

1.22 Causes of mortality

Causes of death of Aboriginal and Torres Strait Islander Australians, expressed as a rate by age group, age-standardised rate and rate ratio

Data sources

Data for this measure come from the AIHW's National Mortality Database.

The National Mortality Database is a national collection of de-identified information for all deaths in Australia and is maintained by the AIHW. Information on the characteristics and causes of death of the deceased is provided by the Registrars of Births, Deaths and Marriages and coded nationally by the ABS. Information on the cause of death is supplied by the medical practitioner certifying the death, or by a coroner. The data are updated each calendar year.

While the identification of Indigenous deaths is incomplete in all state and territory registration systems, four jurisdictions (Queensland, Western Australia, South Australia and the Northern Territory) have been assessed by the ABS and the AIHW as having adequate identification. These four jurisdictions represent approximately 60% of the Indigenous population of Australia. Data are presented by state/territory of usual residence rather than state/territory where death occurs.

Deaths for which the Indigenous status of the deceased was not reported have been excluded from the analysis.

Data have been combined for the five-year period 2000–2004 due to the small number of deaths from some conditions each year. Data have been analysed using the year of occurrence of death for the period 2000–2003 and year of registration of death for 2004. This is because mortality data by year of occurrence of death is a more accurate reflection of mortality during a particular year than year of registration data, however, year of occurrence data for 2004 are still incomplete owing to late registrations.

Deaths for which Indigenous status was not reported have been excluded from the analysis.

Analyses

Age-standardised rates and ratios have been used for this indicator as a measure of mortality in the Indigenous population relative to non-Indigenous Australians. Ratios of this type illustrate differences between the rates of mortality among Indigenous people and those of non-Indigenous Australians, taking into account differences in age distributions.

Mortality

Mortality by cause of death

Tables 1.22.1 and 1.22.2 present data on the major causes of death of Indigenous Australians over the period 2000–2004 in Queensland, Western Australia, South Australia and the Northern Territory combined.

- Over the period 2000–2004, the most common cause of death among Indigenous Australians was circulatory diseases (27%), followed by external causes (injury and poisoning) (16%). Indigenous Australians died from these causes of death at around twice the rate of non-Indigenous Australians (Table 1.22.1).
- Cancer was also a major cause of death among both Indigenous and non-Indigenous Australians, responsible for 15% of Indigenous and 30% of non-Indigenous deaths. Lung cancer is the most common type of cancer causing death for which Indigenous Australians died at almost twice the rate of non-Indigenous Australians.
- Over the period 2000–2004, Indigenous Australians died from endocrine, metabolic and nutritional disorders (predominantly diabetes) at seven times the rate of non-Indigenous Australians and kidney diseases at four times the rate of non-Indigenous Australians.
- Deaths higher than the expected number are referred to as ‘excess deaths’. Excess deaths are calculated by subtracting the number of expected Indigenous deaths based on the age, sex and cause-specific rates of non-Indigenous Australians, from the number of actual cause-specific deaths in the Indigenous population. This is usually expressed as a proportion of excess death from all causes. Diseases of the circulatory system accounted for the highest proportion of excess deaths among Indigenous Australians in Queensland, Western Australia, South Australia and the Northern Territory over the period 2000–2004 (28% of Indigenous male and 26% of Indigenous female deaths). Other major causes of excess deaths were external causes, diseases of the respiratory system and endocrine, nutritional and metabolic diseases. Deaths due to these causes were responsible for around two-thirds of excess deaths among Indigenous males and females (Table 1.22.2).

Table 1.22.1: Causes of mortality, by Indigenous status, Qld, WA, SA and NT, 2000–2004^{(a)(b)(c)(d)(e)}

Underlying cause of death	Number			Per cent			Indigenous			Non-Indigenous			Ratio ⁽ⁱ⁾
	Indig.	Non-Indig.	Not stated	Indig.	Non-Indig.	Not stated	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	
Circulatory diseases (I00–I99)	2,006	84,164	1,370	26.8	37.4	37.9	424.8	403.0	446.7	239.2	239.2	239.2	1.8*
External causes (V00–Y98)	1,202	14,454	435	16.1	6.4	12.0	103.2	95.7	110.6	40.8	40.8	40.8	2.5*
Cancer (C00–D48)	1,134	66,376	46	15.2	29.5	1.3	240.1	224.2	256.0	187.2	187.2	187.2	1.3*
Lung cancer (C30–C39)	290	13,209	149	3.9	5.9	4.1	61.6	53.8	69.3	37.3	37.3	37.3	1.7*
Cervical cancer (C53) ⁽ⁱ⁾	35	441	1	0.5	0.2	0.0	11.5	7.0	15.9	2.3	2.3	2.3	4.9*
Endocrine, metabolic & nutritional disorders (E00–E99)	700	7,580	104	9.4	3.4	2.9	151.6	138.9	164.2	21.5	21.5	21.5	7.0*
Respiratory diseases (J00–J99)	656	19,655	347	8.8	8.7	9.6	144.3	131.3	157.3	55.9	55.9	55.9	2.6*
Digestive diseases (K00–K93)	401	7,479	136	5.4	3.3	3.8	63.4	55.8	70.9	21.1	21.1	21.1	3.0*
Conditions originating in perinatal period (P00–P96)	188	957	18	2.5	0.4	0.5	6.8	5.8	7.8	2.8	2.8	2.8	2.4*
Nervous system diseases (G00–G99)	179	7,198	130	2.4	3.2	3.6	26.3	21.3	31.3	20.4	20.4	20.4	1.3*

(continued)

Table 1.22.1 (continued): Causes of mortality, by Indigenous status, Qld, WA, SA and NT, 2000–2004^{(a)(b)(c)(d)(e)}

Underlying cause of death	Number			Per cent			Indigenous			Non-Indigenous			Ratio ⁽ⁱ⁾
	Indig.	Non-Indig.	Not stated	Indig.	Non-Indig.	Not stated	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	
Infectious & parasitic diseases (A00–B99)	176	2,610	39	2.4	1.2	1.1	25.7	20.7	30.6	7.4	7.4	7.4	3.5*
Kidney diseases (N00–N29)	163	3,365	58	2.2	1.5	1.6	36.3	29.9	42.7	9.6	9.6	9.6	3.8*
Other causes ^(k)	674	11,425	263	9.0	5.1	7.3	96.9	86.8	107.0	32.5	32.5	32.5	3.0*
All causes	7,479	225,263	3,613	100.0	100.0	100.0	1,319.4	1,282.5	1,356.4	638.5	638.5	638.5	2.1*

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

- (a) Data are reported for Queensland, Western Australia, South Australia and the Northern Territory only. These four states and territories are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (b) Data are presented in five-year groupings due to small numbers each year.
- (c) Rates exclude 3,613 registered deaths where the Indigenous status is not stated.
- (d) While most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous all causes mortality rate. It is also difficult to exactly identify the difference between the Indigenous and non-Indigenous mortality rates due to these data quality issues.
- (e) Deaths are by year of occurrence except the latest year which is based on year of registration.
- (f) Directly age standardised using the Australian 2001 standard population.
- (g) LCL = lower confidence limit.
- (h) UCL = upper confidence limit.
- (i) Rate ratio Indigenous:non-Indigenous.
- (j) Rates for cervical cancer are for females only.
- (k) Includes: diseases of the blood and blood-forming organs and certain disorders involving the immune system, mental & behavioural disorders, diseases of the eye and adnexa, diseases of the ear and mastoid process, diseases of the skin & subcutaneous tissue, diseases of the musculoskeletal system and connective tissue, diseases of the genitourinary system (excluding kidney diseases), pregnancy, childbirth & the puerperium, congenital malformations, deformations and chromosomal abnormalities, symptoms, signs and abnormal clinical findings not elsewhere classified.

Note: It should be noted that different causes of death may have different levels of completeness of identification of Indigenous deaths that differ from the 'all cause' under-identification (coverage) estimates.

Source: AIHW analysis of AIHW National Mortality Database.

Table 1.22.2: Main causes of excess Indigenous deaths, by sex, Qld, WA, SA and NT, 2000–2004^{(a)(b)(c)}

Underlying cause of death	Males				Females			
	Observed	Expected	Excess	% excess	Observed	Expected	Excess	% excess
	No.	No.	No.	%	No.	No.	No.	%
Circulatory diseases (I00–I99)	1,143	371	772	27.5	863	332	531	25.5
External causes (V00–Y98)	838	299	539	19.2	364	108	256	12.3
Endocrine, metabolic & nutritional disorders (E00–E99)	316	42	274	9.8	384	36	348	16.7
Respiratory diseases (J00–J99)	366	91	275	9.8	290	78	212	10.2
Cancer (C00–D48)	601	406	195	6.9	533	348	185	8.9
Lung cancer (C30–C39)	184	90	94	3.3	106	50	56	2.7
Cervical cancer (C53)	0	0	0	0.0	35	8	27	1.3
Digestive diseases (K00–K93)	230	42	188	6.7	171	36	135	6.5
Conditions originating in perinatal period (P00–P96)	108	42	66	2.4	80	34	46	2.2
Nervous system diseases (G00–G99)	113	42	71	2.5	66	42	24	1.1
Infectious & parasitic diseases (A00–B99)	101	20	81	2.9	75	14	61	2.9
Kidney diseases (N00–N29)	65	12	53	1.9	98	13	85	4.1
Other causes ^(d)	383	89	294	10.5	291	88	203	9.7
All causes	42,64	1,456	2,808	100.0	3,215	1,129	2,086	100.0

(a) Data are reported for Queensland, Western Australia, South Australia and the Northern Territory only. These jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.

(b) Data are presented in five-year groupings due to small numbers each year.

(c) Deaths are by year of occurrence except the latest year which is based on year of registration.

(d) Includes: diseases of the blood and blood-forming organs and certain disorders involving the immune system, mental & behavioural disorders, diseases of the eye and adnexa, diseases of the ear and mastoid process, diseases of the skin & subcutaneous tissue, diseases of the musculoskeletal system and connective tissue, diseases of the genitourinary system (excluding kidney diseases), pregnancy, childbirth & the puerperium, congenital malformations, deformations and chromosomal abnormalities, symptoms, signs and abnormal clinical findings not elsewhere classified.

Note: It should be noted that different causes of death may have different levels of completeness of identification of Indigenous deaths that differ from the 'all cause' under-identification (coverage) estimates.

Source: AIHW analysis of AIHW National Mortality Database.

Circulatory diseases

- Over the period 2000–2004, there were 2,006 deaths of Indigenous Australians in Queensland, Western Australia, South Australia and the Northern Territory combined from circulatory diseases. Indigenous Australians died from circulatory diseases at around twice the rate of non-Indigenous Australians (Table 1.22.3).
- The most common type of circulatory disease causing death among Indigenous Australians was ischaemic heart disease (including heart attack and angina), followed by cerebrovascular disease (including stroke). Indigenous Australians died from these diseases at around twice the rate of non-Indigenous Australians.
- Over the period 2000–2004, Indigenous Australians died from hypertensive disease at four times the rate of non-Indigenous Australians. Indigenous males and females died from rheumatic heart disease (which predominantly affects children) at 6 and 10 times the rate of non-Indigenous males and females respectively.

Table 1.22.3: Deaths of Indigenous Australians from circulatory diseases, by sex, Qld, WA, SA and NT, 2000–2004^{(a)(b)(c)(d)(e)}

	Males						Females						Total					
	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾
Ischaemic heart disease (I20–I25)	717	62.7	301.2	274.5	327.9	1.9*	437	50.6	181.2	162.1	200.3	1.7*	1,154	57.5	235.9	220.0	251.7	1.8*
Acute myocardial infarction (I21)	397	34.7	171.2	150.8	191.7	2.0*	201	23.3	89.7	75.9	103.5	1.5*	598	29.8	126.7	114.9	138.6	1.7*
Cerebrovascular disease (I60–I69)	161	14.1	91.0	74.7	107.2	1.6*	167	19.4	79.7	66.1	93.2	1.3*	328	16.4	85.0	74.6	95.5	1.4*
Stroke (I60–I64)	129	11.3	71.8	57.4	86.1	1.7*	144	16.7	66.5	54.3	78.7	1.5*	273	13.6	69.1	59.7	78.4	1.6*
Other heart disease (I26–I52)	167	14.6	78.2	63.2	93.2	2.6*	118	13.7	47.4	37.4	57.3	1.7*	285	14.2	60.8	52.3	69.3	2.1*
Hypertension disease (I10–I15)	39	3.4	17.9	11.3	24.5	3.6*	49	5.7	21.2	14.4	27.9	3.7*	88	4.4	19.9	15.1	24.8	3.7*
Rheumatic heart disease (I00–I09)	29	2.5	6.1	3.1	9.0	5.7*	62	7.2	14.5	10.3	18.7	10.2*	91	4.5	10.6	7.9	13.2	8.4*
Other diseases of the circulatory system (I70–I99)	30	2.6	14.5	8.6	20.5	0.8	30	3.5	11.1	6.4	15.8	1.0	60	3.0	12.7	8.9	16.4	0.9
Total circulatory diseases	1,143	100.0	508.8	472.9	544.8	1.9	863	100.0	355.0	328.0	382.0	1.7*	2,006	100.0	424.8	403.0	446.7	1.8*

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

- (a) Data are reported for Queensland, Western Australia, South Australia and the Northern Territory only. These four jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (b) Data are presented in five-year groupings due to small numbers each year.
- (c) These data exclude 1,370 deaths where the Indigenous status was not stated.
- (d) While most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous all causes mortality rate.
- (e) Deaths are by year of occurrence except the latest year which is based on year of registration.
- (f) Directly age standardised using the Australian 2001 standard population.
- (g) LCL = lower confidence limit.
- (h) UCL = upper confidence limit.
- (i) Rate ratio Indigenous:non-Indigenous.

Note: It should be noted that different causes of death may have different levels of completeness of identification of Indigenous deaths that differ from the 'all cause' under-identification (coverage) estimates.

Source: AIHW analysis of AIHW National Mortality Database.

External causes (injury and poisoning)

- Over the period 2000–2004, there were 1,202 deaths of Indigenous Australians in Queensland, Western Australia, South Australia and the Northern Territory combined from external causes. Indigenous Australians died from external causes at 2.5 times the rate of non-Indigenous Australians (Table 1.22.4).
- The most common type of external cause of mortality among Indigenous Australians was intentional self-harm (suicide), followed by transport accidents and assault. Indigenous Australians died from intentional self-harm and transport accidents at two and three times the rate of non-Indigenous Australians respectively and died from assault at 10 times the rate of non-Indigenous Australians.
- Over the period 2000–2004, Indigenous Australians died from exposure to electric current/smoke/fire/animals/nature at around eight times the rate of non-Indigenous Australians.

Table 1.22.4: Deaths of Indigenous Australians from external causes of injury and poisoning, by sex, Qld, WA, SA and NT, 2000–2004^{(a)(b)(c)(d)(e)}

	Males						Females						Total					
	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾
Intentional self-harm (X60–X84)	286	34.1	41.8	36.5	47.2	2.1*	69	19.0	8.4	6.3	10.4	1.7*	355	29.5	24.5	21.7	27.2	2.0*
Transport accidents (V01–V99)	221	26.4	36.9	30.8	43.0	2.4*	104	28.6	16.1	12.6	19.6	3.3*	325	27.0	26.0	22.7	29.3	2.6*
Assault (X85–Y09)	83	9.9	13.5	10.4	16.6	9.5*	64	17.6	9.2	6.5	11.9	10.9*	147	12.2	11.3	9.3	13.4	10.0*
Accidental drowning or accidental threats to breathing (W65–W84)	84	10.0	12.3	9.4	15.2	3.3*	30	8.2	4.4	2.3	6.4	3.1*	114	9.5	8.2	6.4	10.0	3.2*
Accidental poisoning by and exposure to noxious substances (X40–X49)	42	5.0	6.2	4.2	8.1	1.5*	25	6.9	3.8	2.2	5.3	1.9*	67	5.6	4.9	3.7	6.2	1.6*
Exposure to electric current/smoke/fire/animals/nature (W85–W99, X00–X39)	29	3.5	7.3	3.5	11.2	6.6*	14	3.8	3.9	1.4	6.5	7.4*	43	3.6	5.5	3.3	7.7	6.6*
Accidental falls (W00–W19)	16	1.9	4.4	1.7	7.0	1.1	9	2.5	3.5	0.9	6.1	1.2	25	2.1	4.0	2.1	5.9	1.2
Exposure to inanimate mechanical forces (W20–W49)	17	2.0	1.9	0.9	2.9	1.4	6	1.6	0.8	0.1	1.4	4.6*	23	1.9	1.3	0.8	1.9	1.7*

(continued)

Table 1.22.4 (continued): Deaths of Indigenous Australians from external causes of injury and poisoning, by sex, Qld, WA, SA and NT, 2000–2004^{(a)(b)(c)(d)(e)}

	Males						Females					Total						
	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾
Other external causes of accidental injury (X50–X59)	27	3.2	11.5	5.8	17.3	2.5*	23	6.3	9.3	4.8	13.9	1.9*	50	4.2	10.3	6.7	13.9	2.1*
Other external causes ^(j)	33	3.9	7.6	4.2	11.0	3.3*	20	5.5	6.4	3.0	9.8	4.5*	53	4.4	7.1	4.6	9.5	3.9*
Total external causes	838	100.0	143.5	131.0	155.9	2.5*	364	100.0	65.8	57.1	74.6	2.8*	1,202	100.0	103.2	95.7	110.6	2.5*

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

- (a) Data are reported for Queensland, Western Australia, South Australia and the Northern Territory only. These four jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (b) Data are presented in five-year groupings due to small numbers each year.
- (c) These data exclude 435 deaths where the Indigenous status was not stated.
- (d) While most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous all causes mortality rate.
- (e) Deaths are by year of occurrence except the latest year which is based on year of registration.
- (f) Directly age standardised using the Australian 2001 standard population.
- (g) LCL = lower confidence limit.
- (h) UCL = upper confidence limit.
- (i) Rate ratio Indigenous:non-Indigenous.
- (j) Includes event of undetermined intent; legal intervention and operations of war; complications of medical and surgical care; sequale of external cause of mortality; supplementary factors related to causes of mortality not classified elsewhere.

Note: It should be noted that different causes of death may have different levels of completeness of identification of Indigenous deaths that differ from the 'all cause' under-identification (coverage) estimates.

Source: AIHW analysis of AIHW National Mortality Databases.

Neoplasms (cancer)

- Over the period 2000–2004, there were 1,134 deaths of Indigenous Australians in Queensland, Western Australia, South Australia and the Northern Territory combined from cancer. Indigenous Australians died from cancer at around 1.3 times the rate of non-Indigenous Australians (Table 1.22.5).
- The most common type of cancer causing mortality among Indigenous Australians was cancer of the respiratory and intrathoracic organs, which comprises predominantly lung cancer. Indigenous Australians died from lung cancer at around twice the rate of non-Indigenous Australians.
- Over the period 2000–2004, there were 35 deaths of Indigenous females in the four jurisdictions from cervical cancer. Indigenous females died from cervical cancer at five times the rate of non-Indigenous Australians.

Table 1.22.5: Deaths of Indigenous Australians from neoplasms (cancer), by sex, Qld, WA, SA and NT, 2000–2004^{(a)(b)(c)(d)(e)}

Site of neoplasm	Males						Females						Total					
	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾
Respiratory and intrathoracic organs (C30–C39)	184	30.6	91.2	73.0	109.4	1.4*	106	19.9	38.4	28.8	48.1	1.7*	290	25.6	61.6	52.0	71.1	1.7*
Bronchus & lung (C34)	168	28.0	83.9	69.7	98.1	1.6*	99	18.6	35.7	28.2	43.3	1.6*	267	23.5	56.8	49.3	64.3	1.6*
Digestive organs (C15–C26)	173	28.8	81.9	67.6	96.2	1.3*	108	20.3	42.3	33.5	51.1	1.1	281	24.8	59.8	51.9	67.8	1.2*
Ill-defined, secondary & unspecified site (C76–C80)	40	6.7	22.3	14.3	30.2	1.8*	53	9.9	24.4	17.1	31.6	2.4*	93	8.2	23.5	18.1	28.9	2.1*
Lymphoid, haematopoietic and related tissue (C81–C96)	51	8.5	24.5	16.3	32.7	1.0	38	7.1	11.5	7.1	15.9	0.8	89	7.8	17.0	12.8	21.3	0.9
Female genital organs (C51–C58)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	83	15.6	31.0	21.0	42.0	2.4*	83	7.3	17.0	11.0	23.0	2.5*
Cervix (C53)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	35	6.6	11.5	7.0	15.9	4.9*	35	3.1	6.3	3.8	8.8	5.1*
Breast (C50)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	70	13.1	26.6	19.5	33.7	1.1	70	6.2	14.8	10.8	18.9	1.2
Lip, oral cavity and pharynx (C00–C14)	50	8.3	18.8	12.9	24.7	3.7*	19	3.6	5.8	3.0	8.7	3.4*	69	6.1	11.7	8.7	14.8	3.5*

(continued)

Table 1.22.5 (continued): Deaths of Indigenous Australians from neoplasms (cancer), by sex, Qld, WA, SA and NT, 2000–2004^{(a)(b)(c)(d)(e)}

Site of neoplasm	Males						Females						Total					
	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾
Male genital organs (C60–C63)	29	4.8	19.1	11.2	26.9	0.6	0	n.a.	—	—	—	—	29	2.6	8.1	4.8	11.4	0.6*
Other malignant neoplasms ^(j)	57	9.5	25.4	17.5	33.3	0.6	41	7.7	14.7	9.5	20.0	0.8	98	8.6	19.4	14.9	24.0	0.7*
Non-malignant neoplasms (D00–D48)	17	2.8	8.6	3.5	13.8	1.9*	15	2.8	5.3	2.3	8.3	1.7	32	2.8	6.6	3.9	9.4	1.8*
Total neoplasms	601	100.0	291.8	264.6	319.0	1.2*	533	100.0	200.3	181.2	219.4	1.4*	1,134	100.0	240.1	224.2	256.0	1.3*

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

- (a) Data are reported for Queensland, Western Australia, South Australia and the Northern Territory only. These jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (b) Data are presented in five-year groupings due to small numbers each year.
- (c) These data exclude 713 deaths where the Indigenous status was not stated.
- (d) While most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous all causes mortality rate.
- (e) Deaths are by year of occurrence except the latest year which is based on year of registration.
- (f) Directly age standardised using the Australian 2001 standard population.
- (g) LCL = lower confidence limit.
- (h) UCL = upper confidence limit.
- (i) Rate ratio Indigenous:non-Indigenous.
- (j) Includes neoplasms of bone and articular cartilage, melanoma & other neoplasms of skin, neoplasms of mesothelial and soft tissue, neoplasms of urinary tract, neoplasms of eye, brain and other parts of central nervous system, neoplasms of thyroid and other endocrine glands.

Note: It should be noted that different causes of death may have different levels of completeness of identification of Indigenous deaths that differ from the 'all cause' under-identification (coverage) estimates.

Source: AIHW analysis of AIHW National Mortality Database.

Respiratory diseases

- Over the period 2000–2004, there were 656 deaths of Indigenous Australians in Queensland, Western Australia, South Australia and the Northern Territory combined from respiratory diseases. Indigenous Australians died from respiratory diseases at around three times the rate of non-Indigenous Australians (Table 1.22.6).
- The most common type of respiratory disease causing death among Indigenous Australians was chronic lower respiratory diseases (including asthma, bronchitis and emphysema), followed by influenza and pneumonia. Indigenous Australians died at around three times the rate of non-Indigenous Australians for these diseases.

Table 1.22.6: Deaths of Indigenous Australians from respiratory diseases, by sex, Qld, WA, SA and NT, 2000–2004^{(a)(b)(c)(d)(e)}

	Males						Females						Total					
	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾
Chronic lower respiratory diseases (J40–J47)	197	53.8	106.9	89.6	124.1	2.8*	160	55.2	69.6	57.7	81.6	3.4*	357	54.4	85.8	75.7	95.8	3.1*
Pneumonia and influenza (J10–J18)	120	32.8	51.3	39.5	63.1	2.8*	94	32.4	33.1	24.8	41.4	2.0*	214	32.6	41.2	34.2	48.1	2.5*
Other respiratory disease (J00–06, J20–39, J60–99)	49	13.4	22.1	14.3	29.9	1.6*	36	12.4	13.7	8.5	19.0	1.7*	85	13.0	17.4	12.9	21.8	1.7*
Total respiratory diseases	366	100.0	180.2	158.0	202.5	2.6*	290	100.0	116.5	101.0	131.9	2.6*	656	100.0	144.3	131.3	157.3	2.6*

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

- (a) Data are reported for Queensland, Western Australia, South Australia and the Northern Territory only. These four jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (b) Data are presented in five-year groupings due to small numbers each year.
- (c) These data exclude 108 deaths where the Indigenous status was not stated.
- (d) While most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous all causes mortality rate.
- (e) Deaths are by year of occurrence except the latest year which is based on year of registration.
- (f) Directly age standardised using the Australian 2001 Standard population.
- (g) LCL = lower confidence limit.
- (h) UCL = upper confidence limit.
- (i) Rate ratio Indigenous:non-Indigenous.

Note: It should be noted that different causes of death may have different levels of completeness of identification of Indigenous deaths that differ from the 'all cause' under-identification (coverage) estimates.

Source: AIHW analysis of AIHW National Mortality Database.

Diseases of the genitourinary system

- Over the period 2000–2004, there were 209 deaths of Indigenous Australians in Queensland, Western Australia, South Australia and the Northern Territory combined from diseases of the genitourinary system. Indigenous Australians died from genitourinary disease at around four times the rate of non-Indigenous Australians (Table 1.22.7).
- The most common type of genitourinary disease causing mortality among Indigenous Australians was renal failure. Indigenous Australians died from renal failure at around four times the rate of non-Indigenous Australians.
- Over the period 2000–2004, Indigenous Australians died from glomerular disease (a disease of the kidneys) at around seven times the rate of non-Indigenous Australians.

Table 1.22.7: Deaths of Indigenous Australians from diseases of the genitourinary system, by sex, Qld, WA, SA and NT, 2000–2004^{(a)(b)(c)(d)(e)}

	Males						Females						Total					
	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾	No.	%	Rate per 100,000 ^(f)	LCL 95% ^(g)	UCL 95% ^(h)	Rate ratio ⁽ⁱ⁾
Renal failure (N17–N19)	49	63.6	27.2	18.4	36.1	2.9*	71	53.8	30.1	22.3	37.9	4.3*	120	57.4	28.8	22.9	34.6	3.6*
Other diseases of the urinary system (N30–N39)	8	10.4	5.6	1.5	9.8	2.0*	21	15.9	10.8	5.7	15.8	2.9*	29	13.9	8.6	5.2	12.1	2.6*
Glomerular disease (N00–N08)	11	14.3	3.4	1.0	5.8	6.1*	10	7.6	2.6	0.9	4.4	7.3*	21	10.0	3.0	1.5	4.4	6.6*
Renal tubulo-intestinal diseases (N10–N16)	4	5.2	1.4	-0.2	3.0	2.2*	9	6.8	3.7	1.0	6.4	3.7*	13	6.2	2.7	1.0	4.4	3.3*
Other diseases of the genitourinary system ^(j)	5	6.5	2.9	0.1	5.7	2.8*	21	15.9	8.3	4.2	12.5	17.7*	26	12.4	6.0	3.3	8.6	8.6*
Total genitourinary diseases	77	100.0	40.6	30.0	51.1	2.8*	132	100.0	55.5	44.9	66.2	4.4*	209	100.0	49.0	41.4	56.7	3.7*

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

- (a) Data are reported for Queensland, Western Australia, South Australia and the Northern Territory only. These four jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (b) Data are presented in five-year groupings due to small numbers each year.
- (c) These data exclude 88 deaths where the Indigenous status was not stated.
- (d) While most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous all causes mortality rate.
- (e) Deaths are by year of occurrence except the latest year which is based on year of registration.
- (f) Directly age standardised using the Australian 2001 standard population.
- (g) LCL = lower confidence limit.
- (h) UCL = upper confidence limit.
- (i) Rate ratio Indigenous:non-Indigenous.
- (j) Includes: urolithiasis, other disorders of the kidney & urether, disease of male genital organs, disorders of breast, inflammatory disorders of the female pelvic organs, non-inflammatory disorders of the female genital tract, other disorders of the genitourinary tract.

Note: It should be noted that different causes of death may have different levels of completeness of identification of Indigenous deaths that differ from the 'all cause' under-identification (coverage) estimates.

Source: AIHW analysis of AIHW National Mortality Database.

Time series analysis

Longer term mortality trend data are limited to three jurisdictions – Western Australia, South Australia and the Northern Territory – which have over 10 years of adequate identification of Indigenous deaths in their recording systems.

There is a consistent time series of population estimates from 1991. Due to changes in the classification and coding of causes of death from ICD-9 (used up until 1996) to ICD-10 (used from 1997 onwards) which affects the comparability of the data, the analysis reported for this indicator has been done for two time periods – 1991–1996 and 1997–2003. Data for 2004 were not used because of late registration of some deaths.

Due to the late inclusion of a ‘not stated’ category of Indigenous status in 1998 (before which not stated responses were included with non-Indigenous deaths), Indigenous mortality rates have been compared with the mortality rates of ‘other’ Australians (which include deaths of both non-Indigenous people and deaths for which Indigenous status was not stated).

Mortality rates, rate ratios and rate differences between Indigenous and other Australians for circulatory diseases, external causes (injury and poisoning), respiratory diseases, diabetes, cancer and kidney-related diseases over the period 1991–1996 and 1997–2003 are presented in Tables 1.22.8–1.22.13 and Figure 1.22.1 below.

Circulatory diseases

- Over the period 1991–1996 in Western Australia, South Australia and the Northern Territory combined, there were non-significant declines in mortality rates from circulatory diseases among Indigenous Australians and significant declines in mortality rates from circulatory diseases among other Australians.
- Over the period 1997–2003 there were significant declines in mortality rates from circulatory diseases among Indigenous and other Australians. The fitted trend implies an average yearly decline in the rate of around 34 per 100,000 for Indigenous Australians and 12 per 100,000 for other Australians. Over the same period, there were significant declines in the mortality rate ratios and rate differences between Indigenous and other Australians from circulatory diseases. This reflects both a relative and absolute decline in the gap between mortality rates for Indigenous and other Australians from circulatory diseases.

External causes (injury and poisoning)

- Over the period 1991–1996 in Western Australia, South Australia and the Northern Territory, there were non-significant declines in mortality rates from injury and poisoning among Indigenous Australians. Over the same period there were no significant changes in the mortality rates for other Australians. There were significant declines in both the mortality rate ratios and rate differences between Indigenous and other Australians from injury and poisoning over the period 1991–1996.
- Over the period 1997–2003 there were apparent declines in the mortality rates from injury and poisoning for both Indigenous and other Australians, however, these declines did not obtain statistical significance.

Cancer

- Over the period 1991–1996 in Western Australia, South Australia and the Northern Territory, there were apparent increases in the mortality rates from cancer for both Indigenous and other Australians, however, these increases did not obtain statistical significance.
- Over the period 1997–2003, there were non-significant increases in mortality rates from cancer among Indigenous Australians and significant declines in mortality rates from cancer among other Australians. There were significant increases in the mortality rate ratios and rate differences between Indigenous and other Australians from cancer over the period 1997–2003 reflecting both a relative and absolute increase in the gap between mortality rates for Indigenous and other Australians from cancer.

Respiratory diseases

- For the periods 1991–1996 and 1997–2003 in Western Australia, South Australia and the Northern Territory, there were apparent declines in mortality rates from respiratory diseases among Indigenous Australians, however, these declines did not obtain statistical significance. There were no significant changes in the mortality rates from respiratory diseases for other Australians for either period.

Diabetes

- Over the period 1991–1996 in Western Australia, South Australia and the Northern Territory, there were non-significant increases in mortality rates from diabetes among Indigenous Australians and significant increases in mortality rates from diabetes among other Australians.
- There were no significant changes in the mortality rates from diabetes for Indigenous or other Australians over the period 1997–2003.

Kidney diseases

- Over the period 1991–1996 in Western Australia, South Australia and the Northern Territory, there were no significant changes in mortality rates from kidney diseases among Indigenous Australians, but significant increases in mortality rates from kidney diseases among other Australians.
- There were no significant changes in the mortality rates from kidney diseases for Indigenous or other Australians over the period 1997–2003.

It should be noted that fluctuations in the level of Indigenous mortality over time partly reflect changing levels of coverage of Indigenous deaths and population estimates. Given the volatility in the measures of Indigenous mortality, caution should be exercised in assessing trends in Indigenous mortality over time and comparisons between jurisdictions and comparisons with the non-Indigenous population.

Table 1.22.8: Age-standardised mortality rates, rate ratios and rate differences, circulatory diseases, WA, SA and NT, 1991–1996 and 1997–2003

	1991	1992	1993	1994	1995	1996	Annual change ^(a)	1997	1998	1999	2000	2001	2002	2003	Annual change ^(a)
Indigenous rate per 100,000 ^(b)	572.4	497.9	512.6	636.2	489.5	484.3	-9.8	552.9	565.1	489.0	490.3	418.7	429.2	354.4	-33.5*
Other ^(c) rate per 100,000 ^(b)	360.9	356.9	354.5	341.7	326.3	314.0	-9.7*	297.6	285.7	268.4	250.4	247.7	234.4	227.8	-11.9*
Rate ratio ^(d)	1.6	1.4	1.4	1.9	1.5	1.5	0.02	1.9	2.0	1.8	2.0	1.7	1.8	1.6	-0.05*
Rate difference ^(e)	211.5	141.0	158.1	294.5	163.3	170.3	-0.1	255.3	279.4	220.6	239.9	170.9	194.8	126.6	-21.6*

* Represents results with statistically significant increases or declines at the p<.05 level over the period 1991–1996 and 1997–2003.

- (a) Average annual change in rates, rate ratios and rate differences determined using linear regression analysis.
- (b) Rates have been directly age standardised using the 2001 Australian standard population.
- (c) Other includes deaths of non-Indigenous people and those for whom Indigenous status was not stated.
- (d) Mortality rate for Indigenous Australians divided by the mortality rate for other Australians.
- (e) Mortality rate for Indigenous Australians minus the mortality rate for other Australians.

Source: AIHW analysis of AIHW National Mortality Database.

Table 1.22.9: Age-standardised mortality rates, rate ratios and rate differences, external causes, WA, SA and NT, 1991–1996 and 1997–2003

	1991	1992	1993	1994	1995	1996	Annual change ^(a)	1997	1998	1999	2000	2001	2002	2003	Annual change ^(a)
Indigenous rate per 100,000 ^(b)	139.7	140.8	139.2	128.8	120.3	134.1	-2.9	114.4	147.8	106.3	124.8	123.1	129.1	116.1	-0.6
Other ^(c) rate per 100,000 ^(b)	43.1	40.7	44.3	42.0	41.0	45.0	0.2	41.3	47.8	41.9	43.6	41.5	39.1	39.6	-0.8
Rate ratio ^(d)	3.2	3.5	3.1	3.1	2.9	3.0	-0.1*	2.8	3.1	2.5	2.9	3.0	3.3	2.9	0.0
Rate difference ^(e)	96.6	100.1	94.9	86.8	79.3	89.1	-3.1*	73.2	100.0	64.4	81.2	81.6	90.1	76.5	0.3

* Represents results with statistically significant increases or declines at the p<.05 level over the period 1991–1996 & 1997–2003.

- (a) Average annual change in rates, rate ratios and rate differences determined using linear regression analysis.
- (b) Rates have been directly age standardised using the 2001 Australian standard population.
- (c) Other includes deaths of non-Indigenous people and those for whom Indigenous status was not stated.
- (d) Mortality rate for Indigenous Australians divided by the mortality rate for other Australians.
- (e) Mortality rate for Indigenous Australians minus the mortality rate for other Australians.

Source: AIHW analysis of AIHW National Mortality Database.

Table 1.22.10: Age-standardised mortality rates, rate ratios and rate differences, cancer, WA, SA and NT, 1991–1996 and 1997–2003

	1991	1992	1993	1994	1995	1996	Annual change ^(a)	1997	1998	1999	2000	2001	2002	2003	Annual change ^(a)
Indigenous rate per 100,000 ^(b)	222.3	230.2	218.3	229.8	228.7	223.2	0.3	222.6	220.7	224.3	240.3	202.1	254.2	248.0	4.3
Other ^(c) rate per 100,000 ^(b)	204.0	205.9	208.3	211.4	205.1	205.7	0.3	202.1	196.1	196.8	191.9	191.4	190.1	185.9	-2.4*
Rate ratio ^(d)	1.1	1.1	1.0	1.1	1.1	1.1	0.0	1.1	1.1	1.1	1.3	1.1	1.3	1.3	0.04*
Rate difference ^(e)	18.3	24.3	9.9	18.4	23.6	17.5	0.1	20.4	24.7	27.5	48.4	10.7	64.2	62.1	6.7*

* Represents results with statistically significant increases or declines at the p<.05 level over the period 1991–1996 and 1997–2003.

- (a) Average annual change in rates, rate ratios and rate differences determined using linear regression analysis.
- (b) Rates have been directly age standardised using the 2001 Australian standard population.
- (c) Other includes deaths of non-Indigenous people and those for whom Indigenous status was not stated.
- (d) Mortality rate for Indigenous Australians divided by the mortality rate for other Australians.
- (e) Mortality rate for Indigenous Australians minus the mortality rate for other Australians.

Source: AIHW analysis of AIHW National Mortality Database.

Table 1.22.11: Age-standardised mortality rates, rate ratios and rate differences, respiratory diseases, WA, SA and NT, 1991–1996 and 1997–2003

	1991	1992	1993	1994	1995	1996	Annual change ^(a)	1997	1998	1999	2000	2001	2002	2003	Annual change ^(a)
Indigenous rate per 100,000 ^(b)	264.5	249.7	217.8	227.1	211.2	234.6	-7.3	162.3	174.3	146.7	176.0	163.9	152.0	154.6	-1.8
Other ^(c) rate per 100,000 ^(b)	59.8	67.1	59.6	59.0	53.8	60.0	-1.1	63.6	57.5	54.6	60.1	58.4	62.2	61.6	0.3
Rate ratio ^(d)	4.4	3.7	3.7	3.9	3.9	3.9	-0.1	2.6	3.0	2.7	2.9	2.8	2.4	2.5	0.0
Rate difference ^(e)	204.8	182.5	158.1	168.2	157.4	174.6	-6.2	98.7	116.8	92.0	115.9	105.5	89.8	93.0	-2.1

* Represents results with statistically significant increases or declines at the p<.05 level over the period 1991–1996 and 1997–2003.

- (a) Average annual change in rates, rate ratios and rate differences determined using linear regression analysis.
- (b) Rates have been directly age standardised using the 2001 Australian standard population.
- (c) Other includes deaths of non-Indigenous people and those for whom Indigenous status was not stated.
- (d) Mortality rate for Indigenous Australians divided by the mortality rate for other Australians.
- (e) Mortality rate for Indigenous Australians minus the mortality rate for other Australians.

Source: AIHW analysis of AIHW National Mortality Database.

Table 1.22.12: Age-standardised mortality rates, rate ratios and rate differences, diabetes, WA, SA and NT, 1991–1996 and 1997–2003

	1991	1992	1993	1994	1995	1996	Annual change ^(a)	1997	1998	1999	2000	2001	2002	2003	Annual change ^(a)
Indigenous rate per 100,000 ^(b)	117.3	110.9	142.3	122.2	130.6	129.0	2.8	146.5	90.6	118.2	159.6	159.8	123.8	118.4	0.8
Other ^(c) rate per 100,000 ^(b)	19.7	21.9	23.9	26.6	25.4	28.0	1.6*	17.5	15.2	14.9	15.2	15.6	15.5	15.5	-0.2
Rate ratio ^(d)	5.9	5.1	6.0	4.6	5.1	4.6	-0.2	8.4	6.0	8.0	10.5	10.3	8.0	7.6	0.1
Rate difference ^(e)	97.5	89.1	118.4	95.6	105.3	101.0	1.2	129.0	75.4	103.4	144.4	144.2	108.3	102.9	1.0

* Represents results with statistically significant increases or declines at the p<.05 level over the period 1991–1996 and 1997–2003.

- (a) Average annual change in rates, rate ratios and rate differences determined using linear regression analysis.
- (b) Rates have been directly age standardised using the 2001 Australian standard population.
- (c) Other includes deaths of non-Indigenous people and those for whom Indigenous status was not stated.
- (d) Mortality rate for Indigenous Australians divided by the mortality rate for other Australians.
- (e) Mortality rate for Indigenous Australians minus the mortality rate for other Australians.

Source: AIHW analysis of AIHW National Mortality Database.

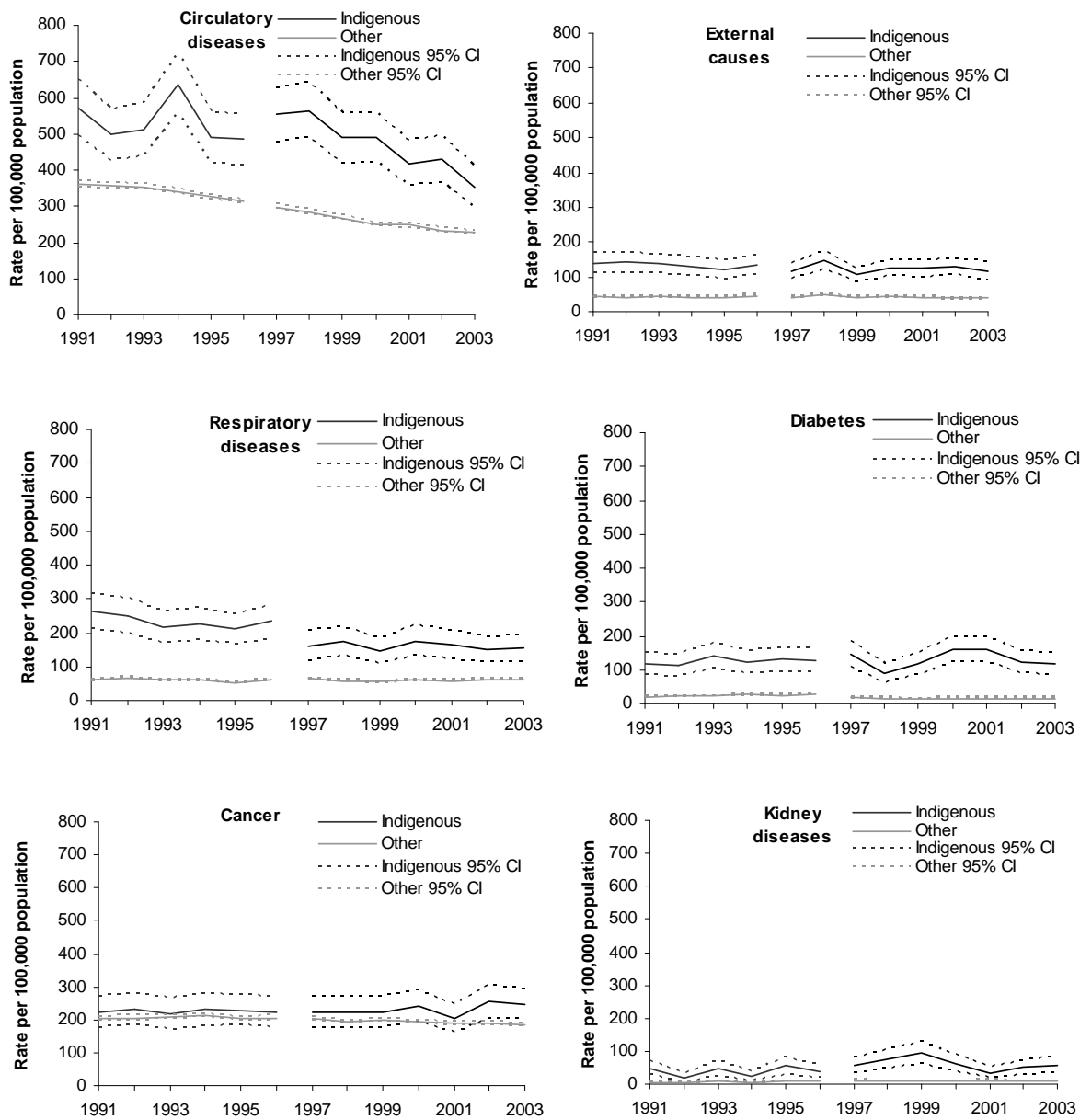
Table 1.22.13: Age-standardised mortality rates, rate ratios and rate differences, kidney diseases, WA, SA and NT, 1991–1996 and 1997–2003

	1991	1992	1993	1994	1995	1996	Annual change ^(a)	1997	1998	1999	2000	2001	2002	2003	Annual change ^(a)
Indigenous rate per 100,000 ^(b)	49.4	19.7	48.7	23.1	55.6	38.3	0.8	58.1	74.4	93.3	63.5	34.5	49.9	58.6	-3.8
Other ^(c) rate per 100,000 ^(b)	6.9	6.7	8.3	7.0	8.3	9.5	0.5*	11.3	10.5	10.0	10.0	11.2	10.6	10.4	0.0
Rate ratio ^(d)	7.2	2.9	5.9	3.3	6.7	4.0	-0.2	5.1	7.1	9.4	6.4	3.1	4.7	5.6	-0.3
Rate difference ^(e)	42.6	13.0	40.4	16.1	47.3	28.8	0.3	46.8	64.0	83.3	53.6	23.3	39.3	48.1	-3.8

* Represents results with statistically significant increases or declines at the p<.05 level over the period 1991–1996 and 1997–2003.

- (a) Average annual change in rates, rate ratios and rate differences determined using linear regression analysis.
- (b) Rates have been directly age standardised using the 2001 Australian standard population.
- (c) Other includes deaths of non-Indigenous people and those for whom Indigenous status was not stated.
- (d) Mortality rate for Indigenous Australians divided by the mortality rate for other Australians.
- (e) Mortality rate for Indigenous Australians minus the mortality rate for other Australians.

Source: AIHW analysis of AIHW National Mortality Database.



Source: AIHW National Mortality Database.

Figure 1.22.1: Mortality rates for Indigenous and other Australians, selected causes of death, WA, SA and NT, 1991-1996 and 1997-2003

Sensitivity of mortality trends to changes in identification

- The fitted trends described above for the two leading causes of mortality – circulatory diseases and external causes (injury and poisoning) – have been examined for their sensitivity to changes in Indigenous identification. Three scenarios for coverage were posted – constant identification, increasing identification and decreasing identification.
 - Under the constant identification scenario, the numbers of deaths for the period under study were adjusted using under-identification estimates derived from the most recent ABS analyses (relating to the period 1999–2003):
 - WA – 72%
 - SA – 66%
 - NT – 95%.
 - Under the increasing identification scenario, deaths were adjusted by linearly increasing the identification through the periods under study – from 64% in 1991 to 72% in 2003 for Western Australia, from 60% to 66% for South Australia, and from 90% to 95% for the Northern Territory.
 - Under the decreasing identification scenario, deaths were adjusted by linearly decreasing the identification from 80% in 1991 to 72% in 2003 for Western Australia, from 72% to 66% for South Australia, and from 100% to 95% for the Northern Territory.
- The adjustments in the latter two scenarios were based on judgements about the largest plausible shifts in identification during the period; of course if any actual shift in identification were more extreme than has been posted under these scenarios, then the observed trends in mortality might not persist. For all three scenarios, the population figures (used as denominators in the calculation of mortality rates) were re-estimated to reflect the altered number of deaths implied by each scenario.
- The observed declines in mortality rates from circulatory disease among other Australians over the period 1991–1996 remained statistically significant under all three identification scenarios. The observed declines in the mortality rates from circulatory diseases among Indigenous and other Australians over the period 1997–2003 also remained statistically significant under all three identification scenarios. The declines in the mortality rate ratios over this later period did not remain statistically significant under any identification scenario and the declines in the mortality rate differences remained significant under all three scenarios.
- The observed declines over the period 1991–1996 in the mortality rate ratios between Indigenous and other Australians from injury and poisoning remained statistically significant under all three identification scenarios. The decline in the mortality rate differences over this period remained significant under the increasing and constant identification scenario.

Data quality issues

Mortality data

Deaths

The mortality rate for Indigenous Australians can be influenced by identification of Indigenous deaths, late registration of deaths, and changes to death forms and/or processing systems. Due to the small size of the Indigenous population these factors can significantly impact on trends over time and between jurisdictions.

Indigenous status question

All jurisdictions comply with the standard wording for the Indigenous status question and categories for their death registration forms. However, New South Wales, Victoria, South Australia, the Northern Territory and the Australian Capital Territory all have slightly different wording to the national standard for the instruction on those with both Aboriginal and Torres Strait Islander origin (ABS & AIHW 2005). While the wording is only slightly different, it would be ideal to have all jurisdictions asking the question in exactly the same way.

Under-identification

Almost all deaths in Australia are registered. However the Indigenous status of the deceased is not always recorded/recorded correctly. The incompleteness of Indigenous identification means the number of deaths registered as Indigenous is an underestimate of deaths occurring in the Aboriginal and Torres Strait Islander population (ABS 1997). As a result, the observed differences between Indigenous and non-Indigenous mortality are underestimates of the true differences.

While the identification of Indigenous deaths is incomplete in all state and territory registration systems, four jurisdictions (Queensland, Western Australia, South Australia and the Northern Territory) have been assessed by the ABS and the AIHW as having adequate identification. Longer term mortality trend data are limited to three jurisdictions (Western Australia, South Australia and the Northern Territory) with 10 years of adequate identification of Indigenous deaths in their recording systems. The quality of the time series data is also influenced by the late inclusion of a not stated category for Indigenous status in 1998. Prior to this time, the not stated responses were probably included with the non-Indigenous. The ABS calculated the implied coverage (identification) of Indigenous deaths for the period 2000–2004 using population estimates: New South Wales – 46%, Victoria – 35%, Queensland – 53%, South Australia – 66%, Western Australia – 72%, the Northern Territory – 94%, Tasmania and the Australian Capital Territory were not calculated due to small numbers, Australia – 57% (ABS 2005).

It should be noted that different causes may have different levels of under-identification that differ from the 'all cause' coverage estimates. It should also be noted that the quality of the cause of death data depends on every step of the process of recording and registering deaths (including the documentation available at each step of the process) from certification to coding of cause of death.

There are also current concerns about data quality for causes of death especially relating to external causes of death to all Australians (not just Indigenous) (ABS 2006).

Numerator and denominator

Rate and ratio calculations rely on good numerator and denominator data. The changes in the completeness of identification of Indigenous people in death records may take place at different rates than changes in the identification of Indigenous people in other administrative collections and population censuses. Denominators used here are sourced from ABS's Experimental estimates and projections: Aboriginal and Torres Strait Islander Australians 1991 to 2009 (ABS 2004).

(continued)

Data quality issues (continued)

Cause of death coding

Causes of death are based on the tenth revision of the International Classification of Diseases (ICD-10). Mortality coding using ICD-10 was introduced into Australia from 1 January 1997.

References

ABS (Australian Bureau of Statistics) 1997. Occasional paper: Mortality of Aboriginal and Torres Strait Islander Australians. ABS cat. no. 3315.0. Canberra: ABS.

ABS 2004. Experimental estimates and projections: Aboriginal and Torres Strait Islander Australians 1991 to 2009. ABS cat. no. 3238.0. Canberra: ABS.

ABS 2005. Deaths Australia 2004. ABS cat. no. 3302.0. Canberra: ABS.

ABS 2006. Causes of death 2004. ABS cat. no. 3303.0. Canberra: ABS.

ABS & AIHW (Australian Bureau of Statistics and Australian Institute of Health and Welfare) 2005. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples, 2005. ABS cat. no. 4704.0; AIHW cat. no. IHW 14. Canberra: ABS & AIHW.