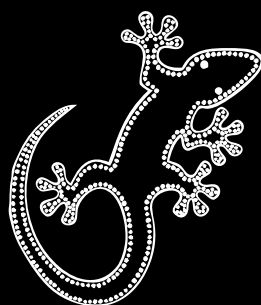


# Review of Indigenous male health, 2009



Australian Indigenous  
HealthInfoNet

# The health of Indigenous males: a review

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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. More recently Indigenous males have been deprived of their provider role through a social welfare policy that provides an income without a requirement to work. The loss of role diminishes status, self esteem and sense of purpose of Indigenous males, striking at the core of what it means to be a man. 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 [5]. These factors, known collectively as the ‘social determinants of health’, are manifest in measures such as housing, education, employment, access to services, social networks, connection with land, racism, and rates of imprisonment [6]. Indigenous males suffer substantial disadvantage for all of these measures during their childhood, as adolescents, and throughout their adult years.

Addressing Indigenous male health needs to take account of these factors within a broad ‘wounded and resilient’ context.

## 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 [7]. 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 [8]. 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.

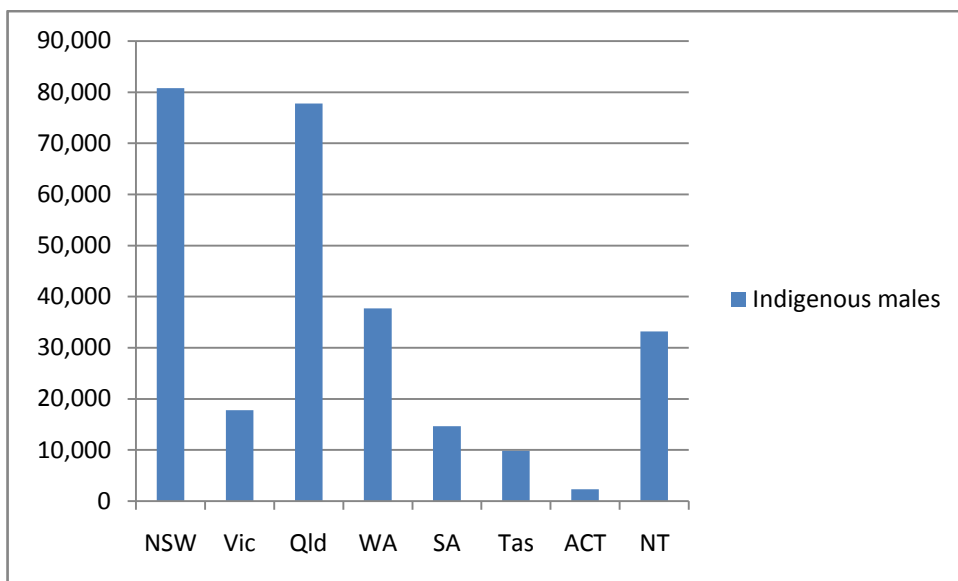
A gendered approach to health has proved useful in improving women's health and there is increasing acknowledgement of its potential benefits for men's health [9]. The approach has grown out of the social determinants of health model, which in broad terms holds that the greater the disadvantage, the more detrimental the effect on health [10]. 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 health of Indigenous males: the facts

### Population

There were around 274,300 Indigenous males living in Australia in June 2009 [11]. They accounted for 2.5% of the Australian male population. A breakdown by state and territory is provided in Figure 1.

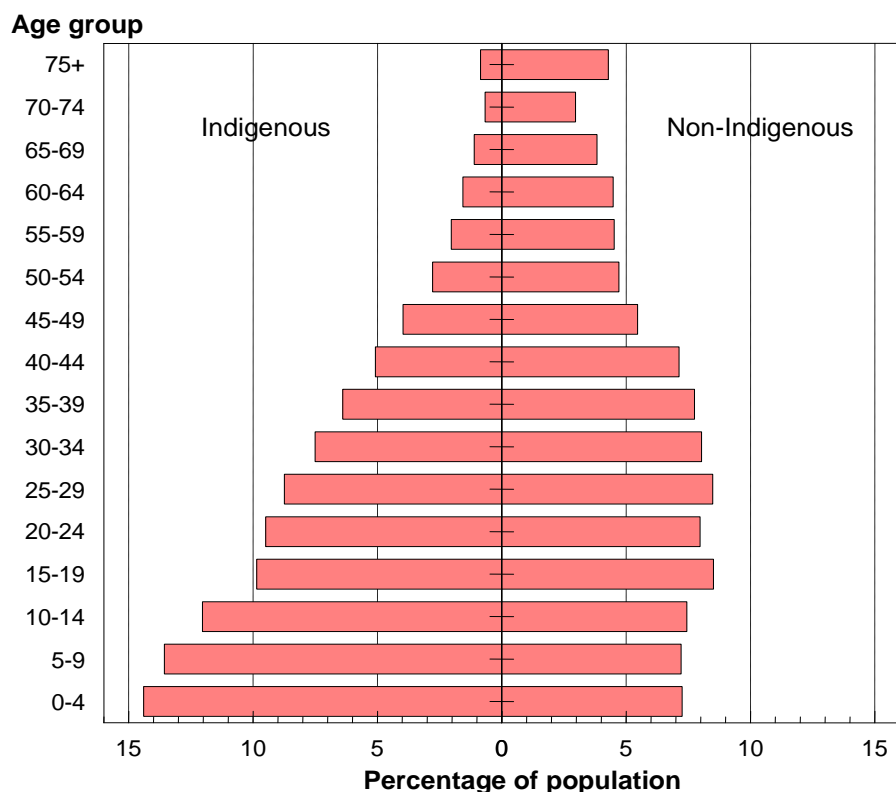
**Figure 1: Indigenous male populations, by jurisdiction, June 2009**



Source: ABS, 2009 [11]

Almost two-fifths (38.5%) of Indigenous males are aged less than 15 years, compared with 19.7% of the non-Indigenous male population [12]. (An age pyramid comparison of Indigenous and non-Indigenous males is provided in Figure 2.) Only 2.6% of the total Indigenous males are 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 2009**



Source: Derived from ABS, 2009 [11]

Almost one-third (31%) of Indigenous males live in major cities, 22% in inner regional areas, 23% in outer regional areas, 8% in remote areas and 16% in very remote areas [12].

## Mortality

### Life expectancy

The Australian Bureau of Statistics (ABS) estimates that Indigenous males born in 2005-2007 could be expected to live to 67.2 years, about 11.5 years less than the 78.7 years expected for all males (Figure 3) [13]. Life expectancy of Indigenous males was highest in New South Wales (69.9 years) and lowest in the Northern Territory (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 non-Indigenous males. Being based on different methodologies, the new estimates cannot be directly used as an indication of improvement.)

**Figure 3: Male life expectancy, by Indigenous status and jurisdiction, 2005-2007**



Source: ABS, 2009 [11]

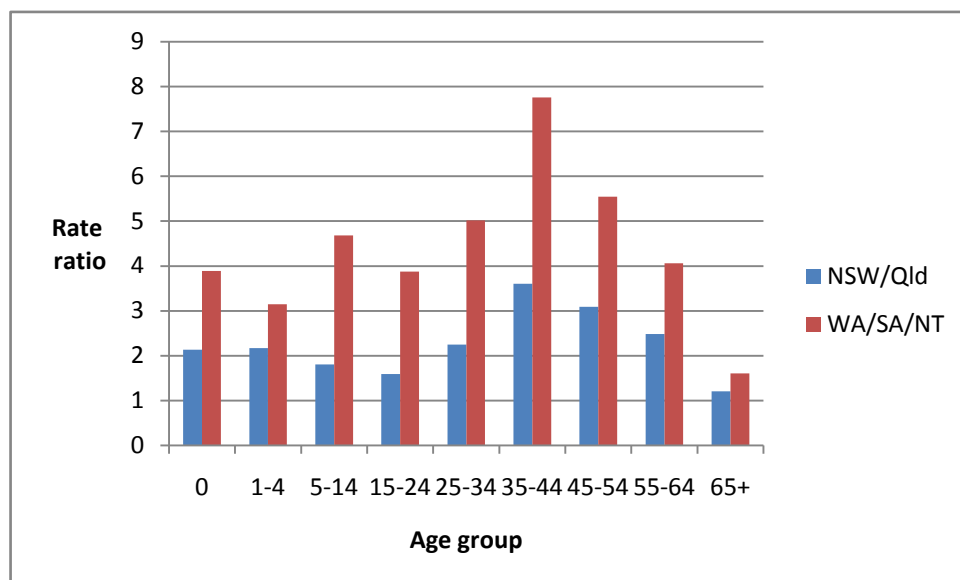
### Death rates<sup>1</sup>

Overall, the number of deaths of Indigenous males 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)).

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 4) [14]. Rates and ratios were higher for Indigenous males living in Western Australia, South Australia and the Northern Territory than for those living in New South Wales and Queensland.

<sup>1</sup> 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.

**Figure 4: Indigenous:non-Indigenous death rate ratios, by jurisdictions, 2005-2007**



Source: ABS, 2008 [14]

### Infant mortality

More than one-fifth of the infant males who died in Queensland, Western Australia, South Australia and the Northern Territory 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 [15].

### Causes of death

Cardiovascular disease was the leading cause of death for Indigenous males living in Queensland, Western Australia, South Australia and the Northern Territory in 2001-2005, with more than three times the number of deaths expected from the rate for non-Indigenous males (SMR: 3.2). 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) [16].

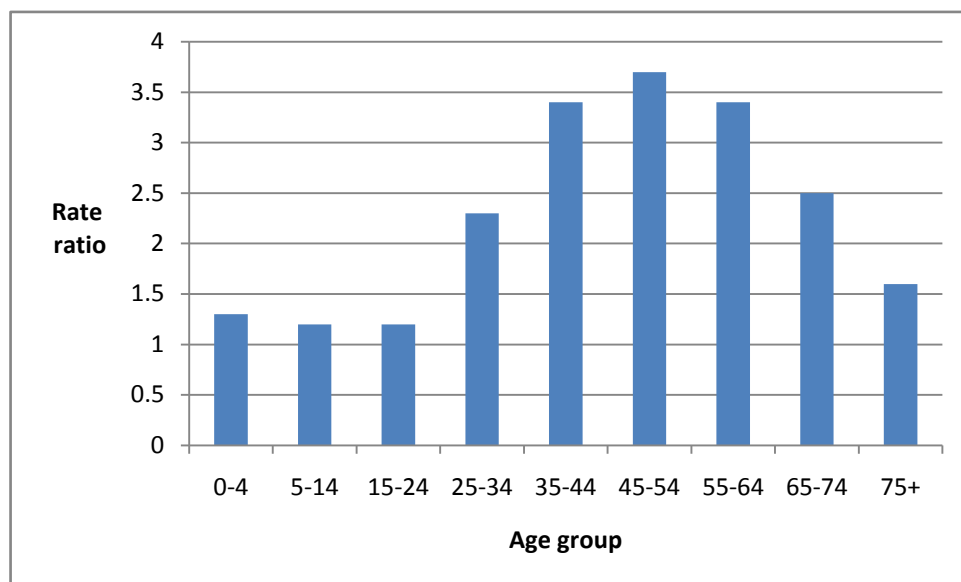
## Hospitalisation

### Hospitalisation rates

Almost 120,000 Indigenous males living in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory 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 17].

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 5) [17].

**Figure 5: Indigenous:non-Indigenous hospitalisation rate ratios, by age group, 2006-2007**



Source: AIHW, 2009 [17]

### 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 male are similar to those documented for 1999-2000 [18]. 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 people, 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 Australian Bureau of Statistics in 2004-2005, almost one-tenth of Indigenous males reported having a long-term heart or related condition, 1.2 times more common than among non-Indigenous males [19]. 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

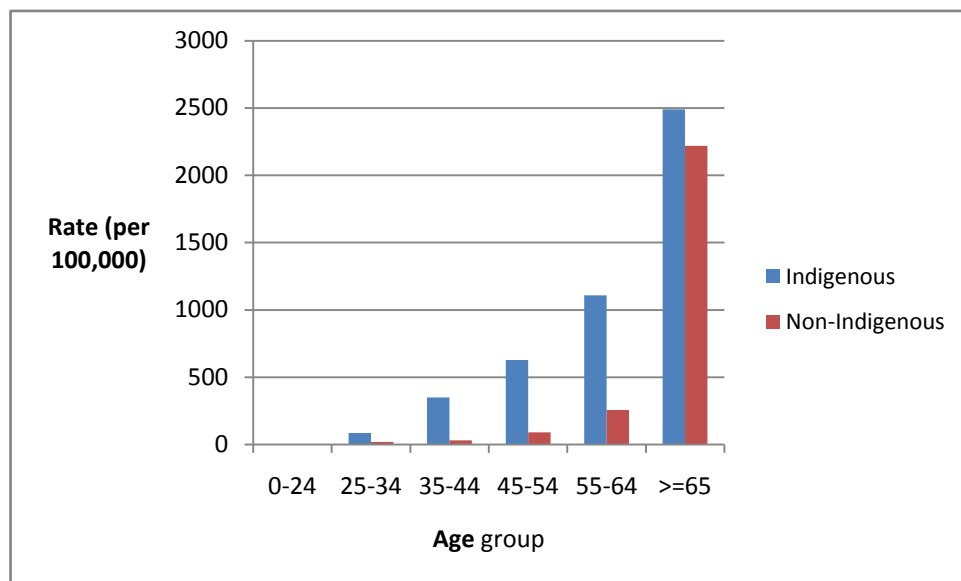
Source: Penm, 2008 [15]

- 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 Queensland, Western Australia, South Australia, and the Northern Territory in the period 2001-2005, being responsible for 27% of deaths, 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 Queensland, Western Australia, South Australia and the Northern Territory in 2002-2005 were 7 to 12 times higher than those for non-Indigenous males in the 35-44 and 45-54 age groups (Figure 6). The death rates for Indigenous males aged 35-44 years was greater than the rate non-Indigenous males 20 years older.

**Figure 6: Male death rates from cardiovascular disease, by Indigenous status and age group, Queensland, Western Australia, South Australia and the Northern Territory, 2002-2005**



Source: Penm, 2008 [15]

The much higher prevalence of CVD for Indigenous males is partly reflected in hospitalisation rates, details of which are available for New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory. 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.

## 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%) [16]. 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 [20, 21].)

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 [16]. The most common specific causes of death from cancer among Indigenous males are lung cancers (rate ratio: 1.6), cancer of digestive organs (1.4), lymphoid and related cancers (0.9) and cancer of the lip, oral cavity and pharynx (4.2).

Insight into this difference is provided by a review of cancer and cancer services for Indigenous people in the NT [22, 23]. 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’ [23]. 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[23]. 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 increased from age 25 years onwards but were considerably lower for Indigenous males than for non-Indigenous males in each age group. 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 [16].

## Injury

The death rate from injury of 148 per 100,000 for Indigenous males living in Queensland, Western Australia, South Australia and the Northern Territory in 2002-2006 was 2.7 times the rate for non-Indigenous males [17]. Intentional self-harm and transport accidents were the leading causes of injury deaths for Indigenous males at rates 2.4 and 2.7 times higher than those for non-Indigenous males.

There were 10,658 hospital admissions of Indigenous males for injury in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory in 2005-06, representing 10% of all hospitalisations for Indigenous males [16]. 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, New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory, 2005–2006**

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 [16]

Assault was the most common cause of hospitalisation for injury among Indigenous males, with 6.2 times more admissions than expected [16]. Almost one-fifth (19%) of these episodes of hospitalisation were for family violence related assaults [24], for which cause Indigenous males were 21 times more likely than their non-Indigenous counterparts to be hospitalised [25].

### 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, more than twice the level among non-Indigenous males [19]. 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.

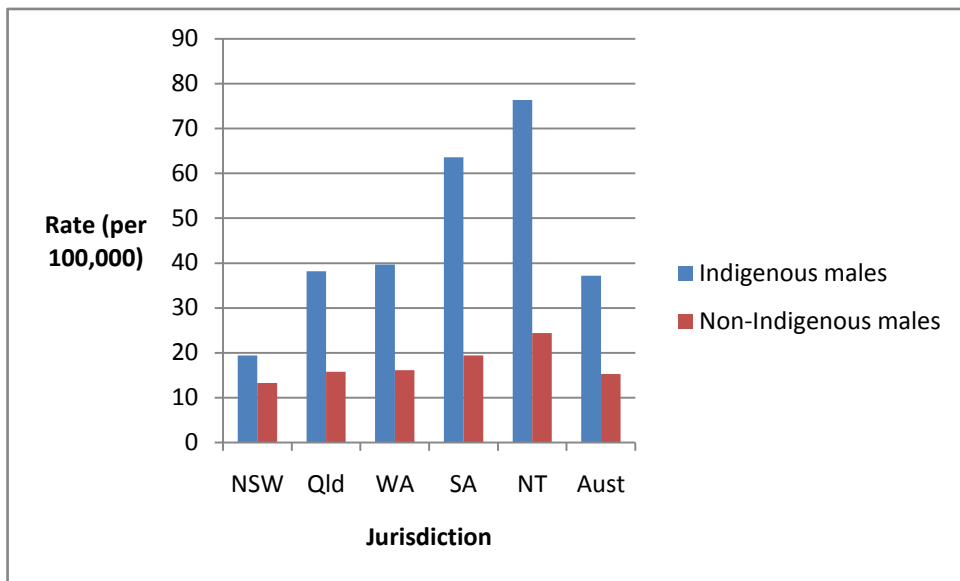
The higher levels of psychological distress among Indigenous people are generally related to higher levels within the previous year of specific stressors, such as death of a family member or friend, serious illness or disability, not able to get a job, alcohol or drug related problem, overcrowding at home, family member sent to jail/in jail, and trouble with police [26].

Reflecting the higher levels of distress, hospitalisation rates for mental and behavioural disorders were 2.1 times higher for Indigenous males living in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory in 2004-2006 than for non-Indigenous males [27]. 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 Queensland, Western Australia, South Australia and the Northern Territory in 2001-2005 was 5.8 times the number expected from rates for non-Indigenous males (that is, SMR was 5.8) [16].

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 Northern Territory and South Australia (Figure 7) [25].

**Figure 7: Male standardised death rates for intentional self-harm, by Indigenous status and jurisdiction, 2003-2007**



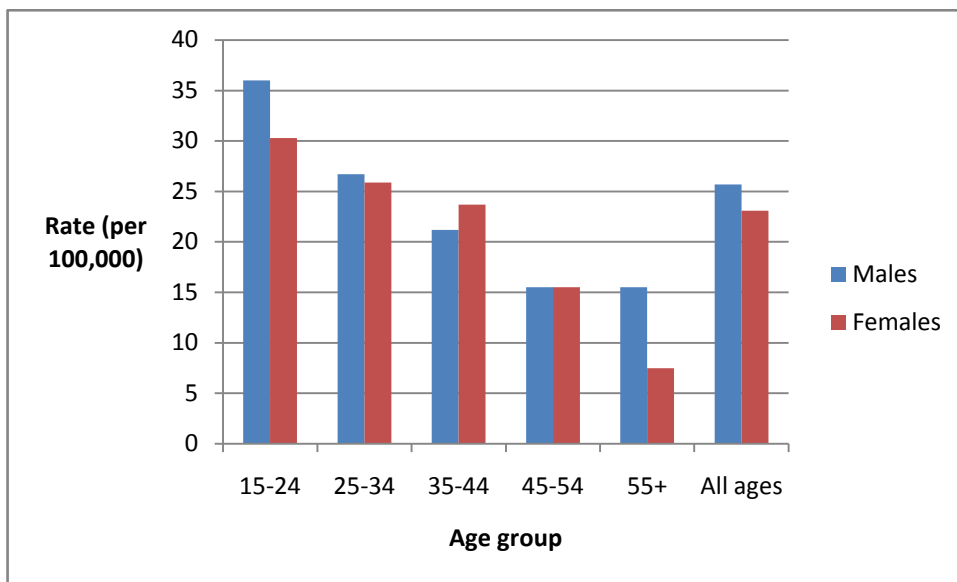
Source: Steering Committee for the Review of Government Service Provision, 2009 [25]

### 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 8) [26]. 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 been removed from their natural families; and
- who had experienced a high number of stressors.

**Figure 8 Percentages of Indigenous victims of physical or threatened violence in the previous 12 months, by sex and age group, Australia, 2002**



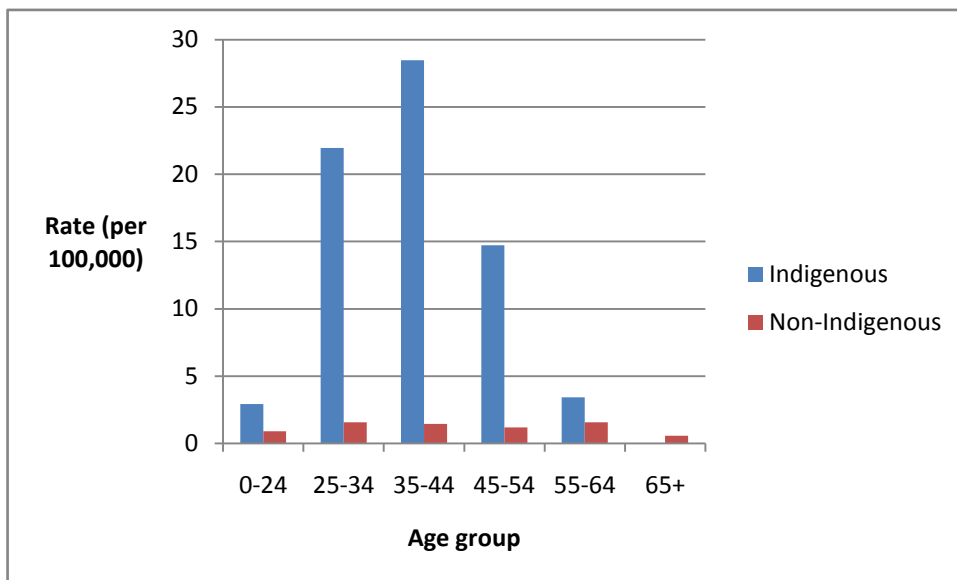
Source: ABS, 2004 [26]

The number of Indigenous males living in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory who were hospitalised in 2005-06 for assault was more than six times the number expected from rates for non-Indigenous males [16].

Hospitalisation rates for assaults from family violence were much more common for Indigenous females and males than for their non-Indigenous counterparts: 35 times more common for females and 22 times more common for males [24]. The Indigenous: non-Indigenous ratios for family violence assaults by a spouse/domestic partner were 38 for females and 27 for males.

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 from males aged 25 to 54 years (Figure 9) [16].

**Figure 9 Male death rates from assault, by Indigenous status and age group, Australia, 2001-2005**



Source: ABS, AIHW, 2008 [16]

### Respiratory disease

More than one-quarter of Indigenous people reported in the 2004-2005 NATSIHS that they had a long-term respiratory condition [19]. 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 New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory were hospitalised in 2005-06 for respiratory conditions at 2.1 times the rate of non-Indigenous males [16]. 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 of Indigenous males living in Queensland, Western Australia, South Australia and the Northern Territory in 2001-2005 was more than four times the number expected from rates for non-Indigenous males [16]. 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 for non-Indigenous males (2.4), and the rate for influenza and pneumonia 18.4 times higher (30.5 compared with 1.7).

### Diabetes

The most recent source of information about the extent of diabetes among Indigenous people is the 2004-2005 NATSIHS [19]. Having diabetes/high sugar levels as a long-term health condition was reported by 6% of Indigenous

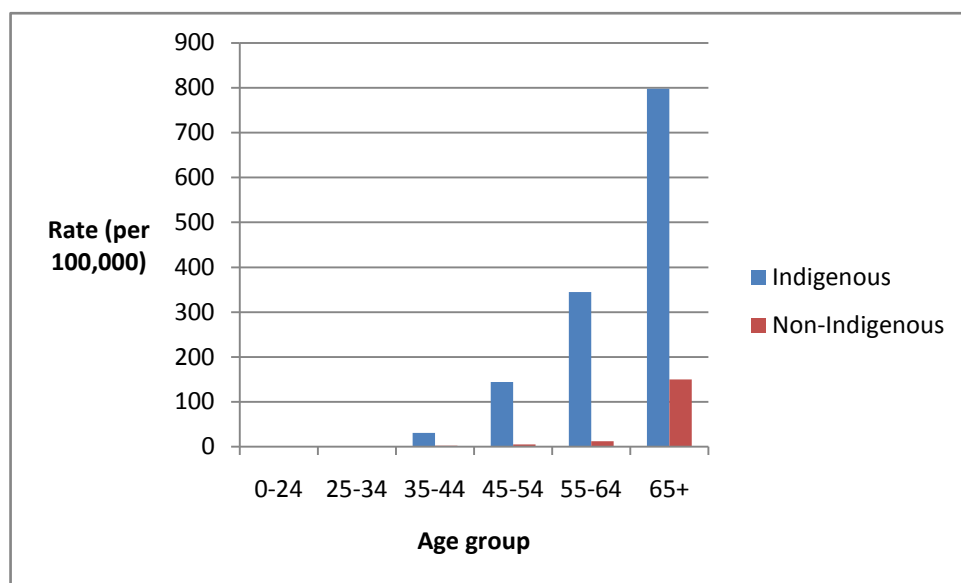
males, with the proportion being higher for those living in very remote (10%) and remote areas (8%) than in non-remote areas (5%). After adjusting for the differences in the age structures of the two populations, the overall diabetes/high sugar level among Indigenous males was 3.4 times that of non-Indigenous males.

Hospitalisation rates of Indigenous males for diabetes as a principal diagnosis were much higher than those for non-Indigenous males, particularly in South Australia and Western Australia [27]. 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 New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory in July 2004-June 2006 had much higher hospitalisation rates for diabetes than other males in all age groups from 25–34 years onwards [27]. 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 Queensland, Western Australia, South Australia and the Northern Territory in 2001-2005 was almost 11 times the number expected from rates for non-Indigenous males [16]. 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 10).

**Figure 10 Male death rates from diabetes, by Indigenous status and age group, Queensland, Western Australia, South Australia and the Northern Territory, 2001-2005**



Source: ABS, AIHW 2008 [16]

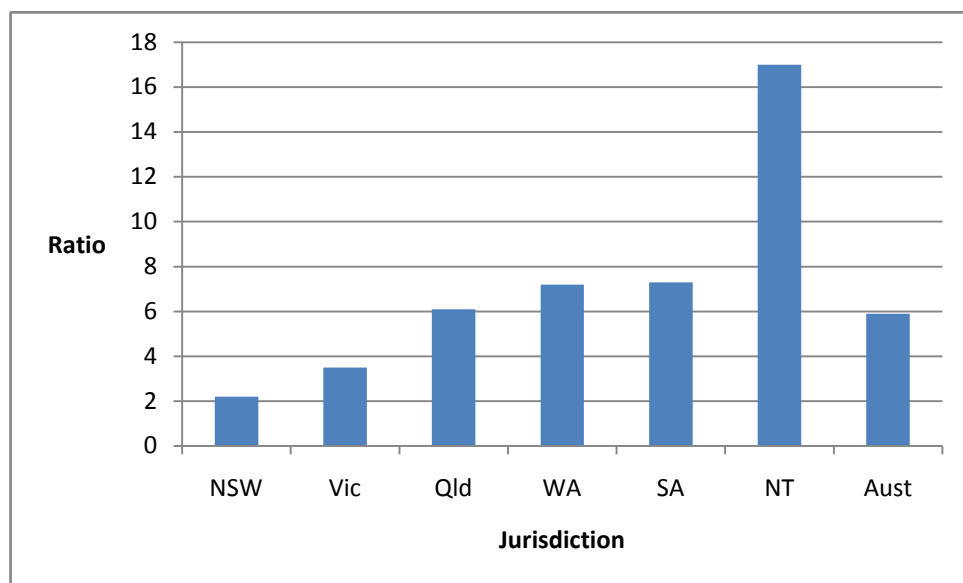
### Kidney health

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, as nearly 15,100 Indigenous people were registered at 31 December 2005 with ANZDATA, the Australian and New Zealand register of people with end-stage renal disease

(ESRD) [15]. (Chronic kidney disease includes ESRD, diabetic nephropathy, hypertensive renal disease, glomerular disease and chronic renal failure.)

A total of 276 Indigenous males were newly identified with ESRD in the three-year period 2004-2006 [27]. 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 Northern Territory (Figure 11).

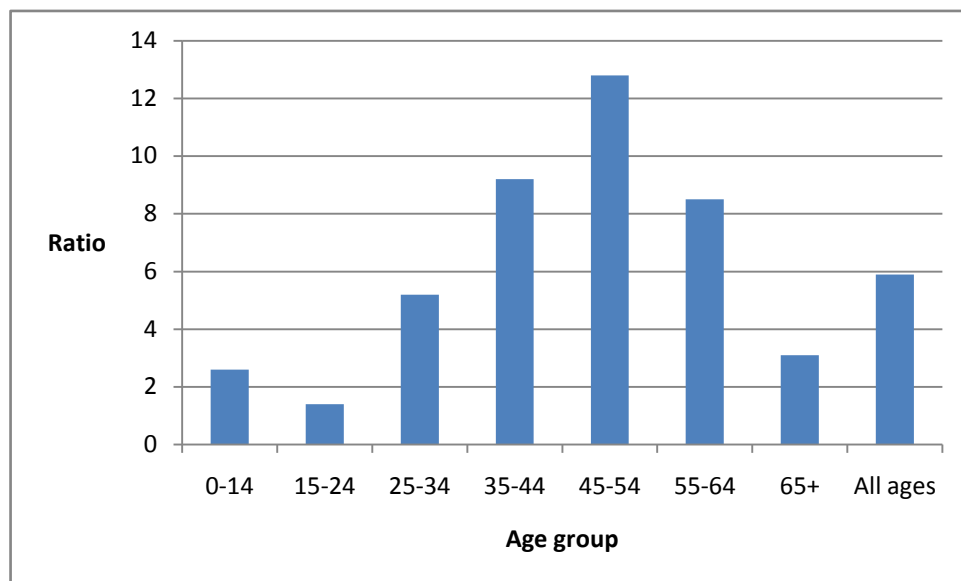
**Figure 11 Indigenous:non-Indigenous ratios of notifications of end-stage renal disease, by state/territory, Australia, 2004-2006**



Source: AIHW, 2008 [27]

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 12) [27].

**Figure 12 Indigenous:non-Indigenous ratios of notifications of end-stage renal disease, by age group, Australia, 2004-2006**



Source: AIHW, 2008 [27]

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 [27].

There were almost 86,000 episodes of hospitalisation for kidney disease for Indigenous males living in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory in the two-year period July 2004-June 2006, with a rate almost eight times that of non-Indigenous males [27]. 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 Queensland, Western Australia, South Australia and the Northern Territory in 2002-2006 was more than four times that of their non-Indigenous counterparts [27]. Reflecting the age pattern of ESRD, the greatest difference in death rates between Indigenous and non-Indigenous males living in Queensland, Western Australia, South Australia and the Northern Territory in 2001-2005 was for the 45-54 year age group, for which the ratio was 31 [16].

## 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 Indigenous males who smoked daily at that time (Table 3) [19]. The proportions 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%) [25].

**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 [19]

- 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 Victoria to 8.2 per 1,000 for the Northern Territory (Table 4) [25]. (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.

**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
New South Wales	4.3	1.4	3.1
Victoria	1.4	1.2	1.2
Queensland	2.1	0.7	3.0
Western Australia	2.8	1.3	2.2
South Australia	4.0	1.1	3.6
Northern Territory	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 [25]

- 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 [28]. 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 [19]. In comparison, 11% of non-Indigenous 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 [25]. 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 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 2004-2005 NATSIHS under-estimate the differences between Indigenous and non-Indigenous males [29]. 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 remote areas (17%) than for their counterparts living in remote areas (15%).

### *Hospitalisation*

Reflecting their higher level of risky and high risk consumption, hospitalisation for alcohol-related conditions of Indigenous males living in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory in 2006-07 was five times higher than that of non-Indigenous males [25]. Details for specific disorders are provided in Table 5.

**Table 5 Male hospitalisation for selected alcohol-related disorders, by Indigenous status and age group, Queensland, Western Australia, South Australia and the Northern Territory, 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 [25]

- 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 Queensland, Western Australia, South Australia and the Northern Territory 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) [27].

It has been estimated that 649 Indigenous males died from conditions attributable to alcohol in Australia in the five-year period 2000-2004 with a mean age at death of 35 years [30]. 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 Western Australia.

**Table 6 Male deaths related to alcohol use, by Indigenous status and diagnosis, Queensland, Western Australia, South Australia and the Northern Territory, 2002-2006**

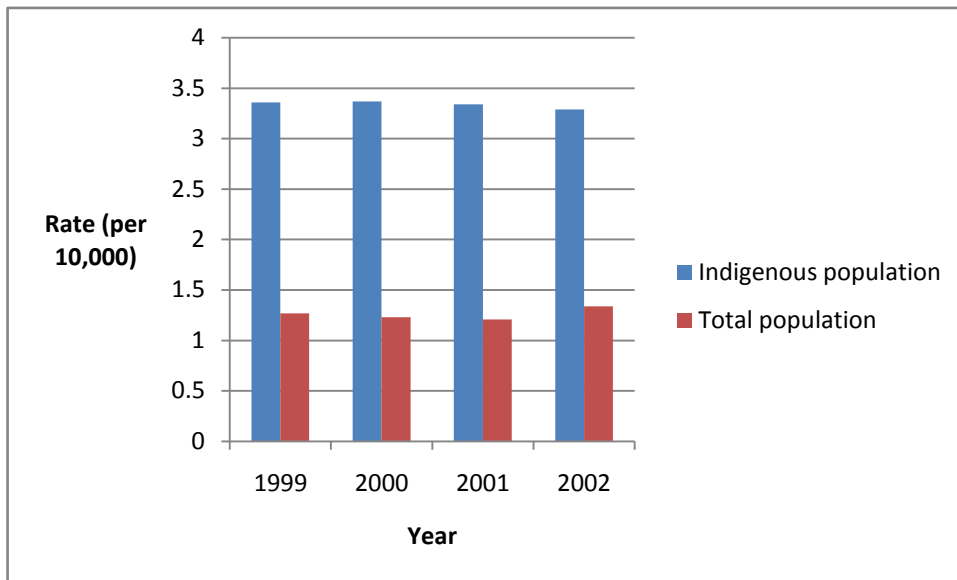
Diagnosis	Indigenous	Non-Indigenous	Ratio
Alcoholic liver disease	30.8	5.0	6.2
Mental and behavioural disorders due to alcohol use	16.8	1.7	9.8
Poisoning by alcohol	0.8	0.1	6.0
All causes	48.4	6.8	7.1

Source: AIHW, 2008 [27]

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 13 compares rates of alcohol-attributable deaths for Indigenous people with those for the total population during the period 1999-2002 [31].

**Figure 13 Alcohol-attributable deaths, Indigenous and total populations by year, Australia, 1999-2003**



Source: Chikritzhs, 2009 [30]

## 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) [32]. 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 [25].

**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 [32]

### *Mortality*

Deaths from illicit drug use were twice as common among Indigenous males living in New South Wales in 2003-2007 than for their non-Indigenous counterparts, and three times more common for those living in South Australia (comparative information was not available for other states and the territories) [25].

**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	7.0	5.4	5.8

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

Notes: 1 Causes of death attributable to drug-induced mortality are based on codes of International Statistical Classification of Diseases and Related Health Problems, 10<sup>th</sup> 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 [33]. 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 not greatly affected – and aerosol spray paints and glues the most popular in urban areas [33].

Petrol sniffers are more likely to be male than female: between two-thirds and three-quarters of Indigenous sniffers in central Australian were male [33]. Indigenous sniffers are generally aged between 8 and 30 years, with the majority aged 12 to 19 years. Children as young as 5 years have been witnessed sniffing petrol in the Northern Territory [34].

## Nutrition

The 2004-2005 NATSIHS collected some limited information about the dietary habits and food security<sup>i</sup> of Indigenous people [19]. In terms of dietary habits, 9% of Indigenous males consumed five or more serves of vegetables and 40% two or more serves of fruit daily, compared with 12% and 47% of non-Indigenous males.. [27]. 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%) [36].

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 [37].

Cost has been confirmed as a major influence on the ability of Indigenous people living in remote communities to attain a healthy diet [38]. 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 Queensland, compared with major cities [39]. Similarly, a healthy basket of foods in the Northern Territory in 2007 cost 17% more in remote areas than in a Darwin supermarket [40].

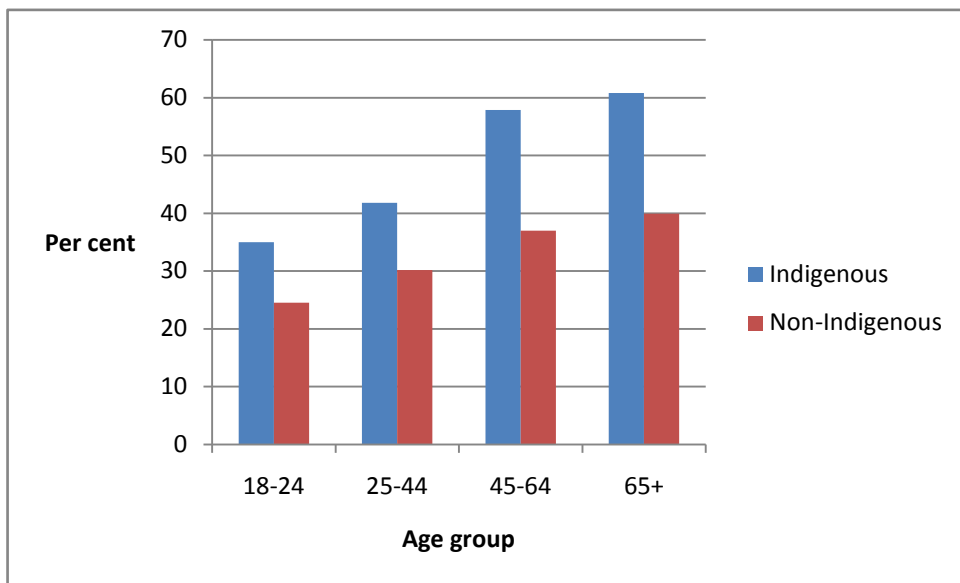
As well as impacting at an individual level, food insecurity can also occur at a community level [37]. Community stores are frequently the only source of food in many remote and rural areas, apart from traditional sources. Remote community stores that lack storage capacity and/or are inaccessible for 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 Northern Territory suggests that, in general, people had a good understanding of healthy eating and the components of a healthy diet [41]. 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 [15]. The proportions of Indigenous males not having done any physical activity in the previous two weeks with were higher than those for non-Indigenous males for all age groups (Figure 14).

**Figure 14: Proportions of inactive males, by Indigenous status and age group, non-remote areas, Australia, 2004-2005**



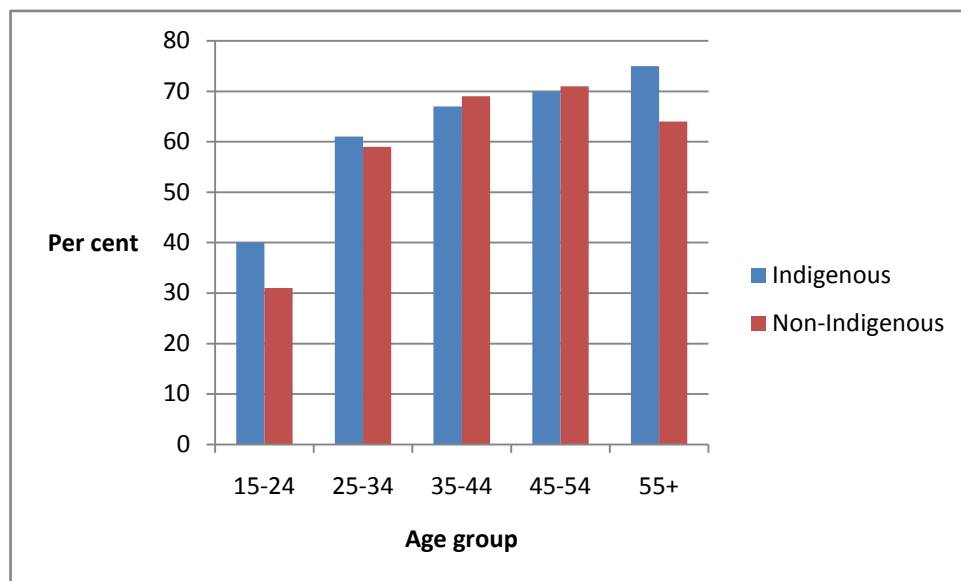
Source: Derived from Penm, 2008 [15]

### 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 [19]. The proportions of both Indigenous and non-Indigenous males who were overweight or obese generally increased with age (Figure 15) [19]. 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%) [19].

**Figure 15 Percentages of overweight and obese males, by Indigenous status and age group, Australia, 2004-2005**



Source: Derived from ABS, 2006 [19]

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

## Vulnerable groups

### Male children and adolescents

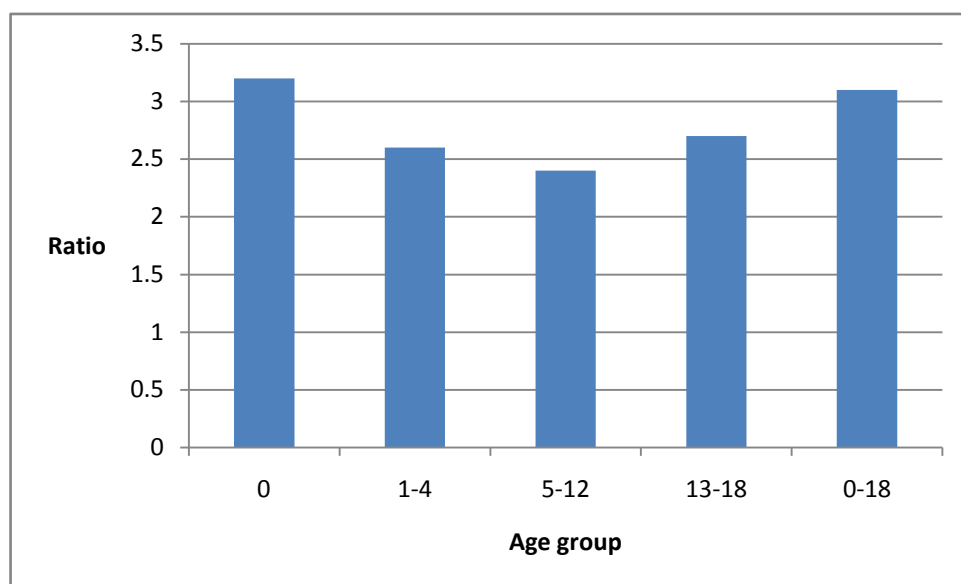
There is very little information specifically on the health of Indigenous boys, but, compared with non-Indigenous counterparts, Indigenous children are:

- 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 [42].

The infant mortality rate for Indigenous male babies born in Queensland, Western Australia, South Australia and the Northern Territory in 2002-2006 was 14.4 deaths per 1,000 live births, 3.2 times the rate of their non-Indigenous counterparts [15].

Beyond infancy, death rates for Indigenous male children and teenagers living in Queensland, Western Australia, South Australia and the Northern Territory in 2002-2006 were between 2 and 3 times higher than those of their non-Indigenous counterparts (Figure 16) [42].

**Figure 16 Indigenous:non-Indigenous ratios of death rates for male children and teenagers, by age group, Queensland, Western Australia, South Australia and the Northern Territory, 2002-2006**



Source: Freemantle J, McAullay D, 2009 [42]

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) [42]. 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 Queensland, Western Australia, South Australia and the Northern Territory in 2001-2005 than for their non-Indigenous counterparts [16].

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 applies particularly to their social and emotional wellbeing [43].

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%) [44]. 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 [44]. 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;
- Suicidal thoughts and behaviour – in the previous 12 months, 12% had thought about ending their life, and 4% had attempted suicide [43].

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

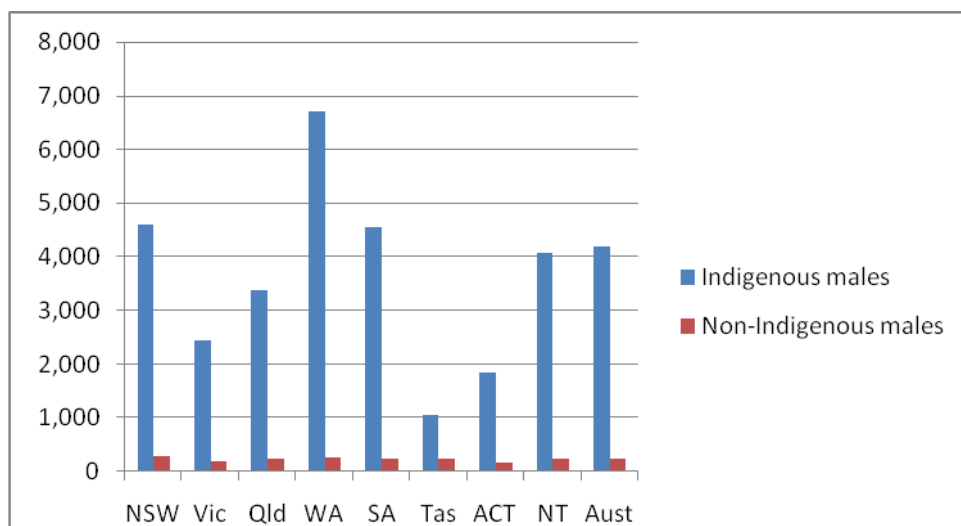
- More than one-third (31%) smoked regularly (56% of 17 year-olds smoked regularly);
- Over one-quarter (27%) drank alcohol (61% of 17 year-olds drank alcohol);
- 30% had used marihuana (45% of 17 year-olds used marihuana at least weekly); and
- One in five (20%) had not done strenuous exercise in the previous week [43].

### Male prisoners and juveniles detainees

Indigenous people are heavily overrepresented in the criminal justice system, accounting for 24% of the prison population in 2008 [45]. Indigenous males aged 10-17 years were 28 times more likely to be in the juvenile detention than non-Indigenous males and almost 10 times more likely than Indigenous females [25]

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 17) [25]. Rates for Indigenous males were highest in Western Australia, New South Wales and South Australia.

**Figure 17 Imprisonment of males, by Indigenous status and jurisdiction, Australia**



Source: Steering Committee for the Review of Government Service Provision, 2009 [25]

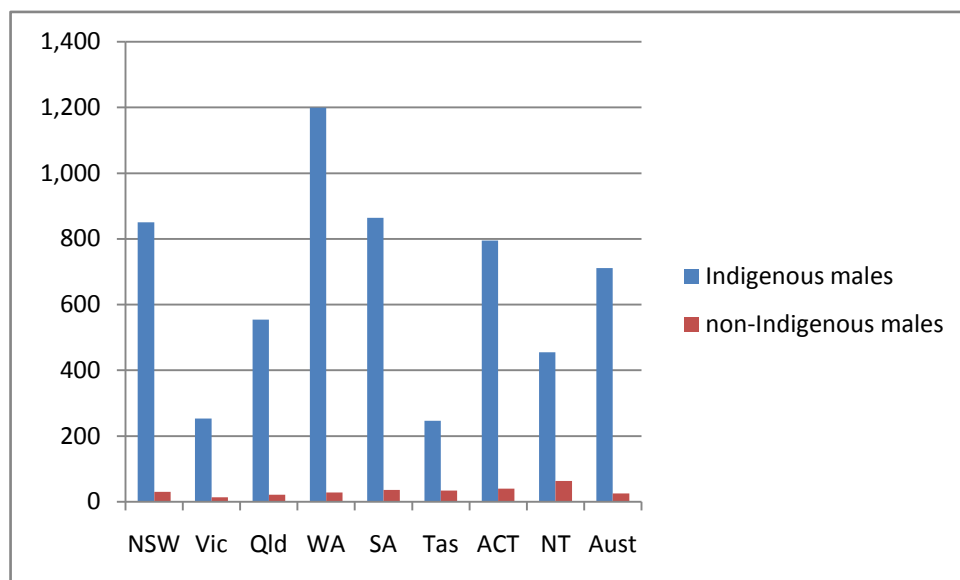
Important statistics about the imprisonment of Indigenous people include:

- 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 [25].

The detention of Indigenous juveniles has decreased by 33% since 1997, but Indigenous young people are still vastly overrepresented, with more than half of those in juvenile corrective institutes in 2006 identified as Indigenous (Figure 18) [46]. The pattern of juvenile detention is similar to that of adult imprisonment, with levels of detention highest in Western Australia, South Australia and New South Wales [25].

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 [47]. They are thus much more likely to have a history of detention and incarceration by the time they reach adulthood.

**Figure 18 Detention of male juveniles, by Indigenous status and jurisdiction, Australia, 2008**



Source: Steering Committee for the Review of Government Service Provision, 2009 [25]

## Social context of Indigenous male health

The health status information provided in the previous sections clearly attests to the crisis in Indigenous male health, but the causes of this situation have to be found not just in the ‘short-distance’ factors (such as genetic vulnerability and the delivery of health services). The health of Indigenous males needs to be considered within a broad social and historical context, that acknowledges the ‘wounding’ that has occurred [1] [2-4].

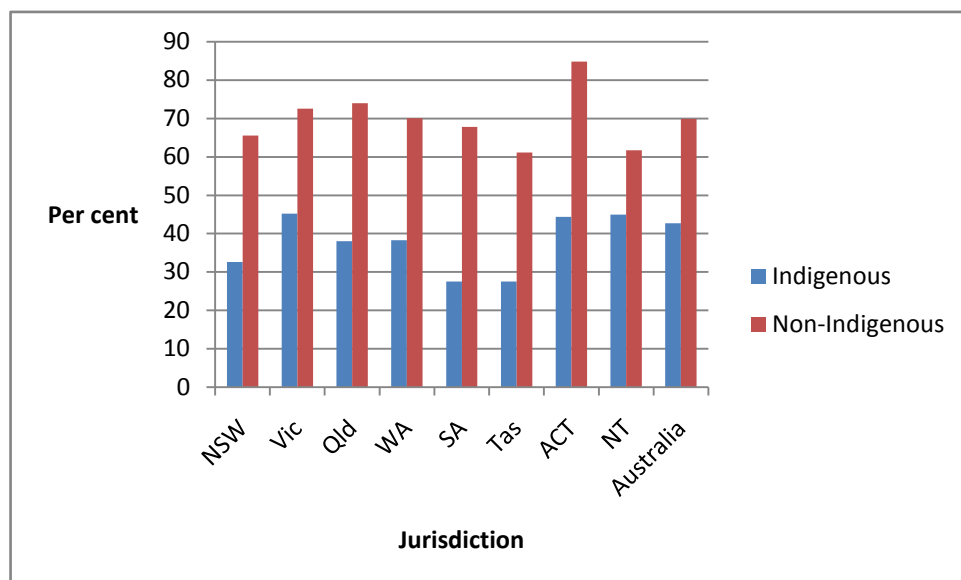
Durie [48] talks about the ‘middle’ and ‘long distance’ factors as being more important determinants of health outcomes. He identifies low educational achievement, unemployment, inadequate incomes, as key middle distance factors known to correlate with a range of lifestyles that predispose to disease and injury.

The readily available information on education, employment and income, summarised in the following sections, reflect historical factors and contemporary issues related to the extent to which Indigenous males have control over their own lives and of their limited opportunities for full social engagement and participation [49].

## Education

Indigenous males did not attend school at almost three times the rate of non-Indigenous males [50], and had much worse school completion rates in 2008 [25]. More 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 South Australia and Tasmania being less than 30% (Figure 19).

**Figure 19 Male school retention until year 12, by Indigenous status and jurisdiction, Australia, 2008**



Source: Steering Committee for the Review of Government Service Provision, 2009 [25]

According to the 2006 Australian Census of Population and Housing, one-quarter (25%) of Indigenous males aged 25-64 years had a post-school qualification compared with 56% of non-Indigenous males [12]. 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 to 36% of non-Indigenous males.

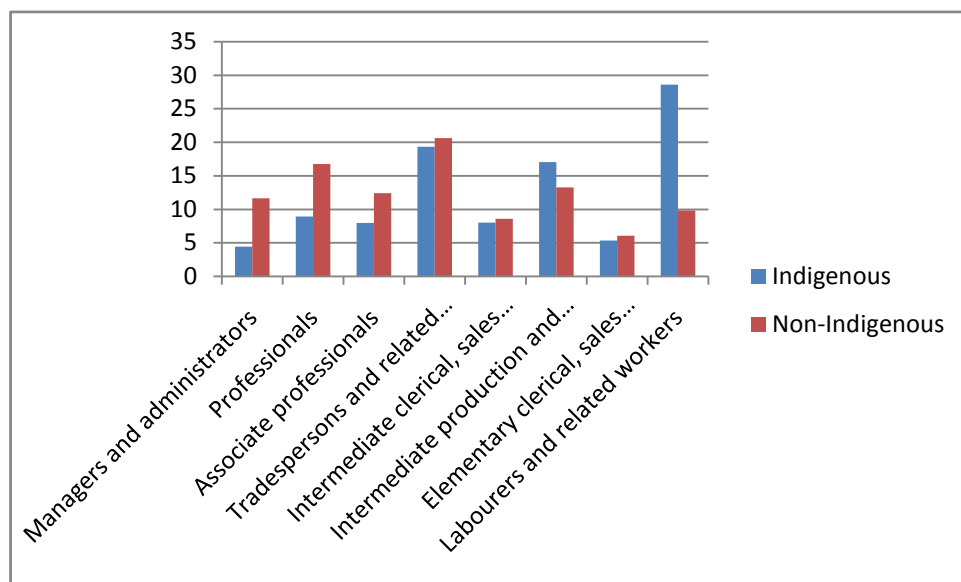
## Employment

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 to 6% of non-Indigenous males [25].

Overall, the higher the level of qualification achieved, the smaller the difference in employment rates between Indigenous and non-Indigenous males [25]. 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 20) [12]. The proportions of Indigenous males employed as ‘managers and administrators’ and ‘professionals’ was much lower than the proportions of non-Indigenous males.

**Figure 20 Percentages of male workers, by Indigenous status and occupational category, Australia, 2006**



Source: ABS, 2008 [12]

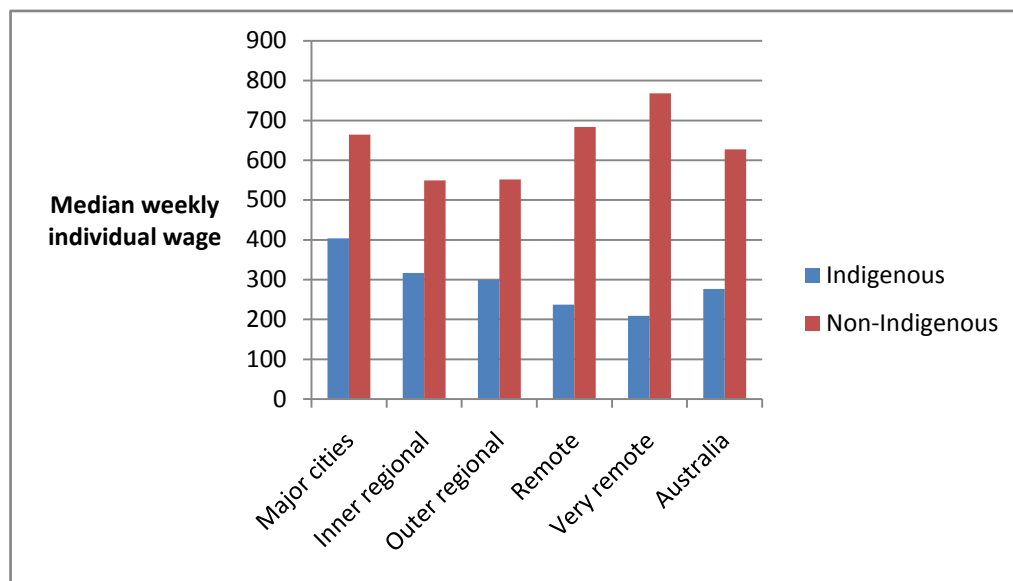
## Income

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 [12]. 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 equivalised mean gross income was \$422 per week for Indigenous households and \$679 for non-Indigenous households. Together these figures illustrate that, although the income in Indigenous households has increased (by approximately 9%), 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 21 [12]. 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 21 Median gross weekly individual income for males aged 15 years and over, by Indigenous status and remoteness, 2006**



Source: ABS, 2008 [12]

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.) [12].

## Improving the health of Indigenous males

### Policy

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 the needs of this particular group. The Australian Government is currently developing a national men's health policy. It is proposed that the policy be based on four core principle:

1. Gender equity;
2. Prevention;
3. Evidence;
4. Needs across the life course.

As part of the development process, the Australian Government has published a number of scoping papers to promote discussion of men's health issues and encourage the community to contribute to the policy development process [51]. These scoping papers indicate that the policy will give particular attention to groups of men who experience greater

health problems and poorer health outcomes for social, cultural or biological reasons. Indigenous men are specifically identified as one such disadvantaged group, and there is a stated commitment that the policy will seek to address their needs.

Ideally, policy frameworks in the area of Indigenous male health will address the health needs of this group in a holistic manner that takes into account both the historical and contemporary social determinants of their health. There is a need to acknowledge the diversity of Indigenous males across Australia, and that this diversity is reflected in their roles both within their own, and the broader Australian community. The health needs of Indigenous males are also diverse and policy has to take into consideration, cultural, social and emotional wellbeing as important components in the health equation.

Flexible policy must embrace inter-sectoral responsibilities as well as national, state and regional partnerships. This should involve greater emphasis on the development of gendered, culturally sensitive services and programs that capture local needs and circumstances in urban, rural and remote settings. To this end the involvement of Indigenous males has to be increased, community understanding improved and outcomes evaluated.

Principles of engagement, self determination and empowerment are central to this approach. It promotes community-controlled health services and capacity building strategies to enable Indigenous males to better understand and control the determinants that affect their health. The benefit is that Indigenous male health strategy is likely to be more effective if based on community control, prevention and early intervention.

## **Health services**

Both Indigenous and non Indigenous men use health services to a lesser extent than their female counterparts, and when they do seek help it is more often at a crisis point than at an earlier stage, when the problem is more preventable [52]. A universal, socialised male gender role seems to play a large part in this pattern of use, but Indigenous male cultural issues, poor access to health services and the failure of health systems to deal with the specific needs of Indigenous men are also important factors [9].

Emphasis needs to be given to appropriate research and evidence-based knowledge to underpin health service frameworks and practices. Indigenous research and knowledge ownership is critical for the communities to share the evidence of good practice and models of care that have proven useful in addressing the specific health issues of Indigenous males. Several models of service delivery have shown some success and these typically involve Indigenous males in decision making, support and service provision roles. It is important therefore that health services seek to actively engage Indigenous males, to not only take responsibility for their own health, but to also mentor and support others males, as way of harnessing what McCoy (2008) saw as the inherent resilience of shared responsibility.

## Research

The Australian Indigenous Health *InfoNet*'s bibliographic database is the most comprehensive database of Indigenous health research. A search of publication titles using the terms Aboriginal men, Indigenous men, Aboriginal male(s), Indigenous male(s), Aboriginal boy(s), Indigenous boy(s) identified 40 documents published between 2000 and 2009. Most of these were program descriptions, discussion papers or commentaries, with a very small number of evaluations. This profile of research on Indigenous male health very much parallels findings on the profile of Indigenous health research more generally.

A review of Indigenous health research found that original research publications rose from 19 in the period 1987-88 to 80 between 1997-98 and 101 between 2001-03[53]. The report did not separately identify research that focused on Indigenous males, but it would seem reasonable to assume that this increased in line with the overall trend. What is disappointing, however, is very little of this research involved the evaluation of interventions, which means there is paucity of evidence on how to change Indigenous, including indigenous male, health outcomes.

## References

- 1 McCoy B (2008) *Holding men: Kanyirninpa and the health of Aboriginal men*. Canberra: Aboriginal Studies Press
- 2 Adams M (2006) Raising the profile of Aboriginal and Torres Strait Islander men's health: an Indigenous man's perspective. *Australian Aboriginal Studies*;2:68-74
- 3 Hunter E (1993) *Aboriginal health and history: power and prejudice in remote Australia*. Cambridge: Cambridge University Press
- 4 Hunter E (1998) Considering trauma in an Indigenous context. *Aboriginal and Islander Health Worker Journal*;22(5):9-18
- 5 Barnett E, Casper M (2001) A definition of 'social environment'. *American Journal of Public Health*;91(3):465
- 6 Siggers S, Gray D (2007) Defining what we mean. In: Carson B, Dunbar T, Chenhall RD, Bailie R, eds. *Social determinants of Indigenous health*. Sydney: Allen and Unwin:1-20
- 7 National Aboriginal Health Strategy Working Party (1989) *A national Aboriginal Health Strategy*. Canberra: Department of Aboriginal Affairs
- 8 Queensland Aboriginal and Islander Health Forum (1999) *Queensland Aboriginal and Islander Health Forum corporate plan*. Brisbane: Queensland Aboriginal and Islander Health Forum
- 9 Wenitong M (2002) *Indigenous male health*. Canberra: Office for Aboriginal and Torres Strait Islander Health
- 10 Braveman P, Gruskin S (2003) Defining equity in health. *Journal of Epidemiology and Community Health*;57:254-258
- 11 Australian Bureau of Statistics (2009) *Experimental estimates and projections, Aboriginal and Torres Strait Islander Australians 1991 to 2021*. (ABS Catalogue no. 3238.0) Canberra: Australian Bureau of Statistics

- 12 Australian Bureau of Statistics (2007) *Population distribution, Aboriginal and Torres Strait Islander Australians*. (ABS Catalogue no. 4705.0) Canberra: Australian Bureau of Statistics
- 13 Australian Bureau of Statistics (2009) *Experimental life tables for Aboriginal and Torres Strait Islander Australians: 2005-2007*. (ABS Catalogue no. 3302.0.55.003) Canberra: Australian Bureau of Statistics
- 14 Australian Bureau of Statistics (2008) *Deaths Australia: 2007*. Canberra: Australian Bureau of Statistics
- 15 Penm E (2008) *Cardiovascular disease and its associated risk factors in Aboriginal and Torres Strait Islander peoples 2004–05*. (AIHW Catalogue no. CVD 41) Canberra: Australian Institute of Health and Welfare
- 16 Australian Bureau of Statistics, Australian Institute of Health and Welfare (2008) *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2008*. (ABS Catalogue no. 4704.0 and AIHW Catalogue no. IHW 21) Canberra: Australian Bureau of Statistics and Australian Institute of Health and Welfare
- 17 Australian Institute of Health and Welfare (2009) *Australian hospital statistics 2007–08*. (Health services series no. 33, AIHW Catalogue no. HSE 71) Canberra: Australian Institute of Health and Welfare
- 18 Lehoczky S, Isaacs J, Grayson N, Hargreaves J (2002) *Hospital statistics: Aboriginal and Torres Strait Islander Australians, 1999-2000*. (ABS Catalogue no. 4711.0, AIHW catalogue no. IHW-9) Canberra: Australian Bureau of Statistics and Australian Institute of Health and Welfare
- 19 Australian Bureau of Statistics (2006) *National Aboriginal and Torres Strait Islander Health Survey: Australia, 2004-05*. Canberra: Australian Bureau of Statistics
- 20 Australian Bureau of Statistics, Australian Institute of Health and Welfare (2005) *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2005*. (ABS Catalogue no. 4704.0) Canberra: Australian Institute of Health and Welfare and the Australian Bureau of Statistics
- 21 Condon JR, Zhao Y, Armstrong BK, Barnes A (2004) *Northern Territory cancer register data quality 1981-2001*. Darwin: Department of Health and Community Services
- 22 Condon JR, Barnes T, Cunningham J, Armstrong BK (2004) Long-term trends in cancer mortality for Indigenous Australians in the Northern Territory. *Medical Journal of Australia*;180(10):504-511

- 23 Condon J (2004) *Cancer, health services and Indigenous Australians*. (Consultant report no.5) Canberra: Office for Aboriginal and Torres Strait Islander Health, Cooperative Research Centre for Aboriginal and Tropical Health
- 24 Al-Yaman F, Van Doeland M, Wallis M (2006) *Family violence among Aboriginal and Torres Strait Islander peoples*. (AIHW catalogue no. IHW 17) Canberra: Australian Institute of Health and Welfare
- 25 Steering Committee for the Review of Government Service Provision (2009) *Overcoming Indigenous disadvantage: key indicators 2009*. Canberra: Productivity Commission, Australia
- 26 Australian Bureau of Statistics (2004) *National Aboriginal and Torres Strait Islander Social Survey, 2002*. (ABS Catalogue no. 4714.0) Canberra: Australian Bureau of Statistics
- 27 Australian Institute of Health and Welfare (2008) *Aboriginal and Torres Strait Islander health performance framework, 2008 report: detailed analyses*. (AIHW Catalogue no. IHW 22) Canberra: Australian Institute of Health and Welfare
- 28 Vos T, B. Barker, et al. (2007) The burden of disease and injury in Aboriginal and Torres Strait Islander peoples: summary report. *Brisbane, University of Queensland*;
- 29 Chikritzhs T, Brady M (2007) Postscript to 'Fact or fiction: a critique of the National Aboriginal and Torres Strait Islander Social Survey 2002' (letter to the editor). *Drug and Alcohol Review*;26(2):221-222
- 30 Chikritzhs T, Pascal R, Gray D, Stearne A, Siggers S, et al. (2009) Trends in alcohol-attributable deaths among Indigenous Australians, 1998-2004. *National Alcohol Indicators, Bulletin 11*;
- 31 Chikritzhs T, Brady M (2006) Fact or fiction?: a critique of the National Aboriginal and Torres Strait Islander Social Survey 2002. *Drug and Alcohol Review*;25(3):277-287
- 32 Australian Institute of Health and Welfare (2008) *National Drug Strategy Household Survey 2007 : detailed findings*. Canberra: Australian Institute of Health and Welfare
- 33 d'Abbs P, Maclean S (2008) *Volatile substance misuse: a review of interventions*. Barton, ACT: Department of Health and Ageing

- 34 Select Committee on Substance Abuse in the Community (2004) *Petrol sniffing in remote Northern Territory communities*. Darwin: Select Committee on Substance Abuse in the Community, Legislative Assembly of the Northern Territory
- 35 Dietitians Association of Australia, Public Health Association Australia (2009) *Food Security for Aboriginal and Torres Strait Islander Peoples Policy*. Canberra: Dietitians Association of Australia and Public Health Association Australia
- 36 Australian Bureau of Statistics (2006) *National Aboriginal and Torres Strait Islander Health Survey: Australia, 2004-05*. Canberra: Australian Bureau of Statistics
- 37 National Public Health Partnership (2001) *National Aboriginal and Torres Strait Islander Nutrition Strategy and Action Plan 2000-2010 and first phase activities 2000-2003*. Canberra: National Public Health Partnership
- 38 Brimblecombe JK, O’Dea K (2009) The role of energy cost in food choices for an Aboriginal population in northern Australia. *Medical Journal of Australia*;190(10):549-551
- 39 Queensland Health (2006) *The 2006 healthy food access basket survey*. Brisbane: Queensland Health
- 40 Northern Territory Department of Health and Community Services (2007) *NT market basket survey 2007*. Darwin: Northern Territory Department of Health and Community Services
- 41 Brimblecombe J (2007) Poverty underlies poor nutrition. *Chronicle*;10(1):16-17
- 42 Freemantle J, McAullay D (2009) Health of Aboriginal and Torres Strait Islander children in Australia. In: Smylie J, ed. *Indigenous children's health report: health assessment in action*. Toronto, Canada: Centre for Research on Inner City Health, Keenan Research Centre:67-93
- 43 Zubrick SR, Silburn SR, Lawrence DM, Mitrou FG, Dalby RB, et al. (2005) *The social and emotional wellbeing of Aboriginal children and young people*. Perth: Telethon Institute for Child Health Research and Curtin University of Technology
- 44 Zubrick SR, Silburn SR, Lawrence DM, Mitrou FG, Dalby RB, et al. (2005) *The social and emotional wellbeing of Aboriginal children and young people: forced separation from natural family, forced relocation from traditional country or homeland, and social and emotional wellbeing of Aboriginal children and young*

people, additional notes. Perth: Telethon Institute for Child Health Research and Curtin University of Technology

- 45 Australian Bureau of Statistics (2008) *Prisoners in Australia 2008*. (ABS Catalogue no. 4517.0) Canberra: Australian Bureau of Statistics,
- 46 Australian Institute of Criminology (2008) *Australian crime facts and figures 2007*. Canberra: Australian Institute of Criminology
- 47 Joudo J (2008) *Responding to substance abuse and offending in Indigenous communities: review of diversion programs*. (Research and Public Policy series no. 88) Canberra: Australian Institute of Criminology
- 48 Durie MH (2003) The health of indigenous peoples [editorial]. *BMJ*;326:510-511
- 49 Marmot M (2004) *The status syndrome: how social standing affects our health and longevity*. New York: Holt Paperbacks
- 50 Australian Bureau of Statistics (2009) *Indigenous statistics for schools*. Canberra: Australian Bureau of Statistics
- 51 Australian Government Department of Health and Ageing (2008) *Development of a national men's health policy: an information paper*. Canberra, ACT: Australian Government Department of Health and Ageing
- 52 Brown A, Blashki G (2005) Indigenous male health disadvantage: linking the heart and mind. *Australian Family Physician*;34(10):813-819
- 53 Sanson-Fisher RW, Campbell EM, Perkins JJ, Blunden SV, Davis BB (2006) Indigenous health research: a critical review of outputs over time. *Medical Journal of Australia*;184(10):502-505

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<sup>i</sup> 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). 35 Dietitians Association of Australia, Public Health Association Australia (2009) *Food Security for Aboriginal and Torres Strait Islander Peoples Policy*. Canberra: Dietitians Association of Australia and Public Health Association Australia