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Review of Indigenous male health

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'Wounded and resilient': historical and contemporary influences

'Wounded and resilient' [1], the term used to describe the characteristics of the Kukatja Aboriginal males of the desert regions of the south-east Kimberley region of Western Australia, applies to many Indigenous males across Australia.

Indigenous males have been 'wounded' by the numerous impacts since colonisation which devalued Indigenous culture, dispossessed and dislocated Indigenous families and communities and introduced diseases [2-4]. Indigenous males lost their well-defined, meaningful roles with authority and status, and young males lost their positive, aspirational role models. Initially, Indigenous male authority and knowledge were disenfranchised. This marginalisation is perpetuated in the current situation, where many Indigenous men have been deprived of their provider role. In turn, this diminishes the status, self-esteem and sense of purpose of Indigenous males [5-7]. This has profound implications for their health by engendering high levels of alcohol abuse, self-harm and violence. It has inter-generational consequences, bringing dysfunction to family life and providing a model of masculinity with little that is attractive or challenging. As a consequence, there is little incentive for boys to participate in schooling, training and work that prepares them for adult male roles. The cycle of male disenfranchisement, demoralisation and poor health is thus perpetuated.

Indigenous male health is also affected by contemporary structural and social factors, including economic opportunity, physical infrastructure and social conditions [4]. These factors, known collectively as the 'social determinants of health' [8, 9], are manifest in measures such as housing, education, employment, access to services, social networks, connection with land, racism, and rates of imprisonment. Indigenous males suffer substantial disadvantage for all of these measures during their childhood, as adolescents, and throughout their adult years. It is important to consider these social determinants in addressing the health of Indigenous males as it is here that resilience can best be supported and reinforced [3, 10].

Addressing Indigenous male health needs to take account of these factors within a broad 'wounded and resilient' context. In particular, it is important that Indigenous males continue to be active participants in defining their social roles, both within their own communities

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and in the broader Australian society. This is recognised in the recently released National Male Health Policy, which recognises the responsibilities that Indigenous males have for traditional practices, parenting and spirituality, and the relationship these have to health and wellbeing [11]. In order to give this practical effect, Indigenous males have to be able to contribute their knowledge, skills and authority to initiatives and interventions that concern their health.

TAKING AN INDIGENOUS AND GENDERED PERSPECTIVE

It is important to understand how Indigenous people themselves conceptualise health. There was no separate term for health as it is understood in western society [12]. The traditional Indigenous perspective of health is holistic. It encompasses everything important in a person's life including land, environment, physical body, community, relationships and law. Health is the social, emotional, and cultural wellbeing of the whole community and the concept is thus linked to the sense of being Indigenous [13]. This has implications for the application of biomedically-derived concepts as a means of improving Indigenous health. Such an approach may be useful in identifying and reducing disease in individuals, but its limitations in terms of making a population healthier need to be fully recognised. These two approaches need to be combined in a culturally sensitive manner to deal adequately with both immediate and long-term Indigenous male health issues.

A gendered approach to health has proved useful in improving women's health and there is increasing acknowledgement of its potential benefits for men's health [4]. The approach has grown out of the social determinants of health model, which in broad terms holds that the greater the disadvantage, the more detrimental the effect on health [14]. Indigenous men have the poorest health of any group within the Australian population and are arguably also the most disadvantaged. Thus, health interventions that take account of the particular social determinants that influence Indigenous males are much more likely to achieve better outcomes.

The context of Indigenous male health

POPULATION

There were around 274,300 Indigenous males living in Australia in June 2009 [15]. They accounted for 2.5% of the Australian male population. (A breakdown by state and territory is provided in Figure 1.)

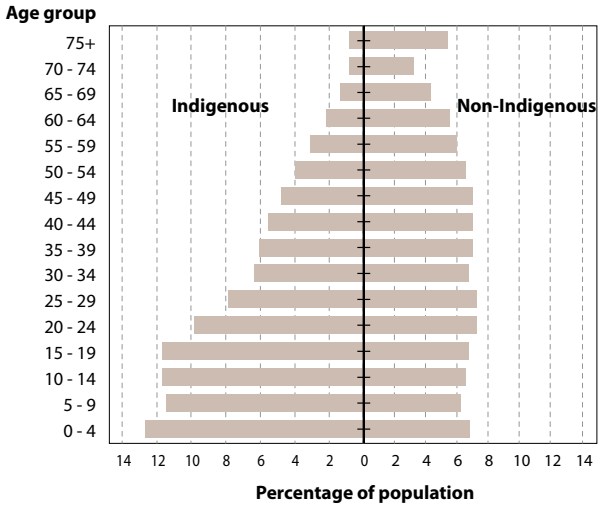
Figure 1 Indigenous male population, by jurisdiction, June 2009



Source: ABS, 2009 [15]

In 2006, it was estimated that almost two-fifths (38.5%) of Indigenous males were aged less than 15 years, compared with 19.7% of the non-Indigenous male population [15]. (An age pyramid comparison of Indigenous and non-Indigenous males is provided in Figure 2.) Only 2.6% of the total Indigenous males were aged 65 years or older, compared with 12.0% of non-Indigenous males.

Figure 2 Indigenous and non-Indigenous male populations, by age group, June 2010



Source: Derived from ABS, 2009 [15, 16]

Almost one-third (31%) of Indigenous people live in major cities, 22% in inner regional areas, 23% in outer regional areas, 8% in remote areas and 16% in very remote areas [17].

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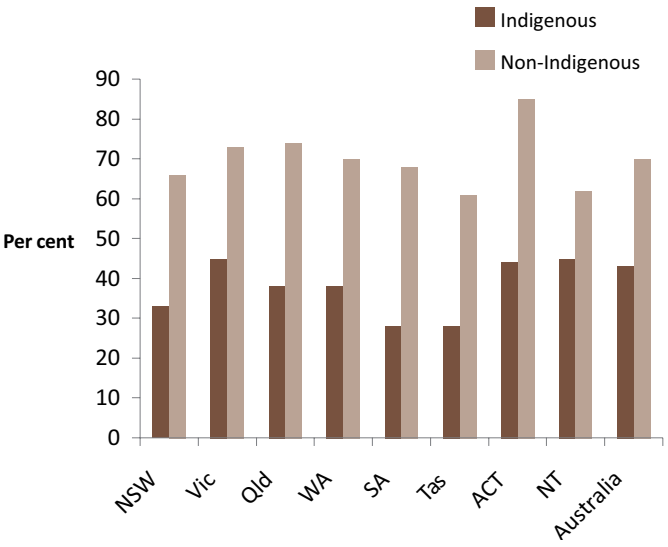
SOCIAL CONTEXT OF INDIGENOUS MALE HEALTH

The health disadvantages experienced by Indigenous males and females can be considered historical in origin [18], but perpetuation of the disadvantages owes much to contemporary structural and social factors, embodied in what are termed the 'social determinants' of health [19-21]. In broad terms, economic opportunity, physical infrastructure and social conditions influence the health of individuals, communities and societies as a whole. These factors are specifically manifest in measures such as education, employment, income, housing, access to services, social networks, connection with land, racism, and incarceration. On all these measures Indigenous people suffer substantial disadvantage. The key measures in some of these areas for Indigenous males are summarised in the following sections.

EDUCATION

Indigenous males did not attend school at almost three times the rate of non-Indigenous males [22], and had much worse school completion rates in 2008 [23]. More than one-half (55%) of Indigenous males dropped out of school between years 9 and 12 in 2008, compared with 30% of their non-Indigenous counterparts. School retention to year 12 was much lower for Indigenous males than for non-Indigenous across the country, with retention in SA and Tas being less than 30% (Figure 3).

Figure 3 Male school retention until year 12, by Indigenous status and jurisdiction, Australia, 2008



Source: Steering Committee for the Review of Government Service Provision, 2009 [23]

In 2004-2005, 38% of Indigenous males aged 25-64 years had a post-school qualification compared with 63% of non-Indigenous males [24]. In 2006, only 4% of Indigenous males had graduated with a Bachelor degree or above, compared with 22% of non-Indigenous males. Diploma or certificate-level qualifications were achieved by 20% of Indigenous males, compared with 36% of non-Indigenous males.

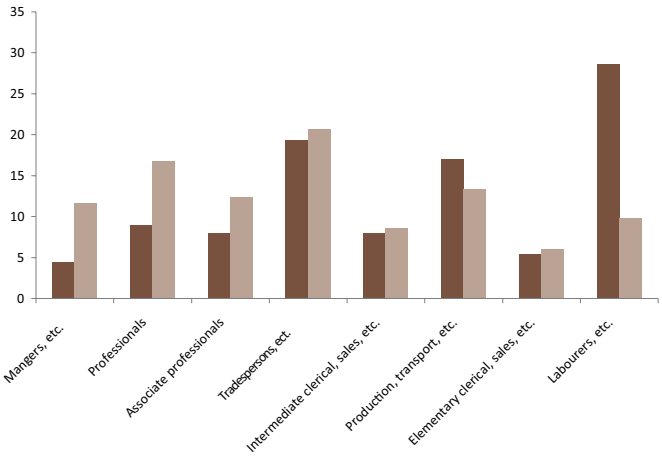
EMPLOYMENT

The lack of post-school qualifications impacts particularly on the employment of Indigenous males: 16% of Indigenous males without any post-school qualifications were unemployed in 2006, compared with 6% of non-Indigenous males [23].

Overall, the higher the level of qualification achieved the smaller the difference in employment rates between Indigenous and non-Indigenous males [23]. The rates of employment – close to full employment – were similar for Indigenous and non-Indigenous males with a Bachelor degree level or higher. All except 4% of non-Indigenous males with a diploma or certificate-level qualification were employed, compared with 88% of Indigenous males overall.

Partly reflecting their lower overall levels of qualifications, the most common occupational category of Indigenous male workers was 'labourers and related workers' (Figure 4) [25]. The proportions of Indigenous males employed as 'managers and administrators' and 'professionals' were much lower than the proportions of non-Indigenous males.

Figure 4 Percentages of male workers, by Indigenous status and occupational category, Australia, 2006



Source: ABS 2008 [25]

INCOME

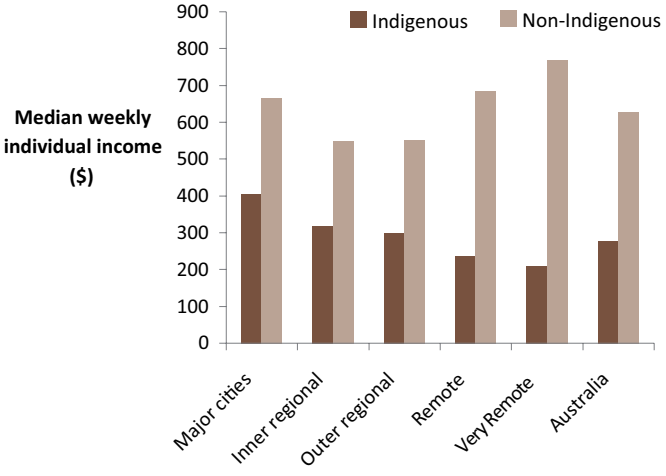
Educational attainment, together with degree of workforce participation, can significantly influence one's level of income. It is therefore anticipated that the dominant experience of Indigenous Australians is that of relative economic hardship, given their generally lower level of educational attainment and reduced participation in the mainstream workforce.

Figures from the 2006 Australian census highlight the extent of the financial adversity encountered by Indigenous people [25]. The mean equivalised gross income per week for Indigenous households in 2006 was $460, compared with $740 for non-Indigenous households. This income figure is a slight improvement from 2001 where the mean equivalised gross income was $422 per week for Indigenous households and $679 for non-Indigenous households. Together these figures illustrate that the income in Indigenous households has

increased (by approximately 9%), but the degree of disparity between Indigenous and non-Indigenous household income has remained unchanged.

The median gross weekly individual income for Indigenous males aged 15 years or older in 2006 was $277, compared with $627 for non-Indigenous males (Figure 5) [25]. For Indigenous males in employment, the median gross weekly individual income was $565 per week, compared with $722 per week for non-Indigenous males.

Figure 5 Median gross weekly individual income for males aged 15 years and over, by Indigenous status and remoteness, 2006



Source: ABS, 2008 [25]

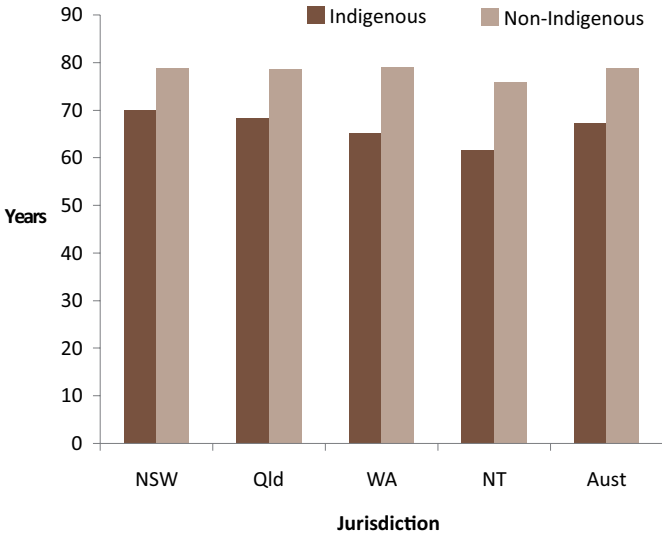
The median gross weekly individual income was lower for Indigenous males than for their non-Indigenous counterparts for all employment classifications (full-time, etc.) and for all occupational categories (managers, professionals, etc.) [25].

Mortality

LIFE EXPECTANCY

The Australian Bureau of Statistics (ABS) estimates that Indigenous males born in 2005-2007 could expected to live to 67.2 years, about 11.5 years less than the 78.7 years expected for all males (Figure 6) [26]. Life expectancy of Indigenous males was highest in NSW (69.9 years) and lowest in the NT (61.5 years) (It should be noted that these estimates of Indigenous life expectancy derive from a new methodology. They are substantially higher than previous ABS estimates that life expectancy for Indigenous males was 59.4 years, more than 17 years less than that of all males [27]. (Being based on different methodologies, the new estimates cannot be directly used as an indication of improvement.)

Figure 6 Male life expectancy, by Indigenous status and jurisdiction, 2005-2007



Source: ABS, 2009 [26]

DEATH RATES

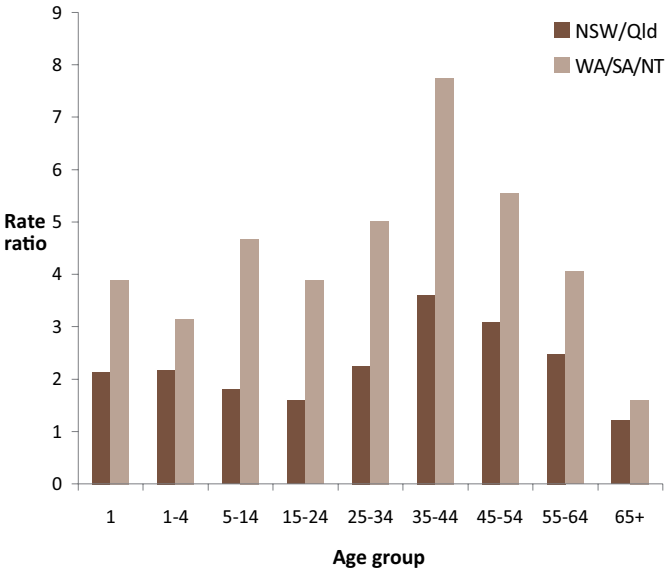
Overall, the number of deaths of Indigenous males in 2005-2007 was 3.0 times the number expected from rates for non-Indigenous males (The number of observed deaths divided by the number of deaths expected is known as the standardised mortality ratio (SMR)) [28].[1]

Death rates were higher in 2005-2007 for Indigenous males than for non-Indigenous males across all age groups, with rate ratios (RR: the Indigenous rate divided by the non-Indigenous rate) being particularly high for the age groups between 25 and 54 years (Figure 7) [27]. Rates and ratios were higher for Indigenous males living in WA, SA and the NT than for those living in NSW and Qld.

1 The levels of identification of Indigenous people in health-related collections are such that only data from some state and territories are of sufficient quality to be used in information statistics compiled by Australia's two main statistical agencies, the Australian Bureau of Statistics and the Australian Institute of Health and Welfare.

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Figure 7 Indigenous:non-Indigenous death rate ratios, by jurisdictions, 2005-2007



Source: ABS, 2008 [27]

INFANT MORTALITY

More than one-fifth of the infant males who died in Qld, WA, SA and the NT in 2002-2006 were Indigenous – the infant mortality rate of 14.4 deaths per 1,000 live births for Indigenous males was 3.2 times the rate of 4.5 per 1,000 for non-Indigenous males [24].

CAUSES OF DEATH

Cardiovascular disease was the leading cause of death for Indigenous males living in Qld, WA, SA and the NT in 2001-2005, with more than three times the number of deaths expected from the rate for non-Indigenous males (SMR: 3.2) [28]. The next most common causes of death for Indigenous males were injuries (SMR: 2.9), neoplasms (mainly cancers) (SMR: 1.5), respiratory diseases (SMR: 4.3), and diabetes (SMR: 10.8).

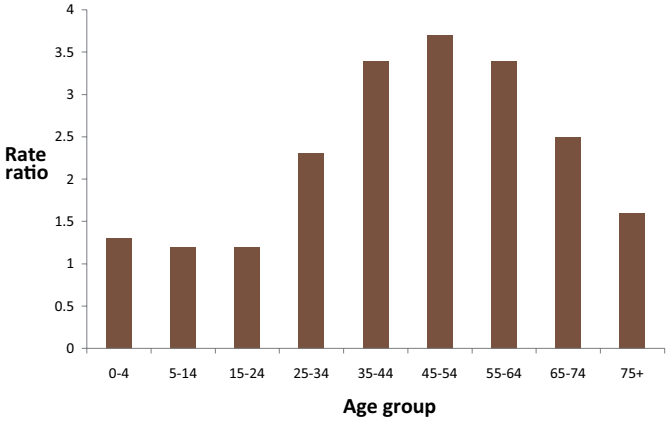
Hospitalisation

HOSPITALISATION RATES

Almost 120,000 Indigenous males living in NSW, Vic, Qld, WA, SA and the NT were admitted to hospital in 2007-08 at a standardised rate of 876 per 1,000, 2.4 times the standardised rate of 358 per 1,000 for non-Indigenous males [Derived from 29].

Admission rates were higher in 2007-08 for Indigenous males than for non-Indigenous males across all age groups, with rate ratios being particularly high for the age groups between 35 and 64 years (Figure 8) [29].

Figure 8 Indigenous:non-Indigenous hospitalisation rate ratios, by age group, 2007-2008



Source: AIHW, 2009 [29]

CAUSES OF HOSPITALISATION

The information needed to compare the causes of hospitalisation for Indigenous and non-Indigenous males is not available for recent years, but it is likely that the causes for Indigenous males are similar to those documented for 1999-2000 [30]. The most common reason for hospitalisation of Indigenous males in that year was 'care involving dialysis', which was responsible for 28% of admissions. Many of these were repeat admissions of the same males, some of whom entered hospital for dialysis almost daily. Apart from admissions for dialysis care, the most common causes of hospitalisation for Indigenous males were injuries (including motor vehicle accidents, assaults, and falls) (RR: 1.9), respiratory disease (RR: 2.6), digestive disease (RR: 1.0), and mental and behavioural disorders (RR: 2.2).

Selected health conditions

CARDIOVASCULAR DISEASE (CVD)

According to the National Aboriginal and Torres Strait Islander Health Survey (NATSIHS), undertaken by the ABS in 2004-2005, almost one-tenth of Indigenous males reported having a long-term heart or related condition, 1.2 times more than the proportion among non-Indigenous males [31]. Hypertension (high blood pressure) was the most commonly reported condition among Indigenous males (6.4%, 1.5 times the prevalence among non-Indigenous males. (See Table 1 for greater detail.)

Table 1 Numbers, percentages and Indigenous: non-Indigenous ratios of cardiovascular conditions, Indigenous males, by condition, Australia, 2004-2005

Condition	Males		
	Number	Per cent	Ratio
Coronary/ischaemic heart disease	2,800	1.2	1.7
Cerebrovascular disease (including stroke)	700	0.3	1.5
Heart failure	1,400	0.6	1.9
Hypertension	15,000	6.4	1.5
Rheumatic heart disease	900	0.4	n/a
Other conditions	1,200	0.5	n/a
All CVD	22,000	9.5	1.2

Source: AIHW, 2008 [31]

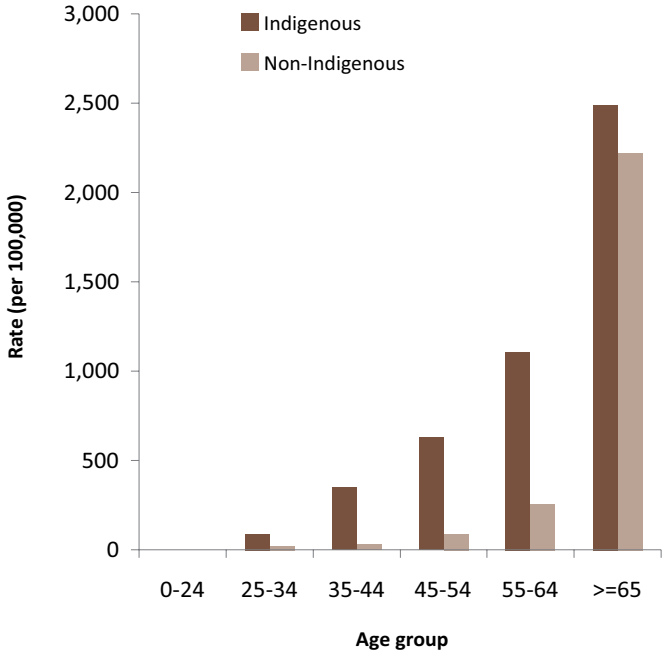
Notes:

1 Per cent is the percentage of all Indigenous males
2 Ratios are standardised prevalence ratios - the reported Indigenous numbers divided by the numbers expected from the age-cause specific prevalences for non-Indigenous males
3 In view of the relatively small numbers involved, the estimates for cerebrovascular disease, heart failure and rheumatic heart disease should be interpreted with caution

CVD was the leading cause of death for Indigenous males living in Qld, WA, SA, and the NT in the period 2002-2005, being responsible for 27% of deaths [31]. The SMR for CVD was 3.1. The leading specific cause of death for Indigenous males was coronary/ischaemic heart disease (SMR: 3.3), followed by cerebrovascular disease (including stroke) (SMR: 2.1). Rheumatic heart disease was responsible for relatively few deaths, but the SMR was 15.1.

The striking difference between Indigenous and non-Indigenous males in CVD mortality is the much greater impact among young and middle-aged Indigenous adults. For all CVD, the death rates for Indigenous males living in Qld, WA, SA and the NT in 2002-2005 were 7 to12 times higher than those for non-Indigenous males in the 35-44 and 45-54 age groups (Figure 9) [31]. The death rate for Indigenous males aged 35-44 years was greater than the rate for non-Indigenous males 20 years older.

Figure 9 Male death rates from cardiovascular disease, by Indigenous status and age group, Qld, WA, SA and the NT, 2002-2005



Source: AIHW, 2008 [31]

The much higher prevalence of CVD for Indigenous males is partly reflected in hospitalisation rates, details of which are available for NSW, Vic, Qld, WA, SA and the NT. There were more than 8,550 episodes of hospitalisation for CVD for Indigenous people living in these jurisdictions in 2007-08, at a rate 1.8 times that of non-Indigenous people [32].

CANCER

The most common cancers diagnosed among Indigenous males in the five-year period 2000-2004 were cancer of the lung, bronchus and trachea (19% of all Indigenous male cancer cases reported), prostate cancer (10%), colorectal cancer (10%), cancer of unknown primary site (6%), and lymphomas (5%) [28]. The overall age-adjusted incidence of cancer among Indigenous males was only four-fifths of that among non-Indigenous males, but the incidence of some cancers – such as smoking-related cancers (lung, mouth and throat, and oesophagus) – was higher among Indigenous males than among non-Indigenous males. The lower incidence of prostate cancer among Indigenous males than among non-Indigenous males at least partly reflects lower levels of screening. (The differences between Indigenous and non-Indigenous people in incidence rates are likely to be much less than suggested above, however, because of the under-identification of Indigenous people in cancer registrations [33, 34].)

Even though the overall incidence rate of cancer is lower for Indigenous males than for their non-Indigenous counterparts, the death rate from cancer is 1.2 times higher [24]. The most common specific causes of death from cancer among Indigenous males are lung cancers (rate ratio: 1.6), cancer of the digestive organs (1.4), lymphoid and related cancers (0.9) and cancer of the lip, oral cavity and pharynx (4.2).

Insight into the differences in cancer incidence and mortality is

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provided by a review of cancer and cancer services for Indigenous people in the NT [35, 36]. This highlighted the fact that the absolute differences in survival after diagnosis with cancer are greatest for cancers with the highest survival in non-Indigenous people. That is, for cancers that are 'amenable to early diagnosis, effective treatment and a high probability of cure' [36]. As well, some of the most common cancers among Indigenous men are preventable, through reduced tobacco consumption, hepatitis B immunisation (hepatitis B is the main risk factor for primary liver cancer), and reduced alcohol consumption. The evidence suggests that the differences between Indigenous and non-Indigenous males in incidence and death rates are a reflection of less access to effective prevention programs, diagnosis at a more advanced stage of the cancer and differences in treatment outcomes by stage at diagnosis.

Hospitalisation rates for cancer for both Indigenous and other Australians increase from age 25 years onwards but are considerably lower for Indigenous males than for non-Indigenous males in each age group [28]. The five most common malignant cancers for which Indigenous males were hospitalised in 2005–06 were lung cancer, skin cancer, prostate cancer, secondary cancer of the respiratory and digestive organs, and secondary malignant neoplasm of other sites.

INJURY

The death rate from injury of 148 per 100,000 for Indigenous males living in Qld, WA, SA and the NT in 2002-2006 was 2.7 times the rate for non-Indigenous males [24]. Intentional self-harm and transport accidents were the leading causes of injury deaths for Indigenous males at rates 2.4 and 2.7 times respectively higher than those for non-Indigenous males.

There were 10,658 hospital admissions of Indigenous males for injury in NSW, Vic, Qld, WA, SA and the NT in 2005-06, representing 10% of all hospitalisations for Indigenous males [28]. The number of admissions for Indigenous males was 1.8 times the number expected from rates for non-Indigenous males (Table 2).

Table 2 ***Observed and expected numbers of Indigenous male hospital admissions for injury, and Indigenous: non-Indigenous ratios, by injury type, NSW, Vic, Qld, WA, SA and the NT, 2005–06***

Injury type	Observed	Expected	Ratio
Assault	2,352	382	6.2
Accidental falls	1,809	1,275	1.4
Exposure to inanimate mechanical forces	1,579	1,064	1.5
Transport accidents	1,212	997	1.2
Complications of medical and surgical care	964	521	1.8
Other causes of accidental injury	835	785	1.1
Intentional self-harm	563	193	2.9
Exposure to animate mechanical forces	528	289	1.8
Other external causes	788	376	2.1
All external causes	10,658	5,888	1.8

Source: AIHW, 2008 [28]

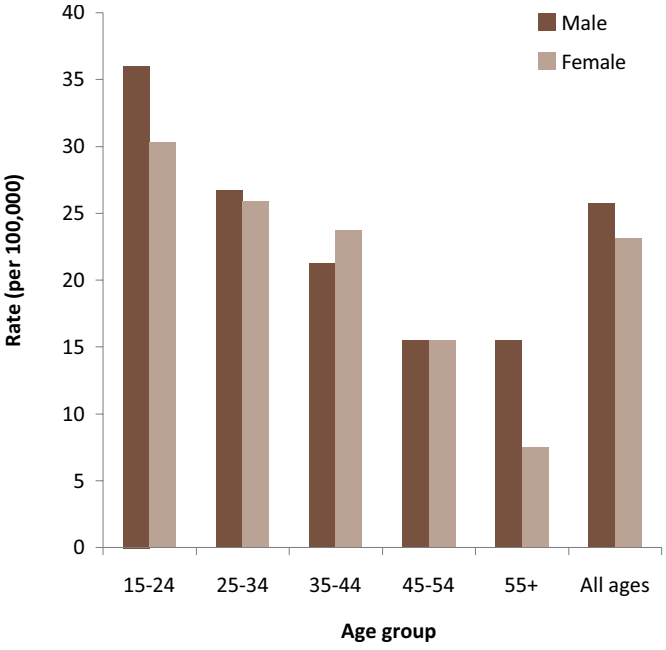
Assault was the most common cause of hospitalisation for injury among Indigenous males in 2005-06, with 6.2 times more admissions than expected (Table 2) [28]. In 2003-04, almost one fifth (19%) of hospital separations of Indigenous males for assault were for family violence related assaults [37]. Separations for this cause were 27 times more likely for Indigenous males than for their non-Indigenous counterparts.

COMMUNITY AND FAMILY VIOLENCE

The 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS), the most comprehensive source of information about violence in the Indigenous community, found that more than one-quarter of Indigenous people aged 15 years or older had been a victim of physical or threatened violence in the previous 12 months (Figure 10) [38]. The proportions of Indigenous people who had been a victim of physical or threatened violence in the previous 12 months were higher for those:

- who had been removed from their natural families; and
- who had experienced a high number of stressors.

Figure 10 ***Percentages of Indigenous victims of physical or threatened violence in the previous 12 months, by sex and age group, Australia, 2002***



Source: ABS, 2004 [38]

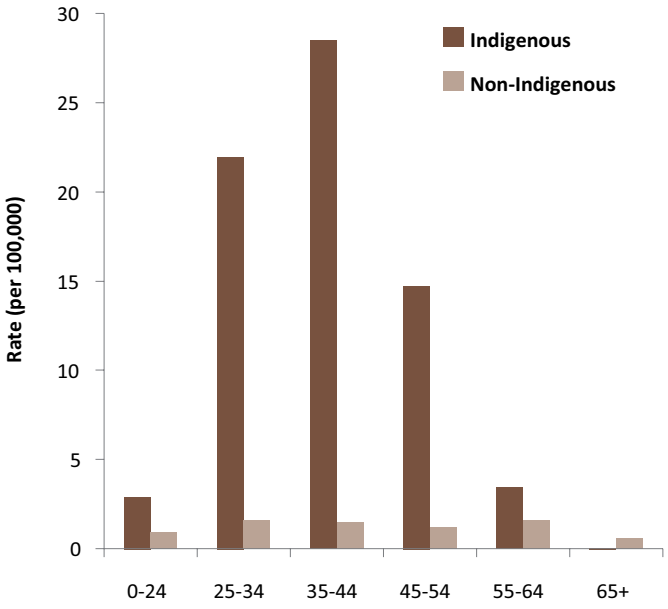
The number of Indigenous males living in NSW, Vic, Qld, WA, SA and the NT who were hospitalised in 2005-06 for assault was more than six times the number expected from rates for non-Indigenous males [28].

Hospitalisation rates for assaults from family violence were much more common for Indigenous males and females than for their non-Indigenous counterparts: 22 times more common for males and 35 times more common for females [37]. The Indigenous: non-Indigenous ratios for family violence assaults by a spouse/domestic partner were 27 for males and 38 for females.

Assault was an important cause of death for Indigenous males at rates

much higher than those for non-Indigenous males: rates were 11 to 17 times higher for males aged 25 to 54 years (Figure 11) [28].

Figure 11 Male death rates from assault, by Indigenous status and age group, Australia, 2001-2005



Source: ABS, AIHW, 2008 [28]

SOCIAL AND EMOTIONAL WELLBEING (INCLUDING MENTAL HEALTH)

The 2004-2005 NATSIHS found that more than 21% of Indigenous males had experienced a high or very high level of psychological distress in the previous year, a level more than twice that among non-Indigenous males [39]. Separate details by age are not available for males, but the levels of psychological distress were higher among Indigenous people than non-Indigenous people in all age groups; the level for people aged 18-24 years was 1.6 times higher.

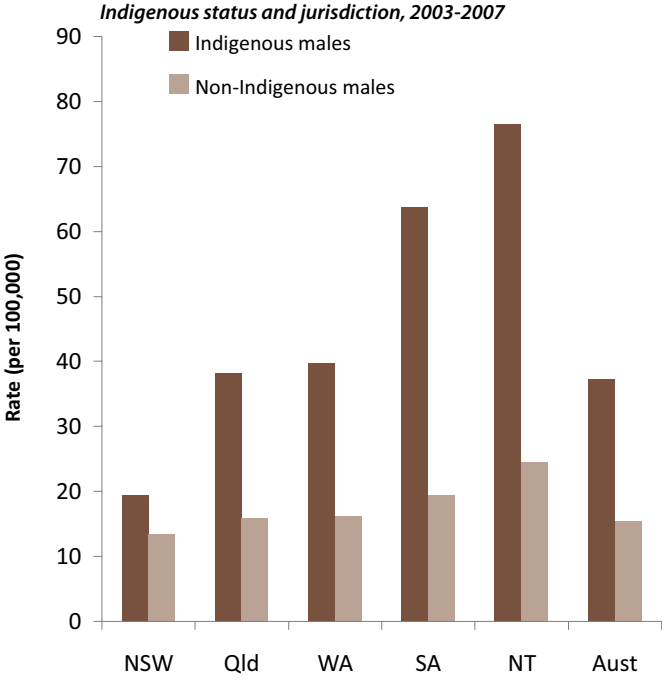
The higher levels of psychological distress among Indigenous people are generally related to higher levels within the previous year of specific stressors, such as death of a family member or friend, serious illness or disability, not able to get a job, alcohol or drug-related problem, overcrowding at home, family member sent to jail/in jail, and trouble with police [38].

Reflecting the higher levels of distress, hospitalisation rates for mental and behavioural disorders were 2.1 times higher for Indigenous males living in NSW, Vic, Qld, WA, SA and the NT in 2004-2006 than for non-Indigenous males [24]. Hospitalisation for 'mental and behavioural disorders due to psychoactive substance use', 'schizophrenia, schizotypal and delusional disorders' and 'neurotic, stress-related disorders' were respectively 4.6, 2.5 and 1.5 times higher for Indigenous males than for non-Indigenous males.

The number of deaths due to mental and behavioural disorders among Indigenous males living in Qld, WA, SA and the NT in 2001-2005 was 5.8 times the number expected from rates for non-Indigenous males (that is, SMR was 5.8) [28].

Importantly, deaths from intentional self-harm, which are included in the ICD chapter 'External causes of injury and poisoning' and not 'Mental and behavioural disorders', were much higher for Indigenous males than for non-Indigenous males in 2003-2007, particularly in the NT and SA (Figure 12) [23].

Figure 12 Male standardised death rates for intentional self-harm, by Indigenous status and jurisdiction, 2003-2007



Source: Steering Committee for the Review of Government Service Provision, 2009 [23]

RESPIRATORY DISEASE

More than one-quarter of Indigenous people reported in the 2004-2005 NATSIHS that they had a long-term respiratory condition [39]. Separate information is not available of the prevalence of long-term respiratory conditions among Indigenous males, but the overall level was similar to that of non-Indigenous males. Bronchitis and asthma were more common among Indigenous males than among their non-Indigenous counterparts, but other respiratory conditions were less common.

Indigenous males living in NSW, Vic, Qld, WA, SA and the NT were hospitalised in 2005-06 for respiratory conditions at 2.1 times the rate of non-Indigenous males [28]. Hospitalisation rates for chronic obstructive pulmonary disease, influenza and pneumonia, and other acute lower respiratory infections were between 4 and 6 times more common for Indigenous males than for their non-Indigenous counterparts.

The numbers of deaths from respiratory disease for Indigenous males living in Qld, WA, SA and the NT in 2001-2005 was more than four times the number expected from rates for non-Indigenous males [28]. The difference between Indigenous and non-Indigenous males in death rates from respiratory disease was greatest among young and middle aged adults: for the 35-54 years age group, the death rate from chronic lower respiratory disease among Indigenous males (32.6 per 100,000) was 13.6 times that of non-Indigenous males (2.4), and the rate for influenza and pneumonia 18.4 times higher (30.5 compared with 1.7).

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DIABETES

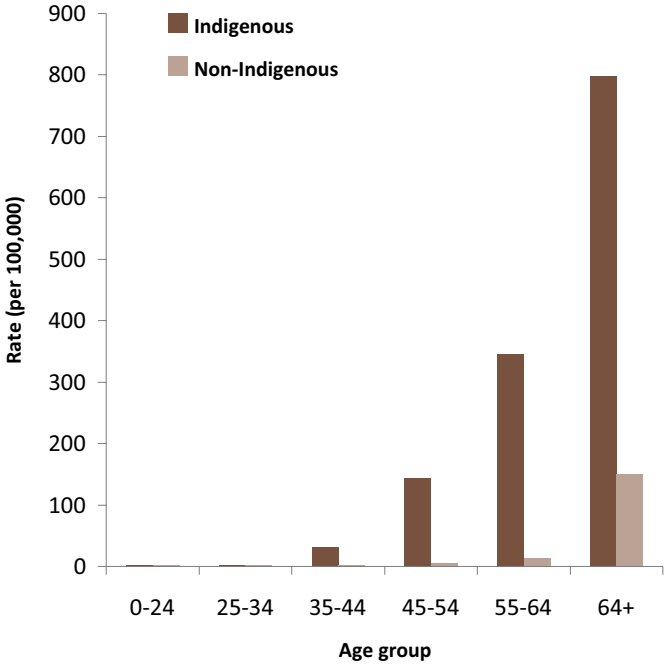
The most recent source of information about the extent of diabetes among Indigenous people is the 2004-2005 NATSIHS [39]. Having diabetes/high sugar levels as a long-term health condition was reported by 6% of Indigenous males, with the proportion being higher for those living in very remote (10%) and remote areas (8%) than for those living in non-remote areas (5%). After adjusting for the differences in the age structures of the two populations, the overall diabetes/high sugar level among Indigenous males was 3.4 times that of non-Indigenous males.

Hospitalisation rates of Indigenous males for diabetes as a principal diagnosis were much higher than those for non-Indigenous males, particularly in SA and WA [24]. After adjusting for the under-identification of Indigenous people in hospital data collections, the Australia-wide hospitalisation rate for Indigenous males for diabetes was 3.8 times that of non-Indigenous males.

Indigenous males living in NSW, Vic, Qld, WA, SA and the NT in July 2004-June 2006 had much higher hospitalisation rates for diabetes than other males in all age groups from 25-34 years onwards [24]. The greatest difference in rates occurred in the 45-54 year age group. In this age group Indigenous males were hospitalised at around 10 times the rate of other males.

The numbers of deaths from diabetes of Indigenous males living in Qld, WA, SA and the NT in 2001-2005 was almost 11 times the number expected from rates for non-Indigenous males [28]. Death rates from diabetes for Indigenous males aged 35-44 years and 45-54 years were respectively 16 and 31 times those of non-Indigenous counterparts (Figure 13).

Figure 13 Male death rates from diabetes, by Indigenous status and age group, Qld, WA, SA and the NT, 2001-2005



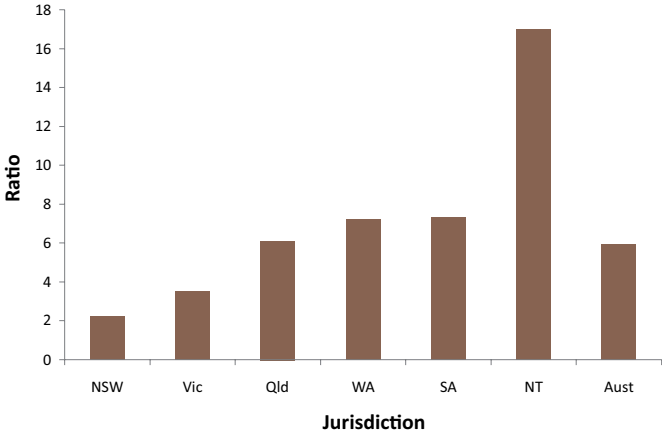
Source: ABS, AIHW 2008 [28]

KIDNEY HEALTH

Only 3% of Indigenous people reported in the 2004-2005 NATSIHS having kidney disease as a long-term health condition, but this is likely to underestimate the true prevalence [31]. (Chronic kidney disease includes end-stage renal disease (ESRD), chronic renal failure, diabetic nephropathy, hypertensive renal disease, and glomerular disease.)

A total of 276 Indigenous males were newly identified with ESRD in the three-year period 2004-2006 [24]. The age-adjusted notification rate for Indigenous males was six times the rate for their non-Indigenous counterparts, with the rate ratio being particularly high for males living in the NT (Figure 14).

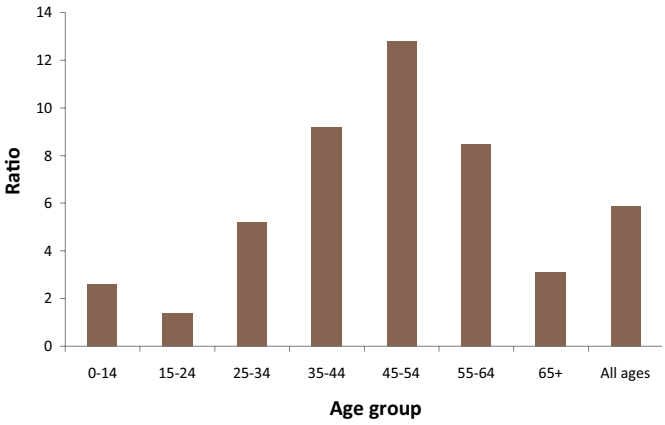
Figure 14 Indigenous:non-Indigenous ratios of notifications of end-stage renal disease, by state/territory, Australia, 2004-2006



Source: AIHW, 2008 [24]

More than two-thirds (68%) of Indigenous males newly registered with the ANZDATA in 2004-2006 were aged less than 55 years, with Indigenous:non-Indigenous rate ratios being particularly high for males aged 45-54 years (Figure 15) [24].

Figure 15 Indigenous:non-Indigenous ratios of notifications of end-stage renal disease, by age group, Australia, 2004-2006



Source: AIHW, 2008 [24]

Separate information about incidence of ESRD among Indigenous males is not available by remoteness of residence, but the overall incidence among Indigenous people is much higher in remote and very remote areas than in other areas [24].

There were almost 86,000 episodes of hospitalisation for kidney disease for Indigenous males living in NSW, Vic, Qld, WA, SA and the NT in the two-year period July 2004-June 2006, with a rate almost eight times that of non-Indigenous males [24]. The most common reason for hospitalisation was the diagnosis of 'care involving dialysis', with the admission rate almost eight times that of non-Indigenous males.

The death rate from chronic kidney disease among Indigenous males living in Qld, WA, SA and the NT in 2002-2006 was more than four times that of their non-Indigenous counterparts [24]. Reflecting the age pattern of ESRD, the greatest difference in death rates between Indigenous and non-Indigenous males living in Qld, WA, SA and the NT in 2001-2005 was for the 45-54 year age group, for which the ratio was 31 [28].

Risk factors

TOBACCO USE

Prevalence

According to the 2004-2005 NATSIHS, around one-half (51%) of Indigenous males smoked cigarettes on a daily basis, around twice the proportion of non-Indigenous males who smoked daily at that time (Table 3) [39]. The proportion of Indigenous males who smoked on a daily basis was high for most age groups, only decreasing slightly among males aged 55 years or older. The proportions of daily smokers was higher in remote and very remote areas (58%) than in other areas (49%) [23].

Table 3 Proportions of males smoking daily, by Indigenous status and age group, Australia, 2004-2005

Age group	Indigenous	Non-Indigenous
18-24	50	29
25-34	56	29
35-44	57	29
45-54	50	25
55+	35	14
All ages	51	24

Source: ABS, 2006 [39]

Notes:

1 Smoking refers to tobacco, including manufactured cigarettes, roll-your-own cigarettes, cigars and pipes, but excludes chewing tobacco and smoking of non-tobacco products
2 Daily smokers refers to people who smoke one or more cigarettes (or pipes or cigars) per day
3 After adjusting for the different age structures of the Indigenous and non-Indigenous populations, the prevalence ratio was 2.0.

Hospitalisation

The hospitalisation of Indigenous males for conditions directly attributable to tobacco smoking varied across jurisdictions, ranging from 1.4 episodes per 1,000 for Vic to 8.2 per 1,000 for the NT (Table 4) [23]. (These rates do not include episodes of hospitalisation where tobacco is probably a contributing factor, but where the link is not direct and immediate.) The rates were higher for Indigenous males than for non-Indigenous males for all jurisdictions.

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Table 4 *Male hospitalisation rates for conditions directly attributable to tobacco smoking, by Indigenous status, NSW, Vic, Qld, WA, SA and the NT, 2006-07*

Jurisdiction	Indigenous	Non-Indigenous	Ratio
NSW	4.3	1.4	3.1
Vic	1.4	1.2	1.2
Qld	2.1	0.7	3.0
WA	2.8	1.3	2.2
SA	4.0	1.1	3.6
NT	8.2	5.7	1.4
All jurisdictions	3.7	1.2	3.1

Source: Steering Committee for the Review of Government Service Provision, 2009 [23]

Notes:

1 The rates are for conditions directly attributable to tobacco smoking and not include conditions where tobacco is probably a contributing factor but where the link is not direct and immediate
2 Rates per 1,000 have been directly standardised using the Australian 2001 standard population
3 Ratios are Indigenous rates divided by non-Indigenous rate

Mortality

There is no recent detailed information about deaths due to tobacco smoking, but a study into the burden of disease among Indigenous people concluded that one-fifth of deaths of Indigenous people in 2003 could be attributed to smoking [40]. Tobacco smoking was seen as being responsible for 12% of the total burden of disease experienced by Indigenous people. The main specific causes of death that were attributed to tobacco smoking were coronary/ischaemic heart disease (220 deaths, 7.7% of all deaths), lung cancer (116, 4.0%), chronic obstructive pulmonary disease (99, 3.5%) and stroke (59, 2.0%).

ALCOHOL CONSUMPTION

Prevalence

According to the 2004-2005 NATSIHS, 17% of Indigenous males aged 18 years or older had never consumed alcohol or had not done so in the previous 12 months [39]. In comparison, 11% of non-Indigenous males aged 18 years or older had never consumed alcohol or had not done so in the previous 12 months.

On the other hand, 11% of Indigenous males aged 18 years or older reported consuming alcohol at a 'risky' (defined as daily consumption for males of four to six standard drinks) or 'high risk' level (more than six standard drinks), compared with 8% of non-Indigenous males in that age range.

Almost two-thirds (64%) of Indigenous males consumed alcohol at short-term risky to high risk levels at least once in the previous 12 months and 24% at least once a week in the previous 12 months [23]. After adjusting for the differences in the age structures of the Indigenous and non-Indigenous populations, these proportions are 1.2 and 1.0 times respectively the proportions for non-Indigenous males.

In view of the known health outcomes of alcohol consumption on Indigenous males (see Tables 5 and 6), it has been suggested that estimates like those obtained by the 2002 NATSISS under-estimate the differences between Indigenous and non-Indigenous males [41]. Based on analysis of information collected by the 2004 National Drug Strategy Household Survey, it has been suggested that the Indigenous:non-Indigenous ratios are more likely to be 1.9 for short-term risks and 2.3 for long-term risks.

Information about levels of total abstinence or abstinence for greater than 12 months are not available by remoteness of residence, but consumption at risky and high risk levels was slightly higher for Indigenous people aged 18 years or older living in non-remote areas (17%) than for their counterparts living in remote areas (15%) [39].

Hospitalisation

Reflecting their higher level of risky and high risk consumption, hospitalisation for alcohol-related conditions of Indigenous males living in NSW, Vic, Qld, WA, SA and the NT in 2006-07 was five times higher than that of non-Indigenous males [23]. Details for specific disorders are provided in Table 5.

Table 5 *Male hospitalisation for selected alcohol-related disorders, by Indigenous status and age group, Qld, NSW, WA, SA and the NT, 2006-07*

Disorder	Indigenous	Non-Indigenous	Ratio
Mental/behavioural disorders	10.9	2.1	5.2
Acute intoxication	4.8	0.6	8.0
Harmful use	0.4	0.1	4.0
Dependence syndrome	2.9	1.1	2.6
Other	2.8	0.3	9.3
Alcoholic liver disease	1.4	0.4	3.5

Source: Steering Committee for the Review of Government Service Provision, 2009 [23]

Notes:

1 Data are from public and most private hospitals. Data exclude private hospitals in the NT
2 Rates per 1,000 have been directly age-standardised using the Australian 2001 standard population
3 Rate ratio is Indigenous rate divided by non-Indigenous rate

Mortality

Deaths related to alcohol use were much more common among Indigenous males living in Qld, WA, SA and the NT in 2002-2006 than among their non-Indigenous counterparts: deaths from alcoholic liver disease were 6.2 times more common; those from mental and behavioural disorders due to alcohol use 9.8 times more common; and those from poisoning by alcohol 6.0 times more common (Table 6) [24].

It has been estimated that 649 Indigenous males died from conditions attributable to alcohol in Australia in the five-year period

1998-2004 with a mean age at death of 35 years [42]. The main causes of Indigenous male deaths were self-inflicted harm, alcoholic liver cirrhosis, road traffic injury, assaults and haemorrhagic stroke. Rates are not available separately for males, but the death rates for Indigenous people were highest in central Australia and northern WA.

Table 6 Male deaths related to alcohol use, by Indigenous status and diagnosis, Qld, WA, SA and the NT, 2002-2006

Diagnosis	Indigenous	Non-Indigenous	Ratio
Alcoholic liver disease	30.8	5.0	6.2
Mental and behavioural disorders due to alcohol use	16.8	1.7	9.8
Poisoning by alcohol	0.8	0.1	6.0
All causes	48.4	6.8	7.1

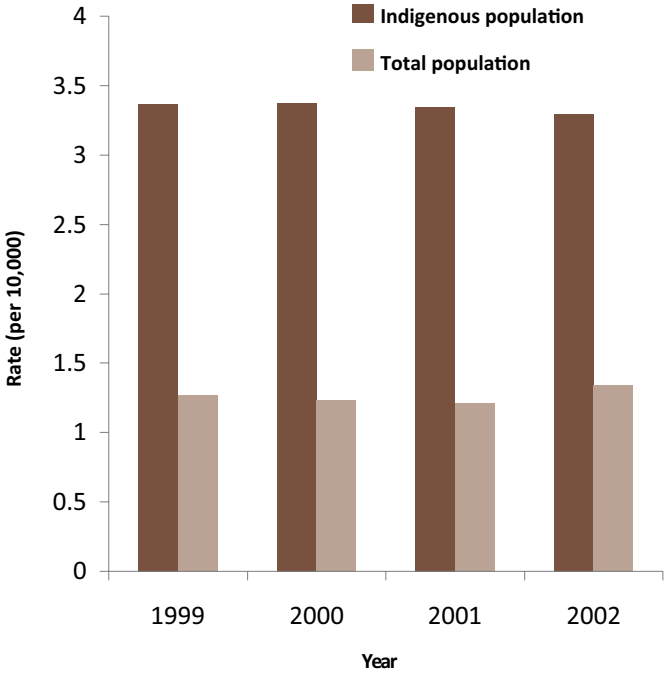
Source: AIHW, 2008 [24]

Notes:

1 Rates per 100,000 have been directly age-standardised using the Australian 2001 standard population

Alcohol consumption is a contributing factor in a variety of health conditions as well as being the sole cause of the conditions shown in Table 6. Figure 16 compares rates of alcohol-attributable deaths for Indigenous people with those for the total population during the period 1999-2002 [43].

Figure 16 Alcohol-attributable deaths, Indigenous and total populations by year, Australia, 1999-2002



Source: Chikritzhs, Brady 2006 [43]

ILLICIT DRUG USE

Prevalence

Indigenous people are more likely to have used an illicit drug and are almost twice as likely to be recent users (Table 7) [44]. The use of illicit drugs is a contributing factor to illness and disease among Indigenous men. Illicit drug consumption can be also linked to Indigenous involvement with the criminal justice system: between 1995-2005, 79% of Indigenous police detainees tested positive to any drug [23].

Table 7 Indigenous and non-Indigenous persons aged 14 years and older, illicit drug use status, 2007 (per cent)

Diagnosis	Indigenous	Non-Indigenous
Never used	46.8	62.2
Ex-users	29.0	24.8
Recent users	24.2	13.0

Source: AIHW 2008 [44]

Mortality

Deaths from illicit drug use were twice as common among Indigenous males living in NSW in 2003-2007 than for their non-Indigenous counterparts, and three times more common for those living in SA (comparative information was not available for other states and the territories) (Table 8) [23].

Table 8 Male illicit drug induced deaths, death rates, age standardised by Indigenous status, 2003-2007

	NSW	Qld	SA	WA	NT
Indigenous males	14.7	np	21.5	np	np
Non-Indigenous males	6.7	4.9	7	5.4	5.8

Source: Steering Committee for the Review of Government Service Provision, 2009 [23]

Notes:

1 Causes of death attributable to drug-induced mortality are based on codes of International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10)

2 Indirect standardised death rates per 100,000 population

USE OF VOLATILE SUBSTANCES

Attention is focused periodically on the use of volatile substances, particularly petrol, among young Indigenous people, but information about the prevalence and patterns of use are notoriously inadequate [45]. The situation is further compounded by fluctuating usage patterns. There are no comprehensive data specific to Indigenous males. Petrol sniffing is the most common volatile substance used in remote areas – even though many areas are not greatly affected – and aerosol spray paints and glues the most popular in urban areas.

Petrol sniffers are more likely to be male than female: between two-thirds and three-quarters of Indigenous sniffers in central Australian were male [45]. Indigenous petrol sniffers are generally aged between 8 and 30 years, with the majority aged 12 to 19 years. Children as

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young as 5 years have been witnessed sniffing petrol in the NT [46].

NUTRITION

The 2004-2005 NATSIHS collected some limited information about the dietary habits and food security[I] of Indigenous people [39]. In terms of dietary habits, 9% of Indigenous males consumed five or more serves of vegetables and 39% two or more serves of fruit daily, compared with 12% and 48% respectively of non-Indigenous males [24]. Almost three-quarters (74%) of Indigenous males reported that they usually used whole milk, compared with 52% of non-Indigenous males.

Information about food security related to whether Indigenous adults had run out of food in the previous 12 months and couldn't afford to buy more, and, if so, whether they then went without food. Almost one-quarter (23%) of respondents had run out of food, and almost 8% of adults had gone without food at some time in the previous 12 months. Those living in remote areas were significantly more likely than those in non-remote areas to report that they had run out of food in the previous 12 months (35% compared with 18%) [24].

Food insecurity is greater among Indigenous people living in remote areas, but Indigenous people living in rural and urban centres are also likely to experience problems of food access, usually related to socioeconomic issues [47, 48].

Cost has been confirmed as a major influence on the ability of Indigenous people living in remote communities to attain a healthy diet [49]. Foods with high energy density (and correspondingly nutrient-poor) were associated with lower costs and contributed disproportionately to the diet, while energy-dilute, nutrient-rich foods, such as fruit and vegetables, were purchased less often due to their greater costs.

The cost of foods, particularly healthy foods, rises dramatically in rural and remote areas compared with major cities. In 2006, a healthy food basket cost 24% more in very remote areas of Qld, compared with major cities [48]. Similarly, a healthy basket of foods in the NT in 2007 cost 17% more in remote areas than in a Darwin supermarket [50].

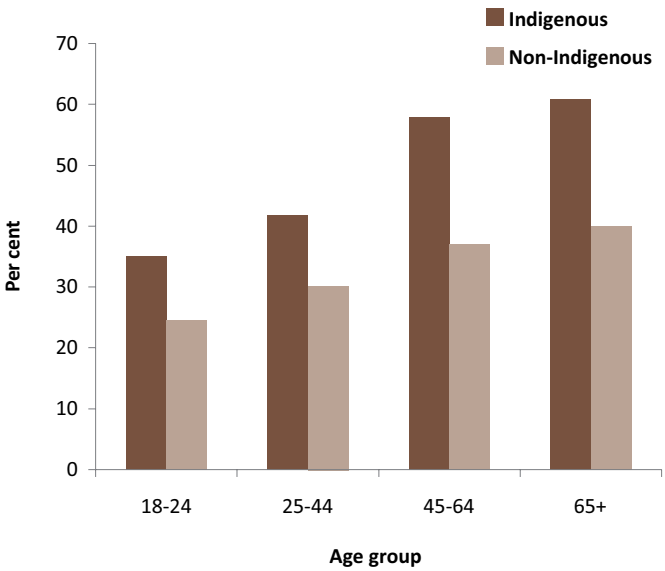
As well as impacting at an individual level, food insecurity can also occur at a community level [51]. Community stores are frequently the only source of food in many remote and rural areas, apart from traditional sources. Remote community stores that lack storage capacity and/or are inaccessible for extended periods because of seasonal weather conditions can contribute to community level food insecurity.

Food use can also be influenced by limited knowledge of basic nutrition, but research in the NT suggests that, in general, people had a good understanding of healthy eating and the components of a healthy diet [52]. Poverty was identified as the key driver of food choice and eating behaviour.

PHYSICAL ACTIVITY

Almost one-half of Indigenous males aged 18 years or older living in non-remote areas reported in the 2004-2005 NATSIHS that they had not done any physical activity in the previous two weeks [31]. The proportions of Indigenous males not having done any physical activity in the previous two weeks were higher than those for non-Indigenous males for all age groups (Figure 17).

Figure 17 Proportions of inactive males, by Indigenous status and age group, non-remote areas, Australia, 2004-2005



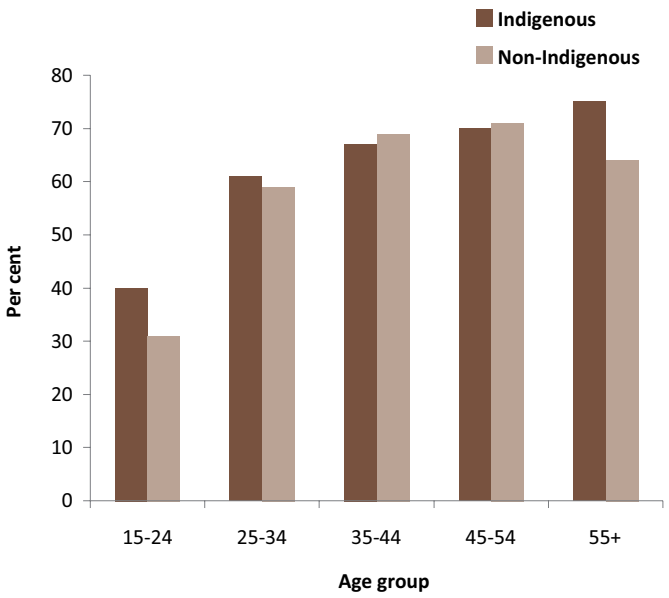
Source: Derived from AIHW, 2008 [31]

OVERWEIGHT AND OBESITY

According to self-reported information collected as a part of the 2004-2005 NATSIHS, 57% of Indigenous people aged 15 years or older were classified as overweight or obese [39]. The proportions of both Indigenous and non-Indigenous males who were overweight or obese generally increased with age (Figure 18) [39]. After age adjustment, the level of overweight and obesity was 1.2 times higher for Indigenous males than for non-Indigenous males.

Separate information is not available for Indigenous males, but the proportion of Indigenous people who were overweight or obese was slightly higher in outer regional (58%) and remote areas (62%) than in major cities (55%) and very remote areas (56%) [39].

Figure 18 Percentages of overweight and obese males, by Indigenous status and age group, Australia, 2004-2005



Source: Derived from ABS, 2006 [39]

Notes:

1 Derivation of proportions excludes people for whom BMI was not known

Vulnerable groups

MALE CHILDREN AND ADOLESCENTS

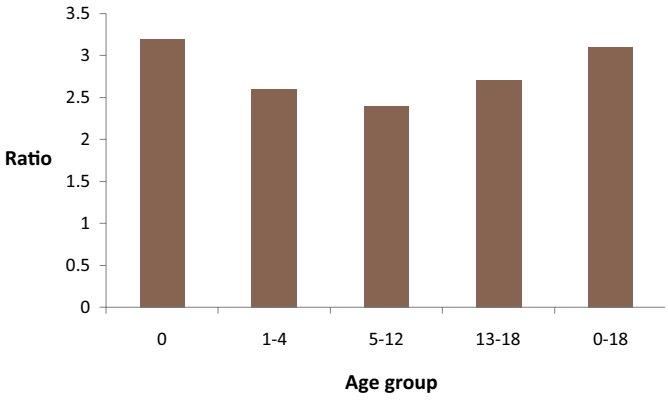
There is very little information specifically on the health of Indigenous boys, but, compared with non-Indigenous counterparts, Indigenous children are:

- around twice as likely to be born pre-term or have low birthweight;
- more likely to suffer from a wide variety of health conditions, including infectious conditions, parasitic diseases, respiratory and circulatory diseases, ear health and hearing problems, dental conditions, injuries and conditions related to social and emotional wellbeing; and
- more likely to be hospitalised for a variety of health conditions, including respiratory conditions, infectious conditions, parasitic diseases, rheumatic fever, and causes relating to injuries [53].

The infant mortality rate for Indigenous male babies born in Qld, WA, SA and the NT in 2002-2006 was 14.4 deaths per 1,000 live births, 3.2 times the rate of their non-Indigenous counterparts [27].

Beyond infancy, death rates for Indigenous male children and teenagers living in Qld, WA, SA and the NT in 2002-2006 were between 2 and 3 times higher than those of their non-Indigenous counterparts (Figure 19) [53].

Figure 19 Indigenous:non-Indigenous ratios of death rates for male children and teenagers, by age group, Qld, WA, SA and the NT, 2002-2006



Source: Freemantle J, McAullay D, 2009 [53]

Injuries were the main causes of death for both Indigenous and non-Indigenous males under 18 years, with a much higher death rate for Indigenous males (42 per 100,000 compared with 15 per 100,000) for non-Indigenous males [53]. It is not known what proportion of these injury deaths were due to intentional self-harm, but deaths from that cause were three times more common for Indigenous males aged 24 years or younger living in Qld, WA, SA and the NT in 2001-2005 than for their non-Indigenous counterparts [28].

As with other aspects of Indigenous health, the health and wellbeing of Indigenous children and teenagers need to be considered within the general context of Indigenous history and disadvantage. This

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applies particularly to their social and emotional wellbeing [54].

The Western Australian Aboriginal Child Health Survey (WAACHS), the most comprehensive assessment ever undertaken of the health of Indigenous children, found that more than one-quarter (27%) of Indigenous males aged 4-17 years were at high risk of clinically significant emotional or behavioural difficulties, 1.7 times the proportion for non-Indigenous males (16%) [54]. Consistent with the overall pattern for males, Indigenous males aged 4-11 years had a slightly higher level of risk (30%) than those aged 12-17 years (24%). Despite the high risk levels among Indigenous male children, few had been seen by the state's Mental Health Services: less than 1% of those aged under 4 years, 5% of those aged 4-11 years and 11% of those aged 12-17 years.

The main factors associated with clinically significant emotional or behavioural difficulties were family life stress events, quality of parenting and family dysfunction [54]. Importantly, the children of Aboriginal carers born before 1966 who had been forcibly removed from their natural family were almost twice as likely as other children to be at high risk of clinically significant emotional or behavioural difficulties.

The high risk of clinically significant emotional or behavioural difficulties among Indigenous males aged 12-17 years in WA was associated with:

- low self-esteem – 21%;
- high risk of clinically significant conduct problems and hyperactivity – 25% and 17% respectively; and
- suicidal thoughts and behaviour – in the previous 12 months, 12% had thought about ending their life, and 4% had attempted suicide [54].

The WAACHS found that Indigenous males aged 12-17 years had high levels of behaviours harmful to health:

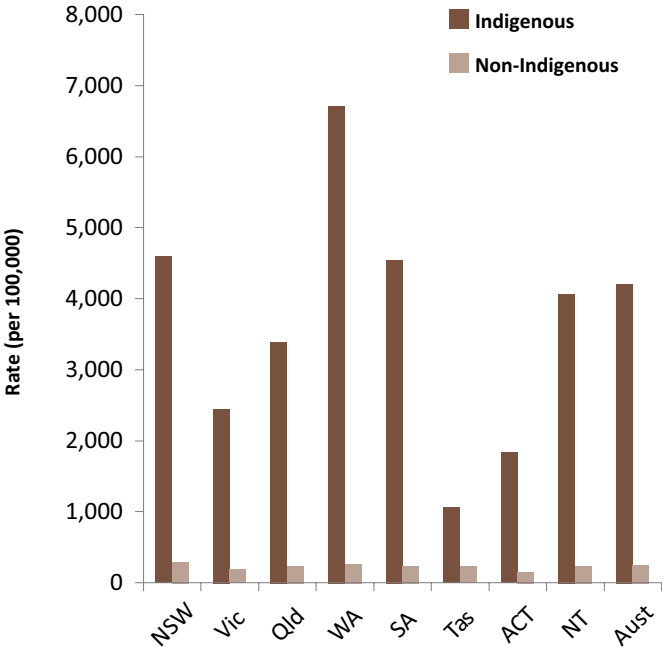
- more than one-third (31%) smoked regularly (56% of 17 year-olds smoked regularly);
- over one-quarter (27%) drank alcohol (61% of 17 year-olds drank alcohol);
- 30% had used marihuana (45% of 17 year-olds used marihuana at least weekly); and
- one-in-five (20%) had not done strenuous exercise in the previous week [54].

MALE PRISONERS AND JUVENILE DETAINEES

Indigenous people are heavily over-represented in the criminal justice system, accounting for 24% of the prison population in 2008 [55]. Indigenous males aged 10-17 years were 28 times more likely to be in juvenile detention than non-Indigenous males and almost 10 times more likely than Indigenous females [23].

In 2008, the overall rate of imprisonment for Indigenous males was 4,201 per 100,000 population compared with 244 per 100,000 for non-Indigenous males (Figure 20) [23]. Rates for Indigenous males were highest in WA, NSW and SA.

Figure 20 Imprisonment of males, by Indigenous status and jurisdiction, Australia,



Source: Steering Committee for the Review of Government Service Provision, 2009 [23]

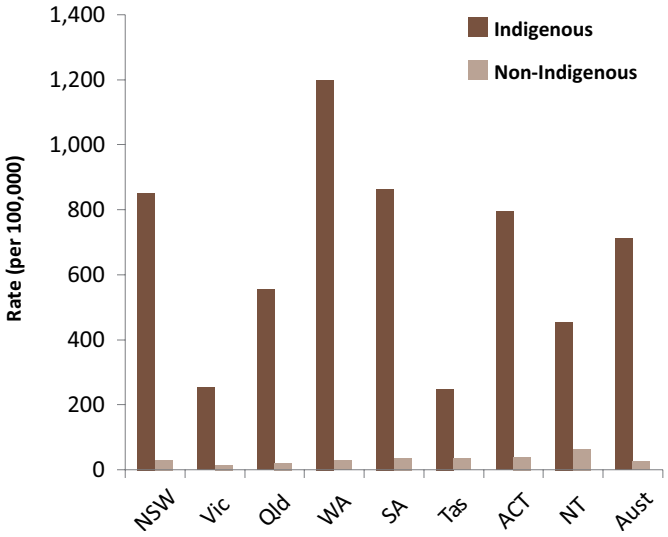
Important statistics about the imprisonment of Indigenous people include:

- Indigenous males were 17 times more likely than non-Indigenous males to be in prison in 2008;
- Indigenous males were 12-14 times more likely to be imprisoned during all adult years, with the exception of the teenage years (approximately 19 times) and beyond 55 years (approximately 10 times);
- The mean age of Indigenous male prisoners was 31.7 years, 4.6 years younger than non-Indigenous male prisoners (36.3 years); and
- Indigenous people were generally expected to serve shorter sentences than the non-Indigenous prisoner population [23].

The detention of Indigenous juveniles has decreased by 33% since 1997, but Indigenous young people are still vastly over-represented, with more than half of those in juvenile corrective institutions in 2006 identified as Indigenous (Figure 21) [23, 56]. The pattern of juvenile detention is similar to that of adult imprisonment, with levels of detention highest in WA, SA and NSW [23].

Compared with non-Indigenous juvenile offenders, Indigenous juveniles are more likely to be younger when they commit their first offence and offend more regularly than their non-Indigenous counterparts [57]. They are thus much more likely to have a history of detention and incarceration by the time they reach adulthood.

Figure 21 Detention of male juveniles, by Indigenous status and jurisdiction, Australia, 2008



Source: Steering Committee for the Review of Government Service Provision, 2009 [23]

Policy developments

Progress has been made in recent years in understanding the health disadvantages experienced by Indigenous men, and this has spurred the development of national and state level policy responses designed to better guide how health services can meet their needs. The Australian Government has recently released a national men's health policy [11]. This identifies the following six priority areas for action:

1. Optimal health outcomes for males
2. Health equity between population groups of males
3. Improved health for males at different life stages
4. A focus on preventive health for males
5. Building a strong evidence base on male health
6. Improved access to health care for males [58].

A stated commitment of the policy is the achievement of equal health outcomes. A number of groups were considered a priority for the policy because of their high risk of poor health outcomes. One of these groups was Indigenous males. The policy framework in the area of Indigenous male health is outlined in a supporting document which articulates 11 guiding principles for improving the health of Indigenous males [58].

These principles are:

1. Reconstructing male empowerment and self-determination
2. A holistic approach
3. Continuity of care
4. Shared, integrated, collaborative and responsible processes
5. Partnership approach
6. Strategy and policy development
7. Access and support
8. The health workforce
9. The evidence base
10. Allocation of funding
11. Governance

The principles, developed by the National Aboriginal and Torres Strait Islander Male Health Leadership Group, are designed to address the health needs of Indigenous males in an empowering, holistic manner that takes into account the social determinants of their health.

The principles emphasise accountability, collaboration, support and community control of health services as important considerations in building the knowledge and capacity to enable Indigenous males to better understand and control the determinants that affect their health. To this end, there is specific mention of the importance of conducting research in collaboration with Indigenous communities and increasing the number of Indigenous men within the health workforce. The benefit of these guiding principles is that the Indigenous male health strategy is likely to be more effective in creating both ownership and change.

'Closing the gap' commitments

More generally, the vast gap between the health of Indigenous and other Australians was highlighted in the *Social Justice Report 2005*, which called on Australian governments to commit to achieving Indigenous Islander health equality within 25 years [59]. In 2007, Australian governments, through the Council of Australian Governments (COAG) committed to 'closing the gaps' in disadvantage between Indigenous and other Australians [60].

Since then, COAG has agreed on a number of specific targets for reducing Indigenous disadvantage in the areas of education, early childhood development, health and employment. The targets are to:

- Close the life expectancy gap within a generation;
- Halve the gap in mortality rates for Indigenous children under five within a decade;
- Ensure access to early childhood education for all Indigenous four year olds in remote communities within five years;
- Halve the gap in reading, writing and numeracy achievements for children within a decade;
- Halve the gap for Indigenous students in year 12 attainment rates by 2020; and
- Halve the gap in employment outcomes between Indigenous and non-Indigenous Australians within a decade [61].

COAG has committed $4.6 billion over four years across early childhood development, health, housing, economic participation and remote service delivery, and has also achieved a number of

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supportive commitments by the corporate and community sectors [61]. Agreement has been reached also on the establishment of a new national Indigenous representative body.

Together, the Australian Government's specific attention to Indigenous males in the development of new strategies for men's health and the broad COAG commitments to 'closing the gaps' in health between Indigenous and other Australians raise the prospects of the achievement of substantial improvements in the health and wellbeing of Indigenous people. Achievement of these improvements will depend largely on the effective implementation of comprehensive strategies and policies that address the complexity of the factors underlying the disadvantages that Indigenous people experience.

This is the first time that such a high level of commitments has been made by the Australian, state and territory governments and others, raising the prospects of substantial improvements in the health of Indigenous males and females.

Concluding comments

It is clear from this review that Indigenous men and boys remain less healthy than their non-Indigenous counterparts. Being a 'snapshot' of the most recent indicators of health status, however, this review does not reflect the evidence that the health status of Indigenous males continues to improve slowly. There have been significant reductions in recorded mortality in recent years in a number of jurisdictions. Age-standardised death rates for Indigenous males living in WA, SA and the NT declined by around 9% over the period 1991-2006 [24]. The declines in death rates were less for Indigenous people than for non-Indigenous people, however, with Indigenous:non-Indigenous death rate ratios increasing for males.

The most recent estimate of life expectancy at birth for Indigenous males – 67.2 years in 2005-2007 – is more than previous estimates, but, as the ABS warns, the apparent improvements are likely to be due largely to revised statistical methods [26].

In terms of specific health conditions, substantial improvements have occurred in the overall impact of many infectious diseases (partly due to immunisation programs) [62-66].

There is, no doubt, other evidence of improvement in some measures of health status, and of deterioration in others. But, clearly, the gap between the health status of Indigenous males and that of non-Indigenous males is still very, very wide.

Acknowledgement

Much of the research underlying this review was undertaken to assist in the preparation of the Australian Medical Association's 2009 Indigenous Health Report Card, *The health of Indigenous males: building capacity, securing the future*.

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ENDNOTES

1 Food security exists 'when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life'. Food security has three components: (1) food access (having sufficient resources to obtain appropriate foods for a nutritious diet); (2) food availability (sufficient quantities of food available on a consistent basis); and (3) food use (appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation).



Australian Indigenous
Health*InfoNet*

The Australian Indigenous Health*InfoNet*'s mission is to contribute to improvements in Indigenous health by making relevant, high quality knowledge and information easily accessible to policy makers, health service providers, program managers, clinicians, researchers and the general community. We are helping to 'close the gap' by providing the evidence base to inform practice and policy in Aboriginal and Torres Strait Islander health.

The Health*InfoNet* addresses this mission by undertaking research into various aspects of Indigenous health and disseminates the results (and other relevant knowledge and information) mainly via its Internet site (www.healthinfonet.ecu.edu.au). The Health*InfoNet*'s research mainly involves analysis and synthesis of data and other information obtained from academic, professional, government and other sources, but it also undertakes some primary data collection and analysis.

The Health*InfoNet* is a world leader in knowledge transfer, the area of research which aims at transferring the results of pure and applied research into practice. In this research, the Health*InfoNet* addresses the knowledge needs of a wide range of potential users. These include policy makers, health service providers, program managers, clinicians and other health professionals (including Indigenous health workers), and researchers. The Health*InfoNet* also provides easy-to-read and summarised material for students and the general community.

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FEATURED ARTWORK

Rites of passage

by Dr Mick Adams

The orange in the artwork represents the male leader. The male in red represents the lore man who has the responsibility to educate, lead and prepare the young males for initiation and the rites of passage.