

Aboriginal and Torres Strait Islander Health Performance Framework 2014 report

Detailed analyses

Australian Institute of Health and Welfare
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Australian Institute of Health and Welfare

Board Chair

Dr Mukesh C Haikerwal AO

Any enquiries relating to copyright or comments on this publication should be directed to:

Digital and Media Communications Unit

Australian Institute of Health and Welfare

GPO Box 570

Canberra ACT 2601

Tel: (02) 6244 1000

Email: info@aihw.gov.au

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Abbreviations

AATSIHS	Australian Aboriginal and Torres Strait Islander Health Survey
ABS	Australian Bureau of Statistics
ACIR	Australian Childhood Immunisation Register
ACT	Australian Capital Territory
AGPAL	Australian General Practice Accreditation Limited
AHW	Aboriginal health worker
AIHW	Australian Institute of Health and Welfare
AMS	Aboriginal Medical Service
ANZDATA	Australian and New Zealand Dialysis and Transplant Registry
AODTS- NMDS	Alcohol and Other Drug Treatment Services National Minimum Data Set
AQF	Australian Qualifications Framework
ARF	acute rheumatic fever
BEACH	Bettering the Evaluation and Care of Health
BMI	body mass index
CDEP	Community Development Employment Projects scheme
CHINS	Community Housing and Infrastructure Needs Survey
CI	confidence intervals
COAG	Council of Australian Governments
COPD	chronic obstructive pulmonary disease
CSOM	chronic suppurative otitis media
DASR	Drug and Alcohol Services Reporting
DEEWR	(Australian Government) Department of Education, Employment and Workplace Relations
DoHA	(Australian Government) Department of Health and Ageing
DSNMDS	Disability Services National Minimum Data Set
ERP	estimated resident population
ESKD	end-stage kidney disease

FaCSIA	(Australian Government) Department of Families, Community Services and Indigenous Affairs
FaHCSIA	(Australian Government) Department of Families, Housing, Community Services and Indigenous Affairs
FASD	fetal alcohol spectrum disorder
FOBT	fecal occult blood test
FTE	full-time equivalent
GP	general practitioner
GPA+	General Practice Accreditation Plus
GPMP	General Practice Management Plan
GSS	General Social Survey
HfL	Healthy for Life
HIV/AIDS	human immunodeficiency virus/acquired immunodeficiency syndrome
HPF	Aboriginal and Torres Strait Islander Health Performance Framework
ICD-10-AM	International statistical classification of disease and related health problems, 10th revision, Australian modification, 4th edition
IHO	Indigenous Housing Organisation
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
KPI	key performance indicator
MBS	Medicare Benefits Schedule
MCEECDYA	Ministerial Council for Education, Early Childhood Development and Youth Affairs
NAGATSIHID	National Advisory Group on Aboriginal and Torres Strait Islander Health Information and Data
NAHA	National Affordable Housing Agreement
NAPEDCD	National Non-admitted Patient Emergency Department Care Database
NAPLAN	National Assessment Program – Literacy and Numeracy
NATSIHON	National Aboriginal and Torres Strait Islander Health Officials Network
NATSISS	National Aboriginal and Torres Strait Islander Social Survey
NCMHCD	National Community Mental Health Care Database
NCVER	National Centre for Vocational Education Research

NDA	National Disability Agreement
NHMRC	National Health and Medical Research Council
NHMD	National Hospital Morbidity Database
NHS	National Health Survey
NIRA	National Indigenous Reform Agreement
NMDS	national minimum data set
NNDSS	National Notifiable Diseases Surveillance System
NOPSAD	National Opioid Pharmacotherapy Statistics Annual Data
NPAH	National Partnership Agreement on Homelessness
NPSU	National Perinatal Statistics Unit
NSSC	National Schools Statistics Collection
NSW	New South Wales
NT	Northern Territory
NTER	Northern Territory Emergency Response
OATSIH	Office of Aboriginal and Torres Strait Islander Health
OECD	Organisation for Economic Co-operation and Development
ORIC	Office of the Registrar of Indigenous Corporations
OSR	Online Services Report
PBS	Pharmaceutical Benefits Scheme
PES	Post Enumeration Survey
PMRT	Performance Measurement and Reporting Taskforce
Qld	Queensland
RHD	rheumatic heart disease
SA	South Australia
SAAPNDC	Supported Accommodation Assistance Program National Data Collection
SAR	Service Activity Reporting
SEIFA	Socio-Economic Indexes for Areas
SFNT	Stronger Futures in the Northern Territory
SHSC	Specialist Homelessness Services Collection

SIDS	sudden infant death syndrome
SIH	Survey of Income and Housing
STIs	sexually transmissible infections
TAFE	Technical and Further Education
Tas	Tasmania
TCA	Team Care Arrangement
VET	Vocational Education and Training
Vic	Victoria
VII	Voluntary Indigenous Identifier
WA	Western Australia
WHO	World Health Organization

Summary

The *Aboriginal and Torres Strait Islander health performance framework 2014 report: detailed analyses* finds improvements in the health of Aboriginal and Torres Strait Islander people, and areas of concern.

Areas of improvement

Health status

- A 16% decline in the overall mortality rate for Indigenous Australians. There was a significant narrowing (15%) of the gap in mortality between Indigenous and non-Indigenous Australians in the period from 1998 to 2013.
- A 40% decline in the death rate due to circulatory disease. This was the leading cause of death for Indigenous Australians, in the period from 1998 to 2012.
- A significant decrease (40%) in the death rate due to kidney disease, in the period from 2006 to 2012.

Risk factors

- Smoking rates declined significantly by 7 percentage points for Indigenous Australians (from 51% to 44%) between 2002 and 2012–13, for those aged 15 and over. The current gap between Indigenous and non-Indigenous Australians is 25 percentage points.

Child and maternal health

- A 31% decline in the mortality rate for Indigenous children aged 0–4, and a significant narrowing of the gap between Indigenous and non-Indigenous Australians in the period from 1998 to 2013.
- The low birthweight rate declined by 9% between 2000 and 2011 for babies born to Indigenous mothers and the gap between Indigenous and non-Indigenous Australians narrowed.
- Smoking during pregnancy declined from 54% to 50% for Indigenous mothers between 2005 and 2011.

Health system

- Medicare services claimed by Indigenous Australians have doubled over the last decade. There were increases in health assessments, chronic disease management items and overall GP care. The age-standardised rate of Medicare GP services claimed by Indigenous Australians is now higher than the rate for non-Indigenous Australians (6,115 compared with 5,583 per 1,000 population).
- Episodes of care delivered by Australian government funded Indigenous primary health care organisations increased from 1.2 million in 1999–2000 to 3.1 million in 2012–13, partly reflecting expansion in the sector.

Social determinants

- The gap in the year 12 or equivalent attainment rate between Indigenous and non-Indigenous Australians for those aged 20–24, narrowed by 11.6 percentage points.
- There have been improvements in overcrowding, homelessness and home ownership over the last decade.

Areas of concern

Health status

- 47% of Indigenous Australians aged 18 and over had a disability or restrictive long-term health condition in 2012–13, compared with 29% of their non-Indigenous counterparts.
- Cancer death rates for Indigenous Australians have increased by 11% between 2006 and 2012, although rates for non-Indigenous Australian have declined (5%).
- There has been no reduction in the mortality rate due to diabetes or injury, including for suicide and transport accidents.
- In 2012–13, 11% of Indigenous adults had diabetes, 3 times the rate for non-Indigenous Australians. Of those diagnosed with diabetes, 61% had high blood sugar levels.
- The incidence rate of end stage kidney disease for Indigenous Australians in 2010–2012 was 7 times the rate for non-Indigenous Australians.

Risk factors

- 44% of Indigenous Australians aged 15 and over reported being a current smoker in 2012–13, this is 2.5 times the rate for non-Indigenous Australians. The smoking rate in *Very remote* areas (56%) has not improved over the last decade.
- 66% of Indigenous Australian aged 15 and over were overweight or obese in 2012–13.
- 20% of Indigenous adults had high blood pressure and most (79%) did not know that they had the condition.

Child and maternal health

- 12.6% of babies born to Indigenous mothers in 2011 were low birthweight, twice the rate for non-Indigenous Australians.
- 50% of Indigenous women smoked during pregnancy in 2011, this is 4 times the rate for non-Indigenous Australians.

Health system

- In 2012–13, 21% of Indigenous Australians reported having problems accessing dentists, 14% doctors, 9% counsellors, 9% other health professionals and 6% hospitals.
- The rate of discharge from hospital against medical advice for Indigenous Australians was 8 times the rate for non-Indigenous Australians in the 2 years to June 2013.
- Indigenous Australians had lower rates of hospitalisations with a procedure recorded compared with non-Indigenous Australians. They also had lower rates recorded for elective surgery, and waited longer for elective surgery.

Social determinants

- No progress on the employment target for Indigenous Australians was recorded since 2008.
- Indigenous students' achievements in reading, writing and numeracy remain below the corresponding proportions for all students.
- In 2012-13, 43% of Indigenous adults were in the lowest quintile of equivalised household incomes, compared with 17% of non-Indigenous adults.
- In 2011, 28% of homeless Australians were Indigenous.

Table S1: Key indicators of Aboriginal and Torres Strait Islander health

Topic	Indicator (current time period)	Current period			Trends			
		Indig.	Non-Indig.	Gap ^(a)	Time period	Indig.	Non-Indig.	Gap ^(a)
Health status and outcomes								
Low birthweight	Low birthweight live born babies per 100 live births (2011)	12.6	6.0	6.6*	2000–2011	↓	↔	↓
Hospitalisations	Total hospitalisations (excluding dialysis) per 1,000 population, age-standardised (2011–12 to 2012–13)	393.1	327.6	65.5 ^(b)	1988–89 to 2012–13	↑	↑	↔
Disease incidence and prevalence	Age-standardised proportion of persons reporting circulatory disease as a long-term condition (2011–12)	19.7	16.0	3.7*	..	n.a.	n.a.	n.a.
	Age-standardised proportion of persons with diabetes (2012–13)	17.9	5.1	12.8	..	n.a.	n.a.	n.a.
	Age-standardised incidence rate of cancer per 100,000 population (2005–2009)	408.1	440.0	–31.9 ^(b)	..	n.a.	n.a.	n.a.
	Age-standardised incidence rate of treated end-stage kidney disease per 100,000 population (2010–2012)	61.7	9.3	52.4*	1996–2012	↑	↑	↑
Self-assessed health status	Age-standardised proportion of persons aged 15 and over reporting very good/excellent health (2012–13)	34.1	55.8	–21.7*	2004–05 to 2012–13	↓	↔	↔
Community functioning	Recognises homeland/traditional country (2012–13)	72.9	..	..	2002 to 2012–13	↑	..	..
	Speaks an Indigenous language (2008)	19	..	..	..	n.a.	..	..
	Lived in only 1 dwelling in last 12 months (2008)	78	..	..	..	n.a.	..	..
	Not a victim of physical or threatened violence in the last 12 months (2008)	75	..	..	..	n.a.	..	..
	Adult participated in sport/social/community activities in last 3 months (2008)	89	..	..	..	n.a.	..	..
Social and emotional wellbeing	Age-standardised proportion of adults reporting high/very high levels of psychological distress (2012–13)	29.5	10.9	18.6*	..	n.a.	n.a.	..
Disability	Age-standardised proportion of persons with a profound, severe or moderate core activity limitation (2012–13)	13.1	8.3	4.8	..	n.a.	n.a.	n.a.

(continued)

Table S1 (continued): Key indicators of Aboriginal and Torres Strait Islander health

Topic	Indicator	Current period			Time period	Trends		
		Indig.	Non-Indig.	Gap ^(a)		Indig.	Non-Indig.	Gap ^(a)
Oral, ear and eye health	Age-standardised hospitalisation rate for dental problems per 1,000 population (July 2011 to June 2013)	1.9	1.5	0.4 ^(b)	..	n.a.	n.a.	n.a.
	Proportion of children aged 0–14 with ear/hearing problems (2012–13)	7.1	3.6	3.5	2001 to 2012–13	↓	↓	↔
	Age-standardised proportion of persons with eye/sight problems (2012–13)	48.3	51.9	–3.6 ^(b)	2004–05 to 2012–13	↔	↔	↔
Mortality	Life expectancy at birth, males (2010–2012)	69.1	79.7	–10.6 ^(b)	2005–07 to 2010–12	↑	↑	↓
	Life expectancy at birth, females (2010–2012)	73.7	83.1	–9.5 ^(b)	2005–07 to 2010–12	↑	↑	↓
	Infant mortality rate per 1,000 live born infants (2009–2013)	6.3	3.7	2.6*	1998–2012	↓	↓	↓
	Child 0–4 mortality rate per 100,000 population (2009–2013)	169.2	89.2	79.9*	1998–2013	↓	↓	↓
	Perinatal mortality rate per 1,000 births (2008–2012)	9.6	8.1	1.5*	1998–2012	↓	↓	↓
	Age-standardised mortality rate per 100,000 population (2009–2013)	985.0	585.2	399.8*	1998–2013	↓	↓	↓
	Age-standardised mortality rate for circulatory diseases per 100,000 population (2008–2012)	285.7	191.8	93.8*	1998–2012	↓	↓	↓
	Age-standardised mortality rate for avoidable and preventable deaths (0–74) per 100,000 population (2008–2012)	592.9	218.7	374.2*	1998–2012	↓	↓	↓
Determinants of health								
Housing	Proportion of people aged 15 and over living in overcrowded households (2012–13)	22.7	5.3	17.4*	2004–05 to 2012–13	↓	↔	↓
Environmental tobacco smoke	Proportion of children aged 0–14 living in households with daily smokers (2012–13)	56.9	26.0	30.9*	2004–05 to 2012–13	↓	↓	↓

(continued)

Table S1 (continued): Key indicators of Aboriginal and Torres Strait Islander health

Topic	Indicator	Current period			Trends			
		Indig.	Non-Indig.	Gap ^(a)	Time period	Indig.	Non-Indig.	Gap ^(a)
Education	Apparent retention rate for year 7/8 to Year 12 (2013)	55.1	82.9	-27.8 ^(b)	1999–2013	↑	↑	↓
	Apparent retention rate for year 11 to Year 12 (2013)	71.3	87.4	-16.1 ^(b)	1999–2013	↑	↔	↓
	Proportion of persons aged 25–64 who had a post-school qualification (2011)	37.9	61.7	-23.9	2001–2011	↑	↑	↔
Literacy and numeracy	Proportion of Year 3 students achieving reading benchmark (2014)	74.7	94.7	-20.0 ^(b)	2008–2014	↔	↔	↔
	Proportion of Year 3 students achieving writing benchmark (2014)	75.8	94.9	-19.1 ^(b)		n.a.	n.a.	n.a.
	Proportion of Year 3 students achieving numeracy benchmark (2014)	78.2	95.7	-17.5 ^(b)	2008–2014	↑	↑	↓
	Proportion of Year 3 students achieving grammar/punctuation benchmark (2014)	72.9	94.9	-22.0 ^(b)	2008–2014	↔	↔	↔
Employment	Labour force participation rate, persons aged 15–64 (2012–13)	60.1	80.0	-19.9*	2008 to 2012–13	↓	↔	↑
	Employment rate (proportion of population employed), persons aged 15–64 (2012–13)	47.5	76.6	-29.1*	2008 to 2012–13	↓	↔	↑
	Unemployment rate, persons aged 15–64 (2012–13)	20.9	4.2	16.7*	2008 to 2012–13	↑	↑	↑
Income	Proportion of persons aged 18 and over in the bottom 20% of equivalised gross weekly household income (2012–13)	42.5	16.9	25.6*	..	n.a.	n.a.	n.a.
Transport	Proportion of households in <i>Non-remote</i> areas with access to motor vehicles (2008)	49.8	84.7	34.9*	..	n.a.	n.a.	n.a.
Community safety and criminal justice	Proportion of persons aged 18 and over who reported they were a victim of physical or threatened violence in last 12 months (2008)	20.5	10.8	9.7	..	n.a.	n.a.	n.a.
	Age-standardised imprisonment rate per 100,000 adults (2013)	1,730.9	132.8	1,598.1	2000–2013	↑	↑	↑
	Child protection substantiations per 1,000 children aged 0–17 (2013)	38.1	5.7	32.4	..	↔	↔	↔

(continued)

Table S1 (continued): Key indicators of Aboriginal and Torres Strait Islander health

Topic	Indicator	Current period			Trends			
		Indig.	Non-Indig.	Gap ^(a)	Time period	Indig.	Non-Indig.	Gap ^(a)
Health behaviours	Age-standardised proportion of persons aged 15 and over who are current daily smokers (2012–13)	40.7	15.4	25.3*	2002 to 2012–13	↓	n.a.	n.a.
	Age-standardised proportion of persons aged 18 and over who drank at risky/high risk levels on any occasion during last 12 months (2012–13)	51.9	45.3	6.6	2004–05 to 2012–13	↔	↔	↔
	Proportion of persons aged 15 and over who used illicit drugs in last 12 months (2012–13)	22.7	..	..	2002 to 2012–13	↔	..	..
	Age-standardised proportion of mothers who smoked during pregnancy (2011)	48.7	12.0	36.7*	..	↓	↓	↑
	Proportion of infants (0–3) currently being breastfed (2012–13)	18.6	19.1	–0.5	..	n.a.	n.a.	n.a.
Overweight and obesity	Age-standardised proportion of persons aged 15 and over who are obese (measured height and weight) (2012–13)	41.0	26.2	14.8*	..	n.a.	n.a.	n.a.
Health system performance								
Early detection and prevention, health promotion	Proportion of mothers who attended at least 1 antenatal care session during the first trimester of pregnancy (age-standardised) (2011)	51.4	66.2	–14.8*	..	n.a.	n.a.	n.a.
	Proportion of 2 year olds fully vaccinated (2013)	91.4	92.2	–0.9	2001–2013	↑	↑	↔
	Proportion of Indigenous primary health care services that offered at least 1 health promotion program (2012–13)	98.5	..	..	..	n.a.	..	..
	Age-standardised proportion of women aged 50–69 who participated in BreastScreen Australia programs (2011–12)	33.3	54.9	–21.7 ^(b)	1999–00 to 2011–12	↑	↓	↓
	Child 0–14 health checks, rate per 1,000 population (2013–14)	194.2	..	..	..	↑	..	..
	Adult 15–54 health assessments, rate per 1,000 population (2013–14)	205.0	..	..	2006–07 to 2013–14	↑	..	..
	Adult 55+ health assessments, rate per 1,000 population (2013–14)	325.0	..	..	..	↑	..	..

(continued)

Table S1 (continued): Key indicators of Aboriginal and Torres Strait Islander health

Topic	Indicator	Current period			Trends			
		Indig.	Non-Indig.	Gap ^(a)	Time period	Indig.	Non-Indig.	Gap ^(a)
Chronic disease management/care planning	General Practice Management Plans (GPMPs), age-standardised rate per 1,000 population (2013–14)	114.0	72.0	41.7*	2005–06 to 2013–14	↑	↑	lead increased
	Team Care Arrangements (TCAs), age-standardised rate per 1,000 population (2013–14)	96.0	58.0	37.7*	2005–06 to 2013–14	↑	↑	lead increased
	MBS allied health items claimed, age-standardised rate per 1,000 population (2013–14)	334.0	386.0	–51.8*	2003–04 to 2013–14	↑	↑	↔
	Proportions of persons with diabetes who had an HbA1c test in the last 12 months (2012–13)	68.7	72.1	9.4 ^(b)	..	n.a.	n.a.	n.a.
Access to hospital procedures	Age-standardised proportion of hospitalisations (excluding dialysis) with a procedure recorded (2011–12 to 2012–13)	58.8	79.9	–21.1 ^(b)	..	↑	↑	↓
Potentially preventable hospital admissions	Age-standardised hospitalisation rates for potentially preventable hospital admissions (2011–12 to 2012–13)	96.6	28.5	68.0 ^(b)	..	n.a.	n.a.	n.a.
Governance and cultural competency	Age-standardised per cent for discharge from hospital against medical advice (excluding mental and behavioural disorders) (2011–12 to 2012–13)	3.6	0.5	3.1 ^(b)	..	↑	↑	↑
	Proportion of Aboriginal and Torres Strait Islander primary health care services that have representatives on external boards (2012–13)	57.1	..	..	..	n.a.	..	..
	Proportion of Indigenous persons experiencing discrimination (2008)	27.3	..	..	..	n.a.	..	..
Access to health services	MBS non-referred GP services claimed, age-standardised rate per 1,000 population (2013–14)	6,115	5,583	532.3*	2003–04 to 2013–14	↑.	↑.	↓
	Proportion of Indigenous population who had problems accessing a dentist (2012–13)	21.0	..	..	..	n.a.	..	..
	Proportion of Indigenous population who had problems accessing a doctor (2012–13)	14.0	..	..	..	n.a.	..	..

(continued)

Table S1 (continued): Key indicators of Aboriginal and Torres Strait Islander health

Topic	Indicator	Current period			Trends			
		Indig.	Non-Indig.	Gap ^(a)	Time period	Indig.	Non-Indig.	Gap ^(a)
	Proportion of Indigenous population who had problems accessing a hospital (2012–13)	6.0	..	..	..	n.a.	..	..
	Episodes of health care provided by Indigenous primary health care services (2012–13)	3,068,438	..	..	..	↑	..	..
	Elective surgery median waiting times (days) (2013–14)	41	36	5 ^(b)	..	n.a.	n.a.	n.a.
	Emergency department waiting times—proportion meeting national benchmark (2013–14)	73	74	-1 ^(b)	2010–11 to 2012–13	↑	↑	↔
	Age-standardised community mental health-care service contacts per 1,000 population (2012–13)	999.2	313.1	686.1 ^(b)	..	n.a.	n.a.	n.a.
	Proportion of presentations to emergency departments which were after hours (2011–12 to 2012–13)	58.7	56.0	2.7 ^(b)	..	n.a.	n.a.	n.a.
Accreditation	Proportion of public hospital separations in accredited hospitals (2011–12 to 2012–13)	99.2	99.2	— ^(b)	1998–99 to 2012–13	↑	↑	↓
	Proportion of Indigenous primary health care services accredited (2012–13)	42	..	..	..	n.a.	..	..
Workforce, training and resources	People in the health workforce (per 10,000 population) (2011)	155.1	344.1	-189.0 ^(b)	1996 to 2011	↑	n.a.	n.a.
	Per cent of undergraduates enrolled in health related courses who were Indigenous (2012)	1.8	..	..	..	n.a.	..	..
	Per cent of VET students enrolled in health related courses who were Indigenous (2012)	4.8	..	..	..	n.a.	..	..
	Estimated health expenditure per person (2010–11)	\$7,995	\$5,437	\$2,559 ^(b)	2001–02 to 2010–11	↑	n.a.	n.a.

(continued)

Table S1 (continued): Key indicators of Aboriginal and Torres Strait Islander health

* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparisons at the $p < 0.05$ level.

(a) Gap is the rate difference (Indigenous age-standardised rate minus non-Indigenous age-standardised rate).

(b) Differences between Indigenous and non-Indigenous populations not tested for statistical significance.

↑ Statistically significant increase in long-term trends presented (see relevant measure in body of report for time period).

↓ Statistically significant decrease in long-term trends presented (see relevant measure in body of report for time period).

↔ No significant change in long-term trends presented (see relevant measure in body of report for time period).

n.a. Data not available or not reported.

.. Not applicable

Note: Figures reported in the current period column should not be compared as many of the indicators are based on different denominators.

Introduction

The *Aboriginal and Torres Strait Islander Health Performance Framework 2014 report: detailed analyses*, is the fifth in a series of reports against the Aboriginal and Torres Strait Islander Health Performance Framework (HPF) which are published every 2 years. This report provides information on a range of measures of health status, determinants of health and the health system performance relating to Aboriginal and Torres Strait Islander people in Australia. Detailed tables to support the analysis presented in this report can be found on the AIHW website in the form of Excel tables.

See <<http://www.aihw.gov.au/indigenous-data/health-performance-framework/>>.

The HPF comprises 3 tiers:

Tier 1 – Health status and outcomes. This tier covers prevalence of health conditions (for example, circulatory disease, diabetes), human function (for example, disability), life expectancy and wellbeing and deaths. It aims to provide an overall indication of current health status and recent trends on a range of issues including child and maternal health, chronic diseases, injury, communicable diseases, and social and emotional wellbeing.

Tier 2 – Determinants of health. This tier covers determinants of health that focus on factors outside the health system that affect the health of Aboriginal and Torres Strait Islander people. This includes socioeconomic status (for example, income and education), environmental factors (for example, overcrowding), community capacity (for example, child protection), health behaviours (for example, risky alcohol consumption and dietary behaviour) and person-related factors (for example, prevalence of overweight and obesity). Such factors have been shown to have a strong association with disease and ill health.

Tier 3 – Health system performance. This tier covers the performance of the health system, including population health, primary health care and secondary/tertiary care services. There are 6 domains covered: effectiveness of health services; responsiveness of health services to Indigenous communities and individuals; accessibility of services; continuity; capability; and sustainability. This tier includes measures that deal with a range of programs and service types, including child and maternal health, early detection and chronic disease management, continuous care, access to secondary/tertiary care, and health workforce and expenditure. The safety and quality of health care is measured through the Australian Safety and Quality Framework for Health Care <<http://www.safetyandquality.gov.au>>.

The tiers and domains of the HPF and selected measures are shown in Figure 1. There are currently 68 measures that can be reported at the national level but not all can be reported for individual jurisdictions due to data availability and quality issues. Information on why these indicators were selected is in the Aboriginal and Torres Strait Islander Health Performance Framework 2014 policy report (AHMAC 2015).

Tier 1—Health status and outcomes		
Health conditions 1.01 Low birthweight 1.02 Top reasons for hospitalisation 1.03 Injury and poisoning 1.04 Respiratory disease 1.05 Circulatory disease 1.06 Acute rheumatic fever and rheumatic heart disease 1.07 High blood pressure 1.08 Cancer 1.09 Diabetes 1.10 Kidney disease 1.11 Oral health 1.12 HIV/AIDS, hepatitis and sexually transmissible infections	Human function 1.13 Community functioning 1.14 Disability 1.15 Ear health 1.16 Eye health Life expectancy and wellbeing 1.17 Perceived health status 1.18 Social and emotional wellbeing 1.19 Life expectancy at birth	Deaths 1.20 Infant and child mortality 1.21 Perinatal mortality 1.22 All causes age-standardised deaths rates 1.23 Leading causes of mortality 1.24 Avoidable and preventable deaths
Tier 2—Determinants of health		
Environmental factors 2.01 Housing 2.02 Access to functional housing with utilities 2.03 Environmental tobacco smoke	Community capacity 2.10 Community safety 2.11 Contact with the criminal justice system 2.12 Child protection 2.13 Transport 2.14 Indigenous people with access to their traditional lands	Health behaviours 2.15 Tobacco use 2.16 Risky alcohol consumption 2.17 Drug and other substance use including inhalants 2.18 Physical activity 2.19 Dietary behaviour 2.20 Breastfeeding practices 2.21 Health behaviours during pregnancy
Socioeconomic factors 2.04 Literacy and numeracy 2.05 Education outcomes for young people 2.06 Educational participation and attainment of adults 2.07 Employment 2.08 Income 2.09 Index of disadvantage		Person-related factors 2.22 Overweight and obesity
Tier 3—Health system performance		
Effective/appropriate/efficient 3.01 Antenatal care 3.02 Immunisation 3.03 Health promotion 3.04 Early detection and early treatment 3.05 Chronic disease management 3.06 Access to hospital procedures 3.07 Selected potentially preventable hospital admissions 3.08 Cultural competency	Accessible 3.14 Access to services compared with need 3.15 Access to prescription medicines 3.16 Access to after-hours primary health care Continuous 3.17 Regular GP or health service 3.18 Care planning for chronic diseases	Capable 3.19 Accreditation 3.20 Aboriginal and Torres Strait Islander people training for health-related disciplines Sustainable 3.21 Expenditure on Aboriginal and Torres Strait Islander health compared to need 3.22 Recruitment and retention of staff
Responsive 3.09 Discharge against medical advice 3.10 Access to mental health services 3.11 Access to alcohol and drug services 3.12 Aboriginal and Torres Strait Islander Australians in the health workforce 3.13 Competent governance		

Source: AHMAC 2015

Figure 1: Aboriginal and Torres Strait Islander Health Performance Framework measures

Demographic information

The preliminary estimated resident Indigenous population of Australia as at 30 June 2014 was 713,589 people (ABS 2014a). Indigenous people represent 3% of the Australian population (Table 1).

Table 1: Preliminary estimated resident population by state/territory and Indigenous status, 30 June 2014

	Indigenous		Non-Indigenous		Total			
	Number	%	Number	%	Number	%	% Indig.	% Non-Indig.
New South Wales	220,902	31.0	7,272,717	31.9	7,493,619	31.9	2.9	97.1
Victoria	50,983	7.1	5,777,986	25.3	5,828,969	24.8	0.9	99.1
Queensland	203,045	28.5	4,557,648	20.0	4,760,693	20.2	4.3	95.7
South Australia	39,800	5.6	1,651,173	7.2	1,690,973	7.2	2.4	97.6
Western Australia	93,778	13.1	2,502,941	11.0	2,596,719	11.0	3.6	96.4
Tasmania	25,845	3.6	489,978	2.1	515,823	2.2	5.0	95.0
Northern Territory	72,251	10.1	171,754	0.8	244,005	1.0	29.6	70.4
Australian Capital Territory	6,707	0.9	383,373	1.7	390,080	1.7	1.7	98.3
Australia^(a)	713,589	100.0	22,810,466	100.0	23,524,055	100.0	3.0	97.0

(a) Includes territories other than New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania, the Northern Territory and the Australian Capital Territory.

Source: AIHW analysis of ABS preliminary population estimates based on 2011 Census.

The Indigenous population has an age structure that is significantly younger than that of the non-Indigenous population. For example, in 2014, Indigenous Australians aged under 15 constituted 34% of the Indigenous population, whereas this age group represents about 18% of the non-Indigenous population. Conversely, those aged 65 and over comprise only 4% of the Indigenous population, compared with about 15% of the non-Indigenous population (Figure 2).

In 2011, over three-quarters of the total Indigenous population in Australia live in *Major cities* (35%), *Inner regional* (22%) and *Outer regional* areas (22%), with under one-quarter in both *Remote* (8%) and *Very remote* (14%) areas (Table 2).

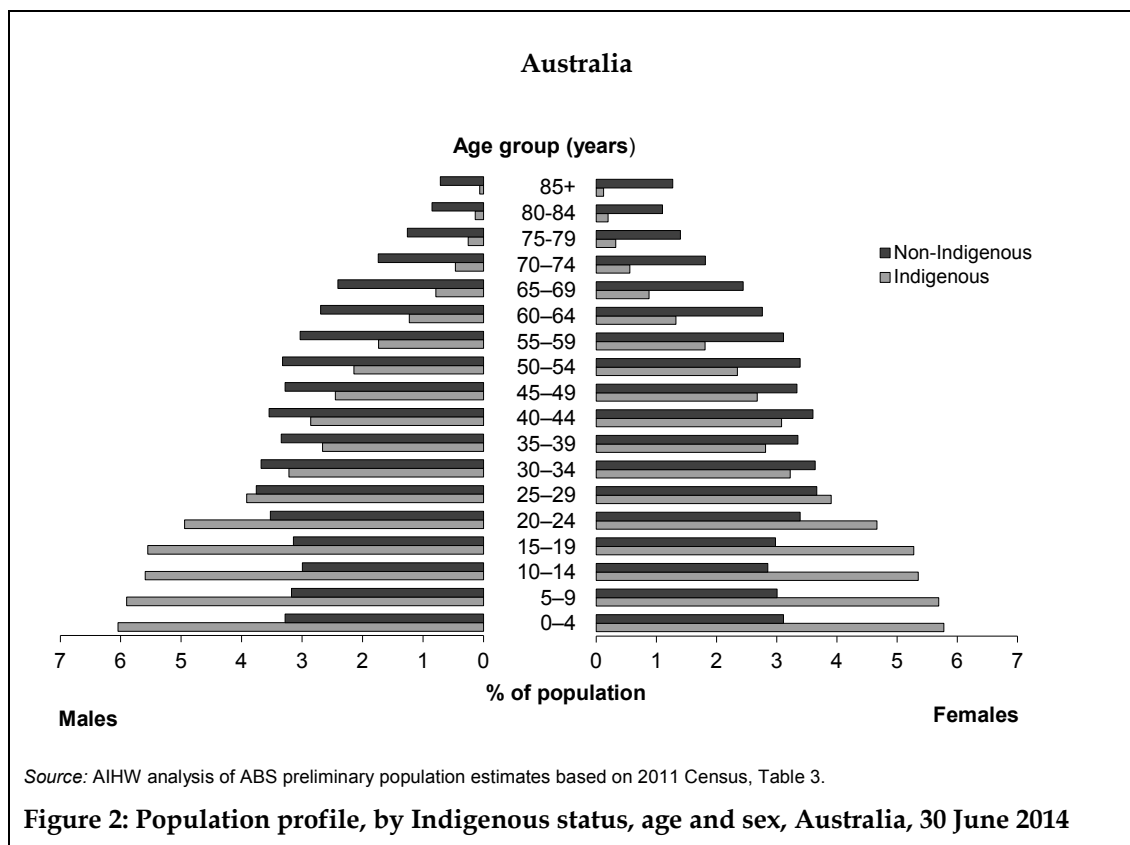


Table 2: Estimated resident population by remoteness area and Indigenous status, Australia, 30 June 2011

	Indigenous		Non-Indigenous		Total			
	Number	%	Number	%	Number	%	% Indig.	% Non-Indig.
Major cities	233,146	34.8	15,451,394	71.3	15,684,540	70.2	1.5	98.5
Inner regional	147,683	22.0	3,963,346	18.3	4,111,029	18.4	3.6	96.4
Outer regional	146,129	21.8	1,880,300	8.7	2,026,429	9.1	7.2	92.8
Remote	51,275	7.7	263,401	1.2	314,676	1.4	16.3	83.7
Very remote	91,648	13.7	111,702	0.5	203,350	0.9	45.1	54.9
Australia	669,881	100.0	21,670,143	100.0	22,340,024	100.0	3.0	97.0

Source: AIHW analysis of ABS population estimates based on 2011 Census.

Structure of this report

This report presents the most recent data available at the time of writing, which varies by data source (see Table 1 for the most recent year/period for which key statistics are reported). Analyses for each measure are presented in order, through Tier 1 – Health status and outcomes, Tier 2 – Determinants of health and Tier 3 – Health system performance.

Detailed tables to support the analyses presented in this report are included within each measure, and can also be found on the AIHW website in the form of Excel tables. See <http://www.aihw.gov.au/indigenous-data/health-performance-framework/>.

Interpreting the data in this report

Data sources and limitations

Data in this report come from a number of different administrative data sets and surveys, all of which have limitations that should be considered when interpreting the results. A brief description of the major data sources used in this report is at Appendix 1; a more detailed description of all data sources and comments on data quality can be found on the AIHW website at <http://www.aihw.gov.au/indigenous-data/health-performance-framework/>.

Administrative data sources

Health-related administrative data sets used for this report include the Australian Institute of Health and Welfare's National Hospital Morbidity Database, the National Mortality Database, the Community Mental Health Care Database, the National Perinatal Data Collection, the Australia and New Zealand Dialysis and Transplant Registry, the National Notifiable Diseases Surveillance System, the Online Services Report data collection and Medicare databases. Administrative data related to education include the Australian Bureau of Statistics National Schools Statistics Collection, Department of Education and Training Higher Education Student Statistics Collection and the National Vocational Education and Training database. Community services related data include the National Child Protection Data collections.

The main limitation in most of these administrative data collections is the under-identification of Aboriginal and Torres Strait Islander people. Under-identification is a problem in mortality, hospital morbidity and communicable disease data, particularly in some states and territories. Data analysis using these sources has therefore been limited to jurisdictions with adequate identification of Indigenous people, and this has been noted in relevant measures. Time-series analyses may also be affected by changes in the quality of Indigenous identification over time.

For current hospitalisation results (for 2011–12 and 2012–13 combined), all states and territories are considered as having data of sufficient quality to be included in the analyses. For short-term trends (2004–05 to 2012–13), data from New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory are used. For longer-term trends (1998–99 to 2012–13), data from only Queensland, Western Australia, South Australia and the Northern Territory are used.

For both current and long-term mortality data (from 1998 onwards), New South Wales, Queensland, Western Australia, South Australia and the Northern Territory are considered as having adequate levels of Indigenous identification to be included in the analyses.

Data on communicable diseases from the National Notifiable Disease Surveillance System have been found to have varying levels of completeness across diseases and jurisdictions. Results for each disease include only data from those jurisdictions considered to have adequate levels of Indigenous identification for that disease. Footnotes in tables and figures specify which jurisdictions have been included in each case.

The incompleteness of Indigenous identification in many administrative data sources results in an underestimate of the true rates for Indigenous Australians.

Surveys and other non-administrative data sources

Surveys that were used to obtain data for this report include Indigenous-specific surveys such as the Australian Aboriginal and Torres Strait Islander Health Survey (AATSIHS), and the National Aboriginal and Torres Strait Islander Social Survey (NATSISS). Data from the Census of Population and Housing have also been used.

Surveys are also subject to a number of data limitations due to sampling and non-sampling errors, such as bias in responses. In many tables that are referred to in this report, estimates with large relative standard errors (which is a measure of the sampling variability) have been footnoted to indicate that they should be used with caution or are considered too unreliable for general use.

For convenience, text and tables including data from the 2012–13 AATSIHS and the 2011–12 Australian Health Survey (which provides a non-Indigenous comparator) are referred to as being 2012–13 data.

Table 3: Comparator population and jurisdictions included in combined totals, by data source

Data source	Comparator population		Jurisdictions included in combined totals		
	Current period	Time series data	Current period	Time series—short	Time series—long
ABS National Prisoner Census	Non-Indigenous	Non-Indigenous	All Australia	All Australia	n.a.
ABS National Schools Statistics Collection	Other Australians	Other Australians	All Australia	All Australia	n.a.
AIC Deaths in Custody Australia (NDICP)	Non-Indigenous	Non-Indigenous	All Australia	All Australia	n.a.
AIC Drug Use Monitoring in Australia (DUMA)	Non-Indigenous	Non-Indigenous	n.a. ^(a)	n.a.	n.a.
AIC National Homicide Monitoring Program	Non-Indigenous	n.a.	All Australia	n.a.	n.a.
AIHW Child Protection Collection	Non-Indigenous	Non-Indigenous	All Australia	All Australia	n.a.
AIHW Health Expenditure Database	Non-Indigenous	Indigenous only	All Australia	All Australia	n.a.
AIHW Juvenile Justice NMDS	Non-Indigenous	Non-Indigenous	NSW, Vic, Qld, SA, Tas, ACT	All Australia	n.a.
AIHW National Hospital Morbidity Database	Non-Indigenous	Non-Indigenous	All Australia	NSW, Vic, Qld, WA, SA, NT	Qld, WA, SA, NT
AIHW National Non-admitted patient emergency department care database (NAPEDCD)	Non-Indigenous	n.a.	All Australia	n.a.	n.a.
AIHW National Prisoner Health Data Collection	Non-Indigenous	n.a.	All Australia	n.a.	n.a.
AODT-NMDS (Alcohol and Other Australians Drug Treatment Services National Minimum Dataset)	Non-Indigenous	n.a.	All Australia	n.a.	n.a.
ARF and RHD registers	Other Australians	Indigenous only	NT, WA, Qld	NT, WA, Qld for ARF; NT, WA for RHD	NT
Australia and New Zealand Dialysis and Transplant Registry (ANZDATA)	Non-Indigenous	Non-Indigenous	All Australia	All Australia	n.a.
Australian Aboriginal and Torres Strait Islander Health Survey	Non-Indigenous ^(b)	Non-Indigenous	All Australia	All Australia	n.a.
Australian Cancer Database—incidence data	Non-Indigenous	n.a.	NSW, Qld, WA, NT	n.a.	n.a.
Australian Cancer Database—survival rates	Non-Indigenous	n.a.	NSW, Qld, WA, NT	n.a.	n.a.
Australian Childhood Immunisation Register (ACIR)	Other Australians	Other Australians	All Australia	NSW, Vic, WA, SA, NT	n.a.
Australian National Infant Feeding Survey	Non-Indigenous	n.a.	All Australia	n.a.	n.a.

(continued)

Table 3 (continued): Comparator population and jurisdictions included in combined totals, by data source

Data source	Comparator population		Jurisdictions included in combined totals		
	Current period	Time series data	Current period	Time series—short	Time series—long
BEACH	Other Australians	Other Australians	All Australia	All Australia	n.a.
National Bowel Cancer Screening Program	Non-Indigenous	n.a.	All Australia	n.a.	n.a.
BreastScreen register data	Other Australians	Other Australians	All Australia	All Australia	n.a.
Census of Population and Housing	Non-Indigenous	Non-Indigenous	All Australia	All Australia	n.a.
Child Dental Health Survey	Non-Indigenous	n.a.	Qld, WA, SA, Tas, ACT, NT	n.a.	n.a.
Deadly Ears	Indigenous only	Indigenous only	Qld	Qld	n.a.
Department of Health General Practice statistics	not by Indigenous status	n.a.	All Australia	n.a.	n.a.
Department of Education Higher Education Statistics Collection	Other Australians	Other Australians	All Australia	All Australia	n.a.
Disability Services NMDS	Non-Indigenous	n.a.	All Australia	n.a.	n.a.
GPA Accreditation Plus (GPA+) and Australian General Practice Accreditation Limited (AGPAL)	not by Indigenous status	n.a.	All Australia	n.a.	n.a.
Healthy for Life (HfL)	Indigenous only	Indigenous only	All Australia	All Australia	n.a.
Medicare—Child Dental Benefits Schedule	Non-Indigenous	n.a.	All Australia	n.a.	n.a.
Medicare data (MBS health checks)	Non-Indigenous	Indigenous only	All Australia	All Australia	n.a.
Medicare PIP IHI	not by Indigenous status	not by Indigenous status	All Australia	All Australia	n.a.
Medicare VII (Medicare Financing and Analysis Branch, Department of Health)	Non-Indigenous	Non-Indigenous	All Australia	All Australia	n.a.
NAPLAN	Non-Indigenous	Non-Indigenous	All Australia	All Australia	n.a.
National Community Mental Health Care Data	Non-Indigenous	n.a.	NSW, Qld, WA, SA, Tas, ACT, NT	n.a.	n.a.
National Health Workforce data	not by Indigenous status	n.a.	All Australia	n.a.	n.a.
National HIV Registry	Other Australians	Other Australians	All Australia	All Australia	n.a.
National Indigenous Eye Health Survey	Indigenous only	n.a.	All Australia	n.a.	n.a.

(continued)

Table 3 (continued): Comparator population and jurisdictions included in combined totals, by data source

Data source	Comparator population		Jurisdictions included in combined totals		
	Current period	Time series data	Current period	Time series—short	Time series—long
National Mental Health Establishments Database.	not by Indigenous status	n.a.	All Australia	n.a.	n.a.
National Mortality Database	Non-Indigenous	Non-Indigenous	NSW, Qld, WA, SA, NT	NSW, Qld, WA, SA, NT	n.a.
National Notifiable Diseases Surveillance System (NNDSS)	Other Australians	Other Australians	varies by disease ^(c)	WA, SA, NT	n.a.
National Perinatal Data Collection—antenatal care	Non-Indigenous	Non-Indigenous	NSW, Qld, SA, Tas, ACT, NT for number of visits; All Australia for gestation at first visit	NSW, Qld, SA, NT	NSW, Qld, SA
National Perinatal Data Collection—birthweight	Non-Indigenous	Non-Indigenous ^(d)	All Australia	NSW, Vic, Qld, WA, SA, NT	NSW, Vic, Qld, WA, SA, NT
National Perinatal Data Collection—smoking in pregnancy	Non-Indigenous	n.a.	All Australia	n.a.	n.a.
National Residential Mental Health Care Data	Non-Indigenous	n.a.	All Australia	n.a.	n.a.
National VET provider Collection	Other Australians	Other Australians	All Australia	All Australia	n.a.
NATSISS	Non-Indigenous ^(e)	n.a.	All Australia	n.a.	n.a.
nKPI collection	Indigenous only	Indigenous only	All Australia	All Australia	n.a.
NOPSAD (National Opioid Pharmacotherapy Statistics Annual Data)	Non-Indigenous	Non-Indigenous	NSW, Qld, SA, Tas, ACT, NT	NSW, Qld, SA, ACT	n.a.
Online Services Reporting (OSR)	Non-Indigenous	Indigenous only	All Australia	All Australia	n.a.
ORIC (Register of Indigenous Corporations)	not by Indigenous status	not by Indigenous status	All Australia	All Australia	n.a.
RHOF and VOS data ^(f)	Other Australians	n.a.	All Australia	n.a.	n.a.
Rural Workforce Agency NMDS	not by Indigenous status	n.a.	All Australia	n.a.	n.a.
SHSC (Specialist Homelessness Services Collection)	Non-Indigenous	n.a.	All Australia	n.a.	n.a.
Stronger Futures NTER CHCI (Northern Territory Emergency Response Child Health Check Initiative)—Audiology and dental data	Indigenous only	Indigenous only	NT	NT	n.a.

(continued)

Table 3 (continued): Comparator population and jurisdictions included in combined totals, by data source

Data source	Comparator population		Jurisdictions included in combined totals		
	Current period	Time series data	Current period	Time series—short	Time series—long
Trachoma Surveillance	Indigenous only	n.a.	NT, SA, WA, Qld for children; NT, SA, WA for adults	n.a.	n.a.

(a) DUMA data are presented by jurisdiction only, no combined total is calculated.

(b) Comparator data are sourced from the 2011–12 Australian Health Survey.

(c) The completeness of Indigenous status information in NNDSS data varies by disease. Invasive pneumococcal disease: all Australia. Chlamydia: Qld, WA, SA, Tas, NT. Non-congenital syphilis: all Australia. Gonorrhoea: all Australia except NSW. Hepatitis C: WA, SA, Tas, NT. Hepatitis B: WA, SA, Tas, ACT NT.

(d) For the long-term time series beginning in 1991, the comparator population is Other Australians.

(e) Comparator data are sourced from the 2008–08 National Health Survey, 2007–08 Survey of Income and Housing or 2006 General Social Survey, as relevant.

(f) RHOF—Rural Health Outreach Fund; VOS—Visiting Optometrists Scheme.

Methods used for analysis

Comparator population

This report focuses on the health of Aboriginal and Torres Strait Islander people and how they are faring relative to other Australians. Wherever possible, results for Indigenous Australians are compared with those for non-Indigenous Australians – that is, people who identified as not being of Aboriginal or Torres Strait Islander origin. This is not always possible, however: some data sources do not allow for the separate identification of people who identified as not being of Aboriginal and/or Torres Strait Islander origin, and people for whom no Indigenous status information was available. For other data sources, investigation has shown that the characteristics of records with unknown Indigenous status tend to be more similar to those specified as not Indigenous than to those specified as Indigenous, and so may be grouped together with the ‘not Indigenous’ records. In these cases, results for Indigenous Australians are compared with those for ‘other Australians’, where the ‘other Australians’ group comprises non-Indigenous people and those of unknown Indigenous status. Text, tables and figures in this report clearly note whether ‘non-Indigenous Australians’ or ‘other Australians’ are the comparator population.

Population data

Population data are required when computing rates. The 2011 Census is the latest available data that gives an estimate of the number of Aboriginal and Torres Strait Islander people in the population. Unless otherwise noted, denominators used to calculate Indigenous Australian rates in this report are therefore based on the ABS backcast Indigenous population estimates and projections based on the 2011 Census. Estimates of the non-Indigenous population for each year have been calculated by subtracting the Indigenous population estimates from the total Australian ERP. These estimates have been used as denominators for both the ‘non-Indigenous’ and ‘other Australian’ rates.

The Census enumerated the Indigenous population from responses to a question on a person’s Indigenous status. The Indigenous ERP for 2011 is computed using this enumerated figure, and adjusted for undercount based on results from the Post Enumeration Survey (PES) as well as for non-response to the Indigenous status question (ABS 2013a). Estimates of the Indigenous ERP at June 2011, based on the 2011 Census, are about 30 per cent higher than estimates of the 2006 Indigenous ERP based on the 2006 Census. This increase involved a 21 per cent increase in the Census count (mostly at age groups below 19 years) and an increase in the measured undercount (influenced by improved PES questions on Indigenous status). Historical rates presented in this report will therefore be different to those presented in previous HPF reports.

Further details on the Indigenous population and health and welfare issues are discussed in *Australia’s health 2014* (AIHW 2014a) and *Australia’s welfare 2015* (AIHW 2015a).

Calculating rates

This report presents both crude and age-standardised rates.

A crude rate provides information on the number of events (for example, deaths of Indigenous people) relative to the population ‘at risk’ (for example, all Indigenous people). No age adjustments are made when calculating such a rate.

Crude rates may not always be suitable when making comparisons across time or between groups when differences by age structure exist (for example, the Indigenous population has a much younger age structure than the non-Indigenous population). In such situations, more meaningful comparisons can be made by using age-standardised rates, with such rates taking into account differences in age structures of the populations.

For this report, the Australian estimated resident population at 30 June 2001 (based on the 2001 Census) has been used as the standard population when deriving age-standardised rates. The same population was used for males and females to allow valid comparison of age-standardised rates between the sexes.

Two different methods of age-standardisation can be used: direct and indirect. Unless otherwise noted (specifically, for hospital procedures and some perinatal data), direct age-standardisation has been used in this report to allow for comparison over time.

Effects of rounding

Entries in columns and rows of tables may not add to the totals shown because of rounding. Derived values (such as proportions, rates, rate ratios and rate differences) are calculated using unrounded numbers. Percentages cited in the text therefore may not add to 100 due to rounding.

Comparing rates at a point in time

Comparison of rates for Indigenous and non-Indigenous (or other) Australians has been done by calculating rate differences and rate ratios.

A rate difference measures the literal, or absolute, gap between 2 population rates; in this report, it is calculated as the rate for Indigenous people minus the rate for non-Indigenous people.

A rate ratio measures the relative difference between populations by taking scale into account; in this report, it is calculated as the rate for Indigenous people divided by the rate for non-Indigenous people and is interpreted as follows:

- A rate ratio of 1 indicates there is no difference between the rates.
- A ratio less than 1 indicates the rate is lower in the Indigenous population.
- A ratio greater than 1 indicates the rate is higher in the Indigenous population.

A large rate ratio does not necessarily imply that an event itself is large. Events that are rare in the comparative population (the non-Indigenous population in this report) can produce large rate ratios, even if the prevalence of that event in the population of interest (the Indigenous population) is low.

To determine whether the Indigenous and non-Indigenous rates are significantly different from each other, 95% confidence intervals are constructed around the rate difference or rate ratio. If these show that the rate difference is statistically significantly different from zero, or the rate ratio is significantly different from 1, then the rates are considered to be significantly different from each other at the $p < 0.05$ level. A similar method has been used in tables which present data for subgroups of the Indigenous population (for example, smokers and non-smokers), to determine whether the results for those groups are significantly different from each other.

Tables include an asterisk (*) next to proportions, rates, rate ratios and rate differences to indicate that the results for the relevant groups are statistically different from each other at

the $p < 0.05$ level. Footnotes in each table specify which results are being compared. Where results of significance testing differ between rate ratios and rate differences, caution should be exercised in the interpretation of the tests.

Comparing rates over time

In cases where at least 4 data points are available, linear regression analysis has been used to calculate annual change and overall percentage change over the period, to determine whether there have been significant changes in the observed rates. Such analysis produces more powerful results because the regression modelling has the advantage of *jointly* considering the information contained in the series of rates, rather than considering each time point separately, which is the case when the analysis compares only the start and end points. Analysing the series of rates as a unit imposes stability and, consequently, the confidence band around the set of predicted values is narrower than the confidence limits calculated around the rates separately. When linear regression analysis was used, this has been footnoted in the tables.

Linear regression uses the least squares method to calculate a straight line that best fits the data (see Figure 3). The ‘slope’ of the line is an estimate of the average annual change in the data over the period; if the slope is statistically significantly greater (less) than zero then the data are said to have significantly increased (decreased) over the period. The annual change estimates presented in this report represent the change each year in the units presented in the table (for example, number of deaths, or rate per 1,000), rather than the average annual percentage change often presented in other publications.

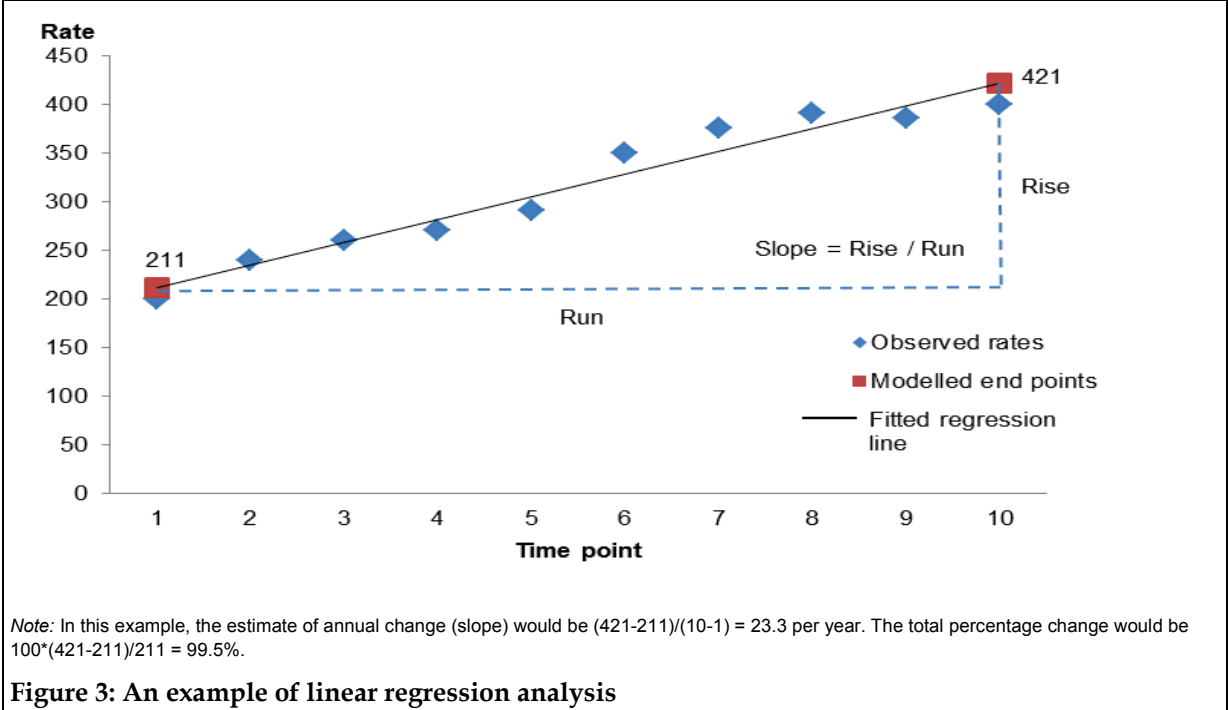


Figure 3: An example of linear regression analysis

In contrast to previous HPF publications, the overall percentage change estimates presented in this report are calculated using the start and end points of the fitted regression line, rather than the actual start and end data points. This overcomes the problem of variation from one data point to the next leading to highly variable percentage and annual change estimates. The time-trend results in this report should therefore not be compared with those in previous HPF publications.

Because percentage change is the change from the starting point (of the trend line), percentage change estimates presented for Indigenous and non-Indigenous Australians should not be compared with each other because the starting points are generally different. In contrast, annual change estimates presented for Indigenous and non-Indigenous Australians can be compared.

Both small numbers and variability in the data from year to year can make it difficult to detect significant changes over time, and can impact on any conclusions reached from a trend analysis. This is a particular problem when analysing trends for small populations such as the Indigenous population in the smaller jurisdictions. Care should be taken when assessing apparent changes over time, particularly those involving small numbers and a small number of data points.

Time-series analysis of rate ratios has not been undertaken in the 2014 HPF as the accuracy of this testing may be low. As rate ratios often do not increase or decrease linearly, applying linear regression to rate ratios may not accurately reflect the change over time.

Remoteness areas

Remoteness is an important factor in understanding the health of Indigenous Australians. Remoteness areas in this report are classified using the Australian Statistical Geography Standard Remoteness Structure, based on the Accessibility/Remoteness Index of Australia which measures the remoteness of a point based on the physical road distance to the nearest urban centre (ABS 2013b).

The ABS classifications for remoteness have recently been subject to revision. Rates for 2011 Remoteness Areas are calculated using ERPs based on the 2011 Census and should not be compared with rates calculated using ERPs based on previous censuses.

Measuring 'the gap'

Throughout this report, the term 'the gap' is used to refer to the rate difference. For trend analyses, references to the widening or narrowing of the gap refer to changes in the rate difference over time.

Reading about diagnoses and causes of death

This report presents information on hospitalisations and deaths relating to specific diseases and injuries. This information usually refers to hospitalisations with a principal diagnosis of a particular disease or injury, or deaths with an underlying cause of the disease or external cause of injury (see Glossary of important terms below).

For ease of reading, in this report, the phrases 'hospitalisations for' or 'hospitalised due to' mean 'hospitalisations with a principal diagnosis of'. Similarly, the phrase 'deaths due to' means 'deaths with an underlying cause of'.

In death records, coding rules indicate that the event causing the injury or poisoning leading to death should be recorded as the underlying cause of death. These are referred to as 'external causes'. For ease of reading, in this report, the phrase 'deaths due to injury and poisoning' is used to mean deaths with an underlying cause of an external cause of injury or poisoning.

Data improvement activities

Jurisdictions, in liaison with the AIHW and the ABS, have been actively engaged and committed to undertaking a range of activities to improve the quality of Aboriginal and Torres Strait Islander data in health data collections. These activities were funded by the Council of Australian Governments (COAG) and the Australian Government with a total budget of \$46.4 million over 4 years to June 2013 under the National Indigenous Reform Agreement (COAG 2008). The activities cover the key data sets required for NIRA Indigenous reporting; for example, mortality, morbidity, perinatal data and population estimates.

Major data development activities done or in progress by the AIHW are described below. Major data developments achieved by the ABS include: improvements to the Census Indigenous enumeration procedures and expansion of the Census PES; timing of the Indigenous Social Surveys and Health Surveys scheduled at 6-yearly cycles in order to provide 3-yearly estimates for key statistics collected in both surveys and 2011 Census records linked with death registration records to assess the level of Indigenous identification.

A variety of data improvement activities have also been done or are in progress throughout the states and territories. Further detail on these activities is available in the HPF policy report technical appendix (AHMAC 2015).

Improving Indigenous identification in health data sets

The AIHW released the *National best practice guidelines for collecting Indigenous status in health data sets* (AIHW 2010a) in April 2010. The AIHW National Indigenous Data Improvement Support Centre has been established to support jurisdictions and service providers to implement the guidelines. Reports on the assessment of the quality of Indigenous identification in labour force data collections (AIHW 2009), the National Cancer Registry, and the National Diabetes Register have been finalised. A report on Phase 1 of the support and evaluation project of the guidelines, *Towards better Indigenous health data*, has also been published (AIHW 2013a).

The AIHW has advanced the recommendations of the report *Taking the next steps: identification of Aboriginal and Torres Strait Islander status in general practice* (AIHW 2013b) through its development of the online Indigenous health check (MBS 715) data tool. This innovative tool draws together 715 MBS billing data and Indigenous population data to show numbers of health checks and usage rates (the proportion of Indigenous people who have had a health check) by quarter and financial year. Data are available at geographic levels including national, jurisdictional, by Medicare Local and by Primary Health Network. The tool can be accessed via the AIHW website at < <http://www.aihw.gov.au/indigenous-australians/indigenous-health-check-data-tool/>>.

National best practice guidelines for data linkage activities relating to Indigenous Australians

The AIHW and ABS in partnership with jurisdictions developed national best practice guidelines for linking data relating to Indigenous people. The guidelines covered linkage methods and protocols, privacy protocols, quality standards, and procedures. The *National best practice guidelines for data linkage activities relating to Aboriginal and Torres Strait Islander people* (AIHW & ABS 2012) were released on 9 July 2012. Two companion documents, *Report*

on the use of linked data relating to Aboriginal and Torres Strait Islander people and Thematic list of projects using linked data relating to Aboriginal and Torres Strait Islander people, describe and review past, ongoing and planned data linkage studies that have an Indigenous focus (AIHW 2013c, 2013d).

Improving estimates of Indigenous under-identification in key data sets

The AIHW and the ABS work in partnership with jurisdictions to lead analysis of the level of Indigenous under-identification in key data sets. As part of this work, the AIHW conducted a study in 2011–12 to assess the level of under-identification in public hospitals data, which was a repeat of a study done in 2007 (AIHW 2010b). All states and territories have participated in the study to assess improvements in data quality. *Indigenous identification in hospital separations data: quality report* (AIHW 2010c; AIHW 2013e), which includes new correction factors for the level of Indigenous under-identification in hospital separations data at the national, state/territory and remoteness levels, was published in April 2013.

A scoping study investigating options for assessing the quality of Indigenous identification in administrative mental health services data collections is being done by the AIHW. The study will include the development of a business case for the preferred option.

Improving estimates of Indigenous mortality

The AIHW is undertaking a project to develop an Enhanced Mortality Database by linking death registration records to several extra data sources that contain information on Aboriginal and Torres Strait Islander deaths (hospital, perinatal and residential aged care data). The enhanced data are expected to enable more accurate estimates of Aboriginal and Torres Strait Islander mortality, including life expectancy, to be made. Results from phases 1 and 2 of the project, which linked data for 2001 to 2006, produced national estimates of Aboriginal and Torres Strait Islander life expectancy at birth of 66.6 years for males and 72.7 for females, which was similar to the estimates produced by the ABS (AIHW 2012a). Two more phases of the Enhanced Mortality Database project are in progress. In Phase 3, the AIHW is linking the Enhanced Mortality Database with the NSW Native Title Services Corporation Database to validate the quality of the derived Indigenous status variable on the Enhanced Mortality Database. In Phase 4, the Enhanced Mortality Database is being extended to cover all deaths 2006–2010, with data linkage and data analysis taking place as new deaths data become available. Phase 4 is also exploring the use of extra algorithms to derive enhanced Indigenous status from the linked data.

The AIHW Linked Perinatal, Births, Deaths Dataset Project will create a national ongoing linked perinatal, birth and death data set for the purposes of analysing the factors affecting infant and child health outcomes in Australia. Infant and child mortality rates are important markers of population health. At the national level, aggregate data demonstrate that there are significant differences in infant and child mortality rates within Australia by factors such as Indigenous status. Currently, however, there is no way to link information on antenatal characteristics/behaviours with birth outcomes, and birth outcomes to infant and child deaths, and so we cannot analyse these factors simultaneously. The data set will be created by linking unit record level data across jurisdictions from perinatal data collections, birth records, and death records covering all births from 2003 to 2010, and deaths within this cohort of births from 2003 to 2015. Work on this project began in May 2013. The project has applied for, and received, ethics approval from the AIHW Ethics Committee as well as from

Health Research Ethics committees in all jurisdictions. Agreements have also been reached with the Registrars (with the exception of ACT births data) and perinatal data custodians in all jurisdictions for the supply of perinatal data for the project.

Enhanced Perinatal National Minimum Data Set

The AIHW is working with the states and territories to develop an enhanced Perinatal National Minimum Data Set (NMDS) to include nationally consistent data items on antenatal care, smoking and alcohol use during pregnancy, and Indigenous status of the baby. Nationally consistent data items on smoking during pregnancy, gestational age at first antenatal visit, and Indigenous status of the baby have been added to the Perinatal NMDS (from 1 July 2009, 1 July 2010, and 1 July 2012, respectively). A data item on number of antenatal visits was included in the Perinatal NMDS from 1 July 2013, although Victoria was not able to start collection until 1 January 2015.

Data development for alcohol consumption in pregnancy has been deferred due to the jurisdictions' inability to implement a nationally standardised data item.

Some states and territories are progressively implementing indications for induction of labour in their perinatal data collections from 1 July 2015, with the intention of adding it to the Perinatal NMDS from 1 July 2016.

Development of a business case for inclusion of Indigenous status in pathology data

The AIHW report *The inclusion of Indigenous status on pathology request forms* (AIHW 2013f) was published on 1 November 2013. It outlines work towards the inclusion of Indigenous status on pathology request forms as a way to improve Indigenous identification in national cancer, communicable disease and cervical screening registries.

Other relevant activities

Key performance indicators for Indigenous primary health care services

As part of the NIRA, the COAG agreed that the Department of Health, in partnership with the state and territory health departments and in collaboration with the AIHW, would develop a set of national Key Performance Indicators (nKPIs) for Indigenous-specific primary health care services. The AIHW receives funding from the Department of Health to collect, manage and report on the nKPIs (AIHW 2014b, 2014c). Data from more than 200 organisations are now collected every 6 months. The nKPIs are designed to enable monitoring of the contribution of this part of the health system in achieving Closing the Gap targets. They can also be used to help improve the delivery of primary health care for Aboriginal and Torres Strait Islander people and to improve health outcomes. A working paper about data quality issues and suggestions for improvement was recently published (AIHW 2015b). The data have also been used to provide insights into the New Directions Mothers and Babies Services programme, showing improvements in relevant indicators for those organisations receiving New Directions funding (AIHW 2014d).

Closing the Gap Clearinghouse

The AIHW with the Australian Institute of Family Studies delivered the Closing the Gap Clearinghouse. The Clearinghouse is an online collection of research and evaluation

evidence on what works to overcome Indigenous disadvantage, focusing on 7 subject areas: early childhood, schooling, health, economic participation, healthy homes, safe communities, and governance and leadership. It aims to support policymakers and service providers involved in overcoming Indigenous disadvantage by providing access to and synthesising the evidence on particular topics.

The contract for the Clearinghouse ended in June 2014. All resources and publications on the website will continue to be publicly available. However, once all commissioned issues papers and resource sheets have been released (towards the end of 2015), no new material will be added to the website.

The Closing the Gap Clearinghouse can be found on the AIHW website at <http://www.aihw.gov.au/closingthegap/>.

Mapping of health services and need

The AIHW is undertaking a series of projects examining the geographic distribution of health services and mapping against potential need for these services among Aboriginal and Torres Strait Islander people. The first project involved the development of an area-based index that measures access to general practitioners relative to the need for primary health care for both the Indigenous and non-Indigenous populations. The index takes into account travel times by road as well as the capacity of general practitioners (GPs) to meet the demands of the populations they serve. *Access to primary health care relative to need for Indigenous Australians* (AIHW 2014e) shows that, on average, there is a general decrease in access to GPs and access to GPs relative to need with increasing remoteness in both population groups, but that the effect appears to be greater for the Indigenous population.

The second project, reported in *Spatial variation in Aboriginal and Torres Strait Islander people's access to primary health care* (AIHW 2015c), aimed to identify areas where critical service gaps exist for the Indigenous population in relation to their access to primary health care. Areas with potential service gaps were defined as areas (Statistical Areas Level 2) with no Indigenous-specific primary health care service located within 1 hour's drive and with poor access to GP services in general. This project also examined the types of services provided by Indigenous-specific primary health care services, with a specific focus on maternal health services and diabetes management, using data from the Online Services Reporting (OSR) data collection, the nKPI data collection and the AIHW's National Hospital Morbidity Database.

The third project uses data from the National Health Workforce Data Set to analyse variation in the distribution of the medical workforce, the nursing and midwifery workforce, the allied health workforce and the dental workforce to enhance our understanding of area-level patterns and gaps in the supply of the health workforce for Indigenous Australians. The results of this project are expected to be published towards the end of 2015.

The fourth project is examining the distribution of maternal and child health services in relation to the geographic distribution of Indigenous women of childbearing age and Indigenous children. The aim of this work is to identify gaps and examine whether there is an association between supply of these services and relevant health outcomes (for example, low birthweight, smoking during pregnancy, antenatal care use) at low geographic levels. This project is expected to be completed in late 2015 with results published in 2016.

Timing of impact of Closing the Gap initiatives

In 2012–13, AIHW was co-funded by AHMAC to examine the likely timing of the impact of COAG Closing the Gap health initiatives on the Indigenous child mortality target. This work involved examining the main drivers impacting on the child mortality target; interventions that have been shown to be effective in reducing risk factors and child mortality; and time lags between program implementation, expected reductions in child mortality, and the availability of data to measure outcomes achieved. The report, *Timing impact assessment for COAG Closing the Gap targets: child mortality* (AIHW 2014f), suggests that the full effect of the COAG maternal and child health initiatives may not be evident for a number of years to come.

Burden of disease

The AIHW received funding from the Department of Health and the previous Australian National Preventive Health Agency to revise and update Australia's burden of disease estimates for the Indigenous and non-Indigenous Australian population. This work, which was last updated in 2007 using 2003 data, builds on the AIHW's previous burden of disease studies and existing disease monitoring work and aims to identify the extent and distribution of health problems in Australia and quantify the contribution of key health risks. Estimates will be produced specifically for the Indigenous population.

Estimates of the fatal burden of disease for Indigenous Australians are presented in *Australian burden of disease study: fatal burden of disease in Aboriginal and Torres Strait Islander people 2010* (AIHW 2015d). Final estimates, expected to be released in 2016, will provide information on the amount of ill health due to death and disability from a variety of diseases, injuries and health risks to help determine the total burden of disease in Australia for the total population and the Aboriginal and Torres Strait Islander population.

Effect of health on socioeconomic factors

The AIHW undertook a study that looked at how poor health can adversely affect participation in education and employment using data from the ABS 2004–05 NATSIHS and ABS 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS). Multiple variables, including health status, were analysed to determine their effect on education, employment and a number of other socioeconomic factors. After controlling for age, sex, remoteness and marital status, health status was found to have the following effects on socioeconomic factors:

- The odds of an Indigenous child or youth aged 5–17 with poor self-assessed health status to be currently studying were one-fifth that of an Indigenous child or youth with excellent self-assessed health status (odds ratio of 0.225).
- Indigenous people aged 15–64 who reported poor or fair self-assessed health were less likely to be working full-time compared with not in the labour force (odds ratios of 0.110 and 0.305, respectively). Similarly, people with disability were less likely to be working full-time (odds ratio of 0.154). Having circulatory disease, high cholesterol, high blood pressure, diabetes, arthritis or high psychological distress also decreased the likelihood of being employed full-time.
- Poor health outcomes such as poor or fair self-assessed health, diabetes, disability and high psychological distress were associated with lower income for Aboriginal and Torres Strait Islander households.

Analyses of ABS 2012–13 AATSIHS data indicated that poor health reduced attendance rates at both school and work for Indigenous Australians in the 2 weeks prior to being surveyed.

- 19% of Indigenous people aged 5–24 who were studying reported that they had days away from study due to their own illness or injury.
- 18% of employed Indigenous people aged 15–64 also reported that they had days away from work due to their own illness or injury (AIHW analysis of ABS 2012–13 AATSIHS); this was the same proportion reported in the ABS 2004–05 NATSIHS.

The contribution of risk factors and social determinants to the health gap

The AIHW used data from the 2004–05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) and National Health Survey (NHS) to investigate the relative contribution of social determinants and behavioural risk factors to the gap in health status between Indigenous and non-Indigenous Australians. For the purpose of this analysis, health was defined as a composite of reported self-assessed health status, long-term conditions and emotional wellbeing.

Social determinants alone, including school and non-school education, employment status, overcrowding, and household income, explained 46% of the health gap between Indigenous and non-Indigenous persons. Behavioural risk factors alone, including smoking status, alcohol consumption, diet, exercise level, body mass index and high blood pressure explained 26% of the gap. Together, behavioural risk factors and social determinants explained 57% of the health gap (Figure 4) (AIHW 2014a).

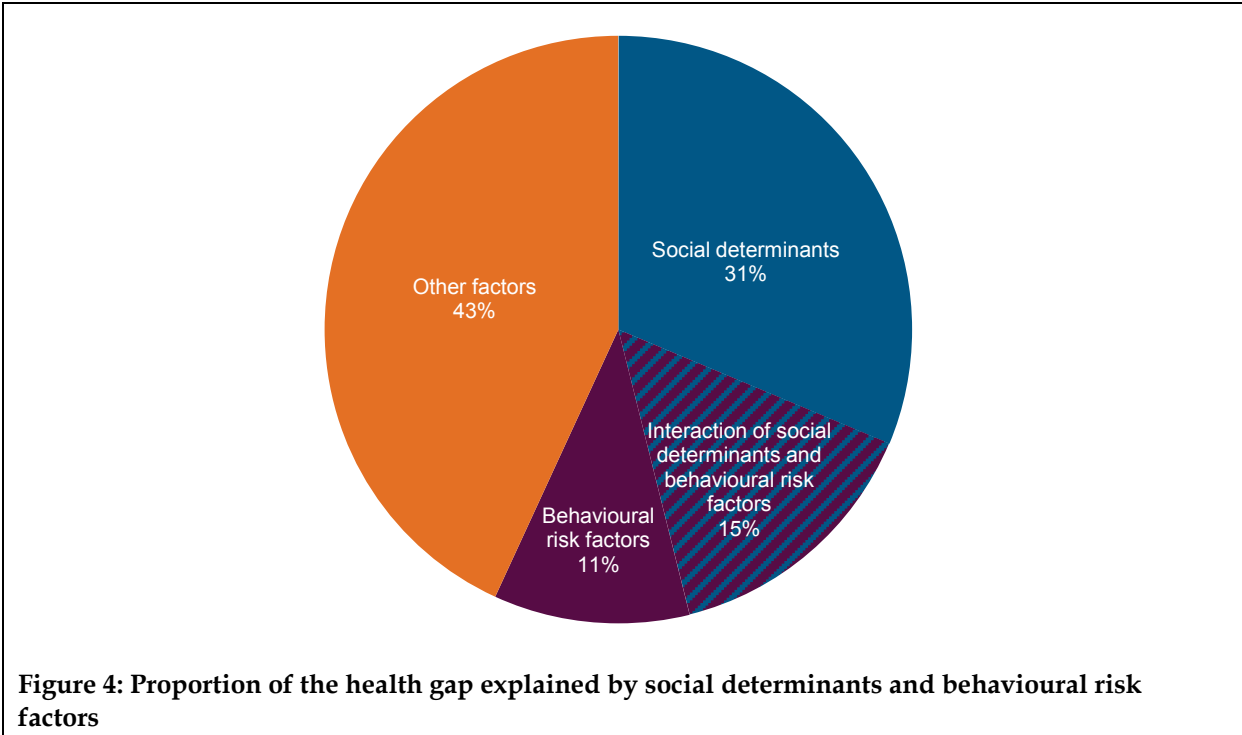


Figure 4: Proportion of the health gap explained by social determinants and behavioural risk factors

The greatest individual factor attributable to the health gap was household income, which by itself explained 36% of the gap. Other significant factors were school education and employment status, which on their own explained 23% and 21% of the gap, respectively.

The analysis underscores the importance of social determinants in relation to the observed health gap between Indigenous and non-Indigenous Australians. It also illustrates the

magnitude of the gap which is currently not explained by the selected social determinants or behavioural risk factors. Unfortunately the contribution of health service access could not be estimated from the available data, but will be the focus of future research.

Glossary

Aboriginal or Torres Strait Islander: a person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander. See also **Indigenous**.

additional diagnosis: a condition or complaint that either coexists with the principal diagnosis or arises during an episode of admitted patient care. An additional diagnosis is reported if the condition affects patient management. Compare with **principal diagnosis**.

age-specific rate: an estimate of the proportion of people experiencing a particular event in a specified age group relative to the total number of people 'at risk' of that event in that age group. See also **crude rate**.

age-standardised rates: rates adjusted for age to take into account differences in age structures when comparing different populations or across time.

associated cause(s) of death: all causes listed on the death certificate, other than the **underlying cause of death**. They include the immediate cause, any intervening causes, and conditions which contributed to the death but were not related to the disease or condition causing the death. See also **cause of death**.

cause of death: all diseases, morbid conditions or injuries that either resulted in or contributed to death, and the circumstances of the accident or violence that produced any such injuries, as entered on the Medical Certificate of Cause of Death. Causes of death are commonly reported using the **underlying cause of death**. See also **associated cause(s) of death**.

crude rate: an estimate of the proportion of a population that experiences an outcome during a specified period. It is calculated by dividing the number of people with the outcome in a specified period by the number of people in the population during that period.

determinant: a factor that can increase the chances of ill health (risk factor) or good health (protective factor) in a population or individual. By convention, services or other programs that aim to improve health are usually not included.

dialysis: a process used to treat kidney failure. A machine is connected to the patient's bloodstream to filter the blood externally to the body, removing water, excess substances and waste from the blood, as well as regulating the levels of circulating chemicals. In doing this, the machine takes on the role normally played by the kidneys.

external cause: the term used in disease classification to refer to an event or circumstance in a person's external environment that is regarded as a cause of injury or poisoning.

gap: in this report, 'the gap' refers to the rate difference.

hospitalisation (or separation): an episode of admitted patient care, which can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute care to rehabilitation).

household: a group of 2 or more related or unrelated people who usually reside in the same dwelling, and who make common provision for food or other essentials for living, or an individual living in a dwelling who makes provision for his or her own food and other essentials for living, without combining with any other person.

incidence: the number of new cases (of an illness or event, and so on) occurring during a given period. Compare with **prevalence**.

Indigenous: a person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander. See also **Aboriginal or Torres Strait Islander**.

non-Indigenous: people who have indicated they are not of **Aboriginal or Torres Strait Islander** descent. Compare with **other Australians**.

other Australians: includes people who do not identify as being of Aboriginal or Torres Strait Islander origin, and people for whom information on their Indigenous status was not available. Compare with **non-Indigenous**.

prevalence: the number or proportion (of cases, instances, and so forth) in a population at a given time. Compare with **incidence**.

principal diagnosis: the diagnosis established after study to be chiefly responsible for occasioning a patient's episode of admitted patient care. Compare with **additional diagnosis**.

remoteness areas: a classification of the remoteness of a location using the Australian Statistical Geography Standard Remoteness Structure, based on the Accessibility/Remoteness Index of Australia which measures the remoteness of a point based on the physical road distance to the nearest urban centre (ABS 2013b).

statistical significance: an indication from a statistical test that an observed difference or association may be significant or 'real' because it is unlikely to be due just to chance. In this report, references to 'significant' or 'statistically significant' differences refer to differences at the $p < 0.05$ level – that is, there is less than a 1 in 20 chance that the result occurred by chance. The words 'significant' and 'significantly' are not used in this report other than in their statistical context.

underlying cause of death: the disease or injury that initiated the sequence of events leading directly to death, or the circumstances of the accident or violence that produced the fatal injury. See also **cause of death** and **associated cause(s) of death**.

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Related publications

There are earlier editions that can be downloaded for free from the AIHW website <<http://www.aihw.gov.au/indigenous-australians-health-and-welfare-publications/>>. The website also includes information on ordering printed copies.

The earlier editions are:

AIHW 2013. Aboriginal and Torres Strait Islander Health Performance Framework 2012: detailed analyses. Cat. no. IHW 94. Canberra: AIHW. Viewed 30 June 2015 <<http://www.aihw.gov.au/publication-detail/?id=60129543821>>.

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