 years of age should not spend any time watching television or using other electronic media (DVDs, computer and other electronic games). For children 2 to 5 years of age, sitting and watching television and the use of other electronic media should be limited to less than one hour per day. Infants, toddlers and pre-schoolers (all children birth to 5 years) should not be sedentary, restrained, or kept inactive, for more than one hour at a time, with the exception of sleeping. Children aged 5–17 years should limit the use of electronic media to no more than two hours a day. It is recommended that adults break up long periods of sitting as often as possible.

Definitions of physical activity levels:

In the AATSIHS 2012–13, respondents are classified as inactive if no walking, moderate or vigorous intensity physical activity was reported in the week prior. Insufficiently active is defined as some activity but not enough to reach the levels required for ‘sufficiently active’; and ‘sufficiently active (for health)’ is defined as 150 minutes of moderate/vigorous physical activity from five or more sessions over a seven day period.

Figure 2.18-3: The physical activity recommendation for children aged 5–17 years is 60 minutes or more per day. This figure shows the proportion of children who met the recommendations on all 3 days prior to interview.

Figure 2.18-4: The screen-based recommendation for children aged 5–17 years is no more than 2 hours per day for entertainment purposes. This figure shows the proportion of children who met the recommendations on all 3 days prior to interview.



2.19 Dietary behaviours

The National Health and Medical Research Council revised their Australian Dietary Guidelines in 2013. The guidelines specify recommendations for adequate minimum daily intake of fruit and vegetables according to age and sex. Where the guidelines specify ½ serves, these have been rounded down to the closest full serve as only full serves were collected. The following table summarises the AATSIHS variation to the NHMRC Australian Dietary Guidelines:

Age groups	Recommended daily serves of vegetables	Recommended daily serves of fruit
2–3 years	2 ¹	1
4–8 years	4 ¹	1 ¹
9–17 years	5 ²	2
18 years and over (excl. males 18–49)	5 ³	2
18–49 year-old males	6	2

1. Actual guidelines have an additional ½ serve.
2. Actual guidelines for males aged 12–17 years have an additional ½ serve.
3. Actual guidelines exclude males aged 19–50 years and males 51–70 have an additional ½ serve.

See AATSIHS: Users Guide for further information (ABS 2013b). For the purposes of time-series analysis, the definition of ‘recommended daily vegetable/fruit intake’ is calculated in accordance with the guidelines that are current for the relevant time period.

2.20 Breastfeeding practices

Data for this measure (except exclusive breastfeeding) are derived from the AATSIHS 2012–13.

Data for exclusive breastfeeding come from the AIHW analysis of the 2010 Australian National Infant Feeding Survey. The sample size for this survey was 28,759 mothers/carers, including 401 (1.4%) mothers/carers who identified as Aboriginal and Torres Strait Islander; 28,214 who identified as non-Indigenous; and 144 (0.5%) whose Indigenous status was missing. The survey was a national survey, and as such no population sub-group was oversampled (e.g. Aboriginal and Torres Strait Islander peoples). The sampling frame for the survey was Medicare enrolment database. If there was a delay in infants or children to enrol for Medicare, these infants/children were excluded from the population. The survey used mail survey method to collect data (with an option of online completion). The survey instrument was in English language only. Mothers/carers who could not read or write and did not seek help from others could not participate in the survey.

Figure 2.20-2: ‘Age (months)’ indicates an infant’s age in the months before a fluid other than breast milk was introduced. This is effectively the month before another fluid was introduced. For example, a child who was introduced to water when they were aged 4 months (in their fifth month of life) was exclusively breastfed to 4 months of age (that is, they had 4 completed months of exclusive breastfeeding). Similarly, a child who was introduced to water at age 1 month (in their second month of life) was exclusively breastfed to 1 month. Or, a child who was introduced to water at 0 months (in their first month of life) was exclusively breastfed to 0 months (or less than 1 month).

2.21 Health behaviours during pregnancy

Figures 2.21-1 and 2.21-2 are from the 2011 National Perinatal Data Collection (refer to notes for measure 1.01 regarding perinatal data). Data include women who gave birth in the period, whether resulting in a live or stillbirth, if the birthweight is at least 400 grams or the gestational age is 20 weeks or more. Provisional data were provided by Victoria. Mother’s tobacco smoking status during pregnancy is self-reported. Percentages are calculated after excluding records with missing or null values. Excludes data where Indigenous status not stated.

Figure 2.21-1: Data are directly age-standardised using the Australian female population who gave birth in 2011 as the standard population. Data exclude non-residents, external territories and not-stated residence.

Figure 2.21-2: Data exclude mothers for whom maternal age was not stated.

Figures 2.21-3 and 2.21-4 are from the 2008 NATSISS. Data are collected for mothers of Indigenous children aged 0–3 years.

2.22 Overweight and obesity

All figures published by ABS in *Australian Aboriginal and Torres Strait Islander Health Survey: Updated results*, released 6 June 2014 (ABS cat. no. 4727.0.55.006). Measured BMI data are only available for 2012–13.

Proportions exclude those for whom BMI was unknown or not stated (16.2% for Aboriginal and Torres Strait Islander peoples and 15.7% for non-Indigenous Australians aged 15 years and over).

Figure 2.22-1: Directly age-standardised proportions to the Australian 2001 standard population.

Figure 2.22-3: For information on the calculation of BMI scores for children see the ABS publication glossary.

The AATSIHS 2012–13 also collected data on waist circumference and waist-to-hip ratio of adults. These measurements can indicate the amount of excess fat carried around the abdomen, which indicates potential for developing certain chronic diseases related to overweight and obesity. The AATSIHS found 62% of Indigenous Australian men and 81% of Indigenous Australian women were considered to be at increased risk of developing chronic disease based on their waist circumference. Refining the risk assessment by using waist circumference in addition to BMI suggests that 85% of Indigenous Australian men who were overweight or obese and 97% of Indigenous Australian women who were overweight or obese were considered to be at increased risk of developing chronic disease.



Health System Performance (Tier 3)

3.01 Antenatal care

Data for this measure come from the National Perinatal Data Collection (see measure 1.01 for more information). Data represent one calendar year. Data includes women who gave birth in the period to a live or stillborn baby who weighed at least 400 grams or whose gestational age was 20 weeks or more. Data exclude births where the mother's Indigenous status was not stated. Antenatal visits relate to care provided by skilled birth attendants for reasons related to pregnancy. Data on care in the first trimester excludes women whose gestation at first antenatal visit was not stated. First trimester is up to and including 13 completed weeks. Data on antenatal care provided in the first trimester is likely to be under reported for WA, ACT and Tasmania. For WA and ACT, first antenatal visit is often the first hospital antenatal clinic visit; earlier antenatal care provided outside this setting is not reported. For Tasmania, first antenatal visit data was not reported by hospitals still using the paper-based form.

Figure 3.01-1: Time-series rates are for NSW, Qld and SA combined only and cannot be generalised to all of Australia. Data are based on place of birth. The collection of data on the number of antenatal visits is not part of the Perinatal NMDS. The current question is not consistent across jurisdictions; therefore, caution should be used when interpreting the data. Rates are per 100 women who gave birth in the relevant period directly age-standardised using the Australian female population who gave birth in 2001. Data are not available from Victoria, WA and Tasmania. Data are available for the ACT but is not of sufficient quality to publish. In the NT in 1998, 1999 and 2002, a system error occurred where a large number of women had birthing records created with no antenatal data attached, therefore the NT is not included. In 2007, NSW collected data for a new variable 'was antenatal care received', which provide a more accurate picture of the use of antenatal sessions. Prior to 2007, data for the number of women attending antenatal sessions in NSW were restricted to those whose 'duration of pregnancy at first antenatal session was recorded'. In order to maintain consistency in the time series, data using the pre-2007 definition are used. SA data exclude women where number of antenatal care sessions attended is unknown but includes those where it is known that antenatal care was provided.

Figures 3.01-2, 3.01-3 and 3.01-4: Data are directly age-standardised using the Australian female population who gave birth in 2011 as the standard population. For figures 3.01-2 and 3.01-3: Data are by place of usual residence of the mother. Excludes Australian non-residents, residents of external territories and not stated state/territory of residence. Additionally for figure 3.01-3: Total includes ACT and Tasmania, which could not be published separately due to small numbers. Because of differences in definitions and methods used for data collection, care must be taken when comparing across jurisdictions.

3.02 Immunisation

Data in this measure are based on the Australian Childhood Immunisation Register (ACIR), which is managed by Medicare Australia and holds information on childhood immunisation coverage. All children under seven years of age who are enrolled in Medicare are automatically included on the ACIR. Children who are not eligible to enrol in Medicare can be added to the ACIR when details of a vaccination are received from a doctor or

immunisation provider. Coverage estimates for Aboriginal and Torres Strait Islander children include only those who identify as such and are registered on the ACIR. Children identified as Aboriginal and Torres Strait Islander on the ACIR may not be representative of all Aboriginal and Torres Strait Islander children, and thus coverage estimates should be interpreted with caution. Children for whom Indigenous status was not stated are included with the non-Indigenous children under the 'other' category. Since 2001, there have been changes in the definitions used to determine whether a child is considered to be fully immunised. Vaccination coverage is a measure of the proportion of people in a target population who have received the recommended course of vaccinations at a particular age. The age at which older children are assessed has changed from 6 years to 5 years of age. As a result, some trends should be interpreted with caution. Vaccination coverage data from the ACIR and the AATSIHS are not directly comparable because of the differences in the cohort used, population coverage, data collection method, method of calculating 'fully immunised' and vaccines included.

Figure 3.02-1: Data not available for children at age 6 years for 2001. From 2008, fully vaccinated status for 5 year olds is reported in place of that for 6 year olds, due to changes to NCIR reporting practices. From December 2013 the definition of the term 'fully immunised' includes pneumococcal for ACIR coverage reporting purposes, for those in the 'Age 1 year' cohort.

Table 3.02-1: Age groups represent three-month cohorts, for cohorts born between 1 July and 30 September 2012, 1 July and 30 September 2011, and 1 July and 30 September 2008, respectively.

3.03 Health promotion

Figure 3.03-1: These data come from the AATSIHS 2012–13. Proportions are of those who consulted a doctor in the last 12 months. Given multiple response was allowed, the sum of components may exceed the total.

3.04 Early detection and early treatment

Figure 3.04-1: Rates were calculated using ABS backcast population estimates and projections based on the 2011 Census. MBS item 715 commenced in May 2010, MBS codes 704, 706, 708 and 710 were reclassified as 715 for prior years. Financial year reporting.

Figure 3.04-2: Data provided are for the periods 1 July 2013 to 30 June 2014. Rates are calculated using the average of 2013 and 2014 Indigenous population projections for those aged 55 years and over and the total Australian population estimates for those aged 75 years and over. MBS item 715 is used for Indigenous Australians. MBS items 700, 701, 702, 703, 705 and 707 are used for All Australians.

Figure 3.04-3: Data are from BreastScreen Australia. Rates are the number of women screened as a percentage of the eligible female population calculated as the average of the 2011 and 2012 ABS estimated resident population. Rates are directly age-standardised to the Australian 2001 standard population in 5-year age groups up to 69 years. 'Other women' includes women in the 'not stated' category for Aboriginal and Torres Strait Islander status. Indigenous status is self-reported; therefore accuracy of Indigenous participation rates will be affected if women choose not to identify as Indigenous at the time of screening. These rates are likely to differ from



Indigenous population data used by individual states and territories; this may result in different participation rates for Indigenous women between this report and state and territory data. Small numbers in individual states and territories will exacerbate any differences in published rates based on different population data.

3.05 Chronic disease management

Figure 3.05-1 and 3.05-2: Medicare data presented by Indigenous status have been adjusted for under-identification in the Medicare Australia Voluntary Indigenous Identifier (VII) database. The methodology for this adjustment was developed and verified by the AIHW and the Department of Health for assessment of MBS and PBS service use and expenditure for Aboriginal and Torres Strait Islander peoples. For an explanation of the methodology, see Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11 (AIHW 2013c). Data are directly age-standardised using the 2001 Australian standard population, by 5-year age group up to 75 years and over.

Figure 3.05-3: December 2013 national Key Performance Indicator data. Data presented for around 28,000 Aboriginal and Torres Strait Islander adults aged 15 years and over who are regular clients of Indigenous primary health care organisations. Valid data for this indicator were provided by around 180 organisations. A regular client is defined as a person who has an active medical record—that is, a client who attended the primary health care organisation at least 3 times in the last 2 years. (Note limitation for clients who attend multiple health organisations).

3.06 Access to hospital procedures

Data for this measure come from the AIHW's analysis of the National Hospital Morbidity Database. Refer to notes for measure 1.02 regarding hospital data. Data in this measure are presented as a proportion of hospital separations and not as a population rate.

Table 3.06-1: Data are age-standardised. Hospitalisations with a principal diagnosis not stated have been excluded.

Table 3.06-2: Data are age-standardised.

Figure 3.06-2: Only includes hospitalisations with a principal diagnosis of I20 to I25 (ICD-10 codes). Per cent refers to the proportion of hospitalisations with coronary heart disease as the principal diagnosis receiving either coronary angiography or coronary revascularisation.

3.07 Selected potentially preventable hospital admissions

Data for this measure come from the AIHW's analysis of the National Hospital Morbidity Database. Refer to notes for measure 1.02 regarding hospital data. Categories are based on the ICD-10-AM sixth edition (National Centre for Classification in Health 2010): codes J10, J11, J13, J14, J153, J154, J157, J159, J168, J181, J188, A35, A36, A37, A80, B05, B06, B161, B169, B180, B181, B26, G000, M014, J45, J46, I50, I110, J81, E10–E14.9, J20, J41, J42, J43, J44, J47, I20, I240, I248, I249, D501, D508, D509, I00–I09, I10, I119, E40, E41, E42, E43, E550, E643, A099, E86, K522, K528, K529, N390, N10, N12, N11, N136, K250, K251, K252, K254, K255, K256, K260, K261, K262, K264, K265, K266, K270, K271, K272, K274, K275, K276, K280, K281, K282, K284, K285, K286, L03, L04, L08, L980, L88, L983, N70, N73, N74, H66, H67, J02, J03, J06, J312, K02, K03, K04, K05,

K06, K08, K098, K099, K12, K13, K350, O15, G40, G41, R56, R02. Note some of these codes are for principal diagnosis only, some are for principal or additional diagnosis, and some are principal diagnosis with the exclusion of some procedure codes. For more information on coding used, refer to the AIHW National Health-care Agreement, PI-22 Selected potentially preventable hospitalisations, 2012. Due to coding changes between the ICD-10-AM 6th edition and 5th edition there may be a large decline in separations associated with the categories 'Diabetes complications' and 'Gastroenteritis'; therefore, time-series data for chronic and acute conditions are not presented.

3.08 Cultural competency

Figure 3.08-1: These data come from the Online Service Report (OSR) data collection. 2012–13 OSR data count all auspice services individually when calculating rates, therefore caution should be exercised when comparing rates with earlier data collection periods. Two hundred and five Aboriginal and Torres Strait Islander primary health care services provided valid data about health related activities provided by the service for 2012–13. The percentages supplied in this table are calculated as a proportion of these 205 services.

Figure 3.08-2: Rate per 10,000 measures the health workforce available (numerator) to service the population (denominator). Denominator used in rates is the relevant Census count by Indigenous status minus those where occupation is not stated.

Figure 3.08-3: More than one response was allowed, therefore the sum may exceed 100%. Estimates for access to dentists were asked of persons aged 2 years and over and estimates for access to counsellors were asked of persons aged 18 years and over.

3.09 Discharge against medical advice

Data for this measure come from AIHW's analysis of the National Hospital Morbidity Database. Refer to notes for measure 1.02 regarding hospital data. Data in this measure are presented as a proportion of hospital separations and not as a population rate. Data exclude principal diagnosis of dialysis (Z49) and mental and behavioral disorders (ICD10-AM chapter F) care types 7.3,9,10.

Figure 3.09-4: 'Other' includes: neoplasms; certain conditions originating in the perinatal period; diseases of the ear and mastoid process; diseases of the eye and adnexa, diseases of the genitourinary system, diseases of the musculoskeletal system, diseases of the blood and blood-forming organs and certain disorders involving the immune system; and congenital malformations and deformations and chromosomal abnormalities.

3.10 Access to mental health services

Figure 3.10-1: Data from five combined BEACH years (April 2008–March 2009 to April 2012–March 2013 inclusive). 'Mental health related problems' classified according to ICPC-2 codes (Classification Committee of the World Organization of Family Doctors (WICC) 2005). Data for Aboriginal and Torres Strait Islander peoples and other Australians have not been weighted. Rates were directly age-standardised (number per 1,000 encounters) using total BEACH encounters in the period as the standard. 'Other' includes non-Indigenous patients and patients for whom Indigenous status was not stated. ICPC-2 codes: P04–P05, P07–P13, P18, P20, P22–P25, P27–P69, P71, P75, P77–P82, P85–P86, P98–P99.



Figure 3.10-2: The data for this figure come from the AIHW National Community Mental Health Care Database (NCMHCD). Data presented excludes Victoria (not available due to service-level collection gaps). Data for Tasmania have quality and quantity issues. Rates were calculated using a methodology, which accounts for missing data. The quality of the Indigenous identification in this database varies by jurisdiction and should be interpreted with caution. Rates were directly age-standardised using the Australian 2001 standard population. Number per 1,000 population based on estimated resident population as at 30 June 2012.

Figures 3.10-3 and 3.10-4: Refer to notes for measure 1.02 regarding hospitalisation data. Mental health related conditions included are based on ICD-10-AM seventh edition (National Centre for Classification in Health 2010) and previous editions: ICD-10-AM codes F00-F99, G30, G47.0, G47.1, G47.2, G47.8, G47.9, 099.3, R44, R45.0, R45.1, R45.4, R48, Z00.4, Z03.2, Z04.6, Z09.3, Z13.3, Z50.2, Z50.3, Z54.3, Z61.9, Z63.1, Z63.8, Z63.9, Z65.8, Z65.9, Z71.4, Z71.5, Z76.0. Principal diagnosis code used.

3.11 Access to alcohol and other drug services

Figure 3.11-1: Refer to notes for measure 3.03 for information on the OSR data collection. Of the 63 respondent Aboriginal and Torres Strait Islander substance use organisations, valid data was supplied by: 27 organisations for the number of residential treatment/rehabilitation episodes of care; 15 organisations for the number of sobering-up/residential respite episodes of care; and 59 organisations for the number of non-residential/follow-up/aftercare episodes of care.

Figure 3.11-2: Refer to notes for measure 1.02 regarding hospitalisation data. For principal diagnoses related to alcohol use, includes ICD-10-AM codes: F10.0–F10.9, K70, T51, K75, X65, X45, Y15. For principal diagnoses related to drug use, includes ICD-10-AM codes: T36–T40, T42, T43, T52, F11–F15, F18, F19, P96.1, B17.1 and O35.5.

3.12 Aboriginal and Torres Strait Islander people in the health workforce

Table 3.12-1: Self-reported data from the 2011 Census. The table includes a detailed breakdown of occupations as defined by the Australian and New Zealand Classification of Occupations (ANZSCO). 'na' means data not available. 'np' refers to data not published (data cannot be released due to quality issues and confidentiality). Numbers less than 10 are considered too unreliable for general use due to the impact of randomisation of small cell values to avoid the release of confidential data. Per cent change between the reporting periods 1996 and 2011 based on the average annual change over the period. (Average period change of Indigenous health workforce numbers determined using regression analysis). Rate per 10,000 measures the health workforce available (number) to service the population (denominator). Denominator used in rates is the 2011 Census count by Indigenous status minus those where occupation is not stated. Rate difference is non-Indigenous rate minus Indigenous rate.

Both 2001 and 2006 figures for 'Registered Nurses' include Midwifery and Nursing Professionals not further defined (nfd).

'Generalist Medical Practitioners' includes General Medical Practitioner and Resident Medical Practitioner, and Specialist Physician (general medicine).

The 2006 figure for 'Other medical practitioners' includes Anaesthetist, Pathologist, Psychologist, Neurosurgeon, and Medical Practitioners nfd. The 2001 figure includes Emergency Medical Specialist, Obstetrician and Gynaecologist, Pathologist, Radiologist, Psychiatrist, Surgeon (General), Medical Practitioners nfd and the 1996 figure includes Specialist Medical Practitioner.

The 2006 figure for 'Psychologist' includes Clinical Psychologist, Psychotherapist, Educational Psychologist, Organisational Psychologist, Psychologist nfd and Psychologist nec. However, both the 1996 and 2001 figures are Clinical Psychologist and Psychotherapist combined.

The 2006 figure for 'Other health therapy professionals' includes Chiropractor, Osteopath, Homeopath, Naturopath, Complementary Health Therapists not elsewhere classified (nec). The 2001 figure includes Chiropractor and Naturopath and the 1996 figure includes Chiropractor and Natural Therapy Professionals. 'Health Promotion Officers' could not be identified separately in 2001 and 1996 due to different occupation classifications. These were included in Community Workers in 2001 and 1996 and not included in the table.

The 2006 figure for 'Other health diagnostic and promotion professionals' includes Health Professionals nfd and Health Diagnostic and Promotional Professionals nfd.

The 2006 figure for 'Health services managers' includes Medical Administrators only. Health and Welfare Services Managers nec and Health and Welfare Services Managers nfd were included in Other. The 2001 data for Medical Administrators could not be published separately due to quality issues and has been included in Other. The 1996 figure is for Medical Administrators.

'Nursing Support Worker and Personal Care Workers' includes Therapy Aide, and in 2006 includes Hospital Orderly, which in 2001 and 1996 was grouped with Nursing Assistants and Personal Care Assistants occupations because there was no such category.

In 2006, 'Other' includes Medical Laboratory Scientist, Counsellors nec, Medical Laboratory Technician, Anaesthetic Technician, Cardiac Technician, Operating Theatre Technician, Pharmacy Technician, Medical Technicians nec, Optical Dispenser, Optical Mechanic, Diversional Therapist, Massage Therapist, Personal Carers and Assistants nfd, Special Care Workers nfd, Natural Remedy Consultant. The 2001 figure includes Health Information Manager, Medical Laboratory Scientist, Medical Technical Officer, Primary Products Inspector, Anatomist or Physiologist, Safety Inspector, Admissions Clerk, Weight Loss Consultant, Massage Therapist, Natural Remedy Consultant. The 1996 figure includes Health Information Manager, Medical Laboratory Scientist, Medical Laboratory Technician, Medical Technicians nec, Primary Products Inspector, Safety Inspector, Admissions Clerk, Weight Loss Consultant, Massage Therapist, Natural Remedy Consultant.

For some occupations, such as Nurses, Medical Practitioners, and Pharmacists, there are slight differences between the 2006 figures in this table and those in the Health and Community Services Labour Force 2006, and the Aboriginal and Torres Strait Islander Health Labour Force Statistics and Data Quality Assessment reports. These discrepancies are due to the impact of aggregating randomised data from data sets with different small cell distributions and the use of different occupation classifications (in the case of the second report).



3.13 Competent governance

Table 3.13-1: The data for this table come from the Office of the Registrar of Indigenous Corporations (ORIC). In 2012–13, compliance analysis was able to be completed for 93 companies incorporated under the *Corporations (Aboriginal and Torres Strait Islander) Act 2006* and registered with ORIC.

Table 3.13-2 and Table 3.13-3: Refer to notes for measure 3.03 for information on the OSR data collection.

Table 3.13-3: Questions were not applicable for all services. Percentage was calculated based on the number of services that have a governing committee or board (170 of the 206 organisations providing primary health care services and 62 of the 63 organisations providing substance use services).

3.14 Access to services compared with need

Figure 3.14-1: Data come from the ABS and AIHW analysis of the ABS National Mortality Database and the 2013–14 Medicare data. Rate ratios for avoidable mortality (as defined in the National Health-care Agreement) include persons aged 0–74 years in NSW, Qld, WA, SA and NT. (Refer to measure 1.22 for further notes mortality data). Medicare data is for non-referred GP (total) claims. Indigenous data has been adjusted for under-identification in the Medicare Australia Voluntary Indigenous Identifier (VII) database. Data have been directly age-standardised using the 2001 Australian standard population, by 5-year grouping up to 75 years and over. Rate ratio is the rate for Indigenous Australians divided by the rate for non-Indigenous Australians. The data show that although Indigenous Australians are up to around 4 times as likely to die from causes considered potentially avoidable given effective and timely health care, they are only accessing health care at slightly higher rates than non-Indigenous Australians. This reflects a potentially large unmet need for health care among Indigenous Australians.

Figure 3.14-2: See notes for measure 3.05 for information on Medicare data. Indigenous rates have been adjusted for under-identification in the Medicare Australia VII database. Data directly age-standardised using the 2001 Australian standard population, by 5-year age group up to 75+. Financial year data presented.

Figure 3.14-3: Refer to notes for measure 3.03 for information on the OSR data collection. 2008–09 OSR data counts all auspice services individually when calculating rates, therefore caution should be exercised when comparing rates with earlier data collection periods. Eligible services only for 2007–08 services.

3.14-4 and 3.14-5: See notes for measure 3.05 for information on Medicare data.

3.14-6: Refer to notes for measure 1.02 regarding hospitalisation data. Data includes public and private hospitals in all jurisdictions. Directly age-standardised using the Australian 2001 standard population. 'Outer regional' includes remote Victoria. 'Remote' excludes remote Victoria. Disaggregation by remoteness area is based on the ABS' 2011 ASGS and relates to the patient's usual residence. Rates by remoteness are calculated using the AIHW derived populations using the ABS population estimates and projections based on the 2011 Census. Excludes separations with care types 7.3, 9 and 10.

Table 3.14-1: Self-reported data from the AATSIHS 2012–13. More than one response allowed for 'reason for not going to health care provider'; sum of components may exceed total. 'Other health professionals' include: nurse, sister, and

Aboriginal (and Torres Strait Islander) health worker. For 'Dentists' data includes persons aged 2 years and over. For 'Counsellors' data includes persons aged 18 years and over; data excludes 'not asked'. 'Total Health Services' includes persons who reported that they needed to go to a dentist (persons aged 2 years and over), Doctor, other health professional, hospital, or mental health service (persons aged 18 years and over) in the last 12 months, but did not go.

3.15 Access to prescription medicines

Figure 3.15-2: Constant price health expenditure for 2001–02 to 2010–11 is expressed in terms of 2010–11 prices. Indigenous population estimates used to estimate the expenditure figures are all derived from 2006 Census base.

Figure 3.15-3: Per person expenditure in *Remote/Very remote & All regions* varies due to the different populations in these regions. Expenditure per person in *All regions* is based on the Australia-wide population. 'Other PBS special supply' includes all other Australian Government expenditure on pharmaceuticals that has not been classified to the other categories, including s100 drugs (excluding the Aboriginal health services component) and other programmes such as the Community Pharmacy and Pharmacy Awareness and Targeted Assistance Pharmaceutical Aids and Appliances.

3.16 Access to after-hours primary care

Figures 3.16-1 and 3.16-2: Refer to notes for measure 3.05 for information on Medicare data. Data are directly age-standardised using the 2001 Australian standard population, by 5-year age group up to 75+. MBS items for after-hours care: 597, 598, 599, 600, 5000–5067 and 5200–5267. These data may double count after hours care provided in selected Emergency Departments claiming Medicare through Section 19.2.

Figure 3.16-3: Data from five combined BEACH years (April 2008–March 2009 to April 2012–March 2013 inclusive). 'Other Australians' includes non-Indigenous patients and patients for whom Indigenous stats was not stated. 'Other' arrangements also includes 'referral to other services' which was removed as an option from April 2009 onwards. Subtotal is less than the sum of the components as GPs can have more than one type of after-hours arrangement. There were 2,100 encounters with after-hours arrangements missing (13 with Indigenous patients and 2,087 with Other patients).

Figure 3.16-4 and Table 3.16-1: The data come from the National Non-Admitted Patient Emergency Department Care Database (NNAPEDCD). The NNAPEDCD is limited to public hospitals in peer groups A and B (see Australian Hospital Statistics Report). Most of the data relates to hospitals within major cities (though some states and territories also provided data for public hospitals that were classified in peer groups other than A or B). Consequently, the NNAPEDCD will only cover a sub-set of after-hours emergency occasions of service. Coverage was 100% for peer group A and B hospitals and includes detailed information for about 84% of all public hospital emergency occasions of service in 2011–12 and 85% in 2012–13. The quality of the identification of Indigenous patients has not been assessed. Identification of Indigenous patients is not considered to be completed and completeness may vary among the states and territories. After hours is defined by the MBS definition for GP services (excluding consideration of public holidays): on Sunday before 8am or after 12pm on a Saturday, or at any time other than 8am to 6pm on a weekday.



3.17 Regular GP or health service

Self-reported data from the AATSIHS 2012–13.

Figure 3.17-1 and 3.17-2: Excludes ‘don’t know’. ‘Other’ includes traditional healer and other health care provider. The list of specific health-care providers may have posed problems for those who were confused between an Aboriginal Medical Service and a Community Clinic, or for those who simply did not know the kind of provider they usually visited.

Figure 3.17-3: Multiple response item. Proportions will not add to total. Some respondents may not have known which providers were available in their local area. The list of specific health-care providers may have posed problems for those who were confused between an Aboriginal Medical Service and a Community Clinic. ‘Other’ includes Traditional Healer and other health care provider.

Figure 3.17-4: Patient experience reported by non-remote respondents aged 15 years and over who had seen a doctor or specialist in the previous 12 months. Regular source of health care category ‘Doctor/GP’ excludes doctors/GPs at an AMS or hospital, which are reported under their own category. AMS/CC represents Aboriginal Medical Service/Community Clinic.

3.18 Care planning for clients with chronic diseases

Figure 3.18-1: Self-reported data from the AATSIHS (2012–13 NATSIHS component) and, for non-Indigenous Australians, the AHS (2011–12 NHS component).

Figure 3.18-2: For information on Medicare data, refer to notes for measure 3.05.

Figures 3.18-3 and 3.18-4: Sourced from national Key Performance Indicators for Aboriginal and Torres Strait Islander primary health care data collection. Two types of information are presented in these charts: one for clients and the second for organisations located within a remoteness category or jurisdiction. The bars present the percentage of clients with Type 2 diabetes with GPMPs and TCAs by. The interquartile ranges included within each bar indicate the variation of performance of organisations within each remoteness category/jurisdiction. Organisation median values show the point above and below which 50% of the organisations in a remoteness category/jurisdiction are performing.

3.19 Accreditation

Figure 3.19-1: Data are from public hospitals only. Jurisdiction based on location of hospital. Data are reported for Qld, WA, SA and NT only. These four jurisdictions are considered to have adequate levels of Indigenous identification over the time period reported, although the level of accuracy varies by jurisdiction and hospital. Hospitalisation data for these jurisdictions should not be assumed to represent the hospitalisation experiences in other jurisdictions. ‘Other’ includes hospitalisations for non-Indigenous Australians and those for whom Indigenous status was not stated. The proportion is the number of separations in accredited hospitals by Indigenous status and state/territory divided by the total number of separations by Indigenous status and state/territory. Hospitals’ accreditation status may change over time. Interpretation of changes in hospital separations in accredited hospitals over time needs to be cautious. Excludes care types 7.3, 9 and 10 (newborn—unqualified days only, organ procurement, hospital boarder).

Figure 3.19-2: Data are from public hospitals only. Remoteness category based on location of hospital. Total includes 7,532 separations from hospitals where remoteness area was unknown/not stated. The proportion is the number of separations in accredited hospitals by Indigenous status and remoteness category divided by the total number of separations by Indigenous status and remoteness category.

Figure 3.19-3: Aboriginal and Torres Strait Islander proportions are based on Medicare Local populations. GPA+ data is for the period 2013 while AGPAL data is financial year 2012–13.

3.20 Aboriginal and Torres Strait Islander people training for health-related disciplines

Table 3.20-1 and Figures 3.20-1 and 3.20-2: These data come from the DEEWR Higher Education Schools Statistics Collection. Includes undergraduate, postgraduate, domestic and international university students. The data take into account the coding of Combined Courses to two fields of education. As a consequence, counting both fields of education for Combined Courses means that the totals may be less than the sum of detailed fields of education. For Table 3.20-1, ‘other’ includes those whose Indigenous status is unknown. Excludes unknown age group. Data published in corresponding tables in previous cycles incorrectly described completions for all courses rather than health-related courses only.

Table 3.20-2: Data sourced from NCVER National VET Provider collection. (Refer to notes for measure 2.06 regarding VET data). ‘Completions’ represents number of completions; students may complete more than one course. ‘Enrolled’ represents number of enrolments; students may be enrolled in more than one course. ‘Other’ includes those whose Indigenous status is unknown. Rates are calculated using Indigenous 2012 population projections based on the 2011 census for ages 15–64 and for other Australians using the Australian 2012 population projections based on the 2011 census for ages 15–64. ‘np’ means data not published (data cannot be released due to quality issues and confidentiality).

3.21 Expenditure on Aboriginal and Torres Strait Islander health compared to need

For more information see Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11 (AIHW 2013c).

Figure 3.21-1: Some of the increase in Indigenous health expenditure per person may have been due to improvements in data collection rather than actual change.

Figure 3.21-2: ACT per person expenditure estimates are not calculated because estimates for the ACT include substantial expenditures for NSW residents. As a result, the ACT population is not an appropriate denominator. Admitted patient expenditure adjusted for Aboriginal and Torres Strait Islander under-identification, except for Tasmania. Includes other recurrent expenditure on health, not elsewhere classified, such as family planning previously reported under ‘Other health services (nec)’. Health administration costs for NSW, Vic, Tas and the NT are zero, as these jurisdictions have allocated administrative expenses into the functional expenditure categories.

Figure 3.21-3: Real \$million according to annual index.

Figure 3.21-4: ‘Primary care’ is defined as services that are provided to the whole population and initiative by a patient.



‘Secondary and tertiary services’ are those generated within the health system through a referral such as specialist services. ‘Community health services’ includes other recurrent expenditure on health, not elsewhere classified, such as family planning previously reported under ‘Other health services (nec)’.

Figure 3.21-5: ‘GP’ includes general practitioners and vocationally registered general practitioners. ‘Other unreferral’ includes enhanced primary care, practice nurses and other unreferral services.

3.22 Recruitment and retention of staff

Figure 3.22-1: Data is from the National Health Workforce Data Set (NHWDS) medical practitioners 2013 (AIHW publication). FTE is based on total weekly hours worked. Standard working week is 40 hours. Data excludes provisional registrants.

Figure 3.22-2: Data from the Rural Workforces Agencies National Minimum Data Set. Excludes 337 GPs for whom remoteness category was unknown. Remoteness categories based on 2006 Census data.

Figures 3.22-3 and 3.22-4: Refer to notes for measure 3.03 for information on the OSR data collection. Figure 3.22-3: Data sourced from OSR data collection 2012–13 (AIHW publication Table B10). The 2012–13 collection includes 205 primary health-care organisations. Vacancies are calculated as a proportion of total FTE for health/clinical positions and administrative/support positions.

Figure 3.22-4: Data sourced from SAR, DSR and AIHW OSR data collections. Number of funded FTE vacancies divided by the total FTE positions (both occupied and vacant) multiplied by 100. Since 2008–09, OSR data counts all auspice services individually when calculating rates, therefore caution should be exercised when comparing rates with earlier data collection periods.



Abbreviations

AATSIHS

Australian Aboriginal and Torres Strait Islander Health Survey

ABS

Australian Bureau of Statistics

ACCHO

Aboriginal Community Controlled Health Organisation

ACHS

Australian Council of Health-care Standards

ACIR

Australian Childhood Immunisation Register

ACT

Australian Capital Territory

AGPAL

Australian General Practice Accreditation Limited

AHF

Aboriginal Health Forum

AHMAC

Australian Health Ministers' Advisory Council

AHS

Australian Health Survey

AHW

Aboriginal health worker

AIC

Australian Institute of Criminology

AIDS

Acquired Immune Deficiency Syndrome

AIHW

Australian Institute of Health and Welfare

AMS

Aboriginal Medical Service

AMSANT

Aboriginal Medical Services Alliance of the NT

ANFPP

Australian Nurse-Family Partnership Program

AODTS-NMDS

Alcohol and Other Drug Treatment Services National Minimum Dataset

APDC

Admitted Patient Data Collection

ARF

Acute Rheumatic Fever

BEACH

Bettering the Evaluation and Care of Health

BMI

Body Mass Index

CATSI

Corporations (Aboriginal and Torres Strait Islander) Act 2006

CBDS

Child Dental Benefits Scheme

CDEP

Community Development Employment Projects

CHC

Council of Australian Governments Health Council

COAG

Council of Australian Governments

COPD

Chronic Obstructive Pulmonary Disease

CPI

Consumer Price Index

CVD

Cardiovascular Disease

DHS

Department of Human Services

DSS

Department of Social Services

Health

Department of Health

ESKD

End stage Kidney Disease

ESRD

End Stage Renal Disease

FASD

Foetal Alcohol Spectrum Disorders

FTE

Full-Time Equivalent

GAS

Group A Streptococcal Bacterium

GDM

Gestational Diabetes Mellitus

GP

General Practitioner

GPA+

General Practice Accreditation Plus

GPMP

General Practitioner Management Plan

HbA1c

Haemoglobin A1c

Health Survey

Australian Aboriginal and Torres Strait Islander Health Survey and Australian Health Survey

HIV

Human Immunodeficiency Virus

HPF

Aboriginal and Torres Strait Islander Health Performance Framework

HPV

Human Papilloma Virus

IAS

Indigenous Advancement Strategy

IHD

Ischaemic Heart Disease

IPD

Invasive Pneumococcal Disease

KRT

Kidney Replacement Therapy

LHNs

Local Hospital Networks

LSAC

Longitudinal Study of Australian Children

LSIC

Longitudinal Study of Indigenous Children

MBS

Medicare Benefits Scheme/Schedule

ML

Medicare Local

na

not available

NACCHO

National Aboriginal Community Controlled Health Organisation

NAGATSIHID

National Advisory Group on Aboriginal and Torres Strait Islander Health Information and Data

**NAHA**

National Affordable Housing Agreement

NAPLAN

National Assessment Program – Literacy and Numeracy

NATSIHSC

National Aboriginal and Torres Strait Islander Health Standing Committee

NATSIHS

National Aboriginal and Torres Strait Islander Health Survey

NATSINSAP

National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan

NATSIPDS

National Aboriginal and Torres Strait Islander peoples Drug Strategy

NATSIIS

National Aboriginal and Torres Strait Islander Survey

NATSISS

National Aboriginal and Torres Strait Islander Social Survey

NBCSP

National Bowel Cancer Screening Program

nec

not elsewhere classified

nfd

not further defined

NHMRC

National Health and Medical Research Council

NHPA

National Health Performance Authority

NHS

National Health Survey

NHWDS

National Health Workforce Data Set

NIP

National Immunisation Program

NIRA

National Indigenous Reform Agreement

nKPI

national Key Performance Indicators (Indigenous primary health care organisations)

NMDS

National Minimum Data Set

np

not published

NPESU

National Perinatal Epidemiology and Statistics Unit

NSW

New South Wales

NT

Northern Territory

NTC

National Tobacco Campaign

ORIC

Office of the Registrar of Indigenous Corporations

OSR

Online Services Report

PATS

Patient Assistance Travel Schemes

PBAC

Pharmaceutical Benefits Advisory Committee

PBS

Pharmaceutical Benefits Scheme

PCIS

Primary Care Information System

PHN

Primary Health Networks

PIP

Practice Incentives Program

PYLL

Potential Years of Life Lost

QAAMS

Quality Assurance for Aboriginal and Torres Strait Islander Medical Services

QIC

Quality Improvement Council

Qld

Queensland

RACGP

Royal Australian College of General Practitioners

RHD

Rheumatic Heart Disease

SA

South Australia

SCRGSP

Steering Committee for the Review of Government Service Provision

SEIFA

Socio-Economic Indexes for Areas

SEWB

Social and Emotional Wellbeing

SIDS

Sudden Infant Death Syndrome

SLA

Statistical Local Area

Social Survey

National Aboriginal and Torres Strait Islander Social Survey and General Social Survey

STI

Sexually Transmissible Infection

TCA

Team Care Arrangement

VAED

Victorian Admitted Episodes Dataset

VEMD

Victorian Emergency Minimum Dataset

VET

Vocational Education and Training

VII

Voluntary Indigenous Identifier

WA

Western Australia

WAACHS

Western Australia Aboriginal Child Health Survey

WHO

World Health Organization



Glossary

Aboriginal Community Controlled Health Organisation (ACCHO)

Community control is a process that allows the local Aboriginal community to be involved in its affairs in accordance with whatever protocols or procedures are determined by the community.

Aboriginal community control has its origins in Aboriginal peoples' right to self-determination. This includes the right to be involved in health service delivery and decision-making according to protocols or procedures determined by Aboriginal communities based on the Aboriginal holistic definition of health.

An ACCHO is:

- an incorporated Aboriginal organisation
- initiated by a local Aboriginal community
- based in a local Aboriginal community
- governed by an Aboriginal body which is elected by the local Aboriginal community
- delivering a holistic and culturally appropriate health service to the community that controls it.

Acute rheumatic fever (ARF)

ARF is a disease caused by an autoimmune reaction to a bacterial infection with Group A streptococcus. ARF is a short illness, but can result in permanent damage to the heart — rheumatic heart disease (RHD). A person who has had ARF once is susceptible to repeated episodes, which can increase the risk of RHD. Following an initial diagnosis of RHD, patients require long-term treatment, including long-term antibiotic treatment to avoid infections that may damage the heart (Steer et al. 2009).

Admission

The formal process, using registration procedures, under which a person is accepted by a hospital or an area or district health service facility as an inpatient.

Age-adjusted rate

See age-standardised rate.

Age-specific rate

Rate for a specified age group. Both numerator and denominator refer to the same age group.

Age-standardised rate

Rate adjusted to take account of differences in age composition when rates for different populations are compared. The direct method of standardisation is used for the HPF. To calculate age-standardised rates using the direct method:

$$ASR = (\text{SUM } (r_i * P_i)) / \text{SUM } P_i$$

Where:

- ASR is the age-standardised rate for the population being studied
- r_i is the age-group specific rate for age group i in the population being studied
- P_i is the population for age group i in the standard population.

Also called age-adjusted rate.

Antenatal care

Includes recording medical history, assessment of individual needs, advice and guidance on pregnancy and delivery, screening tests, education on self-care during pregnancy, identification of conditions detrimental to health during pregnancy, firstline management and referral if necessary.

Antepartum haemorrhage

An antepartum haemorrhage (APH) is bleeding from the vagina after 20 weeks of pregnancy and before the birth of the baby. The common causes of bleeding include: cervical ectropion (when the cells on the surface of the cervix change in pregnancy, the tissue is more likely to bleed), vaginal infection, placental edge bleed (when the lower-half of the uterus begins to stretch and grow, the edge of the placenta can separate from the wall of the uterus), placenta praevia (when the placenta covers all or part of the cervix) or placental abruption (when the placenta detaches from the uterus). The latter two conditions can lead to death of the foetus and/or mother.

At-risk communities (regarding trachoma)

The *National Trachoma Surveillance and Reporting Unit* analysed jurisdictional trachoma screening and management data for 2012 in 204 communities in the NT, SA, WA and Qld at risk of endemic trachoma.

Australian Statistical Geography Standard — Remoteness Area (ASGS—RA)

The Australian Statistical Geography Standard (ASGS) is the Australian Bureau of Statistics' new geographical framework and it is effective from July 2011. The ASGS replaces the Australian Standard Geographical Classification (ASGC). It classifies data from Statistical Areas Level 1 (SA1s) into broad geographical categories, called Remoteness Areas (RAs). The RA categories are defined in terms of 'remoteness' — the physical distance of a location from the nearest Urban Centre (based on population size). Remoteness is calculated using the road distance to the nearest Urban Centre (access to goods and services) for five categories:

- RA1 — Major Cities of Australia
- RA2 — Inner Regional Australia
- RA3 — Outer Regional Australia
- RA4 — Remote Australia
- RA5 — Very Remote Australia.

Australian 2001 standard population

The 2001 Australian population has been used as the standard population for calculation of directly age-standardised rates.

Avoidable mortality

Refers to deaths from certain conditions that are considered avoidable given timely and effective health care. Avoidable mortality measures premature deaths (for those aged 0–74 years) for specific conditions defined internationally and nationally as potentially avoidable given access to effective health care.

Body Mass Index (BMI)

Used to assess overweight and obesity levels. BMI is calculated as follows: $\text{BMI} = \text{weight (kg)} / \text{height (m)}^2$:

- Underweight: BMI below 18.5
- Normal weight: BMI from 18.5 to 24.9
- Overweight: BMI from 25.0 to 29.9
- Obese: BMI of 30.0 and over.



The BMI cut-off points are derived from mainly European populations and can vary for other groups, including Aboriginal and Torres Strait Islander peoples.

Cataract

Clouding of the lens in the eye that affects vision. The most common type of cataract is associated with ageing. Other causes of cataract include:

- smoking
- sunlight exposure
- diabetes
- arthritis
- short-sightedness
- some blood pressure lowering medications.

Cerebrovascular disease

Disease of the blood vessels, especially the arteries that supply the brain. It is usually caused by hardening of the arteries (atherosclerosis) and can lead to a stroke.

Chlamydia

A sexually transmissible infection (STI) that can affect women and men. Chlamydia is caused by the bacterium *Chlamydia trachomatis*. If left untreated, chlamydia can cause pelvic inflammatory disease in women, which can lead to chronic pain and infertility.

Chronic obstructive pulmonary disease (COPD)

COPD is a serious long-term lung disease that mainly affects older people and is often difficult to distinguish from asthma. It is characterised by chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible.

Circulatory disease

Any disease of the circulatory system, namely the heart (cardio) or blood vessels (vascular). Includes heart attack, angina, stroke and peripheral vascular disease. Also known as cardiovascular disease.

Closing the Gap

A commitment made by Australian governments in 2008 to improve the lives of Aboriginal and Torres Strait Islander Australians.

The Council of Australian Governments (COAG) agreed to six specific targets and timelines to reduce disadvantage among Indigenous Australians. These targets acknowledge the importance of reducing the gap in health outcomes and improving the social determinants of health. They are:

- To close the life-expectancy gap within a generation
- To halve the gap in mortality rates for Indigenous children under five within a decade
- To ensure access to early childhood education for all Indigenous four years olds in remote communities within five years
- To halve the gap in reading, writing and numeracy achievements for children within a decade
- To halve the gap in Indigenous Year 12 (or equivalent) attainment rates by 2020
- To halve the gap in employment outcomes between Indigenous and non-Indigenous Australians within a decade.

Congenital malformations

Physical or anatomical abnormalities present in a baby at birth. Examples include heart defects, spina bifida, limb defects, cleft lip and palate, and Down syndrome. Congenital malformations can be genetic or caused by environmental factors (such as alcohol), or be of unknown origin.

Coronary heart disease

Coronary heart disease, also known as ischaemic heart disease, is the most common form of heart disease. There are two major clinical forms—heart attack (often known as acute myocardial infarction) and angina.

Crude rate

An estimate of the proportion of a population that experiences an outcome during a specified period. It is calculated by dividing the number of people with an outcome in a specified period by the defined population during that period.

Crude death rate

An estimate of the proportion of a population that dies in a specified period. It is calculated by dividing the number of deaths in a specified period by the defined population during that period.

Decayed, missing, or filled teeth scores

Oral health outcomes are usually measured in terms of the number of decayed, missing or filled baby or deciduous (dmft) and adult or permanent (DMFT) teeth. The dmft score measures decay experience in deciduous teeth, and the DMFT score measures decay experience in permanent teeth.

Diabetes mellitus

A chronic condition marked by high levels of glucose in the blood. This condition is caused by the inability to produce insulin (a hormone produced by the pancreas to control blood glucose levels), or the insulin produced becomes less effective, or both. The three main types of diabetes are: Type 1, Type 2 and gestational diabetes.

- Type 1 diabetes, an autoimmune condition, is marked by the inability to produce any insulin and those affected need insulin replacement for survival. Type 1 diabetes is rare among Indigenous Australians.
- Type 2 diabetes (non-insulin dependent) is the most common form of diabetes. Those with Type 2 diabetes produce insulin but may not produce enough or cannot use it effectively. There is a high prevalence of Type 2 diabetes among Indigenous Australians, who tend to develop it earlier than other Australians and die from the disease at younger ages.
- Gestational diabetes occurs during pregnancy and usually disappears after birth.

Diabetic retinopathy

Diabetic retinopathy occurs when the tiny blood vessels inside the retina at the back of the eye are damaged as a result of diabetes. This can seriously affect vision and in some cases may even cause blindness.



Dialysis

A medical procedure for the filtering and removal of waste products from the bloodstream. Dialysis is used to remove urea, uric acid and creatinine (a chemical waste molecule that is generated from muscle metabolism) in cases of chronic end-stage renal disease. Two main types are:

- haemodialysis — blood flows out of the body into a machine that filters out the waste products and returns the cleansed blood back into the body.
- peritoneal dialysis — fluid is injected into the peritoneal cavity and wastes are filtered through the peritoneum, the thin membrane that surrounds the abdominal organs.

Ectopic pregnancy

Ectopic pregnancy is a pregnancy that develops outside the uterus, usually in one of the fallopian tubes. In almost all cases, the embryo dies as the developing placenta can't access a rich blood supply and the fallopian tube is not large enough to support the growing embryo. Implantation can also occur in the cervix, ovaries, and abdomen, but this is rare.

End-stage renal disease

Chronic irreversible renal failure. The most severe form of chronic kidney disease where kidney function deteriorates so much that dialysis or kidney transplantation is required to survive.

Equivalised gross household income

In measuring and comparing income, equivalised gross household income adjusts for various factors, such as the number of people living in a household, particularly children and other dependants.

Foetal alcohol spectrum disorders

Conditions that may result from foetal exposure to alcohol during pregnancy. Disorders include foetal alcohol syndrome, alcohol-related neurodevelopmental disorder and alcohol-related birth defects. These disorders include antenatal and postnatal growth retardation, specific facial dysmorphism and functional abnormalities of the central nervous system.

Glaucoma

Glaucoma is a common form of eye disease that often runs in families. It affects the optic nerve connecting the eye to the brain. Glaucoma is usually caused by high intraocular pressure as a result of a blockage in the eye's drainage system, which can lead to irreversible vision loss and blindness. Early detection and treatment can prevent vision loss in most cases.

Gonorrhoea

Gonorrhoea is a common sexually transmissible infection that affects men and women. Gonorrhoea is caused by bacteria known as *Neisseria gonorrhoea*. It usually affects the genital area, although the throat or anus may also be affected. It can cause pelvic inflammatory disease and infertility in women. Gonorrhoea can be treated with antibiotics.

GP Super Clinics

In 2009, the Australian Government committed to improve the quality and accessibility of primary health care services by supporting the establishment of GP Super Clinics. GP Super Clinics are a key element in building a stronger national primary health care system with a greater focus on health

promotion and illness prevention as well as better coordination between GPs and allied health services, community health and other state and territory-funded services (for more information, see www.health.gov.au/gpsuperclinics).

Haemodialysis

A process used to treat kidney failure. A machine is connected to the patient's bloodstream and then filters the blood externally to the body, removing water, excess substances and waste from the blood as well as regulating the levels of circulating chemicals. In doing this the machine takes on the role normally played by the kidneys (see also dialysis).

HbA1c

Haemoglobin A1c—a measurement that acts as an indicator of time-averaged blood glucose levels used as a marker of long-term diabetes control.

Health and Hospitals Fund 2011 Regional Priority Round

The Health and Hospitals Fund is a funding pool that was established on 1 January 2009 by the Australian Government as part of its broader nation-building infrastructure programme. Its objectives, while not replacing state and territory efforts, are to invest in major health infrastructure programmes that will make significant progress towards achieving the Commonwealth's health reform targets; and to make strategic investments in the health system that will underpin major improvements in efficiency, access or outcomes of health care.

Four funding rounds of the Health and Hospitals Fund have been conducted. The fourth round was the 2011 Regional Priority Round where 76 projects were allocated funding through the 2012–13 Budget.

High blood triglycerides

Triglycerides make up about 95 per cent of all dietary fats. In many cases, regular overeating leading to obesity causes a person to have raised triglycerides, which are linked with an increased risk of health conditions including diabetes and heart disease. High triglyceride levels in the blood are also known as hypertriglyceridemia.

Hospital separation or hospitalisation

See Separation.

Hypertension/hypertensive disease

High blood pressure, defined as a repeatedly elevated blood pressure exceeding 140 over 90 mmHg — a systolic pressure above 140 with a diastolic pressure above 90.

Illicit drugs

Illicit drugs include illegal drugs (amphetamine, cocaine, marijuana, heroin, hallucinogens), pharmaceuticals when used for non-medical purposes (pain-killers, sleeping pills) and other substances used inappropriately (inhalants such as petrol or glue).

Incidence

The rate at which new events or cases occur during a certain period of time.



Indigenous deaths identification rate

Almost all deaths in Australia are registered. However, the Indigenous status of the deceased may not be recorded correctly or reported. This means that the identification of Indigenous Australians in deaths data is incomplete. The number of deaths registered as Indigenous may, therefore, be an under-estimate of deaths occurring among the Aboriginal and Torres Strait Islander population (ABS 1997). *As a result, the observed differences between Indigenous and non-Indigenous mortality are under-estimates of the true differences.*

Infant death

The death of a child before one year.

Invasive pneumococcal disease

A more serious form of pneumococcal disease, an infection caused by the *Streptococcus pneumoniae* bacterium. It occurs inside a major organ or in the blood and can result in pneumonia, sepsis, middle-ear infection (otitis media), or bacterial meningitis.

Ischaemic heart disease

Ischaemic heart disease, or myocardial ischaemia, is a disease characterised by reduced blood supply (ischaemia) of the heart muscle, usually due to coronary artery disease. See also coronary heart disease.

Kessler Psychological Distress Scale (K10)

A measure of psychological distress in people aged 16 years and over. K10 is a 10-item questionnaire that measures the level of psychological distress in the most recent 4-week period. At both the population and individual level, the K10 measure is a brief and accurate screening scale for psychological distress.

Life expectancy

The average number of years of life remaining to a person at a particular age. Life expectancy at birth is an estimate of the average length of time (in years) a person can expect to live, assuming that the currently prevailing rates of death for each age group will remain the same for the lifetime of that person.

Live birth

The birth of a child who after delivery, breathes or shows any other evidence of life, such as a heartbeat. For calculation of perinatal death rates only infants weighing at least 400 grams at birth or, where birth weight is unknown, of at least 20 weeks gestation are included.

Low birthweight babies

Infants born weighing less than 2,500g.

Mastoid process

The mastoid process — a bony protrusion located behind the ear in the lower part of the skulls — contains *mastoid cells* (small air-filled cavities) that communicate with the middle ear. Infection of the mastoid process can lead to hearing loss and other complications.

Meningococcal disease

Meningococcal disease describes infections caused by the bacterium *Neisseria meningitidis* (meningococci bacteria). These bacteria can cause meningitis (an inflammatory response to an

infection of the membranes covering the brain and spinal cord) and sepsis (an infection in the bloodstream). Meningitis can lead to deafness, epilepsy, cognitive defects and death. Sepsis can lead to organ dysfunction or failure and death.

Multivariate analysis

A set of statistical techniques used to analyse data with more than one variable.

Myocardial infarction

Myocardial infarction or acute myocardial infarction are terms commonly used to refer to a heart attack, but more correctly refer only to those heart attacks that have caused some death of heart muscle.

Myopia

Myopia or near-sightedness is a type of refractive error of the eye, in which the eye does not focus light correctly. This makes distant objects appear blurred.

Myringotomy procedures

Incision in eardrum to relieve pressure caused by excessive build-up of fluid.

National Indigenous Reform Agreement (NIRA)

The NIRA is an agreement between the Commonwealth and state and territory Governments that provides the framework for Closing the Gap in Indigenous disadvantage. It sets out the objectives, outcomes, outputs, performance indicators and performance benchmarks agreed by COAG.

Neonatal death

Death within 28 days of birth of any child who, after delivery, breathed or showed any other evidence of life, such as a heartbeat.

Neoplasm

An abnormal growth of tissue. Can be 'benign' (not a cancer) or 'malignant' (a cancer). Same as a tumour.

Nephritis

Nephritis is an inflammation of the kidneys. It is often caused by toxins, infections, and autoimmune diseases.

Nephrosis

Nephrosis is a condition of the kidneys. It is usually caused by diseases that damage the kidneys' filtering system, allowing a protein called albumin to be filtered out into the urine (albuminuria). Symptoms include protein in the urine, high triglyceride levels, high cholesterol levels, low blood protein levels, and swelling.

Non-ambulatory care

Care provided to a patient, whose condition requires admission to hospital or other inpatient facility.

Notification

In this report, notifications are cases of communicable diseases reported by general practitioners, hospitals and pathology laboratories to the relevant authorities.

Otitis media

Middle ear infection. In severe or untreated cases, otitis media can lead to hearing loss.



Overweight and obesity

Overweight and obesity are both labels for ranges of weight that are greater than what is generally considered healthy for a given height. The terms also identify ranges of weight that have been shown to increase the likelihood of certain diseases and other health problems. See also Body Mass Index (BMI).

Perinatal death

A foetal death (death of a foetus at 20 or more weeks of gestation, or at least 400 grams birthweight) or neonatal death within 28 days of birth. See also live birth and neonatal death.

Post-Enumeration Survey (PES)

The PES is a short survey run in the month after each Census, to determine how many people were missed or counted more than once. It collects information about where people were on Census night and their characteristics. The PES provides information on the population and dwelling characteristics of the net undercount in the Census of Population and Housing.

Potentially avoidable hospital admissions

See selected potentially avoidable hospital admissions.

Preterm labour

Preterm labour is defined as birth before 37 completed weeks of gestation.

Prevalence

The rate at which existing events or cases are found at a given point or in a period of time.

Primary health care

Primary health care usually is the first point of contact a person encounters with the health care system. In mainstream health throughout Australia primary health care is normally provided by general practitioners, community health nurses, pharmacists, environmental health officers etc., although the term usually means medical care. Primary health care may be provided through an ACCHO or satellite clinic (AH&MRC 1999).

Primary Health Networks (PHN)

PHNs are being established to improve the efficiency and effectiveness of medical services delivered to individual patients and funded by the Commonwealth.

PHNs will achieve this by working directly with general practitioners, other primary care providers, secondary care providers and hospitals to ensure improved outcomes for patients as a result of:

- more effective services provided for identified groups of patients at risk of poor outcomes
- better coordination of care across the local health system with patients requiring assistance from multiple providers receiving the right care in the right place at the right time.

Refractive error

A refractive error, or refraction error, is an error in the focusing of light by the eye and a frequent reason for blurred vision. It may lead to visual impairment.

Respiratory disease

Respiratory disease includes conditions affecting the respiratory system — which includes the lungs and airways — such as asthma, COPD and pneumonia (see also Chronic Obstructive Pulmonary Disease).

Rheumatic heart disease (RHD)

RHD may develop after illness with rheumatic fever, usually during childhood. Rheumatic fever can cause damage to various structures of the heart including the valves, lining or muscle and this damage is known as RHD (see also acute rheumatic fever).

Rheumatoid arthritis

Rheumatoid arthritis is an autoimmune disease. In rheumatoid arthritis, the immune system attacks the body's own tissues, specifically the synovium, a thin membrane that lines the joints. As a result of the attack, fluid builds up in the joints causing pain in the joints and inflammation throughout the body.

Rotavirus

Globally, rotavirus is the most common cause of severe gastroenteritis in early childhood. Almost all children in Australia have been infected by the time they reach five years of age.

Secondary health care

Secondary health care refers to particular services provided by hospitals, such as acute care, as well as services provided by specialists.

Selected potentially avoidable hospital admissions

Selected potentially preventable hospital admissions refers to admissions to hospital that are considered sensitive to the effectiveness, timeliness and adequacy of non-hospital care. This includes conditions for which hospitalisation could potentially be avoided through effective preventive measures or early diagnosis and treatment (Page et al. 2007). Selected potentially preventable conditions are usually grouped into three categories:

- vaccine-preventable conditions—including invasive pneumococcal disease, influenza, tetanus, measles, mumps, rubella, pertussis, and polio;
- potentially preventable acute conditions—including dehydration/gastroenteritis, kidney infection, perforated ulcer, cellulitis, pelvic inflammatory disease, dental conditions, and ear, nose and throat infections; and
- potentially preventable chronic conditions—including diabetes, asthma, angina, hypertension, congestive heart failure, and chronic obstructive pulmonary disease.

Separation

The formal process whereby an in-patient leaves a hospital or other health-care facility after completing an episode of care. For example, a discharge to home, discharge to another hospital, nursing home, other care facility, or death. The hospital separation rate is the average number of hospital separations per 1,000 population.

Statistically significant

An indication from a statistical test that an observed difference or association may be significant or 'real' because it is unlikely to be due just to chance.

Substantiated child protection notifications

A child protection notification is substantiated where it is concluded that the child has been, is being, or is likely to be, abused, neglected or otherwise harmed.

**Sudden infant death syndrome (SIDS)**

The sudden and unexpected death of a baby with no known illness, typically affecting sleeping infants between the ages of 2 weeks to 6 months.

Syphilis

Syphilis is a sexually transmissible infection caused by a bacterium called *Treponema pallidum*. It can affect both men and women. Syphilis is transmitted through close skin-to-skin contact and is highly contagious when the syphilis sore (chancere) or rash is present. If untreated, syphilis can damage the internal organs, such as heart and brain and can result in death.

Tertiary health care

Tertiary health care refers to highly specialised or complex services provided by specialists or allied health professionals in a hospital or primary health care setting, such as cancer treatment and complex surgery.

Trachoma

Trachoma is an eye infection that can result in scarring, intumed eyelashes and blindness. Australia is the only developed country where trachoma is still endemic and it is found almost exclusively in remote and very remote Aboriginal and Torres Strait Islander populations. Trachoma is associated with living in an arid environment (including the impact of dust); lack of access to clean water for hand and face washing; and overcrowding and low socio-economic status (Taylor 2008).

Trichiasis

Trichiasis involves the misdirection of eyelashes toward the eyeball, causing irritation and, if untreated, corneal scarring and vision loss. The misdirected lashes may be diffuse across the entire lid or in a small segmental distribution.

Tympanoplasty

A surgical intervention to reconstruct a perforated eardrum.

Unemployment rate

The number of unemployed people expressed as a proportion of the labour force (i.e., employed and unemployed).

Vocational Education and Training (VET) load pass rate

The VET load pass rate is a ratio of hours of supervision in assessable modules or units that students have completed to the hours of supervision in assessable modules or units that students have either completed, failed or withdrawn from.



References

- Aboriginal Health and Medical Research Council of NSW 1999, *Primary, Secondary and Tertiary Health Care Services to Aboriginal Communities: Core Functions of Primary Health Care in Aboriginal Community Controlled Health Services (ACCHS)*, 1, AH&MRC Monograph Series, AH&MRC, Strawberry Hills, NSW.
- Adami, P, Negro, A, Lala, N & Martelletti, P 2009, 'The role of physical activity in the prevention and treatment of chronic diseases', *La Clinica terapeutica*, vol. 161, no. 6, pp. 537–41.
- Adhikari, P 2006, *Socio-economic indexes for areas: Introduction, use and future directions*, ABS Cat. no. 1351.0.55.015, ABS:Canberra.
- Agaku, IT, Odukoya, OO, Olufajo, O, Filippidis, FT & Vardavas, CI 2014, 'Support for smoke-free cars when children are present: a secondary analysis of 164,819 US adults in 2010/2011', *European Journal of Pediatrics*, pp. 1–8.
- Ahovuo-Saloranta, A, Hiiri, A, Nordblad, A, Worthington, H & Mäkelä, M 2004, 'Pit and fissure sealants for preventing dental decay in the permanent teeth of children and adolescents', *The Cochrane Database of Systematic Review*; 3:CD001830
- Alexander, C & Fraser, J 2007, 'Education, training and support needs of Australian trained doctors and international medical graduates in rural Australia: a case of special needs', *Rural and Remote Health*, vol. 7, no. 2, p. 681.
- Anderson, I 2008, 'An analysis of national health strategies addressing Indigenous injury: consistencies and gaps', *Injury*, vol. 39, pp. S55–S60.
- Anderson, I, Ewen, SC & Knoche, DA 2009, 'Indigenous medical workforce development: current status and future directions', *Medical Journal of Australia*, vol. 190, pp. 580–1.
- Anderson, K, Devitt, J, Cunningham, J, Preece, C, Jardine, M & Cass, A 2012, 'If you can't comply with dialysis, how do you expect me to trust you with transplantation? Australian nephrologists' view on Indigenous Australians' 'non-compliance' and their suitability for kidney transplantation', *International journal for equity in health*, vol. 11, no. 21.
- Anderson, P 1996, 'Priorities in Aboriginal Health', in G Robinson (ed), *Aboriginal Health: Social and cultural transitions: Proceedings of a conference at the Northern Territory University, Darwin, September 1995*. Northern Territory University Press, Darwin.
- Annamalay, AA, Khoo, SK, Jacoby, P, Bizzintino, J, Zhang, G, Chidlow, G, Lee, WM, Moore, HC, Harnett, GB & Smith, DW 2012, 'Prevalence of and risk factors for human rhinovirus infection in healthy Aboriginal and non-Aboriginal Western Australian children', *The Pediatric Infectious Disease Journal*, vol. 31, no. 7, pp. 673–9.
- Arnold, JL, De Costa, CM & Howat, PW 2009, 'Timing of transfer for pregnant women from Queensland Cape York communities to Cairns for birthing', *Medical Journal of Australia*, vol. 190, no. 10, pp. 594–6.
- Atkinson, J 2013, *Trauma-informed services and trauma-specific care for Indigenous Australian children*, (Closing the Gap Clearinghouse, chairman), *Resource sheet*, Canberra.
- Atkinson, W, Wolfe, S & Hamborsky, J 2009, *Epidemiology and prevention of vaccine-preventable diseases*, Public Health Foundation.
- Atlas, SJ, Grant, RW, Ferris, TG, Chang, Y & Barry, MJ 2009, 'Patient–physician connectedness and quality of primary care', *Annals of Internal Medicine*, vol. 150, no. 5, pp. 325–35.
- Australian Bureau of Statistics 1997, *Occasional paper: Mortality of Aboriginal and Torres Strait Islander Australians*, ABS Cat. no. 3315.0, ABS:Canberra.
- Australian Bureau of Statistics 2008, *Health Literacy, Australia, 2006*, ABS Cat. No. 4233, ABS:Canberra.
- Australian Bureau of Statistics 2009, *National Aboriginal and Torres Strait Islander Social Survey: User Guide, 2008*, ABS Cat. no. 4720.0, AIHW:Canberra.
- Australian Bureau of Statistics 2012a, *Australian Health Survey: First Results, 2011–12* ABS Cat. no. 4364.0.55.001, ABS:Canberra.
- Australian Bureau of Statistics 2012b, 'Mortality, life expectancy and causes of death' 1301.1 Year Book Australia, ABS Cat no. 1301.0, ABS:Canberra.
- Australian Bureau of Statistics 2012c, *Suicides, Australia, 2010*, ABS Cat. No. 3309, ABS:Canberra.
- Australian Bureau of Statistics 2013a, *Annual Report, 2012–13* ABS Cat. no. 1001.0, ABS:Canberra.
- Australian Bureau of Statistics 2013b, *Australian Aboriginal and Torres Strait Islander Health Survey: Users' Guide, 2012–13*, ABS Cat. no. 4727.0.55.002 ABS:Canberra.
- Australian Bureau of Statistics 2013c, *Corrective Services, Australia 2013*, ABS Cat. no. 4517.0, ABS:Canberra.
- Australian Bureau of Statistics 2013d, *Deaths Australia 2012*, ABS Cat. no. 3302.0, ABS:Canberra.
- Australian Bureau of Statistics 2013e, *Estimates of Aboriginal and Torres Strait Islander Australians, June 2011* ABS Cat No. 3238.0.55.001, ABS:Canberra.
- Australian Bureau of Statistics 2013f, *Life Tables for Aboriginal and Torres Strait Islander Australians* ABS Cat. no. 3302.0.55.003, ABS:Canberra.
- Australian Bureau of Statistics 2013g, *Prisoners in Australia, 2013*, ABS Cat. no. 4517, ABS:Canberra.
- Australian Bureau of Statistics 2013h, *Profiles of Health, Australia, 2011–13*, ABS Cat. no. 4338.0, ABS:Canberra.
- Australian Bureau of Statistics 2013i, *Retirement and Retirement Intentions, Australia*, Cat no. 6238, ABS:Canberra.
- Australian Bureau of Statistics 2014a, *Australian Aboriginal and Torres Strait Islander Health Survey: Biomedical Results, 2012–13* ABS Cat no. 4727.0.55.003, ABS:Canberra.
- Australian Bureau of Statistics 2014b, *Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012–13*, ABS Cat. no. 4727.0.55.001, ABS:Canberra.



- Australian Bureau of Statistics 2014c, *Australian Aboriginal and Torres Strait Islander Health Survey: Physical activity, 2012–13*, ABS Cat. no. 4727.0.55.004, ABS:Canberra.
- Australian Bureau of Statistics 2014d, *Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012–13*, ABS Cat. no. 4727.0.55.006, ABS:Canberra.
- Australian Bureau of Statistics 2014e, *Australian Social Trends, 2014*, ABS Cat. no. 4102, ABS:Canberra.
- Australian Bureau of Statistics 2014f, *Causes of Death, Australia, 2012*, ABS Cat. no. 3302.0, ABS:Canberra.
- Australian Bureau of Statistics 2014g, *Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001 to 2026* ABS Cat no. 3238.0, ABS:Canberra.
- Australian Bureau of Statistics 2014h, *Information Paper: Aboriginal and Torres Strait Islander peoples Perspectives on Homelessness, 2014* ABS Cat. no. 4736.0, ABS:Canberra.
- Australian Bureau of Statistics 2014i, *Patient Experiences in Australia: Summary of Findings, 2013–14*, ABS Cat. no. 4839.0, ABS:Canberra.
- Australian Bureau of Statistics 2014j, *Recorded Crime, Australia 2013*, ABS Cat. no. 45100DO004_2013, ABS:Canberra.
- Australian Bureau of Statistics 2014k, *Research Paper: Examining Association Between Self-Assessed Health Status and Labour Force Participation Using Pooled NHS Data, Feb 2014* ABS Cat no. 1351.0.55.049, ABS:Canberra.
- Australian Bureau of Statistics 2014l, *Schools, Australia, 2013: Aboriginal and Torres Strait Islander Students*, ABS Cat no. 4221.0, ABS:Canberra.
- Australian Bureau of Statistics & Australian Institute of Health and Welfare 2005, *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2005*, ABS Cat. no. 4704.0, AIHW Cat. no. IHW 14, AIHW:Canberra.
- Australian Bureau of Statistics & Australian Institute of Health and Welfare 2008, *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2008*, AIHW Cat. no. IHW 21, ABS & AIHW:Canberra.
- Australian Commission on Safety and Quality in Health Care 2013, *Consumers, the health system and health literacy: taking action to improve safety and quality*, ACSQHC:Sydney.
- Australian Government 2013, *A snapshot of early childhood development in Australia 2012 AEDI National Report*, Australian Government:Canberra.
- Australian Government 2015, *Closing the Gap Prime Minister's Report 2015*, Department of the Prime Minister and Cabinet:Canberra
- Australian Health Ministers' Advisory Council 2012, *Clinical Practice Guidelines: Antenatal Care – Module 1*, Australian Government Department of Health and Ageing:Canberra.
- Australian Human Rights Commission 2013, *Social Justice and Native Title Report 2013*, Aboriginal and Torres Strait Islander Social Justice Commissioner.
- Australian Institute of Health and Welfare 2002, *Diabetes: Australian facts 2002*, AIHW Cat. no. CVD 20 (Diabetes series no. 3), AIHW:Canberra.
- Australian Institute of Health and Welfare 2005a, *Chronic kidney disease in Australia 2005*, AIHW Cat. no. PHE 68, AIHW:Canberra.
- Australian Institute of Health and Welfare 2005b, *Expenditures on health for Aboriginal and Torres Strait Islander peoples, 2001–02*, Health and welfare expenditure series no. 23. Cat. no. HWE 30, AIHW:Canberra.
- Australian Institute of Health and Welfare 2008a, *Diabetes: Australian facts 2008*, AIHW Cat. no. CVD 40, AIHW:Canberra.
- Australian Institute of Health and Welfare 2008b, *Expenditures on health for Aboriginal and Torres Strait Islander peoples 2004–05*, Health and welfare expenditure series no. 33. Cat. no. HWE 40, AIHW:Canberra.
- Australian Institute of Health and Welfare 2009, *Expenditure on health for Aboriginal and Torres Strait Islander people 2006–07*, Health and welfare expenditure series no. 39. Cat. no. HWE 48, AIHW:Canberra.
- Australian Institute of Health and Welfare 2010a, *Australia's health 2010*, Australia's health series no. 12. Cat. no. AUS 122, AIHW:Canberra.
- Australian Institute of Health and Welfare 2010b, *Diabetes in pregnancy: its impact on Australian women and their babies*, AIHW Cat. no. CVD 52 (Diabetes series no. 14), AIHW:Canberra.
- Australian Institute of Health and Welfare 2010c, *Indigenous identification in hospital separations data—quality report*, AIHW Cat. no. HSE 85 (Health services series no. 35), AIHW:Canberra.
- Australian Institute of Health and Welfare 2010d, *National best practice guidelines for collecting Indigenous status in health data sets*, Cat. no. IHW 29, AIHW:Canberra.
- Australian Institute of Health and Welfare 2010e, *National Health-care Agreement: P20-Potentially avoidable deaths, 2010*, viewed 20/11/2014, <<http://meteor.aihw.gov.au/content/index.phtml/itemId/394495>>.
- Australian Institute of Health and Welfare 2011a, *Adult Vaccination Survey: summary results*, Cat. no. PHE 135, AIHW:Canberra.
- Australian Institute of Health and Welfare 2011b, *Asthma in Australia 2011*, Cat. no. ACM 22 (Asthma Series no. 4), AIHW:Canberra.
- Australian Institute of Health and Welfare 2011c, *Cardiovascular disease: Australian facts 2011*, AIHW Cat. no. CVD 53 (Cardiovascular disease series no. 35), AIHW:Canberra.
- Australian Institute of Health and Welfare 2011d, *Headline indicators for children's health, development and wellbeing 2011*, AIHW Cat. no. PHE 144, AIHW:Canberra.
- Australian Institute of Health and Welfare 2011e, *Neural tube defects in Australia: prevalence before mandatory folic acid fortification*, Cat. no. PER 53, AIHW:Canberra.



- Australian Institute of Health and Welfare 2012a, *Australia's food and nutrition 2012*, AIHW Cat. no. PHE 163, AIHW:Canberra.
- Australian Institute of Health and Welfare 2012b, *Northern Territory Emergency Response Child Health Check Initiative: follow-up services for oral and ear health: final report, 2007–2012*, Cat. no. DEN 223, AIHW:Canberra.
- Australian Institute of Health and Welfare 2012c, *Risk factors contributing to chronic disease*, Cat. no. PHE 157, AIHW Canberra.
- Australian Institute of Health and Welfare 2013a, *Allied health workforce 2012*, National health workforce series 5. Cat. no. HWL 51, AIHW:Canberra.
- Australian Institute of Health and Welfare 2013b, *Cancer in Aboriginal and Torres Strait Islander peoples of Australia: an overview*, Cancer series 78. Cat. no. CAN 75, AIHW:Canberra.
- Australian Institute of Health and Welfare 2013c, *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11*, Health and welfare expenditure series no. 48. Cat. no. HWE 57, AIHW:Canberra.
- Australian Institute of Health and Welfare 2013d, *Expenditure on health for Aboriginal and Torres Strait Islander people 2010–11: an analysis by remoteness and disease*, Health and welfare expenditure series no. 49. Cat. no. HWE 58, AIHW:Canberra.
- Australian Institute of Health and Welfare 2013e, *The health of Australia's prisoners 2012*, AIHW Cat no. PHE 170, AIHW:Canberra.
- Australian Institute of Health and Welfare 2013f, *Indigenous identification in hospital separations data: quality report*, Cat. no. IHW 90. Canberra: AIHW, AIHW:Canberra.
- Australian Institute of Health and Welfare 2013g, *Rheumatic heart disease and acute rheumatic fever in Australia: 1996–2012. Cardiovascular disease series no. 36*, Cat. no. CVD 60, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014a, *Aboriginal and Torres Strait Islander health organisations: Online Services Report—key results 2012–13*, Cat. no. IHW 139, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014b, *Access to primary health care relative to need for Indigenous Australians*, Cat. no. IHW 128, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014c, *Alcohol and other drug treatment services in Australia 2012–13*, Drug treatment series no. 24. Cat. no. HSE 150, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014d, *Australia's health 2014. Australia's health series no. 14.*, Cat. no. AUS 178, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014e, *Australia's mothers and babies 2012*, Perinatal statistics series no. 30. Cat. no. PER 69, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014f, *Australian hospital statistics 2012–13. Health services series no. 54*, Cat. no. HSE 145, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014g, *Australian hospital statistics 2013–14: elective surgery waiting times. Health services series no. 56*, Cat. no. HSE 151, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014h, *Australian hospital statistics 2013–14: emergency department care*, Health services series no. 58. Cat. no. HSE 153, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014i, *Birthweight of babies born to Indigenous mothers*, Cat. no. IHW 138, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014j, *Cardiovascular disease, diabetes and chronic kidney disease: Australian facts: morbidity—hospital care*, Cardiovascular, diabetes and chronic kidney disease series no. 3. Cat. no. CDK 3, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014k, *Cardiovascular disease, diabetes and chronic kidney disease: Australian facts: prevalence and incidence. Cardiovascular, diabetes and chronic kidney disease series no. 2*, Cat. no. CDK 2, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014l, *Cervical screening in Australia 2011–2012*, Cat. no. CAN 79, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014m, *Child protection Australia 2012–13*, Child welfare series 58. Cat. no. CWS 49, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014n, *Coronary heart disease and chronic obstructive pulmonary disease in Indigenous Australians*, Cat. no. IHW 126, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014o, *Determinants of wellbeing for Indigenous Australians.*, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014p, *Disability support services: services provided under the National Disability Agreement 2012–13. AIHW bulletin 122*, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014q, *Homelessness among Indigenous Australians*, Cat. no. IHW 133, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014r, *Indigenous child safety*, Cat. no. IHW 127, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014s, *Medical practitioner workforce 2013: data and additional material*, AIHW, Canberra, viewed 20 January 2015, www.aihw.gov.au/workforce/medical/additional/.
- Australian Institute of Health and Welfare 2014t, *Mental health services provided in emergency departments*, AIHW, Canberra, viewed 14 November 2014, <http://mhsa.aihw.gov.au/services/emergency-departments/>.
- Australian Institute of Health and Welfare 2014u, *National Bowel Cancer Screening Program: monitoring report 2012–2013. Cancer series 84*, Cat. no. CAN 81, AIHW:Canberra.



- Australian Institute of Health and Welfare 2014v, *National Drug Strategy Household Survey detailed report: 2013*, Drug statistics series no. 28. Cat. no. PHE 183, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014w, *National Key Performance Indicators for Aboriginal and Torres Strait Islander primary health care: First national results from December 2013. National key performance indicators for Aboriginal and Torres Strait Islander primary health care series*. Cat no. IHW 123, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014x, *Nursing and midwifery workforce 2013: data and additional material*, AIHW, Canberra, viewed 20 January 2015, www.aihw.gov.au/workforce/nursing-and-midwifery/additional/.
- Australian Institute of Health and Welfare 2014y, *Oral health and dental care in Australia: key facts and figures trends 2014*, Cat. no. DEN 228, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014z, *Pathways through youth justice supervision. Juvenile Justice series no.15*, Cat. no. JUV 40, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014aa, *Pharmacy workforce 2013: additional material*, AIHW, Canberra, viewed 20 January 2015, www.aihw.gov.au/workforce/pharmacy/.
- Australian Institute of Health and Welfare 2014ab, *Prisoner health services in Australia 2012. AIHW bulletin no. 123*, Cat. no. AUS 183, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014ac, *Stronger futures in the NT: hearing services 2012–13*, Cat. no. IHW 117, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014ad, *Timing impact assessment for COAG Closing the Gap targets: child mortality*, Cat. no. IHW 124, AIHW:Canberra.
- Australian Institute of Health and Welfare 2014ae, *Youth justice in Australia, Bulletin 120, April 2014*, Cat. no. AUS 179, AIHW:Canberra.
- Australian Institute of Health and Welfare & Australian Institute of Family Studies 2014, *Ear disease in Aboriginal and Torres Strait Islander children*, Resource sheet no. 35, Closing the Gap Clearinghouse.
- Australian Institute of Health and Welfare & Australian Institute of Family Studies 2015, *Fetal alcohol spectrum disorders: a review of interventions for prevention and management in Indigenous communities* Resource sheet no. 36 Closing the Gap Clearinghouse:Canberra.
- Australian Institute of Health and Welfare and the Australian Bureau of Statistics 2012, *National best practice guidelines for data linkage activities relating to Aboriginal and Torres Strait Islander people: 2012*, Cat. no. IHW 74, AIHW & ABS:Canberra.
- Australian Institute of Health and Welfare and the Commonwealth Department of Health and Ageing 2009, *Progress of the NT Emergency Response Child Health Check Initiative: update on results from the Child Health Check and follow-up data collections*, Cat. no. IHW 28, AIHW:Canberra.
- Australian National Council on Drugs 2013, *An economic analysis for Aboriginal offenders: prison vs residential treatment.*, Canberra.
- Baheiraei, A, Ghafoori, F, Foroushani, AR & Nedjat, S 2014, 'The effects of maternal exposure to second-hand smoke on breast-feeding duration: A prospective cohort study', *Journal of Public Health*, vol. 22, no. 1, pp. 13–22.
- Bailie, R, Si, D, Dowden, M & Loneragan, K 2007, *Audit and Best Practice for Chronic Disease Project: Final Report*, Menzies School of Health Research:Darwin.
- Bailie, RS, McDonald, EL, Stevens, M, Guthridge, S & Brewster, DR 2011a, 'Evaluation of an Australian Indigenous housing programme: community level impact on crowding, infrastructure function and hygiene', *Journal of epidemiology and community health*, vol. 65, no. 5, pp. 432–7.
- Bailie, RS, Si, D, Robinson, GW, Togni, SJ & d'Abbs, PH 2004, 'A multifaceted health-service intervention in remote Aboriginal communities: 3-year follow-up of the impact on diabetes care', *Medical Journal of Australia*, vol. 181, pp. 195–200.
- Bailie, RS, Stevens, M & McDonald, EL 2011b, 'The impact of housing improvement and socio-environmental factors on common childhood illnesses: a cohort study in Indigenous Australian communities', *Journal of epidemiology and community health*.
- Bailie, RS & Wayte, KJ 2006, 'Housing and health in Indigenous communities: Key issues for housing and health improvement in remote Aboriginal and Torres Strait Islander communities', *Australian Journal of Rural Health*, vol. 14, no. 5, pp. 178–83.
- Bambra, C 2011, *Work, worklessness, and the political economy of health*, Oxford University Press.
- Bar-Zeev, SJ, Kruske, SG, Barclay, LM, Bar-Zeev, N & Kildea, SV 2013, 'Adherence to management guidelines for growth faltering and anaemia in remote dwelling Australian aboriginal infants and barriers to health service delivery', *BMC Health Services Research*, vol. 13, no. 1, p. 250.
- Barker, DJ 1993, 'Fetal and infant origins of adult disease', BMJ Publishing Group, London.
- Baum, F, Freeman, T, Jolley, G, Lawless, A, Bentley, M, Värttö, K, Boffa, J, Labonte, R & Sanders, D 2013, 'Health promotion in Australian multi-disciplinary primary health care services: case studies from South Australia and the Northern Territory', *Health Promotion International*, p. dat029.
- Beard, JR, Earnest, A, Morgan, G, Chan, H, Summerhayes, R, Dunn, TM, Tomaska, NA & Ryan, L 2008, 'Socio-economic disadvantage and acute coronary events: a spatiotemporal analysis', *Epidemiology*, vol. 19, no. 3, p. 485.
- Begg, S, Vos, T, Barker, B, Stevenson, C, Stanley, L & Lopez, A 2007, *The burden of disease and injury in Australia 2003*, AIHW Cat. no. PHE 82, AIHW:Canberra.



- Behl, M, Rao, D, Aagaard, K, Davidson, TL, Levin, ED, Slotkin, TA, Srinivasan, S, Wallinga, D, White, MF & Walker, VR 2013, 'Evaluation of the association between maternal smoking, childhood obesity, and metabolic disorders: a national toxicology program workshop review', *Environmental health perspectives*, vol. 121, no. 2, p. 170.
- Belachew, TA & Kumar, A 2014, *Examining association between self-assessed health status and labour force participation using pooled NHS data*, Canberra.
- Berger, L, Wallace, L & Bill, N 2009, 'Injuries and injury prevention among Indigenous children and young people', *Pediatric Clinics of North America*, vol. 56, no. 6, pp. 1519–37.
- Berlyn, C & Bromfield, L 2009, *Child protection and Aboriginal and Torres Strait Islander children*, National Child Protection Clearinghouse Resource Sheet 10, Australian Institute of Family Studies:Melbourne.
- Berry, JG, Harrison, JE & Ryan, P 2009, 'Hospital admissions of Indigenous and non-Indigenous Australians due to interpersonal violence, July 1999 to June 2004', *Australian and New Zealand Journal of Public Health*, vol. 33, no. 3, pp. 215–22.
- Beyond Blue 2014, *Discrimination against Indigenous Australians: A snapshot of the views of non-Indigenous people aged 25–44*. <http://www.beyondblue.org.au/docs/default-source/research-project-files/bl1337-report---tns-discrimination-against-indigenous-australians.pdf?sfvrsn=2>
- Biddle, N 2009, *Ranking regions: Revisiting an index of relative Indigenous socio-economic outcomes*, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.
- Biddle, N 2011a, *Measures of Indigenous wellbeing and their determinants across the lifecourse*, 2011 CAEPR Online Lecture Series viewed 24/11/2014, <http://caepr.anu.edu.au/population/lectures2011.php>.
- Biddle, N 2011b, 'Physical and mental health—Lecture 3, *Measures of Indigenous Wellbeing and Their Determinants Across the Lifecourse*, 2011 CAEPR Lecture Series', Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.
- Biddle, N 2013, *CAEPR Indigenous Population Project 2011 Census Papers*, Paper 11—Income.
- Biddle, N 2014a, 'Developing a behavioural model of school attendance: policy implications for Indigenous children and youth'.
- Biddle, N 2014b, 'Explaining Indigenous educational success: Towards a coherent model of participation, attendance and attainment', Presentation to the Department of Prime Minister and Cabinet, Canberra, 28th March 2014.
- Biddle, N, Howlett, M, Hunter, B & Paradies, Y 2013, 'Labour market and other discrimination facing Indigenous Australian', *Australian Journal of Labour Economics*, vol. 16, no. 1, p. 91.
- Biddle, N, Yap, M & Gray, M 2013, *CAEPR Indigenous Population Project 2011 Census Papers*, Paper no. 6, Centre for Aboriginal Economic Policy Research, ANU:Canberra.
- Black, A 2007, *Evidence of effective interventions to improve the social and environmental factors impacting on health: Informing the development of Indigenous Community Agreements*, Department of Health and Ageing:Canberra.
- Bodenheimer, T, Lorig, K, Holman, H & Grumbach, K 2002, 'Patient self-management of chronic disease in primary care', *JAMA: the Journal of the American Medical Association*, vol. 288, no. 19, p. 2469.
- Bodkin-Andrews, G & Craven, R 'Session H-Bubalamai Bawa Gumada (Healing the Wounds of the Heart): The search for resiliency against racism for Aboriginal Australian students', Australian Council for Educational Research
- Bond, C, Brough, M, Spurling, G & Hayman, N 2012, '“It had to be my choice” Indigenous smoking cessation and negotiations of risk, resistance and resilience', *Health, Risk & Society*, vol. 14, no. 6, pp. 565–81.
- Booth, A & Carroll, N 2005, *The health status of Indigenous and non-Indigenous Australians*, Centre for Economic Policy Research, Australian National University, Canberra.
- Borland, J & Hunter, B 2000, 'Does crime affect employment status? The case of Indigenous Australians', *Economica*, vol. 67, no. 265, pp. 123–44.
- Bowden, F, Tabrizi, S, Garland, S & Fairley, C 2002, 'MJA Practice Essentials—Infectious Diseases 6: Sexually transmitted infections: new diagnostic approaches and treatments', *Medical Journal of Australia*, vol. 176, no. 11, pp. 551–7.
- Boyle, CA, Decoufle, P & Yeargin-Allsopp, M 1994, 'Prevalence and health impact of developmental disabilities in US children', *Pediatrics*, vol. 93, no. 3, pp. 399–403.
- Bradshaw, PJ, Alfonso, HS, Finn, J, Owen, J & Thompson, PL 2010, 'A comparison of coronary heart disease event rates among urban Australian Aboriginal people and a matched non-Aboriginal population', *Journal of epidemiology and community health*, p. jech. 2009.098343.
- Bradshaw, PJ, Alfonso, HS, Finn, JC, Owen, J & Thompson, PL 2009, 'Coronary heart disease events in Aboriginal Australians: incidence in an urban population', *Medical Journal of Australia*, vol. 190, no. 10, pp. 583–6.
- Bridge, P 2011, *Ord Valley Aboriginal Health Service's fetal alcohol spectrum disorders program: Big steps, solid outcome*, Australian Indigenous HealthInfoNet.
- Bromfield, L & Higgins, D 2004, 'The limitations of using statutory child protection data for research into child maltreatment', *Australian Social Work*, vol. 57, no. 1, pp. 19–30.
- Brown, A 2010, 'Acute coronary syndromes in Indigenous Australians: opportunities for improving outcomes across the continuum of care', *Heart, Lung and Circulation*, vol. 19, no. 5, pp. 325–36.
- Bull, F, Bauman, A, Bellew, B & Brown, W 2004, *Getting Australia Active II: An update of evidence on physical activity for health*, National Public Health Partnership:Melbourne.
- Bunker, J 2014, 'Hypertension: diagnosis, assessment and management', *Nursing Standard*, vol. 28, no. 42, pp. 50–9.



- Burgess, C, Johnston, F, Berry, H, McDonnell, J, Yibarbuk, D, Gunabarra, C, Mileran, A & Bailie, R 2009, 'Healthy country, healthy people: the relationship between Indigenous health and "caring for country"', *Medical Journal of Australia*, vol. 190, no. 10, pp. 567–72.
- Burgess, M 2003, 'Immunisation: a public health success', *New South Wales Public Health Bulletin*, vol. 14, no. 1–2, pp. 1–5.
- Burns J & Thomson N 2013, 'Review of ear health and hearing among Indigenous Australians', *Indigenous HealthInfoNet*.
- Burns, L, Breen, C, Bower, C, O'Leary, C & Elliott, EJ 2013, 'Counting fetal alcohol spectrum disorder in Australia: The evidence and the challenges', *Drug and alcohol review*, vol. 32, no. 5, pp. 461–7.
- Burrow, S, Galloway, A & Weisssofner, N 2009, 'Review of educational and other approaches to hearing loss among Indigenous people', *Aust Indigenous Health Bull*, vol. 2, no. 1.
- Cabinet, DotPMa 2014, *The Forrest Review: Creating Parity*, PMC:Canberra.
- Cable, N 2014, 'Life Course Approach in Social Epidemiology: An Overview, Application and Future Implications', *Journal of Epidemiology*, vol. 24, no. 5, p. 347.
- Cai, L & Kalb, G 2007, 'Health status and labour force status of older working-age Australian men', *Australian Journal of Labour Economics*, vol. 10, no. 4, p. 227.
- Campbell, N, McAllister, L & Eley, D 2012, 'The influence of motivation in recruitment and retention of rural and remote allied health professionals: a literature review', *Rural and Remote Health*, vol. 12.
- Campbell, S, Lynch, J, Esterman, A & McDermott, R 2011, 'Pregnancy predictors linked to miscarriage among Aboriginal and Torres Strait Islander women in North Queensland', *Australian and New Zealand Journal of Public Health*, vol. 35, no. 4, pp. 343–51.
- Cancer Australia 2012, *Study of breast cancer screening characteristics and breast cancer survival in Aboriginal and Torres Strait Islander women of Australia*, Cancer Australia:Surry Hills, NSW.
- Canuto, K, McDermott, R, Cargo, M & Esterman, A 2011, 'Study protocol: a pragmatic randomised controlled trial of a 12-week physical activity and nutritional education program for overweight Aboriginal and Torres Strait Islander women', *BMC public health*, vol. 11, no. 655, pp. 1–10.
- Carson, K, Jayasinghe, H, Smith, B, Newchurch, J, Brinn, M, Veale, A, Peters, M, Esterman, A & Singh, K 2014, 'Smoking cessation and tobacco prevention in Indigenous populations', *Evidence Base*, no. 3.
- Carson, KV, Brinn, MP, Peters, M, Veale, A, Esterman, AJ & Smith, BJ 2012, 'Interventions for smoking cessation in Indigenous populations', *Cochrane database of systematic reviews*, vol. 18, no. 1.
- Cass, A, Cunningham, J, Snelling, P, Wang, Z & Hoy, W 2003, 'Renal transplantation for Indigenous Australians: identifying the barriers to equitable access', *Ethnicity and Health*, vol. 8, no. 2, pp. 111–19.
- Catto, M & Thomson, N 2008, *Review of illicit drug use among Indigenous peoples*, viewed 28/11/2014, <<http://www.healthinfonet.ecu.edu.au/health-risks/illicit-drugs/reviews/our-review>>.
- Centers for Disease Control and Prevention 2008, *Recommendations for identification and public health management of persons with chronic hepatitis B virus infection*. National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of Viral Hepatitis.
- Chandola, T & Jenkins, A 2014, *The scope of adult and further education for reducing health inequalities*, (Vision2020uk.org.uk, chairman), "If you could do one thing..." *Nine local actions to reduce health inequalities*, London.
- Chandola, T, Plewis, I, Morris, JM, Mishra, G & Blane, D 2011, 'Is adult education associated with reduced coronary heart disease risk?', *International Journal of Epidemiology*, vol. 40, no. 6, pp. 1499–509.
- Chondur, R, Li, SQ, Guthridge, S & Lawton, P 2014, 'Does relative remoteness affect chronic disease outcomes? Geographic variation in chronic disease mortality in Australia, 2002–2006', *Australian and New Zealand Journal of Public Health*, vol. 38, no. 2, pp. 117–21.
- Christou, A, Katzenellenbogen, J & Thompson, S 2010, 'Australia's national bowel cancer screening program: does it work for Indigenous Australians?', *BMC public health*, vol. 10, no. 373, p. 21.
- Clark, A, Morgan, WH, Kain, S, Farah, H, Armstrong, K, Preen, D, Semmens, JB & Yu, DY 2010, 'Diabetic retinopathy and the major causes of vision loss in Aboriginals from remote Western Australia', *Clinical & Experimental Ophthalmology*, vol. 38, no. 5, pp. 475–82.
- Clark, ML & Utz, SW 2014, 'Social determinants of type 2 diabetes and health in the United States', *World journal of diabetes*, vol. 5, no. 3, p. 296.
- Clough, AR, Guyula, T, Yunupingu, M & Burns, CB 2002, 'Diversity of substance use in eastern Arnhem Land (Australia): patterns and recent changes', *Drug and alcohol review*, vol. 21, no. 4, pp. 349–56.
- Coates, H 2009, 'Current management of otitis media in Australia', *Medical Journal of Australia*, vol. 191, no. 9, p. S37.
- Colley, J 1974, 'Respiratory symptoms in children and parental smoking and phlegm production', *British Medical Journal*, vol. 2, no. 5912, pp. 201–4.
- Collins, DJ & Lapsley, HM 2008, *The costs of tobacco, alcohol and illicit drug abuse to Australian society in 2004/05*, Department of Health and Ageing:Canberra.
- Comino, EJ, Titmuss, A, Harris, E, Craig, P & Pulver, LJ 2007, 'Identification of Aboriginal infants at an urban hospital', *Journal of Paediatrics and Child Health*, vol. 43, no. 9, pp. 623–6.
- Commission on Social Determinants of Health 2007, *An overview of the current knowledge of the social determinants of Indigenous health*, World Health Organization, Geneva.



- Commonwealth of Australia 2014, *Australian Early Development Census 2012 Summary Report*, Canberra.
- Condon, JR, Armstrong, BK, Barnes, A & Cunningham, J 2003, 'Cancer in Indigenous Australians: a review', *Cancer Causes and Control*, vol. 14, no. 2, pp. 109–21.
- Condon, JR, Cunningham, J, Barnes, T, Armstrong, BK & Selva-Nayagam, S 2006, 'Cancer diagnosis and treatment in the Northern Territory: assessing health service performance for indigenous Australians', *Internal medicine journal*, vol. 36, no. 8, pp. 498–505.
- Conti, G, Heckman, J & Urzua, S 2010, 'The Education-Health Gradient', *American Economic Review*, vol. 100, no. 2, pp. 234–38.
- Coory, MD & Walsh, WF 2005, 'Rates of percutaneous coronary interventions and bypass surgery after acute myocardial infarction in Indigenous patients', *Medical Journal of Australia*, vol. 182, no. 10, pp. 507–12.
- Cosh, S, Hawkins, K, Skaczkowski, G, Copley, D & Bowden, J 2014, 'Tobacco-use amongst urban Aboriginal Australian young people: a qualitative study of reasons for smoking, barriers to cessation, and motivators for smoking cessation', *Australian Journal of Primary Health*.
- Council of Australian Governments 2008, *National Indigenous Reform Agreement (Closing the Gap)*, COAG, 10/10/2012, www.federalfinancialrelations.gov.au/content/national_agreements/indigenous_reform/National_Indigenous_Reform_Agreement_from_13_Feb_11.pdf.
- Council of Australian Governments 2009, *Protecting children is everyone's business: National framework for protecting Australia's children 2009–2020*, COAG, 10/10/2012, www.fahcsia.gov.au/sites/default/files/documents/child_protection_framework.pdf.
- Council of Australian Governments 2014, *Communique: Council of Australian Governments Meeting 2 May 2014*, COAG, Viewed 23/10/2014, www.coag.gov.au/sites/default/files/COAG%20communique%202%20May%20-%20final%201300.pdf.
- Couzos, S & Murray, R 1999, *Aboriginal primary health care: an evidence-based approach (second edition)*, Oxford University Press, Melbourne.
- Couzos, S, Murray, RB & Metcalf, S 2001, *Systematic review of existing evidence and primary care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander populations*, Indigenous and Public Health Media Unit, Commonwealth Department of Health and Aged Care.
- Craig, ME, Femia, G, Broyda, V, Lloyd, M & Howard, NJ 2007, 'Type 2 diabetes in Indigenous and non-Indigenous children and adolescents in New South Wales', *Medical Journal of Australia*, vol. 186, no. 10, p. 497.
- Cramb, S, Garvey, G, Valery, PC, Williamson, JD & Baade, PD 2012, 'The first year counts: cancer survival among Indigenous and non-Indigenous Queenslanders, 1997–2006', *Medical Journal of Australia*, vol. 196, no. 4, pp. 270–74.
- Crane, J, Keough, M, Murphy, P, Burrage, L & Hutchens, D 2011, 'Effects of environmental tobacco smoke on perinatal outcomes: a retrospective cohort study', *BJOG: An International Journal of Obstetrics & Gynaecology*, vol. 118, no. 7, pp. 865–71.
- Cunningham, J 2002, 'Diagnostic and therapeutic procedures among Australian hospital patients identified as Indigenous', *Medical Journal of Australia*, vol. 176, no. 2, pp. 58–62.
- Cunningham, J 2010, 'Socio-economic gradients in self-reported diabetes for Indigenous and non-Indigenous Australians aged 18–64', *Australian and New Zealand Journal of Public Health*, vol. 34, pp. S18–S24.
- Cunningham, J & Paradies, YC 2013, 'Patterns and correlates of self-reported racial discrimination among Australian Aboriginal and Torres Strait Islander adults, 2008–09: analysis of national survey data', *International journal for equity in health*, vol. 12, no. 1, p. 47.
- Cunningham, J, Rumbold, A, Zhang, X & Condon, J 2008, 'Incidence, aetiology, and outcomes of cancer in Indigenous peoples in Australia', *Lancet Oncol*, vol. 9, no. 6, pp. 585–95.
- d'Abbs, P & Shaw, G 2013, *Monitoring trends in prevalence of petrol sniffing in selected Aboriginal communities: an interim report*, A report prepared for the Department of Health and Ageing, Menzies School of Health Research:Canberra.
- Davis, T, McAullay, D, Davis, W & Bruce, D 2007, 'Characteristics and outcome of type 2 diabetes in urban Aboriginal people: the Fremantle Diabetes Study', *Internal medicine journal*, vol. 37, no. 1, pp. 59–63.
- Day, A, Francisco, A & Jones, R 2013, *Programs to improve interpersonal safety in Indigenous communities: evidence and issues*, Closing the gap clearinghouse, Australian Institute of Family Studies: Australian Government, Canberra.
- de Alcántara, C 1998, 'Uses and abuses of the concept of governance', *International Social Science Journal*, vol. 50, no. 155, pp. 105–13.
- de Costa, CM & Wenitong, M 2009, 'Could the Baby Bonus be a bonus for babies?', *Medical Journal of Australia*, vol. 190, no. 5, pp. 242–3.
- De Maio, J, Zubrick, S, Silburn, S, Lawrence, D, Mitrou, F, Dalby, R, Blair, E, Griffin, J, Milroy, H & Cox, A 2005, *The Western Australian Aboriginal Child Health Survey: Measuring the social and emotional wellbeing of Aboriginal children and inter-generational effects of forced separation*, Curtin University of Technology and Telethon Institute for Child Health Research:Perth.
- Deeble, J 2009, *Assessing the health service use of Aboriginal and Torres Strait Islander peoples*, National Health and Hospitals Reform Commission, Canberra.
- Delpierre, C, Lauwers-Cances, V, Datta, G, Lang, T & Berkman, L 2009, 'Using self-rated health for analysing social inequalities in health: a risk for underestimating the gap between socio-economic groups?', *Journal of epidemiology and community health*, vol. 63, no. 6, pp. 426–32.



- Denney-Wilson, E, Robinson, A, Laws, R & Harris, MF 2014, 'Development and feasibility of a child obesity prevention intervention in general practice: The Healthy 4 Life pilot study', *Journal of Paediatrics and Child Health*, vol. 50, no. 11, pp. 890–894.
- Dennis, SM, Zwar, N, Griffiths, R, Roland, M, Hasan, I, Davies, GP & Harris, M 2008, 'Chronic disease management in primary care: from evidence to policy', *Medical Journal of Australia*, vol. 188, no. 8, p. 53.
- Department of Families, H, Community Services and Indigenous Affairs 2012, *Cape York Welfare Reform Evaluation*, FaHCSIA:Canberra.
- Department of Family and Community Services 2003, *National Indigenous Housing Guide. 2nd edn.*, Department of Family and Community Services, Canberra.
- Department of Health (Australian Government) 2014, *Australia's Physical Activity and Sedentary Behaviour Guidelines*, viewed 1/12/2014, www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-strateg-phys-act-guidelines.
- Department of Health (Australian Government) and ORIMA Research 2013a, *Indigenous Anti-Smoking Campaign: Break the Chain—Quantitative Campaign Effectiveness*, www.quitnow.gov.au/internet/quitnow/publishing.nsf/Content/btc-indsurvey-execsumm.
- Department of Health (Australian Government) and ORIMA Research 2013b, *National Tobacco Campaign – More Targeted Approach—Evaluation of Burst 2 of the Quit for You Quit for Two Campaign.*, www.quitnow.gov.au/internet/quitnow/publishing.nsf/Content/btc-indsurvey-execsumm.
- Department of Health and Aged Care (Australian Government) 2001, *Better health care: studies in the successful delivery of primary health care services for Aboriginal and Torres Strait Islander Australians*, Canberra.
- Department of Health and Ageing (Australian Government) 2009, *Evaluation of the BreastScreen Australia Program – Evaluation Final Report*, Screening Monograph No.1/2009, DoHA:Canberra.
- Department of Health and Ageing (Australian Government) 2013, 'Evaluation of the National Indigenous Ear Health Campaign—Final Report. Prepared by Cultural & Indigenous Research Centre Australia.', DoHA, Canberra.
- Department of Health WA 2008, *Analysis of the WA Hospital Morbidity Data System*, Perth.
- Department of Social Services 2014, *Footprints in Time: the Longitudinal Study of Indigenous Children – Report from Wave 5*, DSS, Canberra.
- Devitt, J, Cass, A, Cunningham, J, Preece, C, Anderson, K & Snelling, P 2008, 'Study Protocol—Improving Access to Kidney Transplants (IMPAKT): A detailed account of a qualitative study investigating barriers to transplant for Australian Indigenous people with end-stage kidney disease', *BMC Health Services Research*, vol. 8, no. 1, p. 31.
- Dietitians Association of Australia 2013, *Food Security for Aboriginal and Torres Strait Islander peoples Policy*, DAA:Canberra.
- Dockery, A 2011, *Traditional Culture and the Wellbeing of Indigenous Australians: An analysis of the 2008 NATSISS, CLMR Discussion Paper Series 2011*, Centre for Labour Market Research, Curtin University, Perth.
- Dockery, AM, Ong, R, Colquhoun, S, Li, J & Kendall, G 2013, 'Housing and children's development and wellbeing: evidence from Australian data'.
- Dodson, M & Smith, D 2003, *Governance for sustainable development: Strategic issues and principles for Indigenous Australian communities*, Centre for Aboriginal Economic Policy Research, Australian National University:Canberra.
- Dong, M, Giles, WH, Felitti, VJ, Dube, SR, Williams, JE, Chapman, DP & Anda, RF 2004, 'Insights into causal pathways for ischemic heart disease adverse childhood experiences study', *Circulation*, vol. 110, no. 13, pp. 1761–6.
- Drewnowski, A & Specter, S 2004, 'Poverty and obesity: the role of energy density and energy costs', *The American Journal of Clinical Nutrition*, vol. 79, no. 1, p. 6.
- DSI Consulting Pty Ltd & Benham, D 2009, *An investigation of the effect of socio-economic factors on the Indigenous life expectancy gap*, DSI Consulting Pty Ltd.
- Dudgeon, P, Cox, K, D'Anna, D, Dunkley, C, Hams, K, Kelly, K, Scrine, C & Walker, R 2012, 'Hear our voices: community consultations for the development of an empowerment, healing and leadership program for Aboriginal people living in the Kimberley, Western Australia: final research report', *Australian Indigenous Health Bulletin*, vol. 12, no. 3.
- Dudgeon, P, Wright, M & Coffin, J 2010, 'Talking It and Walking It: Cultural Competence', *Journal of Australian Indigenous Issues*, vol. 13, no. 3, pp. 29–44.
- Duvivier, BM, Schaper, NC, Bremers, MA, van Crombrugge, G, Menheere, PP, Kars, M & Savelberg, HH 2013, 'Minimal intensity physical activity (standing and walking) of longer duration improves insulin action and plasma lipids more than shorter periods of moderate to vigorous exercise (cycling) in sedentary subjects when energy expenditure is comparable', *PLOS One*, vol. 8, no. 2, p. e55542.
- Dwyer, J, Silburn, K & Willson, G 2004, *National Strategies for Improving Indigenous Health and Health Care*, Aboriginal and Torres Strait Islander Primary Health Care Review: Consultant Report no.1, Office for Aboriginal and Torres Strait Islander Health:Canberra.
- Eades, D 2013, 'They don't speak an Aboriginal language, or do they?', in Diana Eades (ed), *Aboriginal ways of using English*, Aboriginal Studies Press, Canberra, ACT, pp. 56–75.
- Eades, S 2004, *Maternal and Child Health Care Services: Actions in the Primary Health Care Setting to Improve the Health of Aboriginal and Torres Strait Islander Women of Childbearing age, Infants and Young Children*, Aboriginal and Torres Strait Islander Primary Health Care Review: Consultant Report no. 6, Menzies School of Health Research:Casuarina, NT.



- Eades, S, Read, AW, Stanley, FJ, Eades, FN, McCaullay, D & Williamson, A 2008, 'Bibbulung Gnarnep ('solid kid'): causal pathways to poor birth outcomes in an urban Aboriginal birth cohort', *Journal of Paediatrics and Child Health*, vol. 44, no. 6, pp. 342–6.
- Eades, SJ, Sanson-Fisher, RW, Wenitong, M, Panaretto, K, D'Este, C, Gilligan, C & Stewart, J 2012, 'An intensive smoking intervention for pregnant Aboriginal and Torres Strait Islander women: a randomised controlled trial', *Medical Journal of Australia*, vol. 197, no. 1, p. 42.
- Edwards, J & Moffat, CD 2014, 'Otitis media in remote communities', *Australian Nursing & Midwifery Journal*, vol. 21, no. 9, p. 28.
- Egger, G & Dixon, J 2014, 'Beyond Obesity and Lifestyle: A Review of 21st Century Chronic Disease Determinants', *BioMed research international*, vol. 2014.
- Ekblom-Bak, E, Ekblom, B, Vikström, M, de Faire, U & Hellénus, M-L 2014, 'The importance of non-exercise physical activity for cardiovascular health and longevity', *British journal of sports medicine*, vol. 48, no. 3, pp. 233–8.
- England, LJ, Levine, RJ, Qian, C, Soule, LM, Schisterman, EF, Kai, FY & Catalano, PM 2004, 'Glucose tolerance and risk of gestational diabetes mellitus in nulliparous women who smoke during pregnancy', *American Journal of Epidemiology*, vol. 160, no. 12, pp. 1205–13.
- Espey, DK, Jim, MA, Cobb, N, Bartholomew, M, Becker, T, Haverkamp, D & Plescia, M 2014, 'Leading causes of death and all-cause mortality in American Indians and Alaska Natives', *American journal of public health*, vol. 104, no. S3, pp. S303–S11.
- Exum, ML 2006, 'Alcohol and aggression: An integration of findings from experimental studies', *Journal of Criminal Justice*, vol. 34, no. 2, pp. 131–45.
- Fairley, CK & Hocking, JS 2012, 'Sexual health in Indigenous communities', *Medical Journal of Australia*, vol. 197, no. 11, p. 597.
- Ferdinand, A, Paradies, Y & Kelahe, M 2012, 'Mental Health Impacts of Racial Discrimination in Victorian Aboriginal Communities', *VicHealth: Melbourne, Australia*.
- Ferdinand, A, Paradies, Y & Kelahe, M 2013, *Mental Health Impacts of Racial Discrimination in Victorian Aboriginal Communities: The Localities Embracing and Accepting Diversity (LEAD) Experiences of Racism Survey*.
- Fergusson, DM & Horwood, LJ 2000, 'Alcohol abuse and crime: a fixed-effects regression analysis', *Addiction*, vol. 95, no. 10, pp. 1525–36.
- Fisher, D & Weeramanthri, T 2002, 'Hospital care for Aboriginals and Torres Strait Islanders: appropriateness and decision making', *Medical Journal of Australia*, vol. 176, no. 2, pp. 49–50.
- Fitts, MS, Palk, GR & Jacups, SP 'Alcohol restrictions and drink driving in remote Indigenous communities in Queensland, Australia' in Proceedings of the 23rd Canadian Multidisciplinary Road Safety Conference, Montreal, Canada.
- Fitzpatrick, JP, Elliott, EJ, Latimer, J, Carter, M, Oscar, J, Ferreira, M, Olson, HC, Lucas, B, Doney, R & Salter, C 2012, 'The Lillilwan Project: study protocol for a population-based active case ascertainment study of the prevalence of fetal alcohol spectrum disorders (FASD) in remote Australian Aboriginal communities', *BMJ open*, vol. 2, no. 3.
- Ford, P, Cramb, S & Farah, C 2014, 'Oral health impacts and quality of life in an urban homeless population', *Australian Dental Journal*, vol. 59, no. 2, pp. 234–9.
- Forrest, CB & Starfield, B 1996, 'The effect of first-contact care with primary care clinicians on ambulatory health care expenditures', *Journal of Family Practice*, vol. 43, no. 1, pp. 40–8.
- France, K, Henley, N, Payne, J, D'Antoine, H, Bartu, A, O'Leary, C, Elliott, E & Bower, C 2010, 'Health professionals addressing alcohol use with pregnant women in Western Australia: barriers and strategies for communication', *Substance Use & Misuse*, vol. 45, no. 10, pp. 1474–90.
- Franks, C 2006, 'Gallinella: a town of substance? A descriptive study of alcohol, tobacco, medicines and other drug use in a rural setting', *Rural and Remote Health*, vol. 6, no. 2, p. 491.
- Freeman, T, Edwards, T, Baum, F, Lawless, A, Jolley, G, Javanparast, S & Francis, T 2014, 'Cultural respect strategies in Australian Aboriginal primary health care services: beyond education and training of practitioners', *Australian and New Zealand Journal of Public Health*, vol. 38, no. 4, pp. 355–61.
- Freemantle, J, Ritte, R, Smith, K, Iskandar, D, Cutler, T, Heffernan, B, Zhong, G, Mensah, F & Read, A 2014, *Victorian Aboriginal Child Mortality Study: patterns, trends and disparities in mortality between Aboriginal and Non-Aboriginal infants and children, 1999–2008*, The Lowitja Institute, Melbourne.
- Gakidou, E, Cowling, K, Lozano, R & Murray, CJL 2010, 'Increased educational attainment and its effect on child mortality in 175 countries between 1970 and 2009: a systematic analysis', *The Lancet*, vol. 376, no. 9745, pp. 959–74.
- Gall, S, Huynh, QL, Magnussen, CG, Juonala, M, Viikari, JS, Kähönen, M, Dwyer, T, Raitakari, OT & Venn, A 2014, 'Exposure to parental smoking in childhood or adolescence is associated with increased carotid intima-media thickness in young adults: evidence from the Cardiovascular Risk in Young Finns study and the Childhood Determinants of Adult Health Study', *European heart journal*, p. ehu049.
- Gee, G & Walsemann, K 2009, 'Does health predict the reporting of racial discrimination or do reports of discrimination predict health? Findings from the National Longitudinal Study of Youth', *Social Science & Medicine*, vol. 69, no. 9, pp. 1676–84.
- Gibson, O & Segal, L 2009, 'Avoidable hospitalisation in Aboriginal and non-Aboriginal people in the Northern Territory', *Medical Journal of Australia*, vol. 191, no. 1, p. 411.



- Gilligan, C, Sanson-Fisher, RW, Eades, S, Wenitong, M, Panaretto, K & D'Este, C 2010, 'Assessing the accuracy of self-reported smoking status and impact of passive smoke exposure among pregnant Aboriginal and Torres Strait Islander women using cotinine biochemical validation', *Drug and Alcohol Review*, vol. 29, no. 1, pp. 35–40.
- Goodwin, V & Davis, B 2011, 'Crime families: Gender and the inter-generational transfer of criminal tendencies', *Trends and Issues in Crime and Criminal Justice*, no. 414, p. 1.
- Gould, GS, McEwen, A & Munn, J 2011, 'Jumping the Hurdles for Smoking Cessation in Pregnant Aboriginal and Torres Strait Islander Women in Australia', *Journal of Smoking Cessation*, vol. 6, no. 1, p. 33.
- Gould, GS, Munn, J, Watters, T, McEwen, A & Clough, AR 2013, 'Knowledge and views about maternal tobacco smoking and barriers for cessation in Aboriginal and Torres Strait Islanders: a systematic review and meta-ethnography', *Nicotine & Tobacco Research*, vol. 15, no. 5, pp. 863–74.
- Graham, S, Guy, RJ, Donovan, B, McManus, H, El-Hayek, C & Kwan, K 2012, 'Epidemiology of chlamydia and gonorrhea among Indigenous and non-Indigenous Australians, 2000–2009', *Medical Journal of Australia*, vol. 197, no. 11, pp. 642–6.
- Grau, I, Ardanuy, C, Calatayud, L, Schulze, MH, Liñares, J & Pallares, R 2014, 'Smoking and alcohol abuse are the most preventable risk factors for invasive pneumonia and other pneumococcal infections', *International Journal of Infectious Diseases*.
- Gray, C, Macniven, R & Thomson, N 2013, 'Review of physical activity among Indigenous people', *Diabetes Care*, vol. 23, no. 12, pp. 1794–8.
- Gray, D & Wilkes, E 2010, *Reducing alcohol and other drug related harm*. Resource sheet no. 3. Produced for the Closing the Gap Clearinghouse, Canberra: Australian Institute of Health and Welfare & Melbourne: Australian Institute of Family Studies.
- Gray, M, Hunter, B & Lohar, S 2012, *Increasing Indigenous employment rates*, Closing the gap clearinghouse, Australian Government:Canberra.
- Greenop, K & Memmott, P 2014, '“We are good-hearted people, we like to share”: definitional dilemmas of crowding and homelessness in urban Indigenous Australia'.
- Griew, R 2008, *The link between primary health care and health outcomes for Aboriginal and Torres Strait Islander Australians*.
- Griew, R, Tilton, E, Stewart, J, Eades, S, Lea, T, Peltola, C, Livingstone, L, Harmon, K & Dawkins, Z 2007, *Family Centred Primary Health Care*.
- Gubhaju, L, McNamara, BJ, Banks, E, Joshy, G, Raphael, B, Williamson, A & Eades, SJ 2013, 'The overall health and risk factor profile of Australian Aboriginal and Torres Strait Islander participants from the 45 and up study', *BMC Public Health*, vol. 13, no. 1, p. 661.
- Gunasekera, H, Morris, PS, Daniels, J, Couzos, S & Craig, JC 2009, 'Otitis media in Aboriginal children: the discordance between burden of illness and access to services in rural/remote and urban Australia', *Journal of Paediatrics and Child Health*, vol. 45, no. 7-8, pp. 425–30.
- Guthridge, SL, Ryan, P, Condon, JR, Moss, JR & Lynch, J 2014, 'Trends in hospital admissions for conditions associated with child maltreatment, Northern Territory, 1999–2010', *Medical Journal of Australia*, vol. 201, pp. 162–6.
- Hall, J 2013, 'Communication disorders and indigenous Australians: a synthesis and critique of the available literature', Bachelor of Speech Pathology (Honours), Edith Cowan University.
- Hall, SE, Bulsara, CE, Bulsara, MK, Leahy, TG, Culbong, MR, Hendrie, D & Holman, C 2004, 'Treatment patterns for cancer in Western Australia: does being Indigenous make a difference?', *Medical Journal of Australia*, vol. 181, no. 4, pp. 191–4.
- Hancock, KJ, Shepherd, CC, Lawrence, D & Zubrick, SR 2013, *Student Attendance and Educational Outcomes: Every Day Counts*, Telethon Institute for Child Health Research.
- Hardy, LL, O'Hara, BJ, Hector, D, Engelen, L & Eades, SJ 2014, 'Temporal trends in weight and current weight-related behaviour of Australian Aboriginal school-aged children', *The Medical Journal of Australia*, vol. 200, no. 11, pp. 667–71.
- Harlap, S & Davies, AM 1974, 'Infant admissions to hospital and maternal smoking', *The Lancet*, vol. 303, no. 7857, pp. 529–32.
- Harrison, L, Goldfield, S, Eliza, M & Moore, T 2012, *Early learning programs that promote children's developmental and educational outcomes*, AIHW:Canberra.
- Hawes, DJ & Dadds, MR 2004, 'Australian data and psychometric properties of the Strengths and Difficulties Questionnaire', *Australian and New Zealand Journal of Psychiatry*, vol. 38, no. 8, pp. 644–51.
- Hawkes, DC 2001, 'Indigenous peoples: self-government and intergovernmental relations', *International Social Science Journal*, vol. 53, no. 167, pp. 153–61.
- Hayman, N 1999, 'The poor health status of Aboriginal and Torres Strait Islander peoples: Can more Indigenous doctors make a difference?', *New Doctor*, no. 70, pp. 19–21.
- Hayman, NE, White, NE & Spurling, GK 2009, 'Improving Indigenous patients' access to mainstream health services: the Inala experience', *Medical Journal of Australia*, vol. 190, no. 10, pp. 604–6.
- Haysom, L, Indig, D, Moore, E & Gaskin, C 2014, 'Intellectual disability in young people in custody in New South Wales, Australia—prevalence and markers', *Journal of Intellectual Disability Research*.
- Haysom, L, Indig, D, Moore, E, Hardy, LL & van den Dolder, PA 2013, 'Prevalence and perceptions of overweight and obesity in Aboriginal and non-Aboriginal young people in custody', *Medical Journal of Australia*, vol. 19, no. 199, pp. 266–70.
- Hearn, S, Nancarrow, H, Rose, M, Massi, L, Wise, M, Conigrave, K, Barnes, I & Bauman, A 2011, 'Evaluating NSW SmokeCheck: a culturally specific smoking cessation training program for health professionals working in Aboriginal health', *Health Promotion Journal of Australia*, vol. 22, no. 3, p. 189.



- Helps, Y, Moodie, D & Warman, G 2010, 'Aboriginal People Travelling Well: Community Report'.
- Henley, G & Harrison, J 2013, *Injury of Aboriginal and Torres Strait Islander people due to transport: 2005–06 to 2009–10. Injury research and statistics series 85*, Cat. no. INJCAT 161, AIHW:Canberra.
- Herceg, A 2005, *Improving health in Aboriginal and Torres Strait Islander mothers, babies and young children: a literature review*, Office for Aboriginal and Torres Strait Islander Health, Commonwealth Department of Health and Ageing, Canberra, 10/10/2012.
- Hernandez, SE, Conrad, DA, Marcus-Smith, MS, Reed, P & Watts, C 2012, 'Patient-centered innovation in health care organizations: A conceptual framework and case study application', *Health Care Management Review*.
- Higgins, D 2010, *Community development approaches to safety and wellbeing of Indigenous children*, (Closing the Gap Clearinghouse, chairman), Resource Sheet No.1, Australian Institute of Health and Welfare, Canberra.
- Hirayama, T 1981, 'Non-smoking wives of heavy smokers have a higher risk of lung cancer: a study from Japan', *British Medical Journal (Clinical Research Edition)*, vol. 282, no. 6259, pp. 183–5.
- Hollander, M, Kadlec, H, Hamdi, R & Tessaro, A 2009, 'Increasing value for money in the Canadian health-care system: new findings on the contribution of primary care services', *Health-care quarterly (Toronto, Ont.)*, vol. 12, no. 4, p. 32.
- Holmes, MD, Chen, WY, Feskanich, D, Kroenke, CH & Colditz, GA 2005, 'Physical activity and survival after breast cancer diagnosis', *Jama*, vol. 293, no. 20, pp. 2479–86.
- Hopkins, S 2014, 'A visual profile of Queensland indigenous and non-Indigenous school children, and the association between vision and reading'. Unpublished Doctor of Philosophy thesis, Queensland University of Technology: Brisbane in *Australian Indigenous Health Bulletin* Vol 14 No 2, April 2014 – June 2014
- Howlett, M, Gray, M & Hunter, B 2015, *Unpacking the income of Indigenous and non-Indigenous Australians: Wages, government payments and other income*, Working Paper 99, CAEPR:Canberra.
- Hoy, W, Baker, P, Kelly, A & Wang, Z 2000, 'Reducing premature death and renal failure in Australian Aboriginals', *Medical Journal of Australia*, vol. 172, no. 10, pp. 473–8.
- Hoy, W, Kelly, A, Jacups, S, McKendry, K, Baker, P, MacDonald, S, Wang, Z, Punguatji, N, Kerinauia, J & Tipiloura, E 1999, 'Stemming the tide: reducing cardiovascular disease and renal failure in Australian Aborigines*', *Internal Medicine Journal*, vol. 29, no. 3, pp. 480–3.
- Hoy, W & Nicol, J 2010, 'Birthweight and natural deaths in a remote Australian Aboriginal community', *Medical Journal of Australia*, vol. 192, no. 1, pp. 14–9.
- Hoy, WE, Kondalsamy-Chennakesavan, S, Wang, Z, Briganti, E, Shaw, J, Polkinghorne, K & Chadban, S 2007, 'Quantifying the excess risk for proteinuria, hypertension and diabetes in Australian Aborigines: comparison of profiles in three remote communities in the Northern Territory with those in the AusDiab study', *Australian and New Zealand Journal of Public Health*, vol. 31, no. 2, pp. 177–83.
- Human Rights & Equal Opportunity Commission 1997, *Bringing Them Home: Report of the National Inquiry into the Separation of Aboriginal and Torres Strait Islander Children from their Families*, Sydney, 10/10/2012, www.hreoc.gov.au/social_justice/bth_report/report/index.html.
- Hunter, B & Yap, M 2014, 'Income, work and education: insights for closing the gap in urban Australia'.
- Hunter, E 2007, 'Disadvantage and discontent: A review of issues relevant to the mental health of rural and remote Indigenous Australians', *Australian Journal of Rural Health*, vol. 15, no. 2, pp. 88–93.
- Indig, D, Vecchiato, C, Haysom, L, Beilby, R, Carter, J, Champion, U, Gaskin, C, Heller, E, Kumar, S, Mamone, N, Muir, P, Van den Dolder, PA & Whitton, G 2011, *2009 NSW Young People in Custody Health Survey: Full Report*, Justice Health, Sydney.
- Indig, D & Wales, NS 2010, *2009 NSW Inmate Health Survey: Key Findings Report*, Justice Health, Sydney.
- Intergovernmental Committee on Drugs (IGCD), Standing Committee on Tobacco, 2012, *National Tobacco Strategy 2012–2018*, Department of Health and Ageing:Canberra.
- Jackson, N & Waters, E 2005, 'Criteria for the systematic review of health promotion and public health interventions', *Health Promotion International*, vol. 20, no. 4, pp. 367–74.
- Jamieson, L, Roberts-Thomson, K & Sayers, S 2010, 'Risk indicators for severe impaired oral health among indigenous Australian young adults', *BMC Oral Health*, vol. 10, no. 1, pp. 1–11.
- Jansen, PW, Mensah, FK, Nicholson, JM & Wake, M 2013, 'Family and Neighbourhood Socio-economic Inequalities in Childhood Trajectories of BMI and Overweight: Longitudinal Study of Australian Children', *PLOS One*.
- Jervis-Bardy, J, Sanchez, L & Carney, A 2014, 'Otitis media in Indigenous Australian children: review of epidemiology and risk factors', *The Journal of Laryngology & Otology*, vol. 128, no. S1, pp. S16–S27.
- Johanson, RP & Hill, P 2011, 'Indigenous health: A role for private general practice', *Australian Family Physician*, vol. 40, no. 1/2.
- Johnston, V, Lea, T & Carapetis, J 2009, 'Joining the dots: The links between education and health and implications for Indigenous children', *Journal of Paediatrics and Child Health*, vol. 45, no. 12, pp. 692–7.
- Johnston, V & Thomas, DP 2008, 'Smoking behaviours in a remote Australian Indigenous community: The influence of family and other factors', *Social Science & Medicine*, vol. 67, no. 11, pp. 1708–16.



- Johnston, V, Thomas, DP, McDonnell, J & Andrews, RM 2011, 'Maternal smoking and smoking in the household during pregnancy and postpartum: findings from an Indigenous cohort in the Northern Territory', *Medical Journal of Australia*, vol. 194, no. 10.
- Jones, C, Kypri, K, Moffatt, S, Borzycki, C & Price, B 2009, 'Impact of Restricted Alcohol Availability on Alcohol-related Violence in Newcastle, NSW, The', *BOCSAR NSW Crime and Justice Bulletins*, p. 23.
- Kahneman, D & Deaton, A 2010, 'High income improves evaluation of life but not emotional well-being', *Proceedings of the National Academy of Sciences*, vol. 107, no. 38, pp. 16489–93.
- Karam, J, Sinclair, G & Rackstraw, L 2014, *Dignity, Diversion, Home and Hope: A Review of Interventions for Volatile Substance Misuse in Regional North Queensland*, Department of the Prime Minister and Cabinet:Canberra.
- Kariminia, A, Butler, T, Jones, J & Law, M 2012, 'Increased mortality among Indigenous persons during and after release from prison in New South Wales', *Australian and New Zealand Journal of Public Health*, vol. 36, no. 3, pp. 274–80.
- Katzenellenbogen, JM, Knuiman, MW, Sanfilippo, FM, Hobbs, MS & Thompson, SC 2014, 'Prevalence of stroke and coexistent conditions: disparities between indigenous and non-Indigenous Western Australians', *International Journal of Stroke*, vol. 9, Supplement A100, pp.61–68.
- Katzmarzyk, PT, Church, TS, Craig, CL & Bouchard, C 2009, 'Sitting time and mortality from all causes, cardiovascular disease, and cancer', *Med Sci Sports Exerc*, vol. 41, no. 5, pp. 998–1005.
- Kavanagh, AM, Krnjacki, L, Beer, A, Lamontagne, AD & Bentley, R 2013, 'Time trends in socio-economic inequalities for women and men with disabilities in Australia: evidence of persisting inequalities', *International Journal of Equity Health*, vol. 12, no. 1, p. 73.
- Kelaher, M, Ferdinand, A & Paradies, Y 2014, 'Experiencing racism in health care: The mental health impacts for Victorian Aboriginal communities', *Medical Journal of Australia*, vol. 201, no. 1, pp. 44–7.
- Kelly-Irving, M, Mabile, L, Grosclaude, P, Lang, T & Delpierre, C 2013, 'The embodiment of adverse childhood experiences and cancer development: potential biological mechanisms and pathways across the life course', *International Journal of Public Health*, vol. 58, no. 1, pp. 3–11.
- Kelly, J, Dwyer, J, Willis, E & Pekarsky, B 2014, 'Travelling to the city for hospital care: access factors in country Aboriginal patient journeys', *Australian Journal of Rural Health*, vol. 22, no. 3, pp. 109–13.
- Kennedy, B, Cornes, S, Martyn, S, Wills, R & Breckell, C 2009, *Measuring Indigenous perinatal outcomes—should we use the Indigenous status of the mother, the father or the baby?*, Technical report no. 2, Health and Statistics Centre, Queensland Health.
- Kennedy, B & Firman, D 2004, *Indigenous SIFA—Revealing the ecological fallacy. Population and society: issues, research, policy*, Australian Population Association:Canberra.
- Khalidi, N, McGill, K, Houweling, H, Arnett, K & Sheahan, A 2012, *Closing the Gap in Low Birthweight Births between Indigenous and Non-Indigenous Mothers, Queensland*, Health Statistics Centre.
- Khan, J, Vesel, L, Bahl, R & Martines, JC 2014, 'Timing of Breastfeeding Initiation and Exclusivity of Breastfeeding During the First Month of Life: Effects on Neonatal Mortality and Morbidity—A Systematic Review and Meta-analysis', *Maternal and child health journal*, pp. 1–12.
- Kingsley, J, Townsend, M, Henderson-Wilson, C & Bolam, B 2013, 'Developing an exploratory framework linking Australian aboriginal peoples' connection to country and concepts of wellbeing', *International journal of environmental research and public health*, vol. 10, no. 2, pp. 678–98.
- Kinner, SA, Preen, DB, Kariminia, A, Butler, T, Andrews, JY, Stoové, M & Law, M 2011, 'Counting the cost: estimating the number of deaths among recently released prisoners in Australia', *Medical Journal of Australia*, vol. 195, no. 2, pp. 64–8.
- Kokkinos, PF, Narayan, P & Papademetriou, V 2001, 'Exercise as hypertension therapy', *Cardiology Clinics*, vol. 19, no. 3, pp. 507–16.
- Kondalsamy-Chennakesavan, S, Hoy, WE, Wang, Z & Shaw, J 2008, 'Quantifying the excess risk of type 2 diabetes by body habitus measurements among Australian aborigines living in remote areas', *Diabetes Care*, vol. 31, no. 3, pp. 585–6.
- Kowanko, I 2012, *Chronic condition management strategies in Aboriginal communities: final report 2011*, Flinders University and the Aboriginal Health Council of South Australia.
- KPMG 2014, *National Monitoring and Evaluation of the Indigenous Chronic Disease Package: Summary report 2009–2013*, Department of Health (Australian Government):Canberra.
- Kratzmann, M, Mitchell, E, Ware, J, Banach, L, Ward, J & Ryan, J 2011, *Injecting drug use and associated harms among Aboriginal Australians*, Australian National Council on Drugs Canberra.
- Kruger, E, Perera, I & Tennant, M 2010, 'Primary oral health service provision in Aboriginal Medical Services-based dental clinics in Western Australia', *Australian Journal of Primary Health*, vol. 16, pp. 291–5.
- Kulaga, S, Zagarzadeh, A & Bérard, A 2009, 'Prescriptions filled during pregnancy for drugs with the potential of fetal harm', *BJOG: An International Journal of Obstetrics & Gynaecology*, vol. 116, no. 13, pp. 1788–95.
- Larkins, S, Geia, L & Panaretto, K 2006, 'Consultations in general practice and at an Aboriginal community controlled health service: do they differ?', *Rural Remote Health*, vol. 6, no. 3, p. 560.



- Laws, P & Sullivan, E 2005, *Australia's mothers and babies 2003*, Perinatal statistics series no. 16, AIHW Cat. no. PER 29, AIHW National Perinatal Statistics Unit: Sydney.
- Lee, K, Harrison, K, Mills, K & Conigrave, KM 2014, 'Needs of Aboriginal Australian women with comorbid mental and alcohol and other drug use disorders', *Drug and alcohol review*.
- Leeder, S, Corkhill, R, Irwig, L, Holland, W & Colley, J 1976, 'Influence of family factors on the incidence of lower respiratory illness during the first year of life', *British journal of preventive & social medicine*, vol. 30, no. 4, pp. 203–12.
- Leeds, K, Gourley, M, Laws, P, Zhang, J & Al-Yaman, F, EA 2007, *Indigenous mothers and their babies, Australia 2001–2004*, AIHW Cat. no. PER 38 (Perinatal statistics series no. 19), AIHW: Canberra.
- Levy, M 2005, 'Prisoner health care provision: Reflections from Australia', *International Journal of Prisoner Health*, vol. 1, no. 1, pp. 65–73.
- Li, SQ, Gray, N, Guthridge, S, Pircher, S, Wang, Z & Zhao, Y 2009, 'Avoidable mortality trends in Aboriginal and non-Aboriginal populations in the Northern Territory, 1985–2004', *Australian and New Zealand Journal of Public Health*, vol. 33, no. 6, pp. 544–50.
- Li, SQ, Guthridge, S, Eswara, AP, Lowe, M, Wang, Z, Zhao, Y & Krause, V 2014, 'Dementia prevalence and incidence among the Indigenous and non-Indigenous populations of the Northern Territory', *The Medical Journal of Australia*, vol. 200, no. 8, pp. 465–9.
- Liaw, ST, Lau, P, Pyett, P, Furler, J, Burchill, M, Rowley, K & Kelaher, M 2011, 'Successful chronic disease care for Aboriginal Australians requires cultural competence', *Australian and New Zealand Journal of Public Health*, vol. 35, no. 3, pp. 238–48.
- Lim, FJ, Lehmann, D, McLoughlin, A, Harrison, C, Willis, J, Giele, C, Keil, AD & Moore, HC 2014, 'Risk factors and comorbidities for invasive pneumococcal disease in Western Australian Aboriginal and non-Aboriginal people', *Pneumonia: A Peer Reviewed Open Access Journal*, vol. 4, pp. 24–34.
- Liu, J, Davidson, E, Bhopal, R, White, M, Johnson, M, Netto, G, Deverill, M & Sheikh, A 2012, 'Adapting health promotion interventions to meet the needs of ethnic minority groups: mixed-methods evidence synthesis.', *Health Technology Assessment*, vol. 16, no. 44, p. Chapter 4.
- Lloyd, J, Baldry, E, McEntyre, E, Indig, D, Harris, MF, Thiele, D, Bandjolan, K, Hure, S, Schuster, L, Moore, L, Davison, J, Abbott, P, Reath, J & Sherwood, J 2013, *Primary health care services better meeting the needs of Aboriginal Australians transitioning from prison to the community: SPRINT final report*, Centre for Primary Health Care and Equity, Faculty of Medicine, UNSW, Sydney.
- Lohoar, S, Butera, N & Kennedy, E 2014, *Strengths of Australian Aboriginal cultural practices in family life and child rearing*, CFCA paper no. 25, Australian Institute of Family Studies Child Family Community Australia: Canberra.
- Longitudinal Study of Indigenous Children 2012, *Footprints in Time: Key Summary Report from Wave 3*, FaHCSIA: Canberra.
- Longitudinal Study of Indigenous Children 2013, *Footprints in Time: Key Summary Report from Wave 4*, FaHCSIA: Canberra.
- Longstreet, D, Heath, D, Savage, I, Vink, R & Panaretto, K 2008, 'Estimated nutrient intake of urban Indigenous participants enrolled in a lifestyle intervention program', *Nutrition & Dietetics*, vol. 65, no. 2, pp. 128–33.
- Lucas, C, Charlton, KE & Yeatman, H 2014, 'Nutrition Advice During Pregnancy: Do Women Receive it and Can Health Professionals Provide it?', *Maternal and Child Health Journal*, pp. 1–14.
- MacLachlan, JH, Allard, N, Towell, V & Cowie, BC 2013, 'The burden of chronic hepatitis B virus infection in Australia, 2011', *Australian and New Zealand Journal of Public Health*, vol. 37, no. 5, pp. 416–22.
- Magee, C, Caputi, P & Iverson, D 2014, 'Lack of sleep could increase obesity in children and too much television could be partly to blame', *Acta Paediatrica*, vol. 103, no. 1, pp. e27–e31.
- Mainous, AG, Baker, R, Love, MM, Gray, DP & Gill, JM 2001, 'Continuity of care and trust in one's physician: evidence from primary care in the United States and the United Kingdom', *Family Medicine*, vol. 33, no. 1, pp. 22–7.
- Malseed, C, Nelson, A & Ware, R 2014, 'Evaluation of a School-Based Health Education Program for Urban Indigenous Young People in Australia', *Health*, vol. 2014.
- Margolis, SA, Ypinazar, VA, Muller, R & Clough, A 2011, 'Increasing alcohol restrictions and rates of serious injury in four remote Australian Indigenous communities', *Medical Journal of Australia*, vol. 194, no. 10, pp. 503–6.
- Markwick, A, Ansari, Z, Sullivan, M & McNeil, J 2014, 'Social determinants and lifestyle risk factors only partially explain the higher prevalence of food insecurity among Aboriginal and Torres Strait Islanders in the Australian state of Victoria: a cross-sectional study', *BMC Public Health*, vol. 14, no. 1, p. 598.
- Marley, JV, Kitaura, T, Atkinson, D, Metcalf, S, Maguire, GP & Gray, D 2014, 'Clinical trials in a remote Aboriginal setting: lessons from the BOABS smoking cessation study', *BMC public health*, vol. 14, no. 1, p. 579.
- Marmot, M 2005, 'Social determinants of health inequalities', *The Lancet*, vol. 365, no. 9464, pp. 1099–104.
- Marmot, M, Allen, J, Goldblatt, P, Boyce, T, McNeish, D, Grady, M & Geddes, I 2010, *Fair society, healthy lives: Strategic review of health inequalities in England post-2010*, UCL, London.
- Massie, R, Theodoros, D, McPherson, B & Smaldino, J 2004, 'Sound-field amplification: Enhancing the classroom listening environment for Aboriginal and Torres Strait Islander children', *Australian Journal of Indigenous Education, The*, vol. 33, p. 47.



- Mazanov, J & Byrne, D 2008, 'Modelling change in adolescent smoking behaviour: stability of predictors across analytic models', *British Journal of Health Psychology*, vol. 13, no. 3, pp. 361–79.
- McCalman, J, Tsey, K, Bainbridge, R, Rowley, K, Percival, N, Lynette, O, Brands, J, Whiteside, M & Judd, J 2014, 'The characteristics, implementation and effects of Aboriginal and Torres Strait Islander health promotion tools: a systematic literature search', *BMC Public Health*, vol. 14, no. 1, p. 712.
- McDermott, R, Campbell, S, Li, M & McCulloch, B 2009, 'The health and nutrition of young indigenous women in north Queensland—inter-generational implications of poor food quality, obesity, diabetes, tobacco smoking and alcohol use', *Public Health Nutrition*, vol. 12, no. 11, pp. 2143–9.
- McDermott, R, Tulip, F, Schmidt, B & Sinha, A 2003, 'Sustaining better diabetes care in remote indigenous Australian communities', *British Medical Journal*, vol. 327, no. 7412, pp. 428–30.
- McDermott, R, Tulip, F & Sinha, A 2004, 'Sustaining better diabetes care in remote indigenous Australian communities', *Quality and Safety in Health Care*, vol. 13, no. 4, pp. 295–8.
- McDonald, S, Chang, S & Excell, L 2006, *Twenty eighth report of Australia and New Zealand dialysis and transplant registry*, ANZData Registry:Adelaide.
- Measey, M-AL, Li, SQ, Parker, R & Wang, Z 2006, 'Suicide in the Northern Territory, 1981–2002', *Aboriginal and Islander Health Worker Journal*, vol. 30, no. 6, p. 26.
- Mellor, D 2005, 'Normative data for the Strengths and Difficulties Questionnaire in Australia', *Australian psychologist*, vol. 40, no. 3, pp. 215–22.
- Memmott, P, Birdsall-Jones, C & Greenop, K 2012, *Australian Indigenous House Crowding*, Vol. 194, AHURI (Australian Housing and Urban Research Institute).
- Menzies, RI & Singleton, RJ 2009, 'Vaccine-preventable diseases and vaccination policy for indigenous populations', *Pediatric Clinics of North America*, vol. 56, no. 6, pp. 1263–83.
- Merkur, S, Sassi, F & McDaid, D 2013, *Promoting health, preventing disease: is there an economic case?*, WHO Policy summary 6.
- Meuleners, LB, Hendrie, D & Lee, AH 2008, 'Hospitalisations due to interpersonal violence: a population-based study in Western Australia', *Medical Journal of Australia*, vol. 188, no. 10, pp. 572–5.
- Midford, R, MacLean, S, Catto, M, Thomson, N & Debuyst, O 2011, *Review of volatile substance use among Indigenous people*. *Australian Indigenous Health Bulletin* 11(1), viewed 28/11/2014, <http://healthbulletin.org.au/articles/Review-of-volatile-substance-use-among-indigenous-people>.
- Miller, J, Knott, V, Wilson, C, Cunningham, J, Condon, J & Roder, Dea 2010, *Aboriginal and Torres Strait Islander Cancer Control Research Project*, Cancer Australia.
- Ministerial Council for Education, ECDA 2010, *Neuroscience and early childhood development: Summary of selected literature and key messages for parenting*, Department of Education and Children's Services:South Australia.
- Ministerial Council on Drug Strategy 2011, *National Drug Strategy 2010–2015: A framework for action on alcohol, tobacco and other drugs*, Commonwealth of Australia:Canberra.
- Minniecon, D & Kong, K 2005, *Healthy Futures: Defining best practice in the recruitment and retention on Indigenous medical students*, Australian Indigenous Doctors' Association (AIDA):Canberra.
- Mitchell, C, Hobcraft, J, McLanahan, SS, Siegel, SR, Berg, A, Brooks-Gunn, J, Garfinkel, I & Notterman, D 2014, 'Social disadvantage, genetic sensitivity, and children's telomere length', *Proceedings of the National Academy of Sciences*, vol. 111, no. 16, pp. 5944–9.
- Mitchell, L 2011, *Domestic violence in Australia: an overview of the issues*, Parliamentary Library.
- Moran, M, Porter, D & Curth-Bibb, J 2014, *Funding Indigenous organisations: improving governance performance through innovations in public finance management in remote Australia*, Issues paper no. 11 produced for the Closing the Gap Clearinghouse, AIHW:Canberra.
- Morrell, S, You, H & Baker, D 2012, 'Estimates of cancer incidence, mortality and survival in Aboriginal people from NSW, Australia', *BMC Cancer*, vol. 12.
- Morris, PS, Leach, AJ, Halpin, S, Mellon, G, Gadil, G, Wigger, C, Mackenzie, G, Wilson, C & Gadil, E 2007, 'An overview of acute otitis media in Australian Aboriginal children living in remote communities', *Vaccine*, vol. 25, no. 13, pp. 2389–93.
- Mouzos, J & Makkai, T 2004, *Women's experiences of male violence: findings from the Australian component of the International Violence Against Women Survey (IVAWS)*, Vol. 56, Australian Institute of Criminology Canberra.
- Moylan, S, Eyre, H, Maes, M, Baune, BT, Jacka, FN & Berk, M 2013, 'Exercising the worry away: how inflammation, oxidative and nitrogen stress mediates the beneficial effect of physical activity on anxiety disorder symptoms and behaviours', *Neuroscience & Biobehavioral Reviews*, vol. 37, no. 4, pp. 573–84.
- Murray, CJL, Tandon, A, Salomon, JA, Mathers, CD & Sadana, R 2003, 'Cross-population comparability of evidence for health policy', *Health systems performance assessment: Debates, methods and empiricism*, pp. 705–13.
- NACCHO/RACGP 2012, *National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people*. 2nd edn, The RACGP:South Melbourne.
- Naidu, L, Chiu, C, Habig, A, Lowbridge, C, Jayasinghe, S, Wang, H, McIntyre, P & Menzies, R 2012, 'Vaccine-preventable diseases and vaccination coverage in Aboriginal and Torres Strait Islander people, Australia 2006–2010', *Communicable diseases intelligence quarterly report*, vol. 37, pp. S1–95.
- National Aboriginal Health Strategy Working Group 1989, 'A national Aboriginal health strategy', *Canberra: AGPS*.



- National Health and Medical Research Council 2000, *Nutrition in Aboriginal and Torres Strait Islander Peoples: An Information Paper*, NHMRC:Canberra.
- National Health and Medical Research Council 2005, *Strengthening Cardiac Rehabilitation and Secondary Prevention for Aboriginal and Torres Strait Islander Peoples: A Guide for Health Professionals*, NHMRC, Canberra.
- National Health and Medical Research Council 2008, *Guidelines for the management of diabetic retinopathy*, NHMRC, Canberra.
- National Health and Medical Research Council 2009, *Australian guidelines to reduce health risks from drinking alcohol*, NHMRC, Canberra.
- National Health and Medical Research Council 2012, *Eat for health: Infant feeding Guidelines— information for health workers*, NHMRC:Canberra.
- National Health and Medical Research Council 2013, *Australian Dietary Guidelines*, NHMRC:Canberra.
- National Health Performance Authority 2014, *Healthy Communities: Child and maternal health in 2009–2012*, AIHW Cat. no. PHE 144, NHPA:Canberra.
- National Health Performance Committee 2004, *National Report on Health Sector Performance Indicators 2003*, AIHW Cat. no. HWI 78, Canberra.
- National Health Priority Action Council 2006, *National Chronic Disease Strategy*, Commonwealth Department of Health and Ageing Canberra.
- National Heart Foundation and Australian Health Care and Hospitals Association 2010, *Better hospital care for Aboriginal and Torres Strait Islander people experiencing heart attack*.
- National Heart Foundation of Australia 2006, *Physical activity in the prevention and management of type 2 diabetes*, NHF:Sydney.
- National Heart Foundation of Australia (National Blood Pressure and Vascular Disease Advisory Committee) 2010, *Guide to management of hypertension 2008. Updated December 2010*.
- National Indigenous Drug and Alcohol Committee 2014, *Alcohol and other drug treatment for Aboriginal and Torres Strait Islander peoples*, Australian National Council on Drugs:Canberra.
- National Public Health Partnership 2006, *Making the connections. Guidelines for effective approaches to Aboriginal and Torres Strait Islander public health*, NPHP:Melbourne.
- National Trachoma Surveillance and Reporting Unit 2012, *Australian Trachoma Surveillance Report 2012*, The Kirby Institute, University of New South Wales.
- Ness, AR, Leary, SD, Mattocks, C, Blair, SN, Reilly, JJ, Wells, J, Ingle, S, Tilling, K, Smith, GD & Riddoch, C 2007, 'Objectively measured physical activity and fat mass in a large cohort of children', *PLoS Medicine*, vol. 4, no. 3, p. e97.
- New South Wales Department of Health 2005, *New South Wales Population Health Survey (HOIST) 2003 and 2004*, Centre for Epidemiology and Research.
- Newacheck, PW & Halfon, N 1998, 'Prevalence and impact of disabling chronic conditions in childhood', *American journal of public health*, vol. 88, no. 4, pp. 610–7.
- Nganampa Health Council, South Australian Health Commission & Aboriginal Health Organisation of SA 1987, *Report of Uwankara Palyanyku Kanyintjaku: An Environmental and Public Health Review within the Anangu Pitjantjatjara Lands*, Nganampa Health Council, Adelaide.
- NSW Health 2006, *NSW Aboriginal Maternal and Infant Health Strategy. Evaluation final report 2005*, NSW Health:Sydney.
- NSW Health 2010, *Closing the gap: 10 years of housing for health in NSW*, Sydney.
- O'Leary, CM, Nassar, N, Zubrick, SR, Kurinczuk, JJ, Stanley, F & Bower, C 2010, 'Evidence of a complex association between dose, pattern and timing of pre-natal alcohol exposure and child behaviour problems', *Addiction*, vol. 105, no. 1, pp. 74–86.
- O'Connor, CC, Ali, H, Guy, R, Templeton, D, Fairley, C, Chen, M, Dickson, B, Marshall, L, Grulich, A & Hellard, M 2014, 'High chlamydia positivity rates in Indigenous people attending Australian sexual health services', *The Medical journal of Australia*, vol. 200, no. 10, p. 595.
- O'Grady, K, Taylor-Thomson, DM, Chang, AB, Torzillo, PJ, Morris, PS, Mackenzie, GA, Wheaton, GR, Bauert, PA, De Campo, MP & De Campo, JF 2010, 'Rates of radiologically confirmed pneumonia as defined by the World Health Organization in Northern Territory Indigenous children', *Medical Journal of Australia*, vol. 192, no. 10, p. 4.
- Öberg, M, Jaakkola, MS, Woodward, A, Peruga, A & Prüss-Ustün, A 2011, 'Worldwide burden of disease from exposure to second-hand smoke: a retrospective analysis of data from 192 countries', *The Lancet*, vol. 377, no. 9760, pp. 139–46.
- OECD 2009, 'Measuring disparities in health status and in access and use of health care in OECD countries', *OECD Health Working Papers No. 43*.
- OECD 2011, 'Health at a Glance 2011: OECD Indicators', OECD Publishing. http://dx.doi.org/10.1787/health_glance-2011-en.
- OECD 2013, 'Health at a Glance 2012: OECD Indicators', OECD Publishing.
- OECD 2014, *Obesity Update*, (Labour and Social Affairs OECD Directorate for Employment, chairman).
- Office for Aboriginal and Torres Strait Islander Health 2004, *Defining the Domains: Aboriginal and Torres Strait Islander Health Performance Framework*, Commonwealth Department of Health and Ageing:Canberra.
- Olds, DL, Kitzman, H, Knudtson, MD, Anson, E, Smith, JA & Cole, R 2014, 'Effect of home visiting by nurses on maternal and child mortality: results of a 2-decade follow-up of a randomized clinical trial', *JAMA pediatrics*, vol. 168, no. 9, pp. 800–6.



- Ou, L, Chen, J, Hillman, K & Eastwood, J 2010, 'The comparison of health status and health services utilisation between Indigenous and non-Indigenous infants in Australia', *Australian and New Zealand Journal of Public Health*, vol. 34, no. 1, pp. 50–6.
- Øvretveit, J 2012, *Summary of 'Do changes to patient-provider relationships improve quality and save money?'*, London.
- Page, A, Ambrose, S, Glover, J & Hetzel, D 2007, *Atlas of Avoidable Hospitalisations in Australia: ambulatory care-sensitive conditions*, Public Health Information Development Unit: University of Adelaide, Adelaide.
- Page, A, Tobias, M, Glover, JD, Wright, C, Hetzel, D & Fisher, EJ 2006, *Australian and New Zealand atlas of avoidable mortality*, Public Health Information Development Unit, The University of Adelaide, Adelaide.
- Panaretto, K, Gardner, K, Button, S, Carson, A, Schibasaki, R, Wason, G, Baker, D, Mein, J, Dellit, A & Lewis, D 2013, 'Prevention and management of chronic disease in aboriginal and islander community controlled health services in Queensland: a quality improvement study assessing change in selected clinical performance indicators over time in a cohort of services', *BMJ open*, vol. 3, no. 4.
- Panaretto, KS, Mitchell, MR, Anderson, L, Larkins, SL, Manessis, V, Buettner, PG & Watson, D 2007, 'Sustainable antenatal care services in an urban Indigenous community: the Townsville experience', *Medical Journal of Australia*, vol. 187, no. 1, pp. 18–22.
- Panaretto, KS, Wenitong, M, Button, S & Ring, IT 2014, 'Aboriginal community controlled health services: leading the way in primary care', *The Medical journal of Australia*, vol. 200, no. 11, pp. 649–52.
- Paradies, Y 2006, 'A review of psychosocial stress and chronic disease for 4th world indigenous peoples and African Americans', *Ethnicity and Disease*, vol. 16, no. 1, pp. 295–308.
- Paradies, Y 2007, 'Exploring the Health Effects of Racism for Indigenous people' presented at the *Rural Health Research Colloquium*, Tamworth, NSW.
- Paradies, Y 2011, 'Measuring interpersonal racism: An Indigenous Australian case study', CAEPR Seminar Series, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra, 10 August 2011.
- Paradies, Y & Cunningham, J 2012, 'The DRUID study: Exploring mediating pathways between racism and depressive symptoms among Indigenous Australians', *Social Psychiatry and Psychiatric Epidemiology*, vol. 1, pp. 165–73.
- Paradies, Y, Priest, N, Ben, J, Truong, M, Gupta, A, Pieterse, A, Kelaher, M & Gee, G 2013, 'Racism as a determinant of health: a protocol for conducting a systematic review and meta-analysis', *Systematic reviews*, vol. 2, no. 1, p. 85.
- Paradies, Y, Truong, M & Priest, N 2014, 'A systematic review of the extent and measurement of health-care provider racism', *Journal of general internal medicine*, vol. 29, no. 2, pp. 364–87.
- Paradies, YC & Cunningham, J 2008, 'Development and validation of the Measure of Indigenous Racism Experiences (MIRE)', *International journal for equity in health*, vol. 7, no. 9.
- Parker, S, McKinnon, L & Kruske, S 2014, 'Choice, culture and confidence': Key findings from the 2012 having a baby in Queensland Aboriginal and Torres Strait Islander survey', *BMC Health Services Research*, vol. 14, no. 1, p. 196.
- Parnaby, MG & Carapetis, JR 2010, 'Rheumatic fever in Indigenous Australian children', *Journal of Paediatrics and Child Health*, vol. 46, no. 9, pp. 527–33.
- Passey, ME, D'Este, CA & Sanson-Fisher, RW 2012, 'Knowledge, attitudes and other factors associated with assessment of tobacco smoking among pregnant Aboriginal women by health care providers: a cross-sectional survey', *BMC public health*, vol. 12, no. 1, p. 165.
- Passey, ME, Sanson-Fisher, RW, D'Este, CA & Stirling, JM 2014, 'Tobacco, alcohol and cannabis use during pregnancy: clustering of risks', *Drug and alcohol dependence*, vol. 134, pp. 44–50.
- Pearse, J 2005, *Review of patient satisfaction and experience surveys conducted for public hospitals in Australia: A Research Paper for the Steering Committee for the Review of Government Service Provision*, Productivity Commission Canberra.
- Peiris, DP, Patel, AA, Cass, A, Howard, MP, Tchan, ML, Brady, JP, De Vries, J, Rickards, B, Yarnold, D & Hayman, N 2009, 'Cardiovascular disease risk management for Aboriginal and Torres Strait Islander peoples in primary health care settings: findings from the Kanyini Audit', *Medical Journal of Australia*, vol. 191, no. 6, pp. 304–9.
- Pharmaceutical Society of Australia 2014, *Guide to providing pharmacy services to Aboriginal and Torres Strait Islander people*. Pharmaceutical Society of Australia: Canberra
- Pignone, MP, Flitcroft, KL, Howard, K, Trevena, LJ, Salkeld, GP & St John, DJB 2011, 'Costs and cost-effectiveness of full implementation of a biennial faecal occult blood test screening program for bowel cancer in Australia', *The Medical journal of Australia*, vol. 194, no. 4, p. 180.
- Powe, NR & Cooper, LA 2004, 'Diversifying the racial and ethnic composition of the physician workforce', *Annals of Internal Medicine*, vol. 141, no. 3, pp. 223–4.
- Power, C, Kuh, D & Morton, S 2013, 'From developmental origins of adult disease to life course research on adult disease and aging: insights from birth cohort studies', *Annual review of public health*, vol. 34, pp. 7–28.
- Pratt, S, DeMamiel, M, Reye, K, Huey, A & Pope, A 2014, *Food Security in Remote Indigenous Communities*, ANAO Report No.2 2014–15, Australian National Audit Office: Canberra.
- Priest, N, Perry, R, Ferdinand, A, Paradies, Y & Kelaher, M 2014, 'Experiences of Racism, Racial/Ethnic Attitudes, Motivated Fairness and Mental Health Outcomes Among Primary and Secondary School Students', *Journal of Youth and Adolescence*, pp. 1–16.



- Purdie, N, Reid, K, Frigo, T, Stone, A & Kleinhenz, E 2011, 'Literacy and numeracy learning: lessons from the Longitudinal Literacy and Numeracy Study for Indigenous Students'.
- Putt, J, Payne, J & Milner, L 2005, 'Indigenous male offending and substance abuse', *Drugs*, vol. 1, no. 9, p. 3.
- Qld Health, Begg, S, Bright, M & Harper, C 2008a, *Differentials in the burden of disease and injury in Queensland, 2003*, Queensland Health:Brisbane.
- Qld Health, Bright, M, Begg, S & Harper, C 2008b, *Overview of the burden of disease and injury in Queensland, 2003*, Queensland Health:Brisbane.
- Radford, K, Mack, HA, Robertson, H, Draper, B, Chalkley, S, Daylight, G, Cumming, R, Bennett, H, Jackson Pulver, L & Broe, GA 2014, 'The Koori Growing Old Well Study: investigating aging and dementia in urban Aboriginal Australians', *International Psychogeriatrics*, vol. 26, no. 06, pp. 1033–43.
- Randall, DA, Jorm, LR, Lujic, S, O'Loughlin, AJ, Eades, SJ & Leyland, AH 2013, 'Disparities in revascularization rates after acute myocardial infarction between aboriginal and non-aboriginal people in Australia', *Circulation*, p. CIRCULATIONAHA. 112.000566.
- Randall, DA, Jorm, LR, Lujic, S, O'Loughlin, AJ, Churches, TR, Haines, MM, Eades, SJ & Leyland, AH 2012, 'Mortality after admission for acute myocardial infarction in Aboriginal and non-Aboriginal people in New South Wales, Australia: a multilevel data linkage study', *BMC public health*, vol. 12, no. 1, p. 281.
- Reath, J & Carey, M 2008, 'Breast and cervical cancer in indigenous women', *Australian Family Physician*, vol. 37, no. 3, pp. 178–82.
- Reibel, T & Walker, R 2010, 'Antenatal services for Aboriginal women: the relevance of cultural competence', *Quality in Primary Care*, vol. 18, pp. 65–74.
- Rémond, M, Severin, K, Hodder, Y, Martin, J, Nelson, C, Atkinson, D & Maguire, G 2013, 'Variability in disease burden and management of rheumatic fever and rheumatic heart disease in two regions of tropical Australia', *Internal medicine journal*, vol. 43, no. 4, pp. 386–93.
- Research, TifCH 2009, *Alcohol and Pregnancy Project. Alcohol and Pregnancy and Fetal Alcohol Spectrum Disorder: a Resource for Health Professionals (1st revision)*, Perth.
- RHDAustralia (ARF/RHD writing group), National Heart Foundation of Australia & Cardiac Society of Australia and New Zealand 2012, *Australian guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease (second edition)*, Menzies School of Health Research.
- Roberts-Thomson, KF, Spencer, AJ & Jamieson, LM 2008, 'Oral health of aboriginal and Torres strait islander Australians', *Medical Journal of Australia*, vol. 188, no. 10, p. 592.
- Robertson, J, Conigrave, K, Ivers, R, Hindmarsh, E & Clough, A 2013, 'Addressing high rates of smoking in remote Aboriginal communities: new evidence for GPs', *Australian Family Physician*, vol. 42, no. 7, p. 492.
- Robinson, G, Silburn, S & Leckning, B 2011, 'Suicide of children and youth in the NT, 2006–2010: Public Release Report for the Child Deaths Review and Prevention Committee', Darwin: Menzies Centre for Child Development and Education.
- Robinson, P, Comino, E., Forbes, A., Webster, V., and Knight, J. 2011, 'Timeliness of antenatal care for mothers of Aboriginal and non-Aboriginal infants in an urban setting', *Australian Journal of Primary Health*.
- Roche, AM, Duraisingam, V, Trifonoff, A & Tovell, A 2012, 'The health and well-being of Indigenous drug and alcohol workers: Results from a national Australian survey', *Journal of Substance Abuse Treatment; in press*.
- Rowley, KG, Gault, A, McDermott, R, Knight, S, McLeay, T & O'Dea, K 2000, 'Reduced prevalence of impaired glucose tolerance no change in prevalence of diabetes despite increasing BMI among Aboriginal people from a group of remote homeland communities', *Diabetes Care*, vol. 23, no. 7, pp. 898–904.
- Royal Australian College of General Practitioners 2010, 'RACGP Standards for general practices (fourth edition)', RACGP.
- Rumbold, A, Bailie, R, Si, D, Dowden, M, Kennedy, C, Cox, R, O'Donoghue, L, Liddle, H, Kwedza, R & Thompson, S 2011, 'Delivery of maternal health care in Indigenous primary care services: baseline data for an ongoing quality improvement initiative', *BMC pregnancy and childbirth*, vol. 11, no. 1, p. 16.
- Salomon, JA, Mathers, CD, Chatterji, S, Sadana, R, Ustun, TB & Murray, CJL 2003, 'Quantifying individual levels of health: definitions, concepts and measurement issues', in C.J.L. Murray (ed), *Health systems performance assessment: Debates, methods and empiricism*, World Health Organization, Geneva, pp. 301–18.
- Samitz, G, Egger, M & Zwahlen, M 2011, 'Domains of physical activity and all-cause mortality: systematic review and dose–response meta-analysis of cohort studies', *International Journal of Epidemiology*, vol. 40, no. 5, pp. 1382–400.
- Sassi, F 2009, 'Health inequalities: a persistent problem', in J Hills, T Sefton and K Stewart (eds), *Towards a more equal society*, The Policy Press, Bristol, pp. 135–56.
- Sattelmair, J, Pertman, J, Ding, EL, Kohl, HW, Haskell, W & Lee, I-M 2011, 'Dose response between physical activity and risk of coronary heart disease a meta-analysis', *Circulation*, vol. 124, no. 7, pp. 789–95.
- Saunders, P & Davidson, P 2007, 'Rising poverty is bad for our health', *Medical Journal of Australia*, vol. 187, no. 9, pp. 530–1.
- Scelza, B 2012, 'Food scarcity, not economic constraint limits consumption in a rural Aboriginal community', *Australian Journal of Rural Health*, vol. 20, pp. 108–12.
- Schers, H, van den Hoogen, H, Bor, H, Grol, R & van den Bosch, W 2005, 'Familiarity with a GP and patients' evaluations of care. A cross-sectional study', *Family practice*, vol. 22, no. 1, pp. 15–9.
- Schierhout, G, Brands, J & Bailie, R 2010, *Audit and Best Practice for Chronic Disease Extension Project 2005–2009: Final Report*, Menzies School of Health Research and The Lowitja Institute.



- Schoo, A, Stagnitti, K, Mercer, C & Dunbar, J 2005, 'A conceptual model for recruitment and retention: allied health workforce enhancement in Western Victoria, Australia', *Rural and Remote Health*, vol. 5, no. 477, pp. 1–18.
- Scollo, M & Winstanley, M 2012, *Tobacco in Australia: Facts and issues. 4th edn.*, Cancer Council Victoria, Melbourne.
- Scott, J 2014, 'Chronic disease profiles in one high risk Indigenous community: a comparison of chronic disease profiles after a 10 year follow-up and the relationship between birth weight and chronic disease morbidity and mortality'.
- Semlitsch, T, Jeitler, K, Hemkens, LG, Horvath, K, Nagele, E, Schuermann, C, Pignitter, N, Herrmann, KH, Waffenschmidt, S & Siebenhofer, A 2013, 'Increasing physical activity for the treatment of hypertension: a systematic review and meta-analysis', *Sports Medicine*, vol. 43, no. 10, pp. 1009–23.
- Sen, A 1999, *Development as Freedom*, Oxford University Press, Oxford.
- Senate Community Affairs References Committee 2012, *The factors affecting the supply of health services and medical professionals in rural areas*, Senate Community Affairs Committee Secretariat:Canberra.
- Shahid, S, Finn, L, Bessarab, D & Thompson, S 2009, 'Understanding, beliefs and perspectives of Aboriginal people in Western Australia about cancer and its impact on access to cancer services', *BMC Health Services Research*, vol. 9, no. 1, p. 132.
- Shahpush, M, Huang, TTK, Sikora, A, Tibbits, M, Shaikh, RA & Singh, GK 2014, 'Prolonged financial stress predicts subsequent obesity: Results from a prospective study of an Australian national sample', *Obesity*, vol. 22, no. 2, pp. 616–21.
- Slade, GD, Bailie, RS, Roberts-Thomson, K, Leach, AJ, Raye, I, Endean, C, Simmons, B & Morris, P 2011, 'Effect of health promotion and fluoride varnish on dental caries among Australian Aboriginal children: results from a community-randomized controlled trial', *Community dentistry and oral epidemiology*, vol. 39, no. 1, pp. 29–43.
- Sloboda, D 2011, 'Adolescent obesity: pre-natal and early life determinants of metabolic compromise', *Improving the Transition*, vol. 21, p. 273.
- Smith, MT, Lester-Smith, D, Zurynski, Y, Noonan, S, Carapetis, J & Elliott, E 2011, 'Persistence of acute rheumatic fever in a tertiary children's hospital', *Journal of Paediatrics and Child Health*, vol. 47, no. 4, pp. 198–203.
- Smylie, J, Crengle, S, Freemantle, J & Taulii, M 2010, 'Indigenous Birth Outcomes in Australia, Canada, New Zealand and the United States—an Overview', *The Open Women's Health Journal*, vol. 4, pp. 7–17.
- Social Health Reference Group 2004, *National Strategic Framework for Aboriginal and Torres Strait Islander Peoples' Mental Health and Social and Emotional Well Being 2004–2009*, National Aboriginal and Torres Strait Islander Health Council & National Mental Health Working Group, Canberra.
- Spurling, G, Hayman, NE & Cooney, AL 2009, 'Adult health checks for Indigenous Australians: the first year's experience from the Inala Indigenous Health Service', *Medical Journal of Australia*, vol. 190, no. 10, pp. 562–4.
- Starfield, B 1998, *Primary Care: Balancing Health Needs, Services and Technology*, Oxford University Press, New York.
- Starfield, B & Shi, L 2004, 'The medical home, access to care, and insurance: a review of evidence', *Pediatrics*, vol. 113, no. 5 Supplement, pp. 1493–8.
- Statistics New Zealand 2013, *New Zealand Period Life Tables: 2010–12*, Christchurch.
- Steele, RM, van Sluijs, EMF, Cassidy, A, Griffin, SJ & Ekelund, U 2009, 'Targeting sedentary time or moderate-and vigorous-intensity activity: independent relations with adiposity in a population-based sample of 10-y-old British children', *The American Journal of Clinical Nutrition*, vol. 90, no. 5, pp. 1185–92.
- Steer, AC & Carapetis, JR 2009, 'Acute rheumatic fever and rheumatic heart disease in indigenous populations', *Pediatric Clinics of North America*, vol. 56, no. 6, pp. 1401–19.
- Steering Committee for the Review of Government Service Provision 2007, *Overcoming Indigenous Disadvantage: Key Indicators 2007*, Productivity Commission:Canberra.
- Steering Committee for the Review of Government Service Provision 2013, *National Agreement performance information 2012–13: National Health-care Agreement*, Productivity Commission,:Canberra.
- Steering Committee for the Review of Government Service Provision 2014a, *Overcoming Indigenous Disadvantage: Key Indicators 2014*, AIHW Cat. no. PHE 144, Productivity Commission:Canberra.
- Steering Committee for the Review of Government Service Provision 2014b, *Report on Government Services 2014*, Productivity Commission:Canberra.
- Steering Committee for the Review of Government Service Provision 2015, *Report on Government Services 2015*, Productivity Commission:Canberra.
- Stephens, A, Cullen, J, Massey, L & Bohanna, I 2014, 'Will the National Disability Insurance Scheme Improve the Lives of those Most in Need? Effective Service Delivery for People with Acquired Brain Injury and other Disabilities in Remote Aboriginal and Torres Strait Islander Communities', *Australian Journal of Public Administration*, vol. 73, no. 2, pp. 260–70.
- Stephenson, J, Bauman, A, Armstrong, T, Smith, B & Bellew, B 2000, *The Costs of Illness Attributable to Physical Inactivity in Australia: A preliminary study*, Commonwealth Department of Health and Aged Care Canberra.
- Stevenson, RJ, Lind, B & Weatherburn, D 1999, 'Property damage and public disorder: Their relationship with sales of alcohol in New South Wales, Australia', *Drug and alcohol dependence*, vol. 54, no. 2, pp. 163–70.



- Stockwell, T, Donath, S, Cooper-Stanbury, M, Chikritzhs, T, Catalano, P & Mateo, C 2004, 'Under-reporting of alcohol consumption in household surveys: a comparison of quantity–frequency, graduated–frequency and recent recall', *Addiction*, vol. 99, no. 8, pp. 1024–33.
- Strazdins, L, Shipley, M, Clements, M, O'Brien, LV & Broom, DH 2010, 'Job quality and inequality: Parents' jobs and children's emotional and behavioural difficulties', *Social Science & Medicine*, vol. 70, no. 12, pp. 2052–60.
- Strobel, N & Ward, J 2012, *Education programs for Indigenous Australians about sexually transmitted infections and bloodborne viruses*, Resource sheet no. 14 for the Closing the Gap Clearinghouse, AIHW:Canberra.
- Sullivan, EA, Laws, P & Grayson, N 2006, *Smoking and pregnancy*, AIHW:Canberra.
- Supramaniam, R, Gibberd, A & O'Connell, D 2011, 'Non-small cell lung cancer treatment and survival for Aboriginal people in NSW', 38th Annual Scientific Meeting of the Clinical Oncological Society of Australia, Perth.
- Symons, M, Gray, D, Chikritzhs, T, Skov, SJ, Siggers, S, Boffa, J & Low, J 2012, *A longitudinal study of influences on alcohol consumption and related harm in Central Australia: With a particular emphasis on the role of price*, National Drug Research Institute Perth.
- Taylor, H, Boudville, A, Anjou, M & Abouzeid, M 2014, *The Roadmap to Close the Gap for Vision: Summary Report*, Melbourne School of Population and Global Health, The University of Melbourne.
- Taylor, H, Keeffe, J, Arnold, A, Dunn, S, Goujon, N & Xie, J 2009, *National Indigenous Eye Health Survey: Minum Barreng (Tracking Eyes)—Full Report*, University of Melbourne, Melbourne.
- Taylor, HR 2008, *Trachoma: a blinding scourge from the Bronze Age to the twenty-first century*, Centre for Eye Research Australia, Melbourne.
- Taylor, KP, Thompson, SC, Wood, MM, Ali, M & Dimer, L 2009, 'Exploring the impact of an Aboriginal Health Worker on hospitalised Aboriginal experiences: lessons from cardiology', *Australian Health Review*, vol. 33, no. 4, pp. 549–57.
- Taylor, L & Lim, K 2000, 'Quality of reporting of Aboriginality to the NSW Midwives Data Collection', , vol. 11, no. 12, pp. 206–10.
- Taylor, M & Edwards, B 2012, 'Housing and children's wellbeing and development: evidence from a national longitudinal study', *Family Matters*, no. 91, p. 47.
- Teng, T-HK, Katzenellenbogen, JM, Hung, J, Knuiman, M, Sanfilippo, FM, Geelhoed, E, Hobbs, M & Thompson, SC 2014, 'Rural–urban differentials in 30-day and 1-year mortality following first-ever heart failure hospitalisation in Western Australia: a population-based study using data linkage', *BMJ open*, vol. 4, no. 5, p. e004724.
- The Aboriginal and Torres Strait Islander Healing Foundation 2014, *Our Healing Our Solutions—Sharing Our Evidence*, Canberra.
- Thomas, DP, Briggs, V, Anderson, IPS & Cunningham, J 2008, 'The social determinants of being an Indigenous non-smoker', *Australian and New Zealand Journal of Public Health*, vol. 32, no. 2, pp. 110–6.
- Thomas, DP & Stevens, M 2014, 'Aboriginal and Torres Strait Islander smoke-free homes, 2002 to 2008', *Australian and New Zealand Journal of Public Health*, vol. 38, no. 2, pp. 147–53.
- Thomas, SL, Zhao, Y, Guthridge, SL & Wakerman, J 2014, 'The cost-effectiveness of primary care for Indigenous Australians with diabetes living in remote Northern Territory communities', *The Medical Journal of Australia*, vol. 200, no. 11, pp. 658–62.
- Thompson, S, Shahid, S, Greville, H & Bessarab, D 2011, 'A whispered sort of stuff': A community report on research around Aboriginal people's beliefs about cancer and experiences of cancer care in Western Australia, Cancer Council Western Australia, Perth.
- Thompson, SL, Chenhall, RD & Brimblecombe, JK 2013, 'Indigenous perspectives on active living in remote Australia: a qualitative exploration of the socio-cultural link between health, the environment and economics', *BMC public health*, vol. 13, no. 1, p. 473.
- Thomson, S 2014, 'Financing the future: Australian students' results in the PISA 2012 Financial Literacy assessment'.
- Thomson, S, De Bortoli, L & Buckley, S 2013, 'PISA in brief: highlights from the full Australian report: PISA 2012: how Australia measures up'.
- Thrift, AP, Nancarrow, H & Bauman, AE 2011, 'Maternal smoking during pregnancy among Aboriginal women in New South Wales is linked to social gradient', *Australian and New Zealand Journal of Public Health*, vol. 35, no. 4, pp. 337–42.
- Thurber, K, Boxall, A-m & Partel, K 2014, 'Overweight and obesity among Indigenous children: individual and social determinants'.
- Tighe, J & McKay, K 2012, 'Alive and Kicking Goals!: Preliminary findings from a Kimberley suicide prevention program', *Advances in Mental Health*, vol. 10, no. 3, pp. 240–5.
- Timms, L, Williams, C, Stokes, SF & Kane, R 2014, 'Literacy skills of Australian Indigenous school children with and without otitis media and hearing loss', *International journal of speech-language pathology*, vol. 16, no. 3, pp. 327–34.
- Truong, M, Paradies, Y & Priest, N 2014, 'Interventions to improve cultural competency in health-care: a systematic review of reviews', *BMC Health Services Research*, vol. 14, no. 1, p. 99.
- Turrell, G & Mathers, CD 2000, 'Socio-economic status and health in Australia', *Medical Journal of Australia*, vol. 172, no. 9, pp. 434–8.
- Urbis Pty Ltd 2009, *Evaluation of the healthy for life program: Final report 30 June 2009*.
- Valery, P, Youlden, DR, Baade, PD, Ward, LJ, Green, AC & Aitken, JF 2011, 'Cancer survival for Indigenous compared to non-Indigenous Australian children', 38th Annual Scientific Meeting of the Clinical Oncological Society of Australia, Perth.



- Valery, PC, Coory, M, Stirling, J & Green, AC 2006, 'Cancer diagnosis, treatment, and survival in Indigenous and non-Indigenous Australians: a matched cohort study', *The Lancet*, vol. 367, no. 9525, pp. 1842–8.
- Vanderpoll, T & Howard, D 2012, 'Massive prevalence of hearing loss among Aboriginal inmates in the Northern Territory', *Indigenous Law Bulletin*, vol. 7, no. 28.
- Vass, A, Mitchell, A & Dhurrkay, Y 2011, 'Health literacy and Australian Indigenous peoples: an analysis of the role of language and worldview', *Health Promotion Journal of Australia*, vol. 22, no. 1, pp. 33–7.
- VicHealth 2012, *Disability and health inequalities in Australia: Addressing the social and economic determinants of mental and physical health*, VicHealth:Melbourne.
- Vos, T, Barker, B, Begg, S, Stanley, L & Lopez, AD 2009, 'Burden of disease and injury in Aboriginal and Torres Strait Islander Peoples: the Indigenous health gap', *International Journal of Epidemiology*, vol. 38, no. 2, pp. 470–7.
- Vos, T, Barker, B, Stanley, L & Lopez, AD 2007, *The burden of disease and injury in Aboriginal and Torres Strait Islander peoples 2003*, School of Population Health, University of Queensland, Brisbane.
- Wagner, EH, Austin, BT & Von Korff, M 1996, 'Organizing care for patients with chronic illness', *The Milbank Quarterly*, vol. 74, no. 4, pp. 511–44.
- Walker, N, Johnston, V, Glover, M, Bullen, C, Trenholme, A, Chang, A, Morris, P, Segan, C, Brown, N & Fenton, BD 2014, 'Effect of a Family-Centered, Second-hand Smoke Intervention to Reduce Respiratory Illness in Indigenous Infants in Australia and New Zealand: A Randomized Controlled Trial', *Nicotine & Tobacco Research*, p. ntu128.
- Wallace, C, Burns, L, Gilmour, S & Hutchinson, D 2007, 'Substance use, psychological distress and violence among pregnant and breastfeeding Australian women', *Australian and New Zealand Journal of Public Health*, vol. 31, no. 1, pp. 51–6.
- Wallace, G 2014, 'What can circle sentencing courts tell us about drug and alcohol problems affecting Aboriginal communities?', *Medical Journal of Australia*, vol. 200, no. 11, pp. 675–7.
- Wang, M, Wang, Z-P, Zhang, M & Zhao, Z-T 2014, 'Maternal passive smoking during pregnancy and neural tube defects in offspring: a meta-analysis', *Archives of gynecology and obstetrics*, vol. 289, no. 3, pp. 513–21.
- Wang, X, Ouyang, Y, Liu, J, Zhu, M, Zhao, G, Bao, W & Hu, F 2014, 'Fruit and vegetable consumption and mortality from all causes, cardiovascular disease, and cancer: systematic review and dose-response meta-analysis of prospective cohort studies', *British Medical Journal*, vol. 349.
- Wang, Z, Hoy, W & Si, D 2010a, 'Incidence of type 2 diabetes in Aboriginal Australians: an 11-year prospective cohort study', *BMC Public Health*, vol. 10, no. 487.
- Wang, Z & Hoy, WE 2013, 'Lifetime risk of developing coronary heart disease in Aboriginal Australians: a cohort study', *British Medical Journal, open*, vol. 3, no. 1.
- Wang, Z & Li, SQ 2010b, *Mortality in the Northern Territory 1967–2006. Fact Sheet*, Northern Territory Government:Darwin.
- Ware, V 2013, *Improving the accessibility of health services in urban and regional settings for Indigenous people*, Resource sheet no. 27 produced for the Closing the Gap Clearinghouse, AIHW:Canberra.
- Ware, V & Meredith, V 2013, *Supporting healthy communities through sports and recreation programs*, Resource sheet no. 26. Produced for the Closing the Gap Clearinghouse, Canberra: Australian Institute of Health and Welfare & Melbourne: Australian Institute of Family Studies.
- Weatherburn, D 2014, *Arresting Incarceration: pathways out of Indigenous imprisonment*, Aboriginal Studies Press, Canberra.
- Webster, RJ, Heeley, EL, Peiris, DP, Bayram, C, Cass, A & Patel, AA 2009, 'Gaps in cardiovascular disease risk management in Australian general practice', *Med J Aust*, vol. 191, no. 6, pp. 324–9.
- Weir, J, Stacey, C & Youngetob, K 2011, *The Benefits Associated with Caring for Country: Literature Review*, Canberra.
- Weisleder, A & Fernald, A 2013, 'Talking to children matters early language experience strengthens processing and builds vocabulary', *Psychological science*, vol. 24, no. 11, pp. 2143–52.
- Wen, LM, Flood, VM, Simpson, JM, Rissel, C & Baur, LA 2010, 'Dietary behaviours during pregnancy: findings from first-time mothers in southwest Sydney, Australia', *International Journal of Behavioural Nutrition and Physical Activity*, vol. 7, no. 13, pp. 1–7.
- West, C, Usher, K & Clough, AR 2014, 'Study protocol-resilience in individuals and families coping with the impacts of alcohol related injuries in remote indigenous communities: a mixed method study', *BMC Public Health*, vol. 14, no. 1, p. 479.
- West, R, Usher, K & Foster, K 2010, 'Increased numbers of Australian Indigenous nurses would make a significant contribution to 'closing the gap' in Indigenous health: What is getting in the way?', *Contemporary nurse*, vol. 36, no. 1–2, pp. 121–30.
- West, SK, Rubin, GS, Broman, AT, Munoz, B, Bandeen-Roche, K & Turano, K 2002, 'How does visual impairment affect performance on tasks of everyday life?: The SEE Project', *Archives of Ophthalmology*, vol. 120, no. 6, p. 774.
- Westbury, ND 2002, *The importance of Indigenous governance and its relationship to social and economic development. Background issues paper*, Indigenous Governance Conference, 3–5 April:Canberra.
- White, A, Wong, W, Sureshkumar, P & Singh, G 2010, 'The burden of kidney disease in Indigenous children of Australia and New Zealand, epidemiology, antecedent factors and progression to chronic kidney disease', *Journal of Paediatrics and Child Health*, vol. 46, no. 9, pp. 504–9.



- White, SL, Dunstan, DW, Polkinghorne, KR, Atkins, RC, Cass, A & Chadban, SJ 2011, 'Physical inactivity and chronic kidney disease in Australian adults: The AusDiab study', *Nutrition, Metabolism and Cardiovascular Diseases*, vol. 21, no. 2, pp. 104–12.
- White, V & Smith, G 2009, *Australian secondary school students' use of tobacco, alcohol, and over-the-counter and illicit substances in 2008*, Centre for Behavioural Research in Cancer, The Cancer Council Victoria, Melbourne.
- Whitehead, M 1992, 'The concepts and principles of equity and health', *International journal of health services*, vol. 22, no. 3, pp. 429–45.
- Wilkinson, RG & Marmot, MG 2003, *Social determinants of health: the solid facts*, World Health Organization.
- Williams, CJ & Jacobs, AM 2009, 'The impact of otitis media on cognitive and educational outcomes', *Medical Journal of Australia*, vol. 191, no. 9, p. S69.
- Williams, S, Jamieson, L, MacRae, A & Gray, C 2011, 'Review of Indigenous oral health', *Australian Indigenous HealthInfoNet*.
- Williamson, AB, Raphael, B, Redman, S, Daniels, J, Eades, SJ & Mayers, N 2010, 'Emerging themes in Aboriginal child and adolescent mental health: findings from a qualitative study in Sydney, New South Wales', *Medical Journal of Australia*, vol. 192, no. 10, pp. 603–5.
- Wilmot, E, Edwardson, C, Achana, F, Davies, M, Gorely, T, Gray, L, Khunti, K, Yates, T & Biddle, S 2012, 'Sedentary time in adults and the association with diabetes, cardiovascular disease and death: systematic review and meta-analysis', *Diabetologia*, vol. 55, pp. 2895–905.
- Wilson, M, Stearne, A, Gray, D & Siggers, S 2010, *The harmful use of alcohol amongst Indigenous Australians*, viewed 27/11/2014, www.healthinfonet.ecu.edu.au/alcoholuse_review
- Winnunga Nimmityjah Aboriginal Health Service 2007, 'The social determinants of Aboriginal prison health and the cycle of incarceration and their implications for policy: an Australian Capital Territory case study', Commission on Social Determinants of Health: International Symposium on Indigenous Health, Adelaide.
- Wolfson, M, Kaplan, G, Lynch, J, Ross, N & Backlund, E 1999, 'Relation between income inequality and mortality: empirical demonstration', *British Medical Journal*, vol. 319, no. 7215, pp. 953–5.
- Wong, J & Mellor, D 2014, 'Intimate partner violence and women's health and wellbeing: Impacts, risk factors and responses', *Contemporary nurse*, vol. 46, no. 2, pp. 170–9.
- Wong, MD, Shapiro, MF, Boscardin, WJ & Ettner, SL 2002, 'Contribution of major diseases to disparities in mortality', *New England Journal of Medicine*, vol. 347, no. 20, pp. 1585–92.
- Wood, L, France, K, Hunt, K, Eades, S & Slack-Smith, L 2008, 'Indigenous women and smoking during pregnancy: knowledge, cultural contexts and barriers to cessation', *Social Science & Medicine*, vol. 66, no. 11, pp. 2378–89.
- World Health Organization 2000, *The implications for training of embracing a life course approach to health*, WHO:Geneva.
- World Health Organization 2004a, *Chronic suppurative otitis media: Burden of illness and management options*, WHO, Geneva.
- World Health Organization 2004b, *WHO Policy Perspectives on Medicines*, WHO, Geneva.
- World Health Organization 2005, *The Bangkok Charter for Health Promotion in a Globalized World*, viewed 21/11/2014, www.who.int/healthpromotion/conferences/6gchp/bangkok_charter/en/.
- World Health Organization 2007, *Health Services Coverage Statistics: Antenatal care coverage*, WHO, Geneva.
- World Health Organization 2010, *Global recommendations on physical activity for health*, WHO:Switzerland.
- World Health Organization 2013, *A global brief on Hypertension—silent killer, global public health crisis*, WHO/DCO/WHO/2013.2, WHO:Geneva.
- World Health Organization, March of Dimes, Partnership for Maternal Newborn and Child Health & Save the Children 2012, *Born Too Soon: The Global Action Report on Preterm Birth*, WHO, Geneva.
- Yan, J & Groothuis, PA 2014, 'Timing of Pre-natal Smoking Cessation or Reduction and Infant Birth Weight: Evidence from the United Kingdom Millennium Cohort Study', *Maternal and child health journal*, pp. 1–12.
- Yeates, K, Cass, A, Sequist, T, McDonald, S, Jardine, M, Trpeski, L & Ayanian, J 2009, 'Indigenous people in Australia, Canada, New Zealand and the United States are less likely to receive renal transplantation', *Kidney International*, vol. 76, no. 6, pp. 659–64.
- You, J, Condon, JR, Zhao, Y & Guthridge, S 2009, 'Incidence and survival after acute myocardial infarction in Indigenous and non-Indigenous people in the Northern Territory, 1992–2004', *Medical Journal of Australia*, vol. 190, no. 6, pp. 298–302.
- Zhang, Z, Kris-Etherton, PM & Hartman, TJ 2013, 'Birth Weight and Risk Factors for Cardiovascular Disease and Type 2 Diabetes in US Children and Adolescents: 10 Year Results from NHANES', *Maternal and Child Health Journal*, pp. 1–10.
- Zhao, Y, Connors, C, Wright, J, Guthridge, S & Bailie, R 2008, 'Estimating chronic disease prevalence among the remote Aboriginal population of the Northern Territory using multiple data sources', *Australian and New Zealand Journal of Public Health*, vol. 32, no. 4, pp. 307–13.
- Zhao, Y, Wright, J, Begg, S & Guthridge, S 2013a, 'Decomposing Indigenous life expectancy gap by risk factors: a life table analysis', *Population health metrics*, vol. 11, no. 1, p. 1.
- Zhao, Y, You, J, Wright, J, Guthridge, SL & Lee, AH 2013b, 'Health inequity in the Northern Territory, Australia', *International Journal for Equity in Health*, vol. 12, no. 1, p. 79.



- Zubrick, S, Silburn, S, Lawrence, D, Mitrou, F, Dalby, R, Blair, E, Griffin, J, Milroy, H, De Maio, J, Cox, A & Li, J 2005, *Western Australian Aboriginal Child Health Survey Volume 2: The Social and Emotional Wellbeing of Aboriginal Children and Young People*, Curtin University of Technology and Telethon Institute for Child Health Research (TICHR):Perth.
- Zwar, NA, Hermiz, O, Comino, EJ, Shortus, T, Burns, J & Harris, M 2007, 'Do multidisciplinary care plans result in better care for patients with type 2 diabetes?', *Australian Family Physician*, vol. 36, no. 1–2, pp. 85–9.



All information in this publication is correct as at May 2015

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