1.16 Median age at death

The age at which exactly half the deaths registered (or occurring) in a given time period were deaths of people above that age and half were deaths below that age

Data sources

Data for this measure come from the AIHW 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 analysed using the year of occurrence of death for the period 1999–2003 and year of registration of death for 2004. This is because mortality data by year of occurrence of death are 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.

Care should also be exercised when analysing Indigenous median age at death, as differences in identification by age may lead to biased summary indicators such as median age at death. Better identification of Indigenous infant deaths compared with older age groups will result in observed median age at death being underestimated. Median age at death values are influenced to some extent by the age structure of a population. The Indigenous population has a younger age structure than the non-Indigenous population and this is reflected in the median age at death of the two populations.

Analyses

Median age at death by state/territory

- In 2004, in Queensland, Western Australia, South Australia and the Northern Territory combined, the median age at death was 49 years for Indigenous males and 58 years for Indigenous females. This compared to 76 years for non-Indigenous males and 82 years for non-Indigenous females in these jurisdictions.

- In 2004, in the four jurisdictions, the median age at death for Indigenous males ranged from 43 years in the Northern Territory to 53 years in Queensland. For Indigenous females, the median age at death ranged from 53.5 years in South Australia to 63 years in Western Australia (Table 1.16.1).

Table 1.16.1: Median age at death, by Indigenous status and sex, Qld, WA, SA and NT, 1999–2004[(a)(b)(c)(d)]

	Qld	WA	SA	NT	Qld, WA, SA & NT
			Indigenous males		
1999	50.5	49	45	44	48
2000	53	48	50	47.5	51
2001	52	50	47	44	49
2002	50	50	48.5	47	49
2003	51	51	49.5	47	50
2004	53	49.5	49	43	49
1999–2004	52	50	49	46	49
			Non-Indigenous males		
1999	74	74	76	60	74
2000	75	75	76	60	75
2001	75	75	76	63	75
2002	75	75	77	62	76
2003	75	76	77	64	76
2004	76	76	77	62.5	76
1999–2004	75	75	77	62	76
			Indigenous females		
1999	60.5	50	50	53.5	57
2000	58	55.5	55.5	52	56
2001	53	53	53	52	53
2002	58.5	54.5	54.5	52	54.5
2003	61	49	49	50	56
2004	57	63	53	53.5	58
1999–2004	58	57	53	52	56
			Non-Indigenous females		
1999	81	81	82	71	81
2000	81	81	82	61	81
2001	81	81	82	73	81
2002	82	82	82	70	82
2003	82	82	83	74	82
2004	82	82	83	71	82
1999–2004	82	82	82	70	82

(a) The incompleteness of Indigenous identification means that the number of deaths registered as Indigenous is an underestimate of the actual number of deaths which occur in the Aboriginal and Torres Strait Islander population.

(b) Variations in median age at death by Indigenous status, sex and jurisdiction should be interpreted with care as they are sensitive to differential data quality.

(c) 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.

(d) Data are by year of occurrence of death except for 2004, which is by year of registration of death.

Sources: AIHW analysis of AIHW National Mortality Database.

Time series analysis

Total deaths can be partitioned into quartiles by age at death (the first quartile is the age below which 25% of all deaths occur, the median is the age below which 50% of all deaths occur, and the third quartile is the age below which 75% of all deaths occur). An analysis of this kind can reveal changes in patterns of mortality over time, such as an increase in the proportion of deaths occurring at older ages and a corresponding decrease in the proportion occurring at younger ages.

But any such changes must be interpreted with care before any inferences can be drawn regarding an improvement or deterioration in the mortality of Indigenous Australians. Fluctuations in the level of Indigenous mortality over time partly reflect changing levels of identification of Indigenous deaths and population estimates. Quartiles of age at death are also affected by changes in age distribution of the population resulting, for example, from changes in fertility, and therefore they support comparisons only if fertility rates remain consistent over the period being analysed.

Longer term mortality trend data is 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. As there is a consistent time series of population estimates from 1991, data for the period 1991–2003 have been used for the analysis of Indigenous mortality trends. Data for 2004 have not been used because they are still incomplete, owing to 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), quartiles of death and median age of death for Indigenous Australians have been compared with those of 'other' Australians (which include deaths of both non-Indigenous people and deaths for which Indigenous status was not stated).

Table 1.16.2 and Figure 1.16.1 present trends in the median age at death for Indigenous and other Australians in Western Australia, South Australia and the Northern Territory combined over the period 1991-2003. Table 1.16.3 and Figure 1.16.2 present quartiles of age at death for Indigenous Australians by jurisdiction over the same period.

- Over the period 1991–2003, there were non-significant declines in the median age at death for Indigenous males, and significant declines in the median age at death for Indigenous females in Western Australia, South Australia and the Northern Territory combined. The fitted trend implies an average yearly decline of 0.4 years in the median age at death for Indigenous females.
- Over the same period, there were significant increases in the median age at death for both other males and other females in Western Australia, South Australia and the Northern Territory. The fitted trend implies an average yearly increase in the median age at death of 0.3 years for both males and females.
- Over the period 1991–2003, there were significant increases in the age at death in the first quartile among Indigenous males in all three jurisdictions—Western Australia, South Australia and the Northern Territory. There were also significant increases in the median age at death for Indigenous males in South Australia. For Indigenous females, there were significant increases in the age at death in the first quartile in South Australia and significant declines in the median age at death in Western Australia. There has been no significant change in the age at death in the third quartile in any jurisdiction.

Table 1.16.2: Median age at death, by Indigenous status and sex, WA, SA and NT, 1991–2003

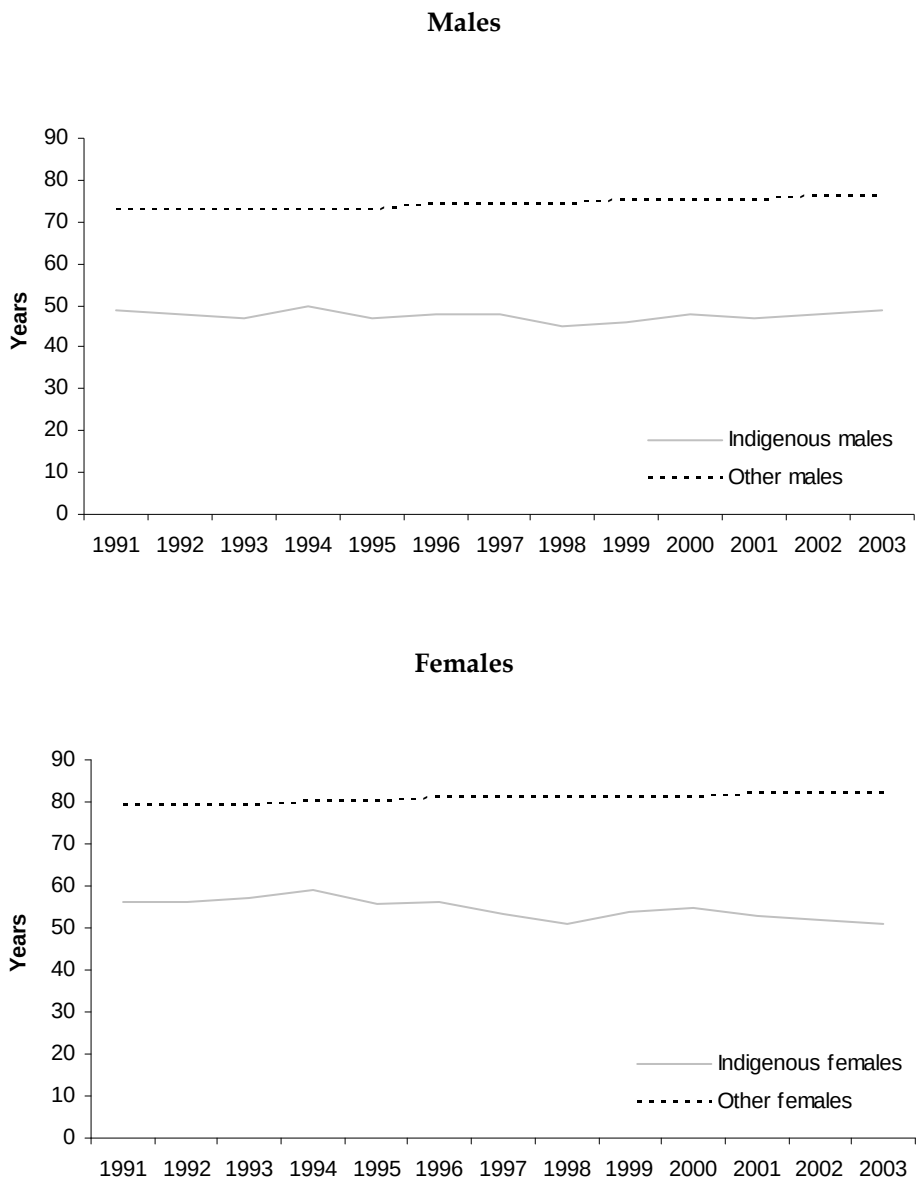
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Annual change[(a)]
Indigenous														
Males	49	48	47	50	47	48	48	45	46	48	47	48	49	−0.1
Females	56	56	57	59	55.5	56	53.5	51	54	55	53	52	51	−0.4*
Other														
Males	73	73	73	73	73	74	74	74	75	75	75	76	76	0.3*
Females	79	79	79	80	80	81	81	81	81	81	82	82	82	0.3*

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

(a) Average annual change in rates, rate ratios and rate differences determined using linear regression analysis.

Note: Data based on year of occurrence of death.

Source: AIHW analysis of AIHW National Mortality Database.



Source: AIHW analysis of AIHW National Mortality Database.

Figure 1.16.1: Median age at death, by Indigenous status, WA, SA and NT combined, 1991–2003

Table 1.16.3: Quartiles of age at death, Indigenous Australians in WA, SA and NT, 1991–2003

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Annual change[(a)]
First quartile of age at death														
Males														
WA	33	28	29	33	29	33.5	33	29	30	32.5	33	33	37	0.3*
SA	22	24	23	39	28	27	29	35	33	30	34	36	37.5	1.0*
NT	31	28	26	28	29	31	34	31	29	32	31	33	34	0.4*
Females														
WA	31	36	45	38	39	40	35	35	37	34	35.5	34	43	0.0
SA	31	33	36	32	41	35	38	39	35	40	44	39	37	0.6*
NT	29	36	35	39	36	37	37	33	38	37	36	34	36	0.2
Median age at death														
Males														
WA	51	49	50	53	47	49	49	44	49	48	50	50	51	−0.1
SA	39	41	38	52	44	47	46	47	45	50	47	48.5	49.5	0.7*
NT	49	46	46	46	48	46.5	48	45	44	47.5	44	47	47	−0.1
Females														
WA	59	58	62	61	57	59	55.5	54	55.5	56	55	52	57.5	−0.5*
SA	55	53.5	55	48.5	51	48	54	51.5	50	55.5	53	54.5	49	−0.1
NT	52	55	51	58	56	53	52	49	53.5	52	52	52	50	−0.3
Third quartile of age at death														
Males														
WA	67	63	66	65	68	67	63	64.5	63	66	66	66	66	0.0
SA	57	58.5	56	68	61	62	66	70	55	64	63	63	58.5	0.2
NT	64	65	61	62	62	60	64	62	62	61	61	62	64	−0.1
Females														
WA	71	70	75	74	71	70	67	69	71	69	69.5	70	71	−0.2
SA	66	62	69	67.5	64	67	70	69	75	69.5	71.5	68	65	0.4
NT	66	67	65	70	67	68	68	68	72	66	69	68	67	0.1

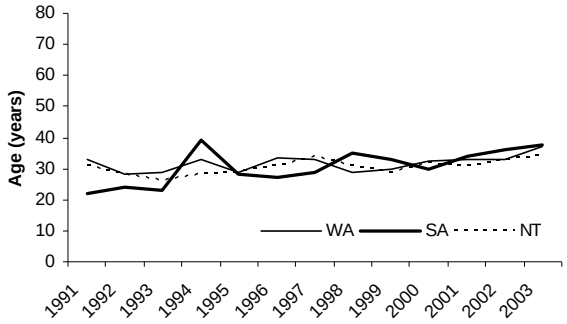
* Represents results with statistically significant increases or declines at the p<.05 level over the period 1991–2003.

(a) Average annual change in rates, rate ratios and rate differences determined using linear regression analysis.

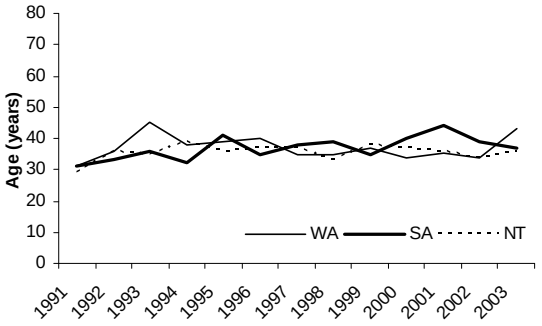
Note: Data based on year of occurrence of death.

Source: AIHW analysis of AIHW National Mortality Database.

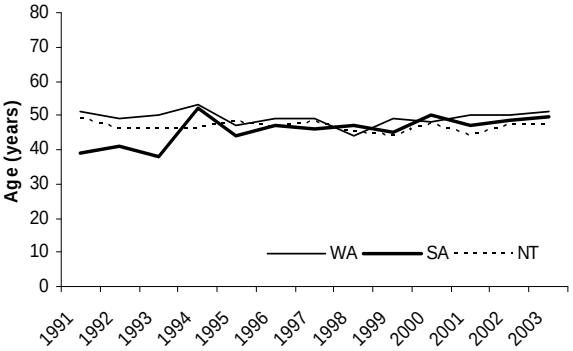
First quartile, Males



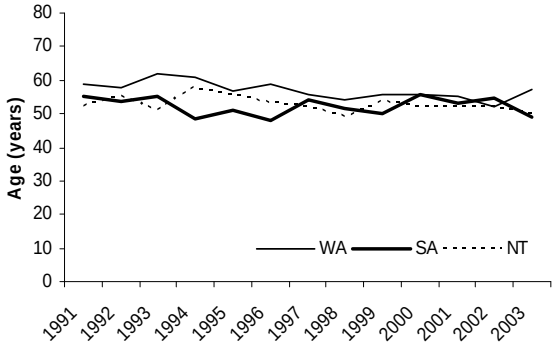
First quartile, females



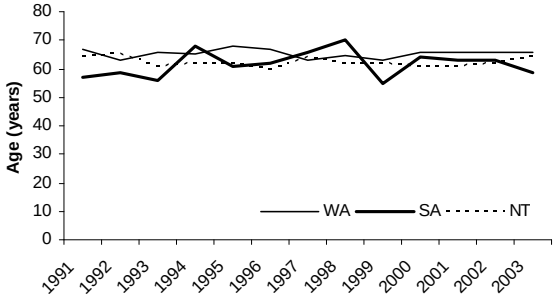
Median age at death, males



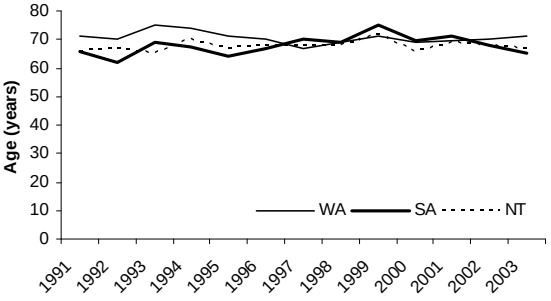
Median age at death, females



Third quartile, males



Third quartile, females



Source: AIHW analysis of AIHW National Mortality Database.

Figure 1.16.2: Quartiles of age at death for Indigenous males and females in WA, SA and NT, 1991–2003

International comparisons

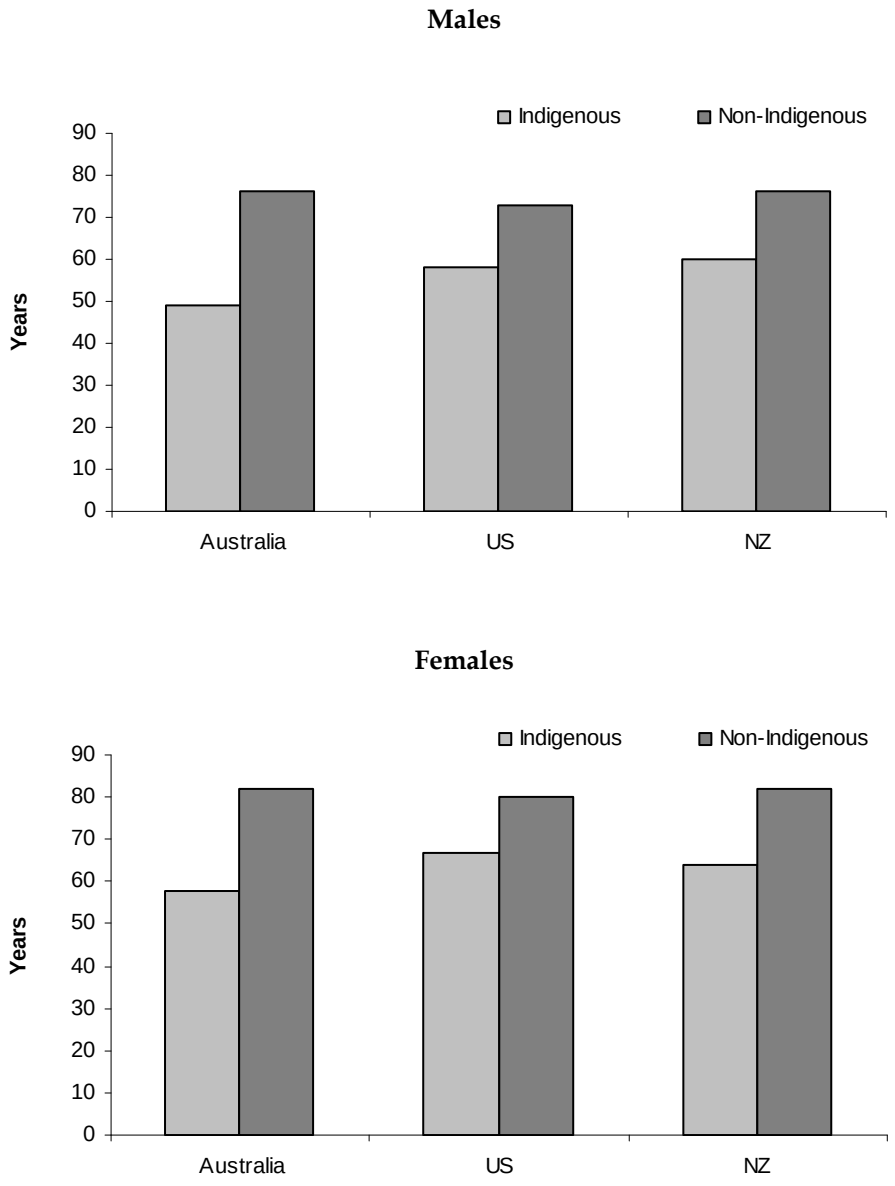
International Indigenous data are available for New Zealand, the United States and Canada.

There are several common issues that adversely affect the quality of Indigenous mortality data in these three countries and Australia. These include the lack of an accurate denominator value for the Indigenous population and the lack of agreement over which population denominator values to use if they do exist. There are differences in how Indigenous status is defined in the different countries. There have also been frequent modifications to the ethnicity question recorded in the censuses in some of these countries. These frequent changes in the census ethnicity question have led to difficulties in comparing mortality trends over time and have also produced difficulties in estimating inter-census population denominator counts.

The most important issue in regard to the quality of Indigenous mortality data is the undercounting of deaths (the numerator for mortality data). In each of the four countries, the undercounting of Indigenous deaths is likely to lead to an underestimation of the relative size of disparities that exist between Indigenous and non-Indigenous populations.

The median age at death is available for United States Indians and Alaskan Natives in the United States and is presented below. Median age at death is not available for Canadian First Nations because, for this population group, data are not accurately available by single year age groups.

- In 2003, the median age at death for United States Indians and Alaskan Natives was 58 years for males and 67 years for females. This compared to 73 years for non-Indigenous males and 80 years for non-Indigenous females in the United States (United States Department of Health and Human Services unpublished data).
- In 2003, the median age at death for New Zealand Maoris was 60 years for males and 65 years for females. This compared to 76 years for all males in New Zealand and 82 years for all females (Statistics New Zealand 2005).
- The median age at death for Aboriginal and Torres Strait Islander peoples is well below that for United States Indians/Alaskan Natives and New Zealand Maoris (Figure 1.16.3).



Notes

1. Australia data are for Qld, WA, SA and NT, Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians.
2. US data are for US Indians/Alaskan Natives and non-Indigenous Americans.
3. New Zealand data are for Maoris and the total New Zealand population.

Sources: AIHW analysis of AIHW National Mortality Database; unpublished data from United States Department of Health and Human Services; Statistics New Zealand 2005.

Figure 1.16.3: Median age at death, by Indigenous status, Australia, United States and New Zealand, 2003

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, or 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 under-estimates 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%, Northern Territory – 94%, Tasmania and the Australian Capital Territory were not calculated due to small numbers, Australia – 57% (ABS 2005).

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).

International comparisons

International Indigenous data are available for New Zealand, the United States and Canada.

In New Zealand, research has been undertaken that attempts to adjust for this undercounting by a process of probabilistic record linkage of death registration data with census data. This research has produced estimates of the considerable extent of the undercounting of Maori deaths. This adjusted data could not be used in international comparisons unless the data in the other countries were also adjusted (Bramley et al. 2004).

(continued)

Data quality issues (continued)

In Canada the national mortality database administered by Statistics Canada does not contain ethnicity data. The regional offices of Health Canada collect mortality data for the Indigenous, on-reserve, First Nations population. Via a series of partnerships with each provincial vital statistics registrar, First Nations specific death certificate information is sent to the regional First Nations and Inuit Health Branch regional office. However, in a number of areas no such relationships exist (for example, the Atlantic, Ontario and Quebec regions), and therefore data are obtained directly from the local communities, or not at all. The availability of Indigenous mortality data in Canada is further limited by the lack of information that is available for off-reserve, or non-status, Indigenous peoples.

The varying degrees of completeness and accuracy of the Indigenous mortality databases that exist within the four countries are likely to affect the comparisons.

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