
8 Healthy lives

Strategic areas for action



Health outcomes directly affect the quality of people’s lives, including their ability to socialise with family and friends, to participate in the community and to work and earn an income. Physical health outcomes reflect a healthy living environment, access to and use of health services, and lifestyle choices. Mental health issues are related to a complex range of medical issues, historical factors, lifestyle factors and the stressors associated with entrenched disadvantage and drug and substance misuse.

In 2015, the Australian Government released the *Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan 2013–2023*, which outlines the actions and strategies to be taken by the Australian Government and other key stakeholders to give effect to the priorities and strategies of the Health Plan (Department of Health 2015).

The following indicators are included in the ‘Healthy lives’ strategic area:

- access to primary health care (section 8.1) — the first point of contact with the health system enables prevention, early intervention, case management and ongoing care. It can also help address health risk behaviours
- potentially preventable hospitalisations (section 8.2) — many hospital admissions could be prevented if more effective non-hospital care were available, either at an earlier stage in disease progression or as an alternative to hospital care
- potentially avoidable deaths (section 8.3) — some deaths could be prevented if effective public health, medical and other interventions were available
- tobacco consumption and harm (section 8.4) — tobacco consumption is a significant contributor to premature death and ill health, and can divert scarce family resources
- obesity and nutrition (section 8.5) — obesity and poor nutrition are significant contributors to poor health outcomes

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- oral health (section 8.5) — healthy teeth are important for overall health. Levels of oral health reflect changes in diet, dental hygiene and access to dental services
 - mental health (section 8.7) — mental health plays an important role in social and emotional wellbeing and includes mental illness and the overall mental wellbeing of an individual, with the latter influenced by a range of factors including domestic violence, substance misuse, imprisonment and family breakdown
 - suicide and self-harm (section 8.8) — suicide and self-harm cause great grief, with mental illness the largest risk factor for suicide.

Several COAG targets and headline indicators reflect the importance of healthy lives:

- life expectancy (section 4.1)
- young child mortality (section 4.2)
- disability and chronic disease (section 4.9).

Other headline indicators can be directly influenced by health outcomes:

- employment (section 4.7)
- household and individual income (section 4.10).

Outcomes in the healthy lives area can be affected by outcomes in all other strategic areas, and can influence outcomes in other areas.

Attachment tables for this chapter are identified in references throughout this chapter by an ‘A’ suffix (for example, table 8A.1.1). These tables can be found on the web page (www.pc.gov.au/oid2016).

References

Department of Health 2015, *Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan 2013-2023*, Australian Government, Canberra.

8.1 Access to primary health care¹

Box 8.1.1 Key messages

- In 2014-15, 39.7 per cent of Aboriginal and Torres Strait Islander Australians aged 15 years and over reported their health status as excellent or very good. This was a decrease from 43.7 per cent in 2008 (table 8A.1.1).
- In 2012-13, a smaller proportion of Aboriginal and Torres Strait Islander adults reported not seeing a GP/specialist in the previous 12 months (13.6 per cent) compared with 2001 (19.4 per cent) (table 8A.1.14). Time series data on GP/specialist visits are difficult to interpret as increases in usage rates could reflect improved access, or an increasing need.
- In 2012-13, 2 in 5 Aboriginal and Torres Strait Islander Australians aged 2 years and over either had not consulted a dentist in the previous two years (26.6 per cent) or had never consulted a dentist (13.9 per cent) (table 8A.1.17).
- In 2015, the vaccination coverage rate for 5 year old Aboriginal and Torres Strait Islander children (95.1 per cent) was higher than for other children of the same age (93.1 per cent). For children aged 1 year and 2 years, vaccination coverage rates were lower for Aboriginal and Torres Strait Islander children compared to other children (table 8A.1.25).
- In 2011, while Aboriginal and Torres Strait Islander Australians made up around 3 per cent of the Australian population, they made up only 1.3 per cent of the health workforce (table 8A.1.49).

Box 8.1.2 Measures of access to primary health care

Access to healthcare is a complex concept, involving sufficient supply of services, and the ability to utilise available services (which may be influenced by affordability, physical accessibility and acceptability of the services and need). There is no single measure of access that encompasses all these aspects. Five proxy measures are reported.

- *Self-assessed health status* is defined as the proportion of the population aged 15 years and over reporting their health status as very good or excellent (all jurisdictions; age; sex; remoteness; selected characteristics). Data for self-assessed health status are sourced from the ABS Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS)/National Aboriginal and Torres Strait Islander Social Survey (NATSISS), with the most recent data available for 2014-15 (data for the non-Indigenous population sourced from the ABS 2014-15 National Health Survey).
- *Aboriginal and Torres Strait Islander Australians' use of primary health care services* is defined as the proportion of the population not visiting a GP/specialist/dentist when they had a health problem (national; remoteness). Reported for those aged 18 years and over for GP/specialist visits and 2 years and over for dentist visits.

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¹ The Steering Committee notes its appreciation to the National Health Leadership Forum, which reviewed a draft of this section of the report.

Box 8.1.2 (continued)

Data for use of primary health care services are sourced from the AATSIHS, with the most recent available data for 2012-13 (data for the non-Indigenous population are sourced from the 2011-12 Australian Health Survey (AHS). AATSIHS and AHS data are presented together as covering the overall time period 2011–13). Additional data on children are reported from the 2014-15 NATSISS.

- *Immunisation* rates are defined as vaccination coverage rates for selected diseases for children (reported at 1, 2 and 5 years of age) and adult immunisation rates for those aged 50 years and over. Data for children are derived from the Australian Childhood Immunisation Register (ACIR), with the most recent data for 2015 (all jurisdictions; age). Data for Aboriginal and Torres Strait Islander adults are available from the 2012-13 AATSIHS (national; age). Data are not available for non-Indigenous adults.
- *Expenditure on health care services* is defined as total recurrent health expenditure and per person expenditure on primary and secondary/tertiary health care. Expenditure refers to funding from multiple government and non-government sources, including private health insurance. Data for this report are sourced from the AIHW Expenditure on Health for Aboriginal and Torres Strait Islander peoples publication, with the most recent available data for 2010-11 (national).
- *Aboriginal and Torres Strait Islander health workforce* is defined as the proportion of Aboriginal and Torres Strait Islander people aged 15 years and over employed in a health related occupation. Data for this report are sourced from the ABS Census of Population and Housing (the Census), with the most recent data for 2011 (national).

Access to primary health care services influences health status by detecting and treating illness, managing chronic conditions and providing prevention programs. Primary health care can affect outcomes in a range of headline indicators and strategic areas for action, including life expectancy (section 4.1), child mortality (section 4.2) and disability and chronic disease (section 4.9). Poor health can also affect people’s educational attainment (sections 4.6 and 4.8) and ability to work (section 4.7). Section 5.3 (engagement with services) examines Aboriginal and Torres Strait Islander Australians’ access to a range of services and some of the barriers they may face.

Health services can be divided into primary health care services provided by a range of health professionals (which include public and community health services, Aboriginal and Torres Strait Islander Community Controlled Primary Health Care Services, general practitioner consultations, hospital emergency attendances, general practitioner ordered investigations and prescriptions, and over the counter medicines) and secondary/tertiary health care services (which involve a referral within the health system or a hospital admission). Primary health care services can reduce the need for secondary/tertiary care services (section 8.2 reports on hospitalisations that may be potentially preventable with appropriate primary health care.)

Due to their poorer health, Aboriginal and Torres Strait Islander Australians could be expected to utilise health care services at a much higher rate than non-Indigenous Australians. However lack of services, lack of affordability and lack of social/cultural acceptability of services are all potential barriers to Aboriginal and Torres Strait Islander

Australians accessing primary health care (Ware 2013). Institutional and cultural barriers may also lead to adverse health outcomes (Paradies, Harris and Anderson 2008). Section 5.1 includes data on Aboriginal and Torres Strait Islander perceptions of discrimination based on their Indigenous status.

Self-assessed health status

In 2014-15, 39.7 per cent of Aboriginal and Torres Strait Islander Australians aged 15 years and over reported their health status as excellent or very good, a decrease from 43.7 per cent in 2008 and 43.0 per cent in 2004-05 (table 8A.1.1). The decrease was similar for males and females (table 8A.1.3) and for people in remote and non-remote areas (table 8A.1.10).

In 2014-15, after adjusting for differences in population age structures, a lower proportion of Aboriginal and Torres Strait Islander Australians reported their health as excellent or very good, compared with non-Indigenous Australians — a gap of around 22 percentage points (similar to the gap for previous reporting periods over the last 10 years). The proportion of people reporting their health status as excellent or very good decreased with age for both Aboriginal and Torres Strait Islander and non-Indigenous Australians (table 8A.1.1).

In 2014-15, age-adjusted self-reported health status for both Aboriginal and Torres Strait Islander and non-Indigenous Australians varied according to a range of socioeconomic characteristics. The proportion of people aged 15 years and over rating their health status as excellent or very good was higher for those:

- with a highest year of schooling of year 12, compared with year 9 (15.9 percentage points higher for Aboriginal and Torres Strait Islander Australians and 21.3 percentage points higher for non-Indigenous Australians)
- in the highest income quintile compared with the lowest income quintile (around 28.5 percentage points higher for Aboriginal and Torres Strait Islander Australians and similar for non-Indigenous Australians) (table 8A.1.11).

Data on health status of Aboriginal and Torres Strait Islander Australians aged 15 years and over are also reported by State and Territory (tables 8A.1.4–9), by remoteness (table 8A.1.10) and by selected population characteristics (table 8A.1.11).

Data on health status of Aboriginal and Torres Strait Islander children aged 0–14 years as reported by the survey respondent are also available for 2008 and 2014-15. In 2014-15 82.7 per cent of Aboriginal and Torres Strait Islander Australians aged 0–14 years had reported health status as excellent or very good, an increase from 78.7 per cent in 2008 (table 8A.1.12).

Data on reported health status for Aboriginal and Torres Strait Islander children are also reported by sex in table 8A.1.12 and by remoteness in table 8A.1.13.

Aboriginal and Torres Strait Islander Australian's use of primary health care services

Use of primary health care services show how many people come into contact with services. Time series data on GP/specialist visits are difficult to interpret — increases in usage rates could reflect improved access, or an increasing need.

Survey data reported below asked people how long it had been since they had last consulted a GP/specialist or dentist, regardless of whether they had a health-related problem. Reasons for not consulting were only asked of people who identified that they had a health problem but had not consulted a GP/specialist or dentist in the previous 12 months.

No new data are available since the previous edition of this report. Summarising earlier results, in 2012-13:

- around one in seven (13.6 per cent) Aboriginal and Torres Strait Islander adults had not consulted a *GP/specialist* in the previous 12 months — a decrease from 19.4 per cent in 2001 (tables 8A.1.14). A variety of reasons were reported for not visiting a GP when people had a health problem, with ‘personal reasons’² (49.6 per cent) most commonly reported, followed by ‘logistical reasons’ (33.9 per cent) and ‘decided not to seek care’ (33.7 per cent) (table 8A.1.16)
- around one-quarter (26.6 per cent) of Aboriginal and Torres Strait Islander Australians aged 2 years and over reported not having visited a *dentist* in the previous two years, and a further 13.9 per cent reported never having visited a dentist (tables 8A.1.17). The most commonly reported reason for not going to a dentist in the previous 12 months when they had an oral health-related problem was ‘cost’ (45.6 per cent), followed by ‘personal reasons’ (43.3 per cent) and ‘logistical reasons’ (32.9 per cent) (table 8A.1.19).

Data on healthcare sought by Aboriginal and Torres Strait Islander adults from other health professionals are in tables 8A.1.20–21.

Additional data for services used by Aboriginal and Torres Strait Islander children are also reported. In 2014-15 for Aboriginal and Torres Strait Islander children aged 0–14 years:

- visiting a GP or doctor was the most common health service utilised (57.9 per cent of services utilised), followed by an Aboriginal medical health service (24.6 per cent of contacts) (table 8A.1.22).
- in non-remote areas, GP’s and doctors were more commonly utilised, and in remote areas, Aboriginal Medical Services and other community health clinics were more commonly utilised (table 8A.1.23).

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

Immunisation rates

Immunisation is effective in preventing sickness and death from vaccine preventable diseases. The Australian Childhood Immunisation Register (ACIR) assesses children for immunisation coverage at 12–15 months (1 year), 24–27 months (2 years) and 60–63 months (5 years), by Indigenous status, for all jurisdictions.

Nationally in 2015, the overall vaccination coverage rate for Aboriginal and Torres Strait Islander 5 year olds was 95.1 per cent — 2.0 percentage points higher than for other children (table 8A.1.25). For 1 year old and 2 year old Aboriginal and Torres Strait Islander children, the rates were around 3 percentage points below the rates for other children (89.5 per cent and 87.2 per cent, compared to 93.2 per cent and 90.4 per cent) (table 8A.1.25).

Time series data for childhood immunisation rates are available for NSW, Victoria, WA, SA and the NT. (Data from the ACT, Queensland and Tasmania were not available prior to 2011 due to data quality issues with reporting of Indigenous identification.) For these five jurisdictions combined, the largest increase in vaccination coverage rates occurred for 5 year olds, with the proportion increasing for Aboriginal and Torres Strait Islander children from 2008 to 2015 by around 20 percentage points (and around 14 percentage points for other children over the same period) (table 8A.1.30)³. From 2001 to 2015, rates increased for 1 year olds for both Aboriginal and Torres Strait Islander and other children. Over the same period, there was no statistically significant change for 2 year old children. Childhood immunisation data reported by State and Territory are available in tables 8A.1.31–45.

Data on immunisation rates for Aboriginal and Torres Strait Islander Australians aged 50 years and over are also available by age in table 8A.1.46.

Expenditure on health care services

Expenditure per person on health services provides an indication of the relative use of health care services by Aboriginal and Torres Strait Islander Australians and non-Indigenous Australians. Comparisons of expenditure require consideration of relative need. For example, chronic diseases are expensive to treat, and Aboriginal and Torres Strait Islander Australians have higher rates of chronic disease than non-Indigenous Australians (AIHW 2014). Section 4.9 includes information on rates of chronic disease.

In addition, investment in primary health care in remote areas is costly compared with metropolitan settings, however the alternative hospital-based care is even more expensive and using it in place of primary health care results in poorer health outcomes. A recent NT

³ Fully vaccinated status for five year olds is only available from 2008, prior to this data are reported for 6 year olds, due to changes in reporting practices.

study showed that improving use of primary health care would not only yield better health outcomes for patients with diabetes, but would be cost-effective (Thomas, Zhao and Wakerman 2014).

For this report, there are no updated expenditure data available – AIHW *Expenditures on Health for Aboriginal and Torres Strait Islander Peoples 2010-11* data reported were included in the previous edition of this report. Caution should be used in interpreting these data, due to issues around incomplete recording of Indigenous status and limitations of financial recording systems (AIHW 2013).

For 2010-11, total expenditure on health care from government and non-government sources (including insurance) for Aboriginal and Torres Strait Islander Australians:

- was \$7995 per person, compared with \$5437 per non-Indigenous Australian (table 8A.1.47). This expenditure was highest on hospitals for both Aboriginal and Torres Strait Islander Australians (\$3826 per person) and non-Indigenous Australians (\$2169 per person), followed by community health services for Aboriginal and Torres Strait Islander Australians (\$1967 per person) and medical services for non-Indigenous Australians (\$1011 per person) (table 8A.1.47)
- for primary health services was \$3602 per person, compared with \$2447 per non-Indigenous Australian (table 8A.1.48). Across primary health services, expenditure per person was highest on community health services (\$1967) for Aboriginal and Torres Strait Islander Australians, followed by medical services (\$406). For non-Indigenous Australians, primary health expenditure per person was highest for medications (\$751) followed by medical services (\$626) (table 8A.1.48).

The Aboriginal and Torres Strait Islander health workforce

Due to cultural differences, language barriers and racism experienced when accessing some mainstream health services, some Aboriginal and Torres Strait Islander Australians feel more comfortable seeing Aboriginal and Torres Strait Islander health professionals and accessing Aboriginal Community Controlled Health services.

The most recent population level data (in respect of 2011) show that although Aboriginal and Torres Strait Islander Australians make up around 3 per cent of the Australian population (ABS 2013), they comprise only 1.3 per cent of people working in health-related occupations. Additional data on employment data across the health workforce are provided by occupation in table 8A.1.49.

In 2014, there were 322 registered Aboriginal and Torres Strait Islander health practitioners, 83 per cent of whom were employed in the Aboriginal health services field,

however this is well below numbers required to provide parity with representation in the community (AIHW 2016)⁴

As many Aboriginal and Torres Strait Islander Australians needing health care will be treated by non-Indigenous health professionals, it is important that non-Indigenous health professionals treating Aboriginal and Torres Strait Islander Australians are trained to deliver safe and culturally responsive care.

Increasing the number of Aboriginal and Torres Strait Islander health workers, requires similar improvements in educational outcomes to those needed for improvement in Aboriginal and Torres Strait Islander employment more generally. Sections 4.6, 4.7, 4.8, chapter 7 and section 9.1 provide more information on education and employment outcomes and case studies of successful programs.

References

- ABS (Australian Bureau of Statistics) 2013, *Estimates of Aboriginal and Torres Strait Islander Australians, June 2011*, 30 August, Cat. no. 3238.0.55.001, Canberra, <http://www.abs.gov.au/ausstats/abs@.nsf/mf/3238.0.55.001> (accessed 16 March 2016).
- AIHW (Australian Institute of Health and Welfare) 2013, *Expenditure on Health for Aboriginal and Torres Strait Islander People 2010-11*, Cat. no. HWE 57, Health and welfare expenditure series no. 48, Canberra.
- 2014, *Australia's Health 2014*, series no. 14. Cat. no. AUS 178, Canberra.
- 2016, *Aboriginal and Torres Strait Islander Health Practitioner Workforce*, <http://www.aihw.gov.au/workforce/aboriginal-and-torres-strait-islander-health-practitioner/> (accessed 1 August 2016).
- Paradies, Y. 2007, *Social Determinants of Indigenous Health*, Allen and Unwin, Sydney.
- , Harris, R. and Anderson, I. 2008, *The Impact of Racism on Indigenous Health in Australia and Aotearoa: Towards a Research Agenda*, Cooperative Research Centre for Aboriginal Health, Darwin.
- Thomas, S., Zhao, Y. and Wakerman, J. 2014, 'The cost-effectiveness of primary care for Indigenous Australians with diabetes living in remote Northern Territory communities', *Medical Journal of Australia*, vol. 200, no. 11, pp. 658–662.
- Ware, V.A. 2013, *Improving the accessibility of health services in urban and regional settings for Indigenous people*, Resource sheet no. 27, Closing the Gap Clearinghouse.

⁴ These data relate to those that are registered under the *National Registration and Accreditation Scheme* as Aboriginal and Torres Strait Islander Health Practitioners. These data differ from the broader count in the 2011 Census where 1256 Aboriginal Health Workers were reported (see table 8A.1.49).

8.2 Potentially preventable hospitalisations⁵

Box 8.2.1 Key messages

Nationally in 2014-15, after adjusting for differences in population age structures, the hospitalisation rate:

- for *chronic* conditions for Aboriginal and Torres Strait Islander Australians was more than three times the rate for non-Indigenous Australians. Chronic obstructive pulmonary diseases (progressive lung diseases) accounted for the largest proportion across both population groups, with the rate for Aboriginal and Torres Strait Islander Australians five times the rate for non-Indigenous Australians (table 8A.2.1)
- for *acute* conditions for Aboriginal and Torres Strait Islander Australians was around 2.5 times the rate for non-Indigenous Australians (table 8A.2.5)
- for *vaccine* preventable conditions for Aboriginal and Torres Strait Islander Australians was 3.5 times the rate for non-Indigenous Australians for influenza and pneumonia, and 8.0 times the rate for non-Indigenous Australians for other vaccine preventable conditions (table 8A.2.7)
- increased as remoteness increased for chronic and acute conditions (with a similar trend for non-Indigenous Australians), whilst for vaccine preventable conditions the rate was highest for Aboriginal and Torres Strait Islander Australians in remote areas but highest for non-Indigenous Australians in major cities (tables 8A.2.4, 8A.2.6 and 8A.2.8).

Box 8.2.2 Measures of potentially preventable hospitalisations

Potentially preventable hospitalisations are those admissions that may have been prevented through appropriate preventive health interventions and early disease management, usually delivered in primary care and community-based care settings.

There are three main measures for this indicator, relating to the rate of hospitalisation per 100 000 population for:

- potentially preventable chronic conditions — diseases that typically persist for at least six months (including specific tables on type 2 diabetes mellitus)
- potentially preventable acute conditions — diseases that cause serious short-term illness that could possibly be prevented, or their severity minimised
- vaccine preventable conditions — including influenza and pneumonia.

Data for all measures are sourced from the AIHW National Hospital Morbidity Database, with the most recent data available for 2014-15 (national by remoteness). Additional data are reported on the rate of hospitalisation for injury, poisoning and other external causes, and sexually transmitted conditions, that could potentially have been prevented (national by remoteness).

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⁵ The Steering Committee notes its appreciation to the National Health Leadership Forum, which reviewed a draft of this section of the report.

Box 8.2.2 (continued)

Data presented in this report are not comparable to previous reports due to the application of a change in coding in 2015 to more accurately reflect categories of potentially preventable hospitalisations. Historical data included in this report have been revised on this new basis.

Potentially preventable hospitalisations are increasingly used internationally as an indicator of access to primary care and its effectiveness, and as a measure of the potential health gains from primary care interventions (Kruger and Tennant 2015). In many cases, hospital admissions can be prevented if more effective non-hospital care is available, either at an earlier stage in disease progression or as an alternative to hospital care (AHMAC 2015; Katterl et al. 2012; Russell 2013). However, higher rates of potentially preventable hospitalisations may also be due to higher prevalence of the underlying diseases, particularly chronic diseases (AIHW 2014).

Aboriginal and Torres Strait Islander Australians have a higher rate of potentially preventable hospitalisations than non-Indigenous Australians (Katterl et al. 2012). Even after controlling for age, sex and remoteness, the rate of potentially preventable hospitalisation for Aboriginal and Torres Strait Islander Australians is 1.5 times as high as the rate for non-Indigenous Australians. Indigenous status appears to have a larger affect than remoteness on whether a hospitalisation was for a potentially preventable disease (AIHW 2014).

For this indicator, potentially preventable hospitalisations data are presented for 2010-11 to 2014-15. From 2010-11 all jurisdictions were considered to have acceptable quality of Aboriginal and Torres Strait Islander and non-Indigenous identification for this indicator. Potentially preventable hospitalisations data presented in this report are not comparable to previous reports due to the application of a change in coding in 2015 to more accurately reflect categories of potentially preventable hospitalisations. Historical data included in this report have been revised on this new basis.

Potentially preventable chronic conditions

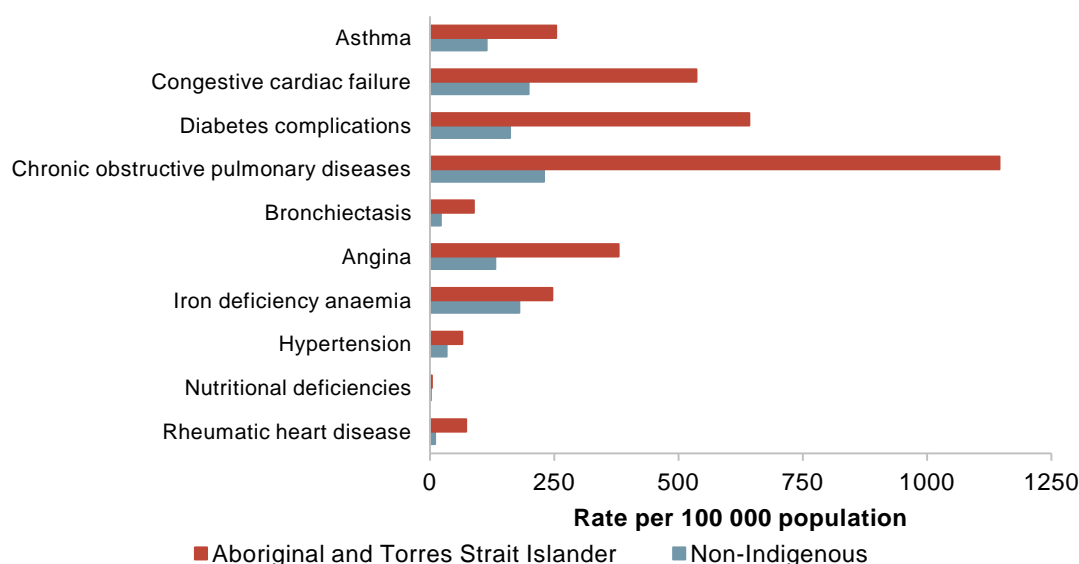
In 2014-15, hospitalisations for potentially preventable chronic⁶ conditions comprised 3.2 per cent of all hospitalisations for Aboriginal and Torres Strait Islander Australians, and 2.9 per cent for non-Indigenous Australians (8A.2.1).

In 2014-15, after adjusting for differences in population age structures, the hospitalisation rate for chronic conditions for Aboriginal and Torres Strait Islander Australians was more than three times the rate for non-Indigenous Australians (table 8A.2.1). For both Aboriginal and Torres Strait Islander and non-Indigenous Australians, the hospitalisation

⁶ Diseases that would typically persist for at least six months.

rate increased as remoteness increased, with the rate for Aboriginal and Torres Strait Islander Australians in remote areas twice the rate in major cities (table 8A.2.2).

Figure 8.2.1 **Potentially preventable hospitalisations for chronic conditions, 2014-15^a**



^a Data are age standardised.

Source: AIHW (unpublished) National Hospital Morbidity Database; table 8A.2.1.

Nationally in 2014-15, for both Aboriginal and Torres Strait Islander and non-Indigenous Australians, chronic obstructive pulmonary diseases⁷ accounted for the highest rate of hospitalisations for preventable conditions, with the rate for Aboriginal and Torres Strait Islander Australians five times the rate for non-Indigenous Australians. For Aboriginal and Torres Strait Islander Australians this was followed by hospitalisations for diabetes as principal diagnosis⁸ (figure 8.2.1). Additional data on Type 2 diabetes by complication are in tables 8A.2.3–4.

From 2010-11 to 2014-15, hospitalisation rates for both Aboriginal and Torres Strait Islander and non-Indigenous Australians have fluctuated with no clear trend (table 8A.2.1).

⁷ Chronic obstructive pulmonary diseases (COPD) is an umbrella term used to describe progressive lung diseases. Smoking (including second-hand smoke) is a risk factor for COPD.

⁸ This refers to diabetes type 1 and type 2. In previous reports diabetes complications accounted for the largest proportion of hospitalisations for preventable chronic conditions. To align with National Health Agreement coding changes in 2015 for chronic conditions, principal diagnosis only is counted for diabetes, where previously additional diagnosis was also included, which has reduced the recorded rate for this report.

Potentially preventable acute conditions

In 2014-15, after adjusting for differences in population age structures, the hospitalisation rate for potentially preventable acute conditions⁹ for Aboriginal and Torres Strait Islander Australians was more than twice the rate for non-Indigenous Australians (table 8A.2.5). For both Aboriginal and Torres Strait Islander and non-Indigenous Australians, the hospitalisation rate for potentially preventable acute conditions increased as remoteness increased, with the rate for Aboriginal and Torres Strait Islander Australians in remote areas 2.5 times the rate in major cities (table 8A.2.6).

Vaccine preventable conditions

In 2014-15, after adjusting for differences in population age structures, the hospitalisation rate for Aboriginal and Torres Strait Islander Australians for influenza and pneumonia was 3.5 times the rate for non-Indigenous Australians, and for other vaccine preventable conditions was 8.0 times the rate for non-Indigenous Australians (table 8A.2.7).

Hospitalisations for vaccine preventable conditions were highest in remote areas for Aboriginal and Torres Strait Islander Australians but were highest in major cities for non-Indigenous Australians (table 8A.2.8).

Other hospitalisations

Available data for hospitalisations for infections with a predominantly sexual mode of transmission show that, in 2014-15, hospitalisation rate for Aboriginal and Torres Strait Islander Australians for these infections was more than seven times the rate for non-Indigenous Australians (table 8A.2.9).

Hospitalisations for infections with a predominantly sexual mode of transmission increased with remoteness for Aboriginal and Torres Strait Islander Australians (in 2014-15, the rate in remote areas was 3.5 times the rate in regional areas and six times the rate in major cities), but there was no clear trend across remoteness areas for non-Indigenous Australians (table 8A.2.10).

Hospitalisations where the principal diagnosis was injury and poisoning and other consequences of external causes, may be prevented by both appropriate primary health care, and improved safety and awareness¹⁰. In 2014-15, hospitalisation rates for Aboriginal and Torres Strait Islander Australians for these causes were almost twice the rate for non-Indigenous Australians (table 8A.2.11). Data are also available by remoteness,

⁹ Relate to serious short-term illness and could possibly be prevented or severely minimised, through access to effective primary health care services.

¹⁰ Hospitalisations do not include episodes of care for non-admitted patients treated in hospital emergency departments or outpatient clinics.

showing much higher hospitalisation rates for Aboriginal and Torres Strait Islander Australians in remote areas (table 8A.2.12).

References

- AHMAC (Australian Health Ministers' Advisory Council) 2015, *Aboriginal and Torres Strait Islander Health Performance Framework 2014 Report*, Canberra.
- AIHW (Australian Institute of Health and Welfare) 2014, *Australia's Health 2014*, series no. 14. Cat. no. AUS 178, Canberra.
- Burrow, S. and Ride, K. 2016, *Review of Diabetes Among Aboriginal and Torres Strait Islander People.*, Australian Indigenous HealthInfoNet, <http://www.healthinfonet.ecu.edu.au/uploads/docs/diabetes-review-2016.pdf> (accessed 2 June 2016).
- Katterl, R., Anikeeva, O., Butler, C., Brown, L., Smith, B. and Bywood, P. 2012, *Potentially Avoidable Hospitalisations in Australia: Causes for Hospitalisations and Primary Health Care Interventions*, Primary Health Care Research & Information Service.
- Kruger, E. and Tennant, M. 2015, 'Potentially preventable hospital separations related to oral health: a 10-year analysis', *Australian Dental Journal*, vol. 60, no. 2, pp. 205–211.
- Russell, L.M. 2013, 'Reports indicate that changes are needed to close the gap for Indigenous health', *Medical Journal of Australia*, vol. 199, no. 11, pp. 737–738.

8.3 Potentially avoidable deaths¹¹

Box 8.3.1 Key messages

Reducing potentially avoidable deaths is a key contributor to increasing life expectancy.

For people aged under 75 years:

- between 1998 and 2014, after adjusting for differences in population age structures, mortality rates from avoidable causes for Aboriginal and Torres Strait Islander Australians declined at a greater rate than for non-Indigenous Australians. The gap has narrowed from 319.2 deaths to 242.7 deaths per 100 000 population. However, in 2014, the avoidable death rate for Aboriginal and Torres Strait Islander Australians remained over 3 times the rate for non-Indigenous Australians (figure 8.3.1)
- for the period 2010–2014, around 60 per cent of Aboriginal and Torres Strait Islander deaths were potentially avoidable (6182 out of 10155 deaths), compared to 50 per cent of non-Indigenous deaths (86232 out of 172307 deaths) (table 8A.3.5)
- for the period 2010–2014, the most common causes of avoidable mortality for Aboriginal and Torres Strait Islander Australians were ischaemic heart disease (heart attacks) (21.6 per cent), diabetes (12.5 per cent) and suicide (10.4 per cent) (table 8A.3.3).

Box 8.3.2 Measures of potentially avoidable deaths

There is one main measure for this indicator.

- *Potentially avoidable deaths* is defined as the number and rate of deaths from potentially preventable and treatable conditions¹² for people aged less than 75 years (NSW, Queensland, WA, SA and the NT; age and sex).

Data for this measure are sourced from the ABS Causes of Death collection, with the most recent available data for 2014. People aged 75 years and over are excluded due to difficulty in assigning a cause of death that can be clearly defined as avoidable or unavoidable.

Reducing potentially avoidable deaths is a key contributor to increasing life expectancy (section 4.1). Potentially avoidable deaths can be reduced through lifestyle improvements (such as reduced alcohol (section 11.1), drug (section 11.2) and tobacco consumption (section 8.4)), high quality, effective and accessible primary prevention, early intervention and medical treatment, and is closely related to measures of access to primary health care (section 8.1) and potentially preventable hospitalisations (section 8.2).

Research into mortality trends over the last three decades in Australia shows that health care has made a significant contribution to the reduction in mortality, but that those with a

¹¹ The Steering Committee notes its appreciation to the National Health Leadership Forum, which reviewed a draft of this section of the report.

¹² A list of causes for potentially avoidable deaths is available in table 8A.3.6.

higher socioeconomic status have obtained a greater benefit (Korda et al., 2007). This may be because factors outside the health system also contribute to potentially avoidable deaths, including socioeconomic factors (education, employment and income — see chapters 7, and 9); lifestyle factors (illicit substance use, obesity and lack of nutrition — see sections 8.4, 8.5, 11.1 and 11.2); environmental factors (lack of clean water and sanitation — see section 10.3) and exposure to abuse, neglect and violence (sections 4.11, 4.12 and 11.3).

Potentially avoidable deaths

Mortality rates for potentially avoidable causes are defined as the number of deaths per 100 000 population. The following caveats apply:

- five year aggregate data are used for current period analysis due to the volatility of the small number of deaths. Single year data are presented for time series analysis only
- data disaggregated by Indigenous status are available for NSW, Queensland, WA, SA and the NT, as these jurisdictions have sufficient levels of Aboriginal and Torres Strait Islander identification and numbers of deaths to support analysis.

Current period

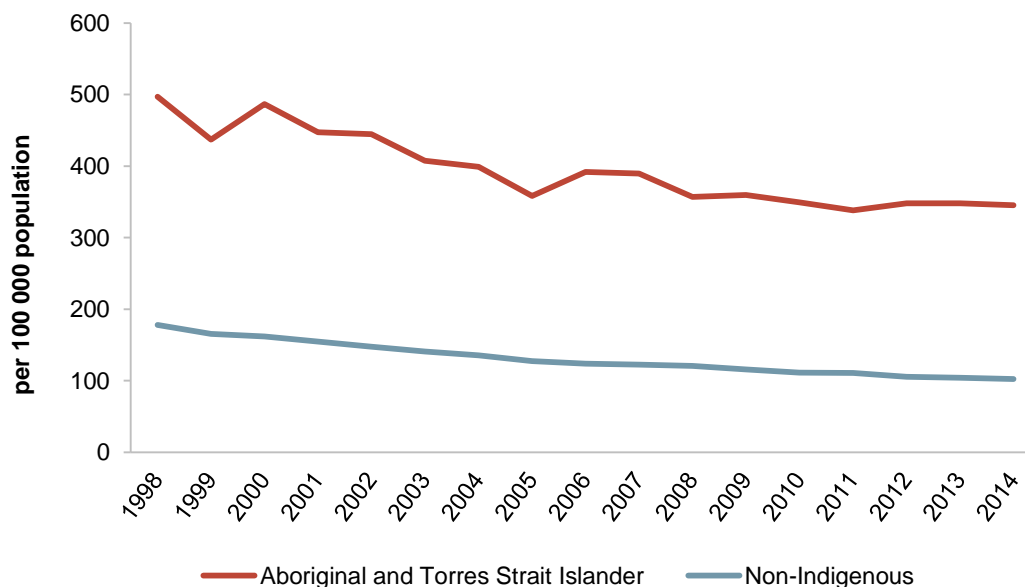
For the period 2010–2014, after adjusting for differences in population age structures, the potentially avoidable mortality rate for Aboriginal and Torres Strait Islander Australians aged 0–74 years was over three times the rate for non-Indigenous Australians.

From 15 years of age, potentially avoidable mortality increased with age for both Aboriginal and Torres Strait Islander Australians and non-Indigenous Australians (for those aged 15–24 years, 78.2 and 27.2 deaths per 100 000 population respectively, whilst for those aged 65–74 years, 1586.5 and 578.8 deaths per 100 000 population respectively). Aboriginal and Torres Strait Islander males had higher rates of avoidable mortality than females across all age categories (except for the 1–4 year age group), with the rates for males aged 15–24 and 25–34 years around twice the rates for females of the same ages (table 8A.3.2). Potentially avoidable mortality data reported by selected states and territories are available in table 8A.3.1.

Over time

Potentially avoidable death rates for Aboriginal and Torres Strait Islander Australians are declining over the longer term. From 1998 to 2014, after adjusting for differences in population age structures, Aboriginal and Torres Strait Islander mortality rates from avoidable causes for people aged 0–74 years declined by 31.7 per cent, with a larger decline for males (33.2 per cent) than for females (29.7 per cent) (table 8A.3.4).

Figure 8.3.1 **Avoidable mortality rates, people aged 0–74 years, NSW, Queensland, WA, SA and the NT, 1998 to 2014^{a, b}**



^a Mortality data disaggregated by Indigenous status are available for NSW, Queensland, WA, SA and the NT, as these jurisdictions have sufficient levels of Aboriginal and Torres Strait Islander identification and numbers of deaths to support analysis. They do not represent an Australian total. ^b Data are age standardised.

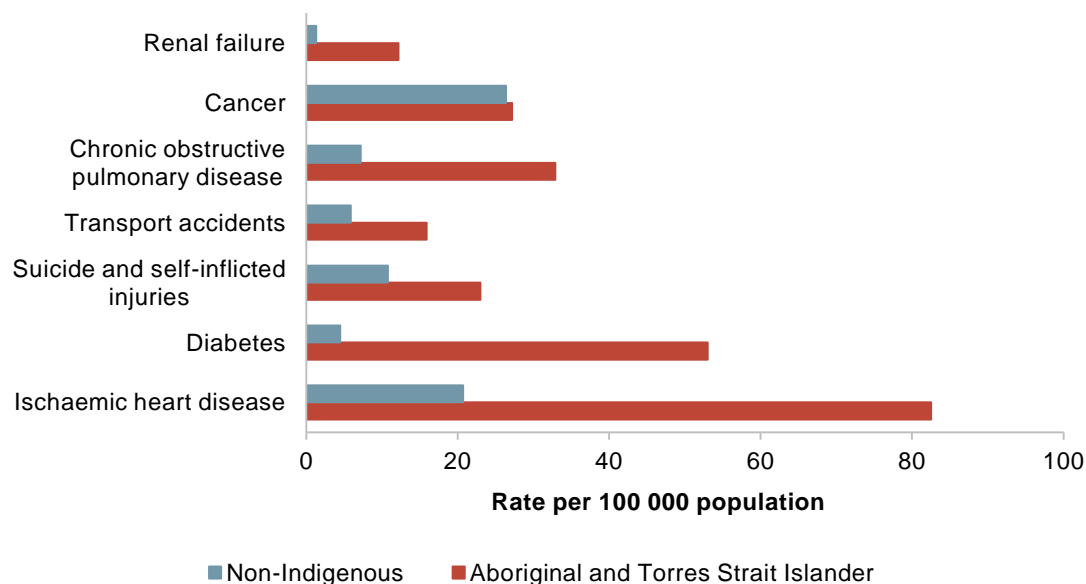
Sources: ABS (unpublished) Causes of Death, Australia; ABS (unpublished) Estimates and Projections, Aboriginal and Torres Strait Islander Australians, 2001 to 2026; table 8A.3.4.

From 1998 to 2014, after adjusting for differences in population age structures, the gap in potentially avoidable mortality rates between Aboriginal and Torres Strait Islander Australians and non-Indigenous Australians narrowed from 319.2 to 242.7 deaths per 100 000 population (figure 8.3.1). The percentage decrease in avoidable mortality rates was larger for non-Indigenous Australians (43.2 per cent) than for Aboriginal and Torres Strait Islander Australians (31.7 per cent), but as the non-Indigenous rate was lower the gap narrowed (table 8A.3.4).

Causes of avoidable mortality

For 2010–2014, the most common causes of avoidable mortality for Aboriginal and Torres Strait Islander Australians aged 0–74 years were ischaemic heart disease (heart attacks) (21.6 per cent), diabetes (12.5 per cent) and suicide (10.4 per cent) (table 8A.3.3). After adjusting for differences in population age structures, the mortality rate for Aboriginal and Torres Strait Islander Australians from diabetes is 12 times the rate for non-Indigenous Australians — followed by ischemic heart disease and suicide at 4 times and 2 times the rates for non-Indigenous Australians (figure 8.3.2).

Figure 8.3.2 **Avoidable mortality, by selected cause of death, people aged 0–74 years, NSW, Queensland, WA, SA and the NT, 2010–2014^{a, b, c}**



^a Mortality data disaggregated by Indigenous status are available for NSW, Queensland, WA, SA and the NT, as these jurisdictions have sufficient levels of Aboriginal and Torres Strait Islander identification and numbers of deaths to support analysis. They do not represent an Australian total. ^b Data are only reported in this figure for selected causes of avoidable mortality based on the most common causes for Aboriginal and Torres Strait Islander Australians. ^c Data are age standardised.

Source: ABS (unpublished) Causes of Death, Australia; table 8A.3.3.

Things that work

For Aboriginal and Torres Strait Islander Australians, chronic diseases and injury (section 4.9) account for the greatest proportions of avoidable deaths, but are amenable to prevention as well as treatment. Whilst there are no evaluated programs, an historical cohort study by Zhao et al (2014) for the period 2002 to 2011, found increased levels of primary care utilisation by Aboriginal and Torres Strait Islander people in remote communities in the NT was cost effective in reducing hospitalisations and deaths from common chronic diseases including renal disease, chronic obstructive pulmonary disease, diabetes and ischemic heart disease. The study found a 59–75 per cent reduction in deaths with medium/high primary healthcare utilisation, compared to low primary healthcare utilisation.

References

- Korda, R.J., Butler, J.R., Clements, M.S., Kunitz, S.J., 2007. Differential Impacts of Health Care in Australia: Trend Analysis of Socioeconomic Inequalities in Avoidable Mortality. *International Journal of Epidemiology*, vol. 36, no. 1, pp. 156-65.
- Zhao, Y., Thomas, S.L., Guthridge, S.L., Wakerman, J., 2014. Better Health Outcomes at Lower Costs: The Benefits of Primary Care Utilisation for Chronic Disease Management in Remote Indigenous Communities in Australia's Northern Territory. *BioMedCentral Health Service Research*, vol. 14, no. 463 .

8.4 Tobacco consumption and harm¹³

Box 8.4.1 Key messages

- Between 2001 and 2014-15, the crude daily smoking rate for Aboriginal and Torres Strait Islander adults declined from 50.7 to 41.4 per cent (table 8A.4.1).
- A similar decline in non-Indigenous smoking rates meant that the gap in (age-adjusted) daily smoking rates remained relatively constant at around 26 percentage points between 2001 and 2014-15 (table 8A.4.7).

Box 8.4.2 Measures of tobacco consumption and harm

There is one main measure for this indicator (aligned with the associated NIRA indicator), rates of current daily smokers, measured by the proportion of people aged 18 years and over who are current daily smokers (all jurisdictions; remoteness; age; sex).

Smoking rate data are available from the ABS Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS)/National Aboriginal and Torres Strait Islander Social Survey (NATSISS), with the most recent data available from the 2014-15 NATSISS. Data for the non-Indigenous population are sourced from the ABS Australian Health Survey (AHS)/National Health Survey (NHS), with the most recent data available from the 2014-15 NHS.

Previous editions of this report included a supplementary measure on tobacco-related hospitalisations. This is no longer included as the measure only related to conditions directly attributable to tobacco — not most conditions, where tobacco may be a contributing factor but the link is not immediate. Data are also difficult to interpret as they represent less than one per cent of all Aboriginal and Torres Strait Islander hospitalisations and are therefore highly volatile over time.

Tobacco consumption is a subsidiary performance measure for COAG's target of 'closing the life expectancy gap (between Indigenous and non-Indigenous Australians) within a generation' (COAG 2012).

In Australia, up to two-thirds of deaths in current smokers can be attributed to smoking (AHMAC 2015). Among Aboriginal and Torres Strait Islander Australians, tobacco use is the leading risk factor contributing to disease and death (Vos et al. 2007). Studies have found that smoking tobacco increases the risk of developing numerous cancers, heart and vascular diseases, and depression (AHMAC 2012; Cunningham et al. 2008; Pasco et al. 2008). Smoking in pregnancy can lead to miscarriage, stillbirth or premature birth (Graham et al. 2007). Section 6.2 includes information on women reporting smoking during pregnancy.

¹³ The Steering Committee notes its appreciation to the National Health Leadership Forum, which reviewed a draft of this section of the report.

Compared to non-Indigenous people, Aboriginal and Torres Strait Islander Australians who smoke generally commence at an earlier age and smoke for longer (CEITC 2010, 2014). Recent research (Knott et al. 2016) suggests also there may be fundamental differences in the determinants of smoking and the reasons for quitting, between Aboriginal and Torres Strait Islander men and women.

Research has found that the proportion of Aboriginal and Torres Strait Islander adults who want to quit smoking and those who have made a quit attempt in the past year, are similar to the general population. However fewer Aboriginal and Torres Strait Islander adults have made a sustained quit attempt for at least a month and a lower proportion agree that social norms disapprove of smoking, compared to the general population (Thomas et. al 2015).

Tobacco use is often associated with other lifestyle related health risk factors, such as excessive alcohol consumption and poor diet. Long term risky/high risk drinkers (both males and females) were more likely to be current smokers than those who drank at a low risk level (ABS 2006). Section 11.1 examines alcohol consumption and harm.

In Australia and many other countries smoking behaviour is inversely related to socioeconomic status, with those in disadvantaged groups in the population more likely to start and continue smoking. In addition to long-term health risks, low income groups (such as some Aboriginal and Torres Strait Islander families and communities) are affected by the financial strain associated with tobacco use (Greenhalgh 2015). A recent study in NSW found that more disadvantaged areas were significantly more likely to have higher tobacco outlet densities, with this density significantly and positively associated with smoking status (Marashi-Pour 2015).

Tobacco consumption

Current daily smokers are people who smoked one or more cigarettes (or pipes or cigars) per day at the time of survey interview.

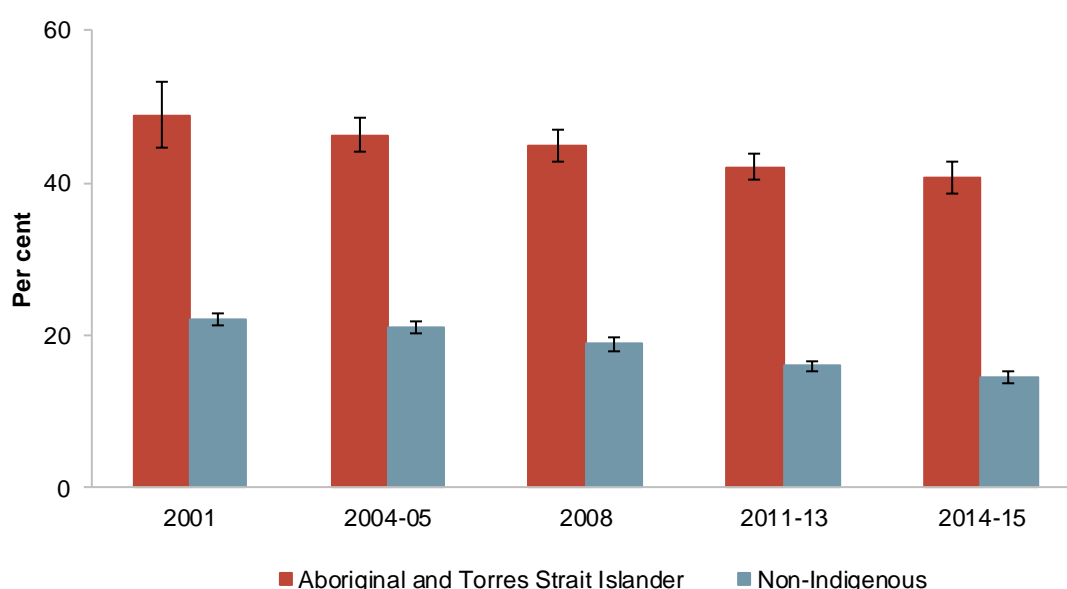
The COAG performance measure and the data presented in this section focus on the proportion of people aged 18 years and over who are current daily smokers. However, as noted, Aboriginal and Torres Strait Islander Australians tend to start smoking at an earlier age than non-Indigenous people — for 2014-15, in non-remote areas around one in six (16.2 per cent) Aboriginal and Torres Strait Islander 15 to 17 year olds were current daily smokers, compared with one in thirty (3.3 per cent) non-Indigenous 15 to 17 year olds (table 8A.4.12).

Nationally in 2014-15, the crude daily smoking rate among Aboriginal and Torres Strait Islander adults was 41.4 per cent, a decline from 50.7 per cent in 2001 (table 8A.4.1). Rates varied across states and territories in 2014-15, from 38.8 per cent in SA to 46.2 per cent in the NT (table 8A.4.1). Smoking rates were higher in remote and very remote areas (49.3 per cent and 48.9 per cent) than in major cities (36.3 per cent) (table 8A.4.2). In non-remote areas in 2014-15, smoking was most prevalent among those aged 25–54 years

(between 45.4 and 46.5 per cent), with smoking rates much lower for older people (31.3 per cent for those aged 55 years and over). A similar pattern was observed for non-Indigenous Australians, although the daily smoking rates were consistently lower across all age groups (table 8A.4.12).

After adjusting for different population age structures, in 2014-15 the current daily smoking rate for Aboriginal and Torres Strait Islander Australians was 2.8 times the rate for non-Indigenous Australians (table 8A.4.7). The gap in smoking rates was widest in remote areas (table 8A.4.8).

Figure 8.4.1 Current daily smokers aged 18 years and over, 2001 to 2014-15^{a, b}



^a Error bars represent 95 per cent confidence intervals around each estimate. ^b Rates are age standardised.

Sources: ABS (unpublished) National Health Survey 2001; ABS (unpublished) National Health Survey and National Aboriginal Torres Strait Islander Health Survey 2004-05; ABS (unpublished) National Aboriginal Torres Strait Islander Social Survey 2008; ABS (unpublished) National Health Survey 2007-08; ABS (unpublished) Australian Aboriginal Torres Strait Islander Health Survey 2012-13 (core component); ABS (unpublished) Australian Health Survey 2011-13 (2011-12 core component); ABS (unpublished) National Aboriginal and Torres Strait Islander Social Survey, 2014-15; ABS (unpublished) National Health Survey, 2014-15; table 8A.4.7.

Between 2001 and 2014-15, after adjusting for differences in population age structures, the daily smoking rate declined for both Aboriginal and Torres Strait Islander adults and non-Indigenous adults, leaving the gap relatively unchanged at around 26 percentage points (figure 8.4.1).

Data for smoking rates reported by State and Territory are available by remoteness in tables 8A.4.2-6 and 8A.4.8-10 and by sex in tables 8A.4.11-12.

Things that work

There is no published robust evaluation of an intervention resulting in a decrease in the prevalence of tobacco smoking for Aboriginal and Torres Strait Islander people (Minichiello et al 2016). A systematic review of 73 interventions in indigenous communities globally found that there was no single intervention that was more likely to result in a reduction in tobacco use, but rather that more successful programs:

- use a comprehensive approach inclusive of multiple activities
- centre Aboriginal leadership
- make long-term community investments
- provide culturally appropriate health materials and activities to produce desired changes (Minichiello et al. 2016).

Research from the national *Talking About The Smokes* project also highlighted the importance of taking a comprehensive approach to tobacco control, reporting that a broad range of factors were associated (positively and negatively) with the desire by Aboriginal and Torres Strait Islander smokers to quit (Nicholson et. al 2015).

References

- ABS (Australian Bureau of Statistics) 2006, *Alcohol Consumption in Australia: A Snapshot, 2004-05*, Cat. no. 4832.0.55.001, Canberra.
- AHMAC (Australian Health Ministers' Advisory Council) 2012, *Aboriginal and Torres Strait Islander Health Performance Framework 2012 Report*, Canberra.
- 2015, *Aboriginal and Torres Strait Islander Health Performance Framework 2014 Report*, Canberra.
- CEITC (Centre for Excellence in Indigenous Tobacco Control) 2010, *Just the Facts: A Fact Sheet about Tobacco Use Among Indigenous Australians*, http://www.ceitc.org.au/system/files/Just_the_facts_2010.pdf (accessed 9 February 2009).
- 2014, *Just the Facts: A Fact Sheet about Tobacco Use among Indigenous Australians*, http://www.ceitc.org.au/files/Just%20the%20facts_v2.pdf (accessed 26 June 2014).
- COAG (Council of Australian Governments) 2012, *National Indigenous Reform Agreement*, www.federalfinancialrelations.gov.au/content/npa/health_indigenous/indigenous-reform/national-agreement_sept_12.pdf (accessed 14 January 2013).
- Cunningham, J., Rumbold, A.T., Zhang, X. and Condon, J.R. 2008, 'Incidence, aetiology, and outcomes of cancer in Indigenous people in Australia', *The Lancet Oncology*, vol. 9, no. 6, pp. 585–595.
- Graham, S., Jackson Pulver, L.R., Wang, Y.A., Kelly, P.M., Laws, P.J., Grayson, N. and Sullivan, E.A. 2007, 'The Urban-Remote Divide for Indigenous Perinatal Outcomes', *Medical Journal of Australia*, vol. 186, no. 10, pp. 509–512.

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- Greenhalgh, E. 2015, *Tobacco in Australia: Facts and issues*, Cancer Council Victoria, Melbourne, <http://www.tobaccoinaustralia.org.au/chapter-1-prevalence/1-7-trends-in-the-prevalence-of-smoking-by-socioec> (accessed 12 May 2016).
- Knott, V., Gilligan, G., Maksimovic, L., Shen, D. and Murphy, M. 2016, 'Gender Determinants of Smoking Practice in Indigenous communities: an Exploratory Study', *European Journal of Cancer Care*, vol. 25, no. 2, pp. 231–241.
- Marashi-Pour, S. 2015, 'The Association Between the Density of Retail Tobacco Outlets, Individual Smoking Status, Neighbourhood Socioeconomic Status and School Locations in New South Wales, Australia', *Spatial and Spatio-temporal Epidemiology*, vol. 12, January 2015, pp. 1–7.
- Minichiello, A., Lefkowitz, A., Firestone, M., Smylie, J. and Schwartz, R. 2016, 'Effective Strategies to Reduce Commercial Tobacco Use in Indigenous Communities Globally: A Systematic Review', *BMC Public Health*.
- Nicholson, A.K., Borland, R., Davey, M.E., Stevens, M., Thomas, D.P. 2015, 'Predictors of Wanting to Quit in a National Sample of Aboriginal and Torres Strait Islander smokers', *The Medical Journal of Australia, Supplement*, vol. 202, pp. 26–32.
- Pasco, J.A., Williams, L.J., Jacka, F., Ng, F., Henry, M.J., Nicholson, G. and Kotowicz, M.A. 2008, 'Tobacco Smoking as a Risk Factor for Major Depressive Disorder: Population-based study', *The British Journal of Psychiatry*, vol. 193, pp. 322–326.
- Thomas, D.P., Davey, M.E., Briggs, V.L., Borland, R., 2015, 'Research Methods of Talking About The Smokes: an International Tobacco Control Policy Evaluation Project study with Aboriginal and Torres Strait Islander Australians', *The Medical Journal of Australia, Supplement*, vol. 202, pp. 3-12.
- Vos, T., Barker, B., Stanley, L. and Lopez, A. 2007, *The Burden of Disease and Injury in Aboriginal and Torres Strait Islander Peoples 2003*, School of Population Health, The University of Queensland, Brisbane.

8.5 Obesity and nutrition¹⁴

Box 8.5.1 Key messages

- In 2014-15, 69.8 per cent of Aboriginal and Torres Strait Islander children aged 2–14 years were meeting the guidelines for adequate daily fruit intake, slightly lower than the rate for non-Indigenous children (74.1 per cent). The proportions meeting the guidelines for adequate daily vegetable intake were much lower — 7.4 per cent for Aboriginal and Torres Strait Islander children and 5.5 per cent for non-Indigenous children (table 8A.5.13).
- In 2012-13, 69.2 per cent of Aboriginal and Torres Strait Islander adults were categorised as clinically obese (39.8 per cent) or overweight (29.4 per cent). Only 27.7 per cent were considered to be of normal weight (table 8A.5.8). After adjusting for different population age structures, the proportion of Aboriginal and Torres Strait Islander adults categorised as overweight or obese was 1.2 times the proportion for non-Indigenous adults (table 8A.5.2).

Box 8.5.2 Measures of obesity and nutrition

There is one main measure for this indicator (aligned with the associated NIRA indicator). *Overweight and obese* is defined as the number of people aged 18 years and over with a BMI in the range 25.0–29.9 (overweight) or 30 or higher (obese) as a proportion of the total population. Additional data are also reported for people with a BMI of 18.5–24.9 (normal weight) and with a BMI of less than 18.5 (underweight) (all jurisdictions; remoteness; sex; age). The data source is the ABS Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS) with the most recent data for 2012-13. Data for the non-Indigenous population are sourced from the Australian Health Survey (AHS) with the most recent data for 2011–13. BMI data for 2012-13 are not directly comparable with earlier data for 2004-05.

Data are also provided for a supplementary measure defined as the proportion of children aged 2–14 years meeting the recommended average daily fruit and vegetable consumption guidelines (national; remoteness; age). Data for the Indigenous population are sourced from the ABS AATSIHS/National Aboriginal and Torres Strait Islander Social Survey (NATSISS), with the most recent data available from the 2014-15 NATSISS. Data for the non-Indigenous population are sourced from the ABS AHS/National Health Survey (NHS), with the most recent data from the 2014-15 NHS.

The prevalence of overweight and obesity is a subsidiary performance measure for COAG’s target of ‘closing the life expectancy gap (between Indigenous and non-Indigenous Australians) within a generation’ (COAG 2012).

For Aboriginal and Torres Strait Islander Australians, high body mass and physical inactivity are two significant risk factors for poor health outcomes (Thorpe and Browne 2009).

¹⁴ The Steering Committee notes its appreciation to the National Health Leadership Forum, which reviewed a draft of this section of the report.

Excess weight increases the risk of an individual developing, among other things, cardiovascular disease, Type 2 diabetes, some musculoskeletal conditions and some cancers (AIHW 2013). Research suggests that the excess burden of overweight and obesity for Aboriginal and Torres Strait Islander Australians reduces the average life expectancy by between one and three years, accounting for 9 to 17 per cent of the total gap in life expectancy between Aboriginal and Torres Strait Islander Australians and non-Indigenous Australians (Zhao et al. 2013).

Lifestyle factors including a lack of physical activity, sedentary time and poor dietary intake are all well established as major contributors to obesity (NHMRC 2013; Sanders et al. 2015).

Good nutrition contributes to quality of life and helps to maintain a healthy body weight, protect against infections, and reduce the risk of chronic disease and premature deaths. Studies have found that people on low incomes tend to purchase foods that provide the most calories for the least cost, such as soft drinks (Brimblecombe and O’Dea 2009; Brownell and Frieden 2009; Harrison et al. 2007; WHO 2008). Low income, in combination with the high cost of fresh food, contributes to obesity, poor nutrition and the displacement of healthy food choices in remote Aboriginal communities. (Section 4.10 provides more information on incomes.)

Regular physical activity and intake of a nutritious diet commensurate with energy requirements can have a protective effect against obesity related diseases (AMA 2005; NHMRC 2013). Section 5.7 provides more information on participation in organised sport, arts or community group activities. Good nutrition is important during pregnancy (see section 6.1, Antenatal care) because pathways to chronic diseases can begin in utero (O’Dea 2008; WHO 2005). Low birthweight (see section 6.4) is associated with a higher risk of central obesity, type 2 diabetes, kidney failure, high blood pressure, and heart disease in later life. Good nutrition is also important for infant and childhood growth and development and for establishing healthy habits for life (ARACY 2008; Eades et al. 2010; Tomkins 2001; WHO 2008).

Inadequate housing in remote areas compounds the issue of providing a well-balanced daily diet (House of Representatives 2009; Lee et al. 2009). In one community, less than six per cent of houses had essential kitchen hardware for the storage and preparation of food (Lee et al. 2009). Section 10.3 provides more information on housing infrastructure.

Research shows that it becomes more difficult to get on track towards a healthy weight as age increases, emphasising the importance of early prevention, to avoid the development of overweight and obesity (FaHCSIA 2013). Education has an important role in establishing health behaviours and the readiness of individuals to effect behavioural change (NHMRC 2013).

Obesity

Obesity is most commonly measured using the body mass index (BMI). BMI is calculated as weight (kg) divided by the square of height (m). BMI values are grouped according to World Health Organization and National Health and Medical Research Council guidelines. Adults with a BMI of 25 to less than 30 are categorised as overweight and those with a BMI of 30 or higher are categorised as obese (NHMRC 2013; WHO 2000).

Nationally in 2012-13, 69.2 per cent of Aboriginal and Torres Strait Islander adults were considered to be obese (39.8 per cent) or overweight (29.4 per cent). Only 27.7 per cent were considered to be of normal weight. Rates of overweight were higher for males (32.3 per cent) than females (26.6 per cent) but rates of obesity were higher for females (43.3 per cent) than for males (36.2 per cent). Whilst rates of overweight remained relatively stable as age increased, rates of obesity increased with age (from 28.4 per cent for those aged 18–24 years to 48.8 per cent of those aged 55 years and over). The trend was similar for males and females (table 8A.5.8).

After adjusting for differences in population age structures, the proportion of Aboriginal and Torres Strait Islander adults who were overweight or obese in 2012-13 was 1.2 times the proportion for non-Indigenous adults in 2011-12 (table 8A.5.2).

Data for rates of overweight and obesity by State and Territory and by remoteness area are available in tables 8A.5.2, 8A.5.4 and 8A.5.6. Data for all BMI categories by State and Territory are available in table 8A.5.6.

Children have lower rates of overweight and obesity than adults. In 2012-13, 29.7 per cent of Aboriginal and Torres Strait Islander children aged 2–14 years were categorised as overweight (19.6 per cent) and obese (10.2 per cent) (ABS 2014).

The BMI data for Aboriginal and Torres Strait Islander Australians collected in 2012–13 were calculated from *measured* height and weight, while data collected in 2004–05 were calculated from *reported* height and weight, which means that the two sets of data are not directly comparable.

Child nutrition

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

Data reported for 2014-15 are based on the 2013 NHMRC daily food consumption guidelines (NHMRC 2013). For children and adolescents, the guidelines depend on age and sex, varying from 3.5 to 5.5 serves of vegetables and legumes/beans, and 1 to 2 serves of fruit.

In 2014-15, 69.8 per cent of Aboriginal and Torres Strait Islander children aged 2–14 years across all areas (remote and non-remote) met the guidelines for adequate daily fruit consumption, slightly lower than the rate for non-Indigenous children (74.1 per cent). The proportions meeting the guidelines for adequate daily vegetable intake were much lower — 7.4 per cent for Aboriginal and Torres Strait Islander children and 5.5 per cent for non-Indigenous children (table 8A.5.13).

From 2011–13 to 2014-15 the proportions of Aboriginal and Torres Strait Islander Australians aged 2–14 years meeting adequate daily fruit and vegetable intake did not change, whilst for non-Indigenous Australians there was a slight increase for fruit intake and vegetable intake did not change (tables 8A.5.13-14). Time series comparisons are only available from 2011–13 onwards due to changes to the guidelines for adequate fruit and vegetable intake.¹⁵ Data are also available for fruit and vegetable consumption for children aged 2–14 years by age group in table 8A.5.15 and by remoteness area in table 8A.5.16.

References

- ABS (Australian Bureau of Statistics) 2014, *Australian Aboriginal and Torres Strait Islander Health Survey: Updated Results, 2012-13 Australia*, cat. no 4727.0.55.006, Canberra.
- AIHW (Australian Institute of Health and Welfare) 2013, *Overweight and Obesity*, <http://www.aihw.gov.au/overweight-and-obesity/> (accessed 26 June 2014).
- ARACY (Australian Research Alliance for Children and Youth) 2008, *The Wellbeing of Young Australians: Technical Report*, Canberra.
- Australian Medical Association and AMA 2005, *Nutrition - 2005*, <https://ama.com.au/node/2237> (accessed 26 June 2014).
- Brimblecombe, J.K. and O’Dea, K. 2009, ‘The role of energy cost in food choices for an Aboriginal population in northern Australia’, *Medical Journal of Australia*, vol. 190, no. 10, pp. 549–551.
- Brownell, K.D. and Frieden, T.R. 2009, ‘Ounces of Prevention - the Public Policy Case for Taxes on Sugared Beverages’, *New England Journal of Medicine*, vol. 360, no. 18, pp. 1805–1808.
- COAG (Council of Australian Governments) 2012, *National Indigenous Reform Agreement*, www.federalfinancialrelations.gov.au/content/npa/health_indigenous/indigenous-reform/national-agreement_sept_12.pdf (accessed 14 January 2013).

¹⁵ The NHMRC guidelines for fruit and vegetable consumption were amended in 2013. Data for 2011–13 in this report have been provided on the 2013 basis to ensure comparability with 2014-15 data. Data for 2011–13 and prior years in the 2014 OID report were based on the 2011 NHMRC guidelines and are not comparable to the data in this report.

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- Eades, S.J., Read, A.W., McAullay, D., McNamara, B., O’Dea, K. and Stanley, F.. 2010, ‘Modern and traditional diets for Noongar infants’, *Journal of Paediatrics and Child Health*, vol. 46, no. 7–8, pp. 398–403.
- FaHCSIA 2013, *Footprints in Time: The Longitudinal Study of Indigenous Children Key Summary Report from Wave 4*, Canberra.
- Harrison, M.S., Coyne, T., Lee, A.J., Leonard, D., Lowson, S., Groos, A. and Ashton, B.A. 2007, ‘The increasing cost of the basic foods required to promote health in Queensland’, *Medical Journal of Australia*, vol. 186, no. 1, pp. 9–14.
- House of Representatives 2009, *Everybody’s Business: Remote Aboriginal and Torres Strait Community Stores*, <http://www.aph.gov.au/house/committee/atsia/communitystores/report.htm> (accessed 6 July 2010).
- Lee, A., Leonard, D., Moloney, A. and Minniecon, D. 2009, ‘Improving Aboriginal and Torres Strait Islander nutrition and health’, *Medical Journal of Australia*, vol. 190, no. 10, pp. 547–548.
- NHMRC (National Health and Medical Research Council) 2013, *Eat for Health: Australian Dietary Guidelines*, Canberra.
- O’Dea, K. 2008, ‘Reducing the burden of diabetes among Aboriginal and Torres Strait Islanders’, presented at Strong Foundations Strong Future, Sydney.
- Sanders, R.H., Han, A., Baker, J.S. and Cobley, S. 2015, ‘Childhood obesity and its physical and psychological co-morbidities: a systematic review of Australian children and adolescents’, *European Journal of Pediatrics*, vol. 174, no. 6, pp. 715–746.
- Thorpe, S. and Browne, J. 2009, *Closing the Nutrition and Physical Activity Gap in Victoria: Victorian Aboriginal Nutrition and Physical Activity Strategy*, Melbourne.
- Tomkins, A. 2001, ‘Vitamin and Mineral Nutrition for the Health and Development of the Children of Europe’, *Public Health Nutrition*, vol. 4, no. 1A, pp. 91–99.
- WHO (World Health Organization) 2000, *Obesity: Preventing and Managing the Global Epidemic*, WHO Technical Report Series No. 894, Geneva.
- 2005, *Position Statement on Nutrition*, Geneva
- 2008, *Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health, Final Report of the Commission on Social Determinants of Health*, Geneva.
- Zhao, Y., Wright, J., Begg, S. and Guthridge, S. 2013, ‘Decomposing Indigenous life expectancy gap by risk factors: a life table analysis’, *Population Health Metrics*, vol. 11, no. 1.

8.6 Oral health¹⁶

Box 8.6.1 Key measures

- Nationally in 2014-15, the rate of potentially preventable hospitalisations for dental conditions for Aboriginal and Torres Strait Islander children was 4.2 per 1000 population. After adjusting for differences in population age structures the rate is around 1.3 times the rate for non-Indigenous Australians (table 8A.6.10), reflecting an increase over the last 10 years for Aboriginal and Torres Strait Islander Australians (table 8A.6.11).
- Accurate data on dental health are relatively old (2010 for children and 2004–2006 for adults) and, particularly for children, may not be representative of current dental health outcomes. Supplementary data for Aboriginal and Torres Strait Islander children aged 0–14 years show that in 2014-15:
 - there were 28.4 per cent with reported teeth or gum problems (table 8A.6.4)
 - of those with reported problems, 71.4 per cent reported having a dental check-up within the previous year (table 8A.6.5), with cost the major reason the child didn't see the dentist in the last 12 months (27.9 per cent) (table 8A.6.6).

Box 8.6.2 Measures of oral health

There are two main measures for this indicator:

- *Child dental health* is defined as the proportion of children with no decayed, missing or filled teeth (dmft/DMFT) for children aged 5–10 years (infant teeth) and 6–15 years (permanent teeth)¹⁷. Data are sourced from the AIHW Child Dental Health Survey, with the most recent data for Aboriginal and Torres Strait Islander children for 2010 for Queensland, WA, SA, NT and Tasmania (age; remoteness)
- *Adult dental health* is defined as the number of decayed, missing and filled teeth (DMFT) for people aged 15 years and over. Data are sourced from the National Survey of Adult Oral Health, 2004–2006 (national).

Supplementary data for the main measures are reported from the ABS Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS)/National Aboriginal and Torres Strait Islander Social Survey (NATSISS), with the most recent data for 2014-15 for children aged 0–14 years and 2012-13 for people aged 15 years and over (data are based on self-report). Non-Indigenous comparator data are not available. A supplementary measure is reported on the hospitalisation rate for dental health conditions per 1000 population (national: remoteness; age).

Oral health is an important part of overall health and wellbeing. There is increasing evidence about the link between poor oral health and some chronic diseases such as diabetes and cardiovascular disease (Gwynne et al. 2016).

¹⁶ The Steering Committee notes its appreciation to the National Health Leadership Forum, which reviewed a draft of this section of the report.

¹⁷ DMFT/dmft: uppercase denote permanent (adult) teeth and lowercase deciduous (infant) teeth. DMFT/dmft is the sum of decayed, missing and filled teeth. Index is cumulative: once a tooth has decay, it is permanently recorded, and changes in risk factors or disease levels do not change.

Two of the most frequently occurring oral diseases are tooth decay (also known as dental decay or dental caries) and periodontal disease (Jamieson, Sayers and Roberts-Thomson 2010). Both are preventable and, with early treatment, curable (Williams et al. 2011).

- Tooth decay unless treated early, may result in pain, infection and destruction of soft tissue in the mouth. This may contribute to the development or exacerbation of other diseases. In addition, eating difficulty or pain may lead to modification of eating habits and subsequent nutritional problems. Dental health may affect speech and language development, and exacerbate other chronic diseases (Jamieson, Sayers and Roberts-Thomson 2010; NACOH 2004; Zander et al. 2013).
- Periodontal diseases of the tissues surrounding teeth are associated with bacterial infection of the periodontal tissues, and are specifically attributed to poor oral hygiene as opposed to diet. Periodontal diseases range in severity from gingivitis (a mild reversible form) to periodontitis (a severe destruction of the tissues) (Williams et al. 2011).

Accurate data on dental health for Aboriginal and Torres Strait Islander Australians are relatively incomplete and dated, however available data indicate that in Australia, dental conditions are highly prevalent in Aboriginal and Torres Strait Islander communities and generally among the socially disadvantaged (Lalloo et al. 2015). Older Aboriginal and Torres Strait Islander children generally have more dental decay than non-Indigenous children, and the decay is less likely to have been treated. Untreated tooth decay is also significantly more prevalent among Aboriginal and Torres Strait Islander adults than among non-Indigenous adults (AHMAC 2015). Historically, the traditional diets of Aboriginal and Torres Strait Islander Australians were associated with low levels of tooth decay. A marked rise in the consumption of food and drinks containing high levels of sugar and other refined carbohydrates over recent decades — particularly in remote communities and among children — has occurred at the same time as an increase in levels of tooth decay among Aboriginal and Torres Strait Islander Australians (Jamieson, Armfield and Roberts-Thomson 2007; NACOH 2004).

Factors influencing oral health include diet, dental hygiene and environmental factors, such as water fluoride levels and yearly dental check-ups (AHMAC 2015).

Preventative oral health behaviours such as tooth brushing and flossing are developed mainly through education and modelling by adults in the home environment and/or education outside the home (Jamieson, Armfield and Roberts-Thomson 2007). Among Aboriginal and Torres Strait Islander children, levels of preventative oral health behaviours are relatively low. A survey of children in Queensland between 2010 and 2012 found that more than one-third (35.3 per cent) of Aboriginal and Torres Strait Islander children did not start brushing with toothpaste until the age of 30 months or later, compared to 16.9 per cent of non-Indigenous children (Armfield et al. 2014).

Regular dental visits to manage issues and for routine check-ups are vital for good oral health, and can result in lower prevalence of dental decay (Australian Indigenous

HealthInfoNet 2016). In 2012-13, 13.9 per cent of Aboriginal and Torres Strait Islander people aged 2 years and over reported never having visited a dentist (table 8A.1.17), with cost the most commonly reported reason for not visiting a dentist in the last 12 months, followed by logistical reasons in remote areas and personal reasons in non-remote areas (table 8A.1.19). Additional data on dental consultations and oral health actions are reported in section 8.1 (Access to primary health care).

Dental health

For both child and adult dental health the main data sources containing the most accurate available data are relatively old and are reported in the attachment tables only (child dental health in tables 8A.6.1–8A.6.3 and adult dental health in table 8A.6.7).

Supplementary data on dental health are available from ABS survey data and are presented in this section. While more recent, these data are not as comprehensive as data from the main data sources, and rely on individuals self-reporting.

In 2014-15, for Aboriginal and Torres Strait Islander children aged 0–14 years:

- there were 28.4 per cent of children with reported teeth or gum problems (table 8A.6.4)
- of those with reported problems, 71.4 per cent had a dental check-up within the previous year (table 8A.6.5), with the cost the major reason the child didn't see the dentist in the last 12 months (27.9 per cent) (table 8A.6.6).

In 2012-13, 4.7 per cent of Aboriginal and Torres Strait Islander Australians aged 15 years and over reported complete natural tooth loss. The rate for complete tooth loss was highest for those aged over 55 years (23.6 per cent) and higher in non-remote areas (5.1 per cent) than in remote areas (3.3 per cent) (tables 8A.6.8 and 8A.6.9).

Potentially preventable hospitalisation for dental conditions

For this report, hospitalisations data are presented for the non-Indigenous population from 2012-13 onwards (for prior years the data are presented for 'other' which includes non-Indigenous Australians and those for whom Indigenous status is unknown or not stated). Prior to 2010-11, six jurisdictions (NSW, Victoria, Queensland, WA, SA and the NT) were considered to have acceptable quality of Aboriginal and Torres Strait Islander identification in hospitalisation data. The attachment tables for this report include hospitalisations data for all jurisdictions for 2012-13 to 2014-15 for Aboriginal and Torres Strait Islander and non-Indigenous Australians, as well as data for the six jurisdictions for 2004-05 to 2014-15 for Aboriginal and Torres Strait Islander and other Australians.

In 2014-15, the rate of potentially preventable hospitalisations for dental conditions for Aboriginal and Torres Strait Islander Australians was 4.2 per 1000 population (table 8A.6.10), with the rate increasing as remoteness increased (table 8A.6.12). After

adjusting for differences in population age structures, Aboriginal and Torres Strait Islander Australians were hospitalised for dental conditions at 1.3 times the rate for non-Indigenous Australians (table 8A.6.10).

From 2004-05 to 2014-15, for NSW, Victoria, Queensland, WA, SA and the NT combined, the age-adjusted hospitalisation rate for dental health conditions for Aboriginal and Torres Strait Islander Australians increased by 54 per cent, while rates for other Australians remained relatively stable (table 8A.6.11).

In 2014-15, Aboriginal and Torres Strait Islander children aged 0–4 years and 5–9 years had higher rates of hospitalisation for dental health conditions than non-Indigenous children in the same age groups (8.0 and 5.0 per 1000 population and 12.2 and 9.9 per 1000 population, respectively), but older Aboriginal and Torres Strait Islander children aged 10–14 years had lower rates than non-Indigenous children (3.3 and 6.0 per 1000 population respectively) (table 8A.6.13).

Data are available for dental hospitalisation rates for children aged 0–14 years by remoteness by age in table 8A.6.15.

Future directions in data

National representative and timely data on oral health are not currently available. Until such data are available, information is collated from a range of sources. While supplementary data from the ABS is nationally representative it is limited in content on oral health and based on self-report.

Without data from larger sample surveys specifically targeting the Aboriginal and Torres Strait Islander population, collected on a consistent basis over time, there will continue to be a limited understanding on the oral health of Aboriginal and Torres Strait Islander Australians (Williams et al. 2011).

References

- AHMAC (Australian Health Ministers' Advisory Council) 2015, *Aboriginal and Torres Strait Islander Health Performance Framework 2014 Report*, Canberra.
- Armfield, J., Beckwith, K., Do, L., Ellershaw, A., Johnston, Z., Diep, H., Koster, C., Mejia, G., Roberts-Thomson, K., Spencer, J., Stute, B. and Thomas, R. 2014, *The Beginning of Change In Queensland Child Oral Health Survey 2010-2012*, Queensland Health and the Australian Research Centre for Population Oral Health the University of Adelaide.
- Australian Indigenous HealthInfoNet 2016, *Overview of Australian Indigenous and Torres Strait Islander Health Status, 2015*, Australian Indigenous HealthInfoNet, Perth, WA.

-
- Gwynne, K., Irving, M., McCowen, D., Rambaldini, B., Skinner, J., Naoum, S. and Blinkhorn, A. 2016, 'Developing a Sustainable Model of Oral Health Care for Disadvantaged Aboriginal People Living in Rural and Remote Communities in NSW, Using Collective Impact Methodology', *Journal of Health Care for the Poor and Underserved*, vol. 27, no. 1, pp. 46–53.
- Jamieson, L., Armfield, J. and Roberts-Thomson, K. 2007, *Oral Health of Aboriginal and Torres Strait Islander Children*, Cat. no. DEN 67, AIHW, Canberra.
- , Sayers, S. and Roberts-Thomson, K. 2010, 'Clinical oral health outcomes in young Australian aboriginal adults compared with national-level counterparts', *Medical Journal of Australia*, vol. 192, no. 10.
- Laloo, R., Jamieson, L., Ha, D., Ellershaw, A. and Luzzi, L. 2015, 'Does fluoride in the water close the dental caries gap between Indigenous and non-Indigenous children?', *Australian Dental Journal*, vol. 60, no. 3, pp. 390–396.
- NACOH (National Advisory Committee on Oral Health) 2004, *Healthy Mouths Healthy Lives: Australia's National Oral Health Plan 2004-2013*, South Australian Department of Health, Adelaide.
- Williams, S., Jamieson, L., MacRae, A. and Gray, C. 2011, *Review of Indigenous oral health*, http://www.healthinfonet.ecu.edu.au/oral_review (accessed 16 July 2014).
- Zander, A., Sivaneswaran, S., Skinner, J., Byun, R. and Jalaludin, B. 2013, 'Risk factors for dental caries in small rural and regional Australian communities', *Rural and Remote Health*, vol. 13.

8.7 Mental health¹⁸

Box 8.7.1 Key messages

- In 2014-15, almost one-third of Aboriginal and Torres Strait Islander Australians aged 18 years and over (32.8 per cent) reported experiencing high/very high levels of psychological distress (table 8A.7.2). After adjusting for differences in population age structures this was 2.6 times the rate for non-Indigenous adults (table 8A.7.1).
- From 2004-05 to 2014-15, and adjusting for age, the proportion of Aboriginal and Torres Strait Islander adults experiencing high/very high levels of psychological distress increased by around 6 percentage points, while the proportion for non-Indigenous adults remained relatively constant, leading to a widening of the gap (figure 8.7.1).
- In 2014-15, the hospitalisation rate for mental and behavioural disorders for Aboriginal and Torres Strait Islander Australians was 2349 per 100 000 population. After adjusting for differences in population age structures, this was 1.8 times the rate for non-Indigenous Australians (table 8A.7.28).
- Over the period 2010–2014, for NSW, Queensland, WA, SA and the NT combined, after adjusting for differences in population age structures the rate of deaths for Aboriginal and Torres Strait Islander Australians due to mental and behavioural disorders was 1.4 times the rate for non-Indigenous Australians (table 8A.7.36).

Box 8.7.2 Measures of mental health

There is one main measures for this indicator:

- *Psychological distress*¹⁹ is defined as the proportion of people aged 18 years and over experiencing high/very high levels of psychological distress (all jurisdictions; national data by remoteness, age and stressors).

Data for the main measure are available from the ABS Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS)/National Aboriginal and Torres Strait Islander Social Survey (NATSISS), with the most recent available data for 2014-15. Data for the non-Indigenous population are sourced from the ABS Australian Health Survey (AHS)/National Health Survey (NHS), with the most recent data for the 2014-15 from the NHS.

There are three supplementary measures for this indicator:

- *Treatment rates* is defined as the rate of patients treated for mental health by emergency departments (national), community and residential mental health care (all jurisdictions), and general practitioners (national).

(continued next page)

¹⁸ The Steering Committee notes its appreciation to the National Health Leadership Forum, which reviewed a draft of this section of the report.

¹⁹ Based on Kessler Psychological Distress Scale-10 (K10) modified to five questions (K5) which measure an individual's level of psychological distress in the past four weeks.

Box 8.7.2 (continued)

- *Hospitalisation rates* is defined as the rate of hospitalisations for mental and behavioural disorders per 100 000 population (all jurisdictions: sex, remoteness).
- *Deaths from potentially avoidable mental and behavioural disorders* is defined as the rate of deaths from mental and behavioural disorders per 100 000 population (NSW, Queensland, WA, SA and the NT: age, sex).

Mental health is essential to the overall health and wellbeing of individuals, and is closely related to the COAG targets for improved health outcomes. Mental health can also affect outcomes in other areas, such as education and training (chapter 7) economic participation (chapter 9), and safe and supportive communities (chapter 11).

Mental health relates to the ability to negotiate the daily challenges and social interactions of life, without experiencing undue emotional or behavioural incapacity (DoHA 2010). Mental health includes both mental illness and overall mental wellbeing. Although mental wellbeing problems are distinct from mental illness, the two interact and influence each other.

- Mental *illness* describes a range of behavioural and psychological conditions that can affect an individual's mental health functioning and quality of life. The most common mental illnesses are anxiety, affective (mood), and substance use disorders. Mental illness also includes low prevalence conditions such as schizophrenia, bipolar disorder and other psychoses, and severe personality disorder (DoHA 2010). While of lower prevalence, these conditions can severely affect people's ability to function in their daily lives (Morgan et al. 2011).
- Mental *wellbeing* can be affected by a broad range of factors, including domestic violence (see section 4.12), alcohol and substance misuse (see sections 11.1 and 11.2), physical health problems, incarceration (see section 4.13), family breakdown and social disadvantage (AHMAC 2004; Dudgeon, Milroy and Walker 2014).

Many of the unique risk factors faced by Aboriginal and Torres Strait Islander Australians have persisted across generations, most particularly the ongoing effects of colonisation (Dudgeon, Milroy and Walker 2014). Socio-historical-political factors influence the mental health of Aboriginal and Torres Strait Islander people, through the impact of family separation, the taking away of land, social inequity, racism, and the loss of culture and identity (Vicary and Westerman 2004). (See the historical narrative on Australia's first peoples in chapter 1.)

Racism can be a key source of stress and socioeconomic disadvantage faced by Aboriginal people and families, with negative effects on social and emotional wellbeing (Dudgeon, Milroy and Walker 2014). Research in the NT found a significant association between interpersonal racism and depression among Aboriginal and Torres Strait Islander Australians (AHMAC 2012). (See section 5.1 on valuing Indigenous Australians and their cultures.)

A range of factors can have a positive influence on the mental wellbeing of Aboriginal and Torres Strait Islander people including paid employment, participation in education, community engagement and access to social networks, affordable and secure housing, and culturally appropriate services. A WA study showed that higher socioeconomic status was associated with a reduced risk of mental health problems in Aboriginal children (Dudgeon, Milroy and Walker 2014). However, people with a mental health condition may have barriers to these positive influences due to their condition (ABS 2016).

Psychological distress

In 2014-15, almost one-third of Aboriginal and Torres Strait Islander Australians aged 18 years and over (32.8 per cent) reported experiencing high/very high levels of psychological distress (table 8A.7.2), with rates higher for females (38.4 per cent) than males (26.7 per cent) (table 8A.7.16).

In 2014-15, the most commonly reported stressors²⁰ for Aboriginal and Torres Strait Islander adults with high/very high psychological distress (and for males and females and all remoteness areas) were 'death of a close family member or close friend' (46.7 per cent) and 'not able to get a job' (42.5 per cent) (table 8A.7.16). Comparing stressors across remoteness areas, 'mental illness' had the largest rate difference with 35.9 per cent in non-remote areas and 17.0 per cent in remote areas (table 8A.7.17).

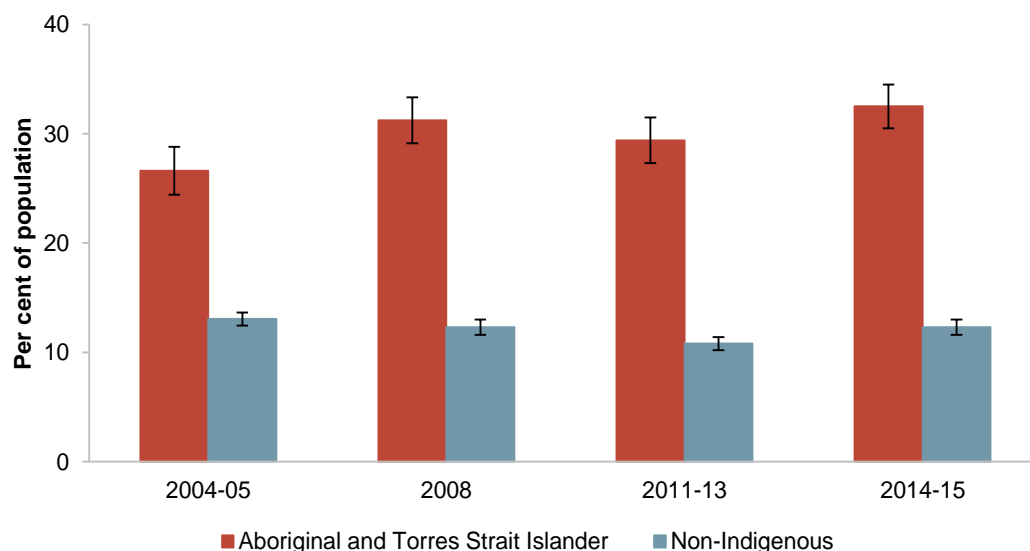
After adjusting for differences in population age structures, the rate of Aboriginal and Torres Strait Islander adults experiencing high/very high levels of psychological distress was 2.6 times the rate for non-Indigenous adults. For both groups there was no significant difference in rates across remoteness areas in 2014-15 (for Aboriginal and Torres Strait Islander adults, the rate in remote areas increased from 2012-13 to 2014-15 making it now similar to the rate in major cities and regional areas) (table 8A.7.1).

Between 2004-05 and 2014-15, after adjusting for differences in population age structures, the proportion of Aboriginal and Torres Strait Islander adults experiencing high/very high levels of psychological distress increased by around six percentage points. The proportion for non-Indigenous adults remained relatively constant, resulting in a widening of the gap over the same period (figure 8.7.1).

The attachment tables include supplementary data about selected attributes of psychological distress (nervous, without hope, restless, jumpy, that everything was an effort and sadness) by age, sex and remoteness (table 8A.7.19–27).

²⁰ Data on reported stressors for psychological distress are reported differently to data in the 2014 OID report to provide more meaningful understanding of the contributors to high/very high psychological distress.

Figure 8.7.1 **Proportion of people aged 18 years and over with high/very high levels of psychological distress, 2004-05, 2008, 2011-13 and 2014-15^{a, b}**



^a Error bars represent 95 per cent confidence intervals around each estimate. ^b Data are age standardised.

Sources: ABS (unpublished) National Aboriginal Torres Strait Islander Health Survey 2004-05; ABS (unpublished) National Aboriginal Torres Strait Islander Social Survey (NATSISS) 2008; ABS (unpublished) National Health Survey (NHS) 2007-08; ABS (unpublished) Australian Aboriginal Torres Strait Islander Health Survey 2012-13 (core component); ABS (unpublished) Australian Health Survey 2011-13 (2011-12 core component); ABS (unpublished) NATSISS, 2014-15; ABS (unpublished) NHS, 2014-15; table 8A.7.1.

Treatment rates²¹

In 2013-14, after adjusting for differences in population age structures, Aboriginal and Torres Strait Islander and non-Indigenous Australians recorded similar rates of contact with GPs for mental health problems (606 and 648 encounters per 1000 population respectively, table 8A.7.33), but Aboriginal and Torres Strait Islander Australians rate of contact with community based mental health services²² (1066 per 1000 population) was more than three times the rate for non-Indigenous Australians (table 8A.7.35). Data on residential mental health care and mental health related emergency departments' occasions of service in public hospitals are available in tables 8A.7.33-34.

²¹ Treatment rate data are reported for a selection of mental health services by 'occasions of service'. A patient may be counted more than once if they received multiple occasions of service.

²² Community based mental health service contacts refers to specialised public mental health services dedicated to the assessment, treatment, rehabilitation and care of non-admitted clients.

Hospitalisation rates

For this report, hospitalisations data are presented for the non-Indigenous population from 2012-13 onwards (for prior years the data are presented for 'other' which includes non-Indigenous Australians and those for whom Indigenous status is unknown or not stated). Prior to 2010-11, six jurisdictions (NSW, Victoria, Queensland, WA, SA and the NT) were considered to have acceptable quality of Aboriginal and Torres Strait Islander Indigenous identification in hospitalisation data. The attachment tables for this report include hospitalisations data for all jurisdictions for 2012-13 to 2014-15 for Aboriginal and Torres Strait Islander and non-Indigenous Australians, as well as data for the six jurisdictions for 2004-05 to 2014-15 for Aboriginal and Torres Strait Islander and other Australians.

Nationally in 2014-15, the crude rate of hospitalisation for mental and behavioural disorders for Aboriginal and Torres Strait Islander Australians was 2348.6 per 100 000 population (table 8A.7.28). The most common principal diagnoses were substance use disorders (933.4 per 100 000 population) and mood and neurotic disorders (689.3 per 100 000 population) (table 8A.7.31).

After adjusting for differences in population age structures, the Aboriginal and Torres Strait Islander hospitalisation rate for mental and behavioural disorders was 1.8 times the rate for non-Indigenous Australians (table 8A.7.28). For both Aboriginal and Torres Strait Islander and non-Indigenous Australians, the hospitalisation rate was higher in major cities compared to regional and remote areas (table 8A.7.30).

For NSW, Victoria, Queensland, WA, SA and the NT combined, between 2004-05 and 2014-15:

- the crude rate for Aboriginal and Torres Strait Islander Australians increased from 1941.5 to 2364.2 per 100 000 population (table 8A.7.32)
- when adjusted for differences in population age structures, the rate for Aboriginal and Torres Strait Islander Australians increased from 1.5 to 1.8 times the rate for other Australians (tables 8A.7.29).

Mental and behavioural disorders as cause of death

Mortality data disaggregated by Indigenous status are available for NSW, Queensland, WA, SA and the NT, as these jurisdictions have sufficient levels of Indigenous identification and numbers of deaths to support analysis.

Over the period 2010–2014, there were 324 deaths due to mental and behavioural disorders for Aboriginal and Torres Strait Islander Australians, equating to a rate of 10.7 deaths per 100 000 population, with rates slightly higher for females compared with males (table 8A.7.38). After adjusting for differences in population age structures, the rate for Aboriginal and Torres Strait Islander Australians was 1.4 times the rate for non-Indigenous

Australians (table 8A.7.37). The majority of deaths for both Aboriginal and Torres Strait Islander and non-Indigenous Australians were for people aged 45 years and over — 91 per cent and 99 per cent respectively (table 8A.7.38).

Data on death rates due to mental and behavioural disorders are available by State and Territory by sex in tables 8A.7.36 and 8A.7.38.

Things that work

Research by Dudgeon et al (2014) for the Closing the Gap Clearinghouse identified the following as important features of programs that showed promising results in improving mental health outcomes for Aboriginal and Torres Strait Islander Australians:

- a holistic approach
- a focus on recovery and healing from stress and trauma
- a means of empowering people to regain a sense of control over their lives
- strategies that are Aboriginal and Torres Strait Islander led, family focused, culturally responsive and context specific, including partnerships with the Aboriginal Community Controlled Health Services sector and local communities
- incorporate interdisciplinary approaches that provide outreach services and transport (Dudgeon et al. 2014).

Research findings also increasingly suggest that early intervention can prevent the worsening of mental health problems. Early intervention and prevention strategies are appropriate for helping young people, as adolescence is the peak age of onset for a first episode of mental illness (Chalmers et al. 2014).

References

ABS (Australian Bureau of Statistics) 2016, *National Aboriginal and Torres Strait Islander Social Survey, 2014-15 - Feature article*, 4714.0, Canberra.

AHMAC (Australian Health Ministers' Advisory Council) 2004, *National Strategic Framework for Aboriginal and Torres Strait Islander Mental Health and Social and Emotional Wellbeing 2004-2009*, South Australia.

— (Australian Health Ministers' Advisory Council) 2012, *Aboriginal and Torres Strait Islander Health Performance Framework 2012 Report*, Canberra.

Chalmers, K., Bond, K., Jorm, A., McKelly, C., Kitchener, B. and Tchen, W. 2014, 'Providing culturally appropriate mental health first aid to an Aboriginal or Torres Strait Islander adolescent: development of expert consensus guidelines', *International Journal of Mental Health Systems*, vol. 8, no. 6.

-
- DoHA (Department of Health and Ageing) 2010, *National Mental Health Report 2010: Summary of 15 years of reform in Australia's Mental Health Services under the National Mental Health Strategy 1993-2008*, Australian Government, Canberra.
- Dudgeon, P., Milroy, H. and Walker, R. 2014, *Working together: Aboriginal and Torres Strait Islander Mental Health and Wellbeing Principles and Practice*, Australian Government Department of The Prime Minister and Cabinet.
- , Walker, R., Scrine, C., Shepherd, C., Calma, T. and Ring, I. 2014, *Effective strategies to strengthen the mental health and wellbeing of Aboriginal and Torres Strait Islander people*, Issues paper no. 12 produced for the Closing the Gap Clearinghouse, November 2014.
- Morgan, V., Waterreus, A., Jablensky, A., Mackinnon, A., McGrath, J., Carr, V., Bush, R., Castle, D., Cohen, M., Harvey, C., Galletly, C., Stain, H., Neil, A., McGorry, P., Hocking, B., Shah, S. and Saw, S. 2011, *People Living with Psychotic Illness 2010, Report on the Second Australian National Survey*, Australian Government, Canberra.
- Vicary, D. and Westerman, T. 2004, 'That's just the way he is: Some implications of Aboriginal mental health beliefs', *Australian e-Journal for the Advancement of Mental Health*, vol. 3, no. 3.

8.8 Suicide and self-harm²³

Box 8.8.1 Key messages

- Suicide and self-harm cause great grief in both Aboriginal and Torres Strait Islander communities and non-Indigenous communities.
- For the period 2010–2014, after adjusting for differences in population age structures, the rate of deaths from suicide for Aboriginal and Torres Strait Islander Australians was twice the rate for non-Indigenous Australians (table 8A.8.1).
- The rate of deaths from suicide was higher for males than for females for both Aboriginal and Torres Strait Islander Australians (2.8 times as high) and non-Indigenous Australians (3.2 times as high) (table 8A.8.1).
- For NSW, Queensland, WA, SA and the NT combined, age-specific rates of deaths from suicide were highest for Aboriginal and Torres Strait Islander people aged 25–34 years (41.2 deaths per 100 000 population), around three times the rate for non-Indigenous Australians of the same age. There was no difference in rates between Aboriginal and Torres Strait Islander and non-Indigenous people aged 45 years and over (figure 8.8.1).
- From 2004-05 to 2014-15, after adjusting for differences in population age structures, the hospitalisation rate for intentional self-harm increased for Aboriginal and Torres Strait Islander Australians by 55.9 per cent, while the rate for other Australians remained relatively stable, resulting in the rate for Aboriginal and Torres Strait Islander Australians increasing from 1.7 to 2.6 times the rate for other Australians (figure 8.8.2).

Box 8.8.2 Measures of suicide and self-harm

There is one main measure for this indicator. Suicide deaths is defined as the number of deaths from intentional self-harm per 100 000 population (NSW, Queensland, WA, SA and NT; age; sex). Data for this measure are sourced from the ABS Causes of Death collection, with the most recent available data for 2014. Due to small numbers, the rate is calculated by averaging the number of deaths over a five year period.

Data are also provided for one supplementary measure, the number of non-fatal hospitalisations from intentional self-harm per 100 000 population (all jurisdictions; sex; remoteness).

Suicide and self-harm cause great grief in both Aboriginal and Torres Strait Islander and non-Indigenous communities (Senate Community Affairs References Committee 2010). However, Aboriginal and Torres Strait Islander Australians experience disproportionately high rates of suicide, and it has become increasingly prevalent over recent decades, accelerating after the 1980s (DOHA 2013). Suicide is most prevalent among young Aboriginal and Torres Strait Islander males, while suicide attempts seem to be more

²³ The Steering Committee notes its appreciation to the National Health Leadership Forum, which reviewed a draft of this section of the report.

prevalent for Aboriginal and Torres Strait Islander females (AHA 2014; Clifford, Doran and Tsey 2013; Elliott-Farrelly 2004). The causes appear to be a complex mix of life events, social and geographical isolation, cultural and family background and supports, socioeconomic disadvantage, genetic makeup, mental and physical health, coping skills and resilience (Australian Government 2013). Section 8.7 reports on mental health in more detail.

Environmental risk factors that contribute to high levels of suicide in Aboriginal and Torres Strait Islander Australians include: lower levels of education, employment, service access, health and income; and increased levels of remoteness, domestic violence or abuse, alcohol and other drug abuse (DOHA 2008). Trauma and grief as a result of past dislocation and mistreatment, and a loss of cultural identity, and lack of access to culturally appropriate services can also contribute to higher levels of suicide (DOHA 2008).

Studies have found that suicides among Aboriginal and Torres Strait Islander Australians appear to occur in clusters, and that victims may share common age groups, genders and methods. There have been significant peaks and clusters of suicides in some regions, particularly those with significant remote populations (DOHA 2013; Elliott-Farrelly 2004). Aboriginal and Torres Strait Islander Australians have been more exposed to suicide than most non-Indigenous Australians, which can lead to situations of ‘bereavement overload’ and may contribute to suicidal behaviours (AHA 2014).

The continued exposure of Aboriginal and Torres Strait Islander Australians to multiple risk factors has led to calls for increased suicide prevention interventions (Clifford, Doran and Tsey 2013). Broadly protective factors against suicide include connectedness with family, friends, culture, school and communities; having someone who cares about you and having someone you care about; having positive attitudes and ways to tackle problems; financial stability, good health and access to mental health support when required (NMHC 2012).

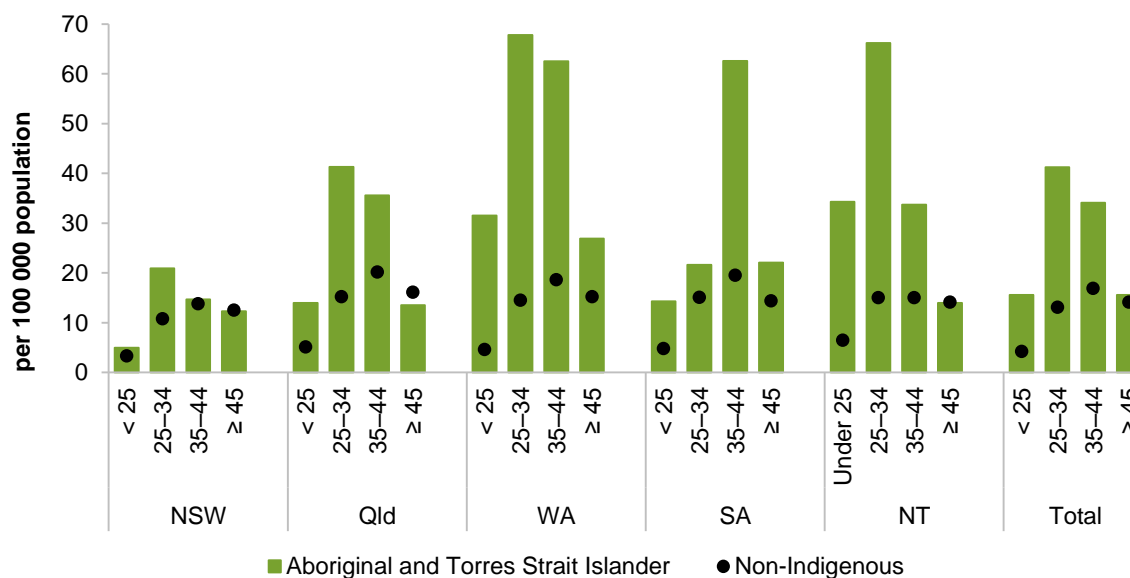
Suicide deaths

Mortality data disaggregated by Indigenous status are available for NSW, Queensland, WA, SA and the NT, as these jurisdictions have sufficient levels of Aboriginal and Torres Strait Islander identification and numbers of deaths to support analysis.

For the period 2010–2014, after adjusting for differences in population age structures, the rate of deaths for Aboriginal and Torres Strait Islander Australians due to suicide was twice the rate for non-Indigenous Australians (table 8A.8.1).

The rate of deaths from suicide was higher for males than for females for both Aboriginal and Torres Strait Islander Australians (2.8 times as high) and non-Indigenous Australians (3.2 times as high) (table 8A.8.1).

Figure 8.8.1 Rates of deaths from intentional self-harm (suicide) by age, NSW, Queensland, WA, SA and the NT, 2010–2014^a



^a Deaths from intentional self-harm are defined as causes of death with ICD-10 codes X60-X84, Y87.0.

Source: ABS (unpublished) Causes of Death collection; table 8A.8.2.

Suicide rates vary by age group. For the period 2010–2014 for NSW, Queensland, WA, SA and the NT combined (and individually with the exception of SA), the suicide rate was highest for Aboriginal and Torres Strait Islander Australians aged 25–34 years (41.2 per 100 000 population), over three times the rate for non-Indigenous Australians of the same age (figure 8.8.1). Data on suicide death rates by State and Territory by sex are available in table 8A.8.1.

Hospitalisations for self-harm

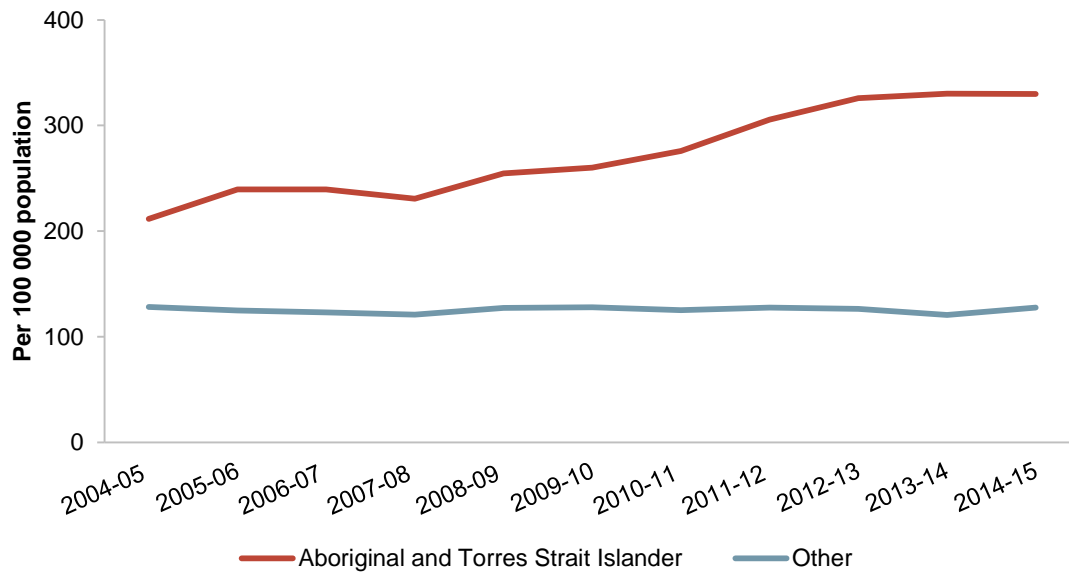
For this report, hospitalisations data are presented for the non-Indigenous population from 2012-13 onwards (for prior years the data are presented for ‘other’ which includes non-Indigenous Australians and those for whom Indigenous status is unknown or not stated). Prior to 2010-11, six jurisdictions (NSW, Victoria, Queensland, WA, SA and the NT) were considered to have adequate identification of Aboriginal and Torres Strait Islander Australians in hospitalisation data. The attachment tables for this report include hospitalisations data for all jurisdictions for 2012-13 to 2014-15 for Aboriginal and Torres Strait Islander Australians and non-Indigenous Australians, as well as data for the six jurisdictions for 2004-05 to 2014-15 for Aboriginal and Torres Strait Islander Australians and other Australians.

Nationally in 2014-15, after adjusting for differences in population age structures, the rate of hospitalisation for intentional self-harm for Aboriginal and Torres Strait Islander Australians was around two-and-a-half times the rate for non-Indigenous Australians (table 8A.8.3).

In 2014-15, for Aboriginal and Torres Strait Islander Australians, the rate was:

- higher for females than males. There was a similar pattern for non-Indigenous Australians (table 8A.8.3)
- higher in major cities and remote areas (remote and very remote combined) than regional areas. Rates for non-Indigenous Australians were higher in regional areas, than remote areas and major cities (table 8A.8.5).

Figure 8.8.2 **Rates of hospitalisation for intentional self-harm, NSW, Victoria, Queensland, WA, SA and public hospitals in the NT, 2004-05 to 2014-15^{a, b}**



^a Other includes hospitalisations where Indigenous status was recorded as non-Indigenous or not stated.
^b Rates are age standardised.

Source: AIHW (unpublished) National Hospital Morbidity Database; table 8A.8.4

Comparable time series data from 2004-05 to 2014-15 are available for NSW, Victoria, Queensland, WA, SA and the NT. After adjusting for differences in population age structures, the hospitalisation rate for intentional self-harm increased for Aboriginal and Torres Strait Islander Australians by 55.9 per cent, while the rate for other Australians remained relatively stable, resulting in the rate for Aboriginal and Torres Strait Islander Australians increasing from 1.7 to 2.6 times the rate for non-Indigenous Australians (figure 8.8.2).

Things that work

A systematic review by Clifford, Doran and Tsey (2013) of suicide prevention interventions targeting indigenous peoples in Australia, the United States, Canada and New Zealand identified nine evaluations (three in Australia that were peer-reviewed), with only three of these measuring changes in rates of suicide or suicidal behaviour, and significant methodological variability. The study concluded an urgent need for more rigorous evaluations, noting that combining and tailoring best evidence and culturally-specific individual strategies into one coherent suicide prevention program for delivery to whole Indigenous communities and/or population groups at high risk of suicide offers considerable promise. A more recent review by Ridani et al. (2015) expanded the review of Indigenous interventions to incorporate gray literature (i.e, information not peer-reviewed) and confirmed the need to evaluate outcomes if prevention is to be progressed, adding that results suggest that employing a whole of community approach and focusing on connectedness, belongingness and cultural heritage may be of benefit.

One initiative that may have contributed to a reduction in suicide and self-harm is described in box 8.8.3.

Box 8.8.3 Things that work

The **Yiriman Project** (WA), auspiced by the Kimberly Aboriginal Law and Culture Centre, commenced in 2000. The Project takes young people, accompanied by elders, on trips back to country, to immerse them in the stories, song and knowledge that are their cultural heritage. This builds young people's confidence and improves their self-worth, and is considered to have helped curb suicide, self-harm and substance abuse in the participating communities (RA 2013).

The Yiriman project was the winner of Reconciliation Australia's 2012 Indigenous Governance Awards in Category B: non-incorporated projects and initiatives. Project outcomes were summarised in Taylor's (2010) qualitative study:

- the healing of young people as they walk on country and look after it
- the opportunity to develop and assert culture, language and bush skills
- meaningful employment that values and maintains culture.

Source: Reconciliation Australia (2013) *Sharing Success: Stories from the 2012 Indigenous Governance Awards*, Reconciliation Australia, Canberra; Taylor (2010), *Partnerships in the Youth Sector - Building Stories in Our Young People: The Yiriman Project*, The Foundation for Young Australians, Melbourne.

In 2014, the Australian Government funded the School of Indigenous Studies, University of Western Australia, in partnership with the Telethon Kids Institute and the Healing Foundation, to undertake the national *Aboriginal and Torres Strait Islander Suicide Prevention Evaluation Project*. The project will evaluate the effectiveness of existing suicide prevention services and programs and contribute to a much needed evidence base for what works in Aboriginal and Torres Strait Islander suicide prevention. A report was due to be provided to the Minister for Indigenous Affairs in mid-2016, which will include

recommendations for improving services and programs and delivery models (Australian Indigenous Health Info Net 2014; University of Western Australia 2014).

References

- AHA (Australian Healthcare Associates) 2014, *Evaluation of Suicide Prevention Activities*.
- Australian Government 2013, *Australian Governments Response to the House of Representatives Standing Committee on Health and Ageing's Report on the Inquiry into early intervention programs aimed at reducing youth suicide*, [http://www.health.gov.au/internet/main/publishing.nsf/Content/0B356361B55CEE4ECA257BF0001A8E4D/\\$File/before.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/0B356361B55CEE4ECA257BF0001A8E4D/$File/before.pdf) (accessed 7 June 2016).
- Australian Indigenous Health Info Net 2014, *Aboriginal and Torres Strait Islander suicide prevention evaluation project*, <http://www.healthinfonet.ecu.edu.au/key-resources/programs-projects?pid=2427> (accessed 8 April 2016).
- Clifford, A., Doran, C. and Tsey, K. 2013, 'A systemic review of suicide prevention interventions targeting Indigenous peoples in Australia, United States, Canada and New Zealand', *BMC Public Health*, vol. 13, no. 463.
- DOHA (Department of Health and Ageing) 2008, *Promoting Good Practice in Suicide Prevention - Activities Targeting Men*, Canberra.
- (Department of Health and Ageing) 2013, *National Aboriginal and Torres Strait Islander Suicide Prevention Strategy*, Canberra.
- Elliott-Farrelly, T. 2004, 'Australian Aboriginal suicide: the need for an Aboriginal suicidology?', *Australian e Journal for Advancement of Mental Health*, vol. 3, no. 3.
- NMHC (National Mental Health Commission) 2012, *A Contributing Life: The 2012 National Report Card on Mental Health and Suicide Prevention*, Sydney.
- Ridani, R., Shand, F.L., Christensen, H., McKay, K., Tighe, J., Burns, J. and Hunter, E. 2015, 'Suicide Prevention in Australian Aboriginal Communities: A Review of Past and Present Programs', *Suicide and Life-Threatening Behaviour*, vol. 45, no. 1, pp. 111–140.
- Senate Community Affairs References Committee 2010, *The Hidden Toll: Suicide in Australia*, Commonwealth of Australia.
- University of Western Australia 2014, *Aboriginal and Torres Strait Islander Suicide Prevention Evaluation Project*, <http://www.atsispep.sis.uwa.edu.au/> (accessed 8 April 2016).