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Summary of Indigenous women's health

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Summary of Indigenous women's health

Jane Burns, Caitlin M Maling and Neil Thomson

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Aboriginal and Torres Strait women experience poorer health across all health areas compared with non-Indigenous women [1]. There is the potential for significant health gains for Indigenous women through improved prevention, early detection and treatment to address the higher level of risk factors and the burden of disease with earlier onset and lower survival rates. Addressing their health needs will be included in a new national women's health policy, which is in the process of being developed. It takes into account that women have many responsibilities as mothers, grandmothers, sisters, daughters, wives and partners. Often it is the women in households who have the main responsibility for looking after the health of other family members. Many Indigenous women suffer health problems due to the context of their lives. To ensure better health outcomes, strategies need to include knowledge and awareness of their history, experience, culture and rights.

It is important also to understand how Indigenous people themselves conceptualise health. There was no separate term for health as it is understood in western society [2]. 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 [3]. 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 female health issues.

Contents

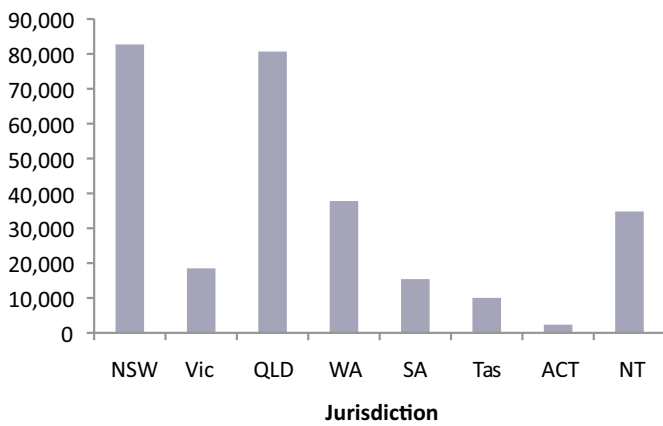
The context of Indigenous female health	2
Population.....	2
Social context of Indigenous female health.....	2
Mortality	4
Life expectancy.....	4
Standardised mortality ratios.....	4
Age at death.....	4
Causes of death	5
Births and pregnancy outcome	5
Age of mothers.....	5
Total fertility rates.....	6
Birthweights.....	6
Hospitalisation	7
Hospitalisation rates.....	7
Causes of hospitalisation	7
Selected health conditions	7
Cardiovascular disease (CVD).....	7
Cancer	8
Respiratory disease.....	9
Diabetes.....	9
Kidney health.....	10
Sexual health.....	11
Social and emotional wellbeing (including mental health)....	11
Risk factors	14
Tobacco use.....	14
Alcohol consumption.....	14
Illicit drug use.....	15
Nutrition.....	16
Physical activity	17
Overweight and obesity	17
Vulnerable groups	17
Concluding comments	20

The context of Indigenous female health

POPULATION

The Australian Bureau of Statistics (ABS) estimates that by June 2010 there will be more than 282,400 Indigenous females living in Australia, accounting for 2.5% of the Australian female population [4]. NSW and Qld are the jurisdictions with the highest numbers of Indigenous female residents, followed by WA and the NT (Figure 1).

Figure 1. Projected Indigenous female populations, by jurisdiction, June 2010

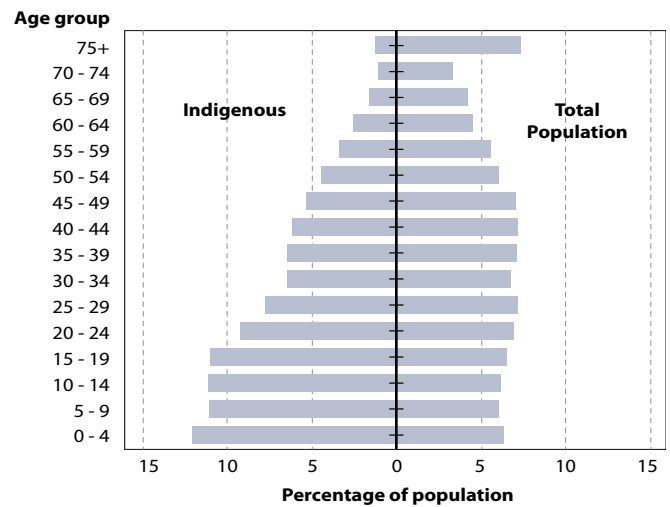


Source: ABS, 2009, [4]

Almost one-third of Indigenous people live in major cities (31%), 22% live in inner regional areas, 23% in outer regional areas, 8% in remote areas and 16% in very remote areas [5].

The Indigenous female population is much younger overall than the non-Indigenous female population (Figure 2) [4]. The ABS projects that by the end of June 2011 almost half (45%) of Indigenous females will be aged less than 20 years, compared with 25% of the total female population [4, 6]. At June 2011 it is projected that only 4% of the total Indigenous female population will be aged 65 years or older, compared with 21% of non-Indigenous females.

Figure 2. Indigenous and non-Indigenous female populations, by age group, at June 2011



Source: Derived from ABS, 2009, [4, 6]

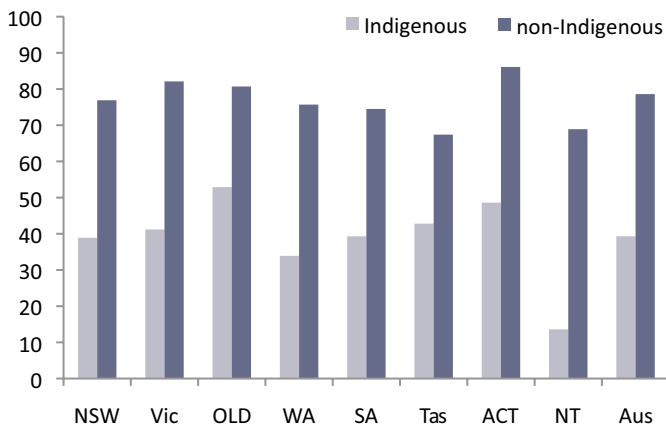
SOCIAL CONTEXT OF INDIGENOUS FEMALE HEALTH

The health disadvantages experienced by Indigenous females and males can be considered historical in origin [7], but perpetuation of the disadvantages owes much to contemporary structural and social factors, embodied in what are termed the ‘social determinants’ of health [8-10]. 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 females are summarised in the following sections.

Education

Attendance rates at school were lower for Indigenous females than for non-Indigenous females across all age groups in 2006, with the difference being especially pronounced in the 15 to 19 year old age group [11]. In 2006, school completion to year 12, was much lower for Indigenous females than for their non-Indigenous counterparts (Figure 3).

Figure 3. Female school retention until year 12, by Indigenous status and jurisdiction, Australia, 2006



Source: Steering Committee for the Review of Government Service Provision, 2009, [11]

NOTE:

1. Number is per cent of females in total Indigenous/non-Indigenous population retained at school until year 12

According to the 2006 Australian Census of Population and Housing, one-fifth (20%) of Indigenous females aged over 15 years had a post-school qualification compared with 37% of non-Indigenous females [12]. Only 5% of Indigenous females had graduated with a Bachelor degree or above, compared with 17% of non-Indigenous females. Diploma or certificate level qualifications were achieved by 15% of Indigenous females, compared with 20% of non-Indigenous females.

Employment

The lack of post-school qualifications impacts particularly on the employment of Indigenous females: 16% of Indigenous females without any post-school qualifications were unemployed in 2006, compared with 5% of non-Indigenous females [11].

Overall, the higher the level of qualification achieved, the smaller the difference in employment rates between Indigenous and non-Indigenous females [11]. The rates of employment – close to full employment – were similar for Indigenous and non-Indigenous females with a Bachelor degree level or higher. For Indigenous females with any non-school qualification 92% were employed compared with 97% of non-Indigenous females [11].

The proportion of Indigenous females employed as ‘professionals’ or ‘managers’ was less than half that of that of non-Indigenous females. For both Indigenous and non-Indigenous females, the most common industry of employment at the 2006 Census was ‘Health care and social assistance’ [12].

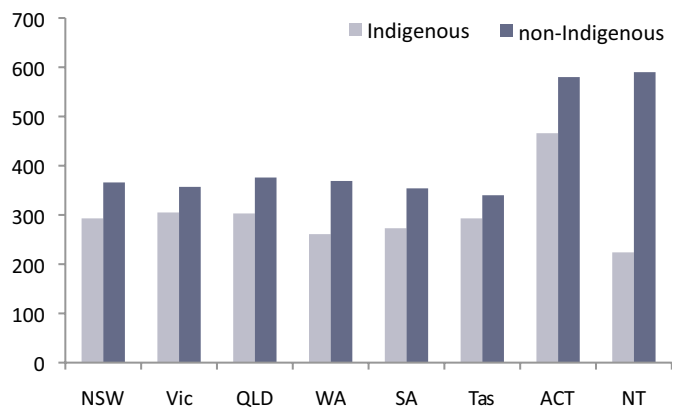
Income

Educational attainment, together with degree of workforce participation can significantly influence a woman’s level of income. It is therefore anticipated that the dominant experience of Indigenous women 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 \$521, compared with \$730 for non-Indigenous households [11]. This income figure is a slight improvement from 2001 where the equivalised mean gross income was \$484 per week for Indigenous households and \$680 for non-Indigenous households (after figures have been adjusted for inflation) [11]. 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 females aged 15 years or older in 2006 was \$278, compared with \$367 for non-Indigenous females, this discrepancy was greatest in the NT (Figure 4) [11].

Figure 4. Median gross weekly individual income for females aged 15 years and over, by Indigenous status and jurisdiction, 2006



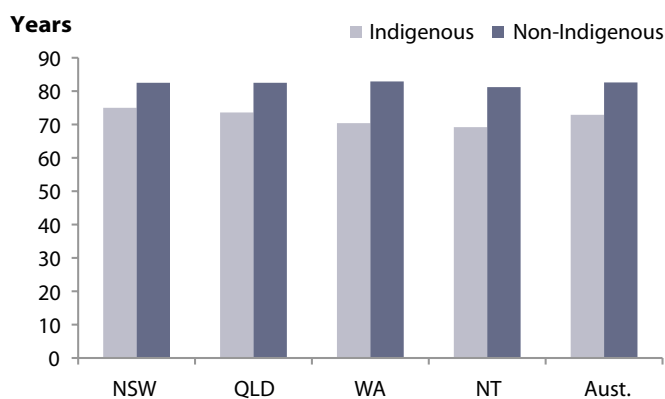
Source: Steering Committee for the Review of Government Service Provision, 2009, [11]

Mortality

LIFE EXPECTANCY

The ABS estimates that Indigenous females born in 2005-2007 could be expected to live to 72.9 years, about 9.7 years less than the 82.6 years expected for all females (Figure 5) [13]. Life expectancy of Indigenous females was highest in NSW (75.0 years) and lowest in the NT (69.2 years).¹

Figure 5. Female life expectancy, by Indigenous status and jurisdiction, 2005-2007



Source: ABS, 2009, [13]

STANDARDISED MORTALITY RATIOS²

After adjusting for the differences in the age structures of the Indigenous and non-Indigenous female populations and for uncertainties about the completeness of both death and population numbers for the Indigenous population, the numbers of deaths of Indigenous females in 2004-2008 were between two and four times higher than the numbers expected from the age-specific death rates for the total Australian female population (Table 1) [14]. (The number of observed deaths divided by the number of deaths expected is known as the standardised mortality ratio (SMR)). The adjusted SMRs range from 2.16 for Indigenous females living in NSW to 3.52 for those living in the NT.

AGE AT DEATH

Age-specific rate and rate ratios

Death rates were higher in 2006-2008 for Indigenous females than for non-Indigenous females across all age groups, with the ratio of the Indigenous rate to the non-Indigenous rate being particularly high for the age groups between 25 and 64 years (Figure 6) [14]. Rates and rate ratios were higher for Indigenous females living in WA, SA and the NT than for those living in NSW and Qld.

Table 1. Female Indigenous deaths and SMRs, by jurisdiction, Australia, 2004-2008

	Registered deaths	SMR	
		Registered	Adjusted
NSW	1,174	1.88	2.16
Qld	1,269	2.29	2.42
WA	1,028	3.47	3.12
SA	316	2.53	n/a
NT	1,001	3.83	3.52
Australia	5,056	2.40	2.61

Source: Derived from ABS, 2009, [15]

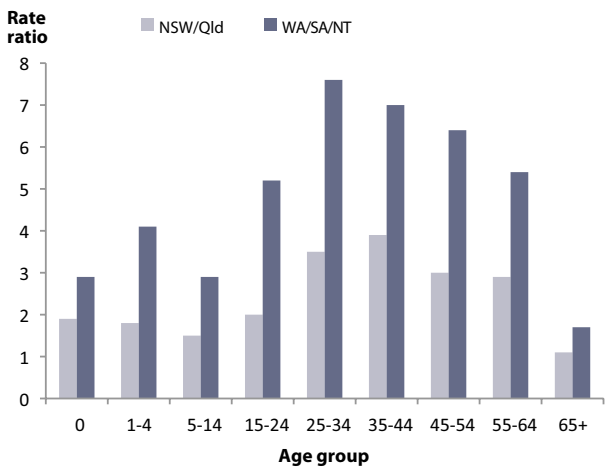
NOTES:

1. Registered SMRs (standardised mortality ratios) are the numbers of deaths registered divided by the numbers expected from the age-sex-specific death rates for the total Australian population at 30 June 2006
2. Adjusted SMRs use the ABS adjustment factors for each jurisdiction. These factors are based on a detailed assessment by the ABS of a linkage between Census and death records
3. Due to the small numbers involved, the ABS did not make an estimate of the adjustment factor applicable to SA
4. Caution should be exercised in the interpretation of these SMRs as some uncertainty persists about the completeness of both death and population numbers

¹ Due to significant changes in the methodology used by the ABS to estimate Indigenous life expectancy, these figures are substantially higher than previous estimates. The current and previous estimates should not be compared.

² 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 ABS and the Australian Institute of Health and Welfare (AIHW).

Figure 6. Indigenous:non-Indigenous death rate ratios, by jurisdictions, 2006-2008



Source: ABS, 2008, ABS, [14]

NOTE:

1. Rate ratio is the Indigenous rate divided by the non-Indigenous rate

Infant mortality

Of the infant females who died in Qld, WA, SA and the NT in 2002-2006, about one fifth were Indigenous – the infant mortality rate of 10.1 deaths per 1,000 live births for Indigenous females was 2.6 times the rate of 3.9 per 1,000 for non-Indigenous females [16].

CAUSES OF DEATH

Cardiovascular disease was the leading cause of death for Indigenous females living in Qld, WA, SA and the NT in 2001-2005, with almost three times the number of deaths expected from the rate for non-Indigenous females (SMR: 2.7).³ The next most common causes of death for Indigenous females were neoplasms (mainly cancers) (SMR: 1.6), external causes (SMR: 3.5), diabetes (SMR: 14.5), and respiratory diseases (SMR: 3.6).

Maternal mortality

In Australia in 2003-2005 (the most recent period for which detailed data are available), six (10%) of the 60 maternal deaths where Indigenous status was known were of Indigenous women (Indigenous status was not reported in 8% of the deaths) [17].

Reflecting the higher rate of confinements among Indigenous women, the maternal mortality ratio for Indigenous women in 2003-2005 was 21.5 deaths per 100,000 confinements, almost three times higher than the ratio of 7.9 per 100,000 for non-Indigenous women [17]. For direct maternal deaths, the ratio for Indigenous women was 7.2 per 100,000 compared with 3.6 per 100,000 for non-Indigenous women.

3 2001-2005 is the most recent period for which detailed information about causes of death is available.

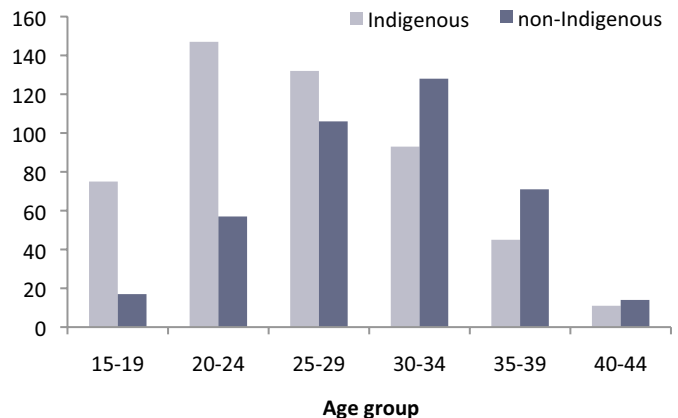
Births and pregnancy outcome

In 2008, there were 15,011⁴ births, 7,316 of which were female, registered in Australia with one or both parents identified as Indigenous (5% of all births registered) [18]. Both parents were identified as Indigenous in 32% of these births, only the mother in 41% (including births where paternity was not acknowledged and those where the father's Indigenous status was unknown), and only the father in 27%.

AGE OF MOTHERS

In 2008, Indigenous women had more babies and had them at younger ages than did non-Indigenous women – teenagers had one-fifth of the babies born to Indigenous women, compared with only 4% of those born to non-Indigenous women [18]. The median age of Indigenous mothers was 24.7 years, compared with 30.7 years for all women. The highest birth rates (known technically as fertility rates) were for the 20-24 years age group for Indigenous women and for the 30-34 years age group for non-Indigenous women (Figure 7). The fertility of teenage Indigenous women (75 babies per 1,000 women) was more than four times that of all teenage women (17 babies per 1,000).

Figure 7. Age-specific fertility rates, by Indigenous status of mother, Australia, 2008



Source: ABS, 2009, [18]

NOTE:

1. Rates per 1,000 women in each age group

4 This figure probably underestimates the true number slightly as Indigenous status is not always identified, and there may be a lag in birth registrations. The ABS estimated that 96% of Indigenous births in 2002-2006 were correctly identified as such. Completeness of identification varied across the country, with only Vic, Qld, WA, SA and the NT having levels above 90%.

TOTAL FERTILITY RATES

In 2008, total fertility rates were 2,515 births per 1,000 Indigenous women and 1,969 per 1,000 for all women (Figure 8) [18]. The highest total fertility rate for Indigenous women was for WA (3,160 babies per 1,000), followed by SA (2,936 per 1,000) and Qld (2,728 per 1,000).

Figure 8. Total fertility rates, by Indigenous status of mother, selected jurisdictions, Australia, 2008



Source: ABS, 2009, [18]

NOTES:

1. Total fertility rate is the number of children born to 1,000 women at the current level and age pattern of fertility
2. Figures in this table are restricted to those jurisdictions with estimated identification of Indigenous births of around 90% or higher

BIRTHWEIGHTS

The average birthweight of babies born to Indigenous mothers in 2007 was 3,182 grams, almost 200 grams less than the average for babies born to non-Indigenous mothers (3,381 grams) [19]. Babies born to Indigenous women in 2007 were twice as likely to be of low birthweight (LBW) (12.5%) than were those born to non-

Indigenous women (5.9%). (LBW, defined as a birthweight of less than 2,500 grams, increases the risk of death in infancy and other health problems.) The low-birthweight proportions for babies born to Indigenous women were highest for WA and SA (both 16.2%) (Table 2).

Risk factors for LBW include socioeconomic disadvantage, the size and age of the mother, the number of babies previously born, the mother’s nutritional status, illness during pregnancy, and duration of the pregnancy [20]. A mother’s alcohol consumption and use of tobacco and other drugs during pregnancy also impacts on the size of her baby.

Tobacco, in particular, has a major impact on birthweight. The mean birthweight of live babies born in 2001-2004 to Indigenous women who smoked was 3,037 grams, more than 250 grams lighter than those born to Indigenous women who did not smoke (3,290 grams) [21].

The comparable figures for live babies born to non-Indigenous women were 3,210 grams and 3,416 grams respectively. The impact of tobacco smoking during pregnancy was seen also in the proportions of low birthweight liveborn babies – 16% and 10% respectively for Indigenous and non-Indigenous women who smoked during pregnancy, and 10% and 5% for those who didn’t.

The 2000-2001 Western Australian Aboriginal Child Health Survey (WAACHS) reported slightly higher average birthweights than those reported above – 3,310 grams for babies whose mothers did not use tobacco in pregnancy, and 3,100 grams for those whose mothers did use tobacco [22]. The lowest average birthweights reported in the WAACHS were for babies whose mothers used marijuana with tobacco (3,000 grams) or marijuana with both tobacco and alcohol (2,940 grams).

Table 2. Mean birthweights and percentage of low birthweight for babies born to Indigenous and non-Indigenous mothers, selected jurisdictions, Australia, 2007

	NSW	Vic	Qld	WA	SA	NT	Aust
Indigenous mothers							
Mean birthweight	3,217	3,216	3,214	3,107	3,067	3,133	3,182
% low birthweight	11.2	12.0	11.2	16.2	16.2	12.5	12.5
Non-Indigenous mothers							
Mean birthweight	3,386	3,370	3,394	3,372	3,366	3,390	3,381
% low birthweight	5.5	6.3	6.0	5.7	6.1	4.9	5.9

Source: Derived from Laws and Sullivan, 2009, [19]

NOTES:

1. Low birthweight is defined as less than 2,500 grams
2. Mean birthweights and low birthweight proportions for babies born to non-Indigenous mothers have been estimated from published figures for Indigenous and all mothers

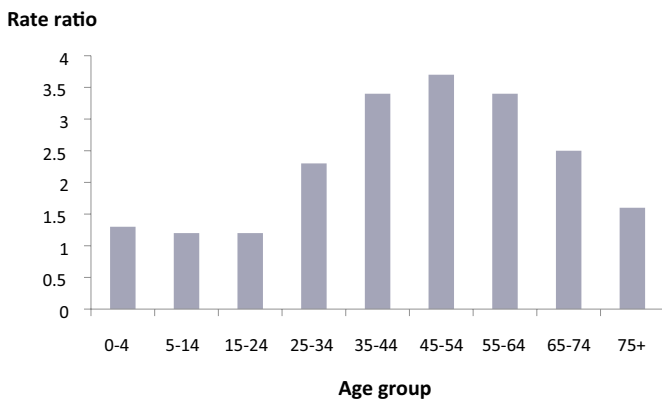
Hospitalisation

HOSPITALISATION RATES

Over 152,000 Indigenous females living in NSW, Vic, Qld, WA, SA and the NT were admitted to hospital in 2007-08 at a standardised rate of 915 per 1,000, 2.3 times the standardised rate of 394 per 1,000 for non-Indigenous females (derived from AIHW, 2009, [23]).

Admission rates were higher in 2007-08 for Indigenous females than for non-Indigenous females across all age groups, with rate ratios being particularly high for those aged between 5 and 14 years (Figure 9) (derived from AIHW, 2009, [23]).

Figure 9. Female Indigenous:non-Indigenous hospitalisation rate ratios, by age group, 2007-2009



Source: (derived from AIHW, 2009, [23])

NOTE:

1. Rate ratio is the Indigenous rate divided by the non-Indigenous rate

CAUSES OF HOSPITALISATION

The information needed to compare the causes of hospitalisation for Indigenous and non-Indigenous females is not available for recent years, but it is likely that the causes for Indigenous females are similar to those documented for 1999-2000 [24]. The most common reason for hospitalisation of Indigenous females was 'care involving dialysis', which was responsible for 30% of admissions. Many of these were repeat admissions of the same people, some of whom entered hospital for dialysis almost daily. Apart from these admissions, the most common causes of hospitalisation for Indigenous females were childbirth related, respiratory disease (rate ratio: 3.2), digestive disease (rate ratio: 3.2), and injury/poisoning (rate ratio: 7.3) [24].

More recently in 2007-08, there were 271,290 hospital separations which were identified as Indigenous in NSW, Vic, Qld, WA, SA and the NT (3.7% of the total hospital separations) [23]. For Indigenous females, pregnancy-related conditions, most of which involved

normal deliveries, accounted for 19,333 separations. Generally, separation rates were higher for Indigenous people than for non-Indigenous people for all main ICD groups. The most common reason of hospitalisation for Indigenous people was 'care involving dialysis', which was responsible for 43% of Indigenous separations (115,279 separations). Apart from admissions for dialysis care and pregnancy related, the ICD group 'Injury, poisoning and certain other consequences of external causes' (including motor vehicle accidents, assaults, self-inflicted harm and falls) was the next most common cause, being responsible for 19,919 separations (7.3% of all separations, and 12.8% of separations excluding those for dialysis). The separation rate of 46 per 1,000 for Indigenous people was almost twice that of 24 per 1,000 for non-Indigenous people. Respiratory conditions were responsible for 16,601 separations – 10.6% of separations excluding those for dialysis) and digestive diseases (14,325 separations – 9.2% of separations excluding those for dialysis).

Of particular concern, is the number of hospital separations for Indigenous females for assault. In the two-year period July 2004 to June 2006, for Indigenous females living in NSW, Vic, Qld, WA, SA and the NT, assault was responsible for 32% of Indigenous female admissions for injury [16]. The numbers of admissions for Indigenous females for assault were 35 times higher than non-Indigenous rates. Over the seven-year period 1998-99 to 2005-06, however, there were significant declines in the hospitalisation rate for assault among Indigenous females with a 9% reduction.

Selected health conditions

CARDIOVASCULAR DISEASE (CVD)

The AIHW's analysis of the 2004-2005 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) found that 14% of Indigenous females reported having a long-term heart or related condition, a level 1.4 times that of non-Indigenous females [25]. Hypertension (high blood pressure) was the most commonly reported condition among Indigenous females (7.7%) 1.7 times the prevalence among non-Indigenous females (Table 3).

Table 3. Numbers and percentages of cardiovascular conditions, Indigenous females, and Indigenous: non-Indigenous ratios, by condition, Australia, 2004-2005

Condition	Females		
	Number	Per cent	Ratio
Coronary/ischaemic heart disease	3,000	1.2	2.7
Cerebrovascular disease (including stroke)	700	0.3	1.9
Heart failure	3,100	1.3	1.6
Hypertension	18,700	7.7	1.7
Rheumatic heart disease	2,600	1.1	n/a
Other conditions	5,800	2.4	n/a
All CVD	33,900	14.0	1.4

Source: AIHW, 2008, [25]

NOTES:

1. Per cent is the percentage of all Indigenous females
2. Ratios are standardised prevalence ratios - the reported Indigenous numbers divided by the numbers expected from the age-cause specific prevalences for non-Indigenous females
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

Cardiovascular disease was the leading cause of death for Indigenous females living in Qld, WA, SA and the NT in 2002-2005, with 2.7 times the number of deaths expected from rates for non-Indigenous females (Table 4) [25].

Table 4. Numbers of Indigenous female deaths from cardiovascular disease and standardised mortality ratios (SMRs), Qld, WA, SA, and the NT, 2002-2005

Condition	Indigenous females	
	Number of deaths	SMR
Coronary	332	2.8
Cerebrovascular disease (including stroke)	132	1.9
Heart failure	28	2.4
Rheumatic heart disease	52	23.0
Other conditions	140	3.1
All CVD	684	2.7

Source: AIHW, 2008, [25]

NOTE:

1. SMR (standardised mortality ratio) is the ratio of the observed number of deaths to the number of expected deaths if Indigenous Australians had experienced the same age-specific death rates as non-Indigenous Australians.

The rate of premature mortality associated with CVD is much higher for Indigenous females than for their non-Indigenous counterparts. For all CVD, death rates for Indigenous females living in Qld, WA, SA and the NT in 2002-2005 were 12 to 28 times higher than those for non-Indigenous females in the 35-44 and 45-54 age groups (Table 5) [25]. The death rate for Indigenous females aged 25-34 years was higher than the rate for non-Indigenous females 20 years older.

Table 5. Female death rates and rate ratios from cardiovascular disease, by Indigenous status and age group, Qd, WA, SA and the NT, 2002-2005

Age group (years)	Age-specific rate		Rate ratio
	Indigenous	Non-Indigenous	
0-24	6.5	0.9	7.2
25-34	36.9	4.4	8.4
35-44	166.9	12	13.9
45-54	333	28.2	11.8
55-64	584.9	84	7.0
65+	2322.7	2169.1	1.1

Source: AIHW, 2008, [25]

NOTES:

1. Age specific rates are per 100,000 population
2. Rate ratio is the Indigenous rate divided by the non-Indigenous rate

Gender-specific information about CVD hospitalisation is not available for people living in NSW, Vic, Qld, WA, SA and the NT in 2007-08, but the rate for Indigenous people was 1.8 times that for non-Indigenous people [23].

CANCER

The most common cancers diagnosed among Indigenous females in the five-year period 2000-2004 were breast cancer (25% of all Indigenous female cancer cases reported), cancer of the lung, bronchus and trachea (12%), colorectal cancer (9%), cervical cancer (7%), and cancer of unknown primary site (6%) [26]. The overall age-adjusted incidence of cancer among Indigenous females was only 90% of that among non-Indigenous females, but the incidence of some cancers was higher among Indigenous females than among non-Indigenous females: the incidence of cervical cancer was 2.4 times higher, and that of liver and gallbladder cancer 2.6 times higher. It is likely the lower overall cancer incidence rates recorded for Indigenous people can be partially attributed to under-identification in cancer registrations.

Hospitalisation rates for cancer for both Indigenous and other Australians living in NSW, Vic, Qld, WA, SA and NT in 2005-06 increased from age 25 years onwards, but were considerably lower for Indigenous

people than for non-Indigenous people in each age group. The five most common cancers for which Indigenous females were hospitalised in 2005–06 were breast cancer, lung cancer, skin cancer, cervical cancer, and secondary cancer of other sites [26].

In contrast to the lower overall incidence rate of cancer among Indigenous females, the death rate from cancer for Indigenous females living in Qld, WA, SA and NT in 2002–2006 was 1.4 times higher than that of their non-Indigenous counterparts [16]. The most common specific causes of death from cancer among Indigenous females were lung cancer (rate ratio: 1.8), cancer of the female genital organs (rate ratio: 2.4), breast (rate ratio: 1.1) and cancer of ill-defined and unspecified sites (rate ratio: 2.3).

The contrasting overall incidence and death rates reflects the fact that Indigenous people are more likely than non-Indigenous people to have cancers that have a poor prognosis, and to be diagnosed at a later stage [27]. They are also less likely to receive adequate treatment.

The participation of Indigenous people in screening programs is also lower than that of non-Indigenous people. An estimated 35% of Indigenous women in the 50–69 years target group in the BreastScreen Australia Program in 2003–2004 were screened, a much lower proportion than that of the total Australian female population (56%) [26]. For cervical cancer screening, studies in the NT and Qld identified that participation of Indigenous females was well below that for all women in these jurisdictions [28, 29].

Importantly, some of the most common cancers among Indigenous women are preventable, through reduced tobacco consumption, hepatitis B immunisation (hepatitis B is the main risk factor for primary liver cancer), and reduced alcohol consumption [30].

RESPIRATORY DISEASE

According to the 2004–2005 NATSIHS, 35% of Indigenous females reported having a long-term respiratory condition, 1.1 times the prevalence of 31% among non-Indigenous females (rate ratio: 1.1) [31]. The self-reported prevalence of bronchitis (5%) among Indigenous females was slightly higher than that of non-Indigenous females (3%), but the prevalence of asthma was much higher (20% compared with 11%). The self-reported prevalence of chronic sinusitis (11%) and other diseases of the respiratory system (15%) were equal to or less than those for non-Indigenous females (11% and 18% respectively).

The hospitalisation rate for respiratory disease of Indigenous females living in NSW, Vic, Qld, WA, SA and the NT in 2005–06 were 2.5 times that of non-Indigenous females [26]. Hospitalisation rates for Indigenous females for chronic obstructive pulmonary disease (rate ratio: 7.5), asthma (rate ratio: 2.2), influenza and pneumonia (rate ratio: 4.7), other acute lower respiratory infections (rate ratio: 5.0), and acute upper respiratory infections (rate ratio: 2.0) were all

higher than those for their non-Indigenous counterparts [26].

The numbers of deaths from respiratory disease for Indigenous females living in Qld, WA, SA and the NT in 2002–2006 was 2.5 times the number expected from rates for non-Indigenous females [16]. The differences between Indigenous and non-Indigenous females in death rates from respiratory disease in 2001–2005 were greatest in the 35–54 years age group: 25 deaths per 100,000 compared with 2.1 per 100,000 for chronic lower respiratory disease, and 21 per 100,000 compared with 0.8 per 100,000 for influenza and pneumonia [26].

DIABETES

Diabetes is a significant health problem among Indigenous women. Having diabetes/high sugar levels as a long-term health condition was reported by around 6% of Indigenous females who participated in the 2004–2005 NATSIHS [31]. After adjusting for differences in the age structures of the two populations, the overall diabetes/high sugar level among Indigenous females was 4.1 times that of non-Indigenous females. The prevalence of diabetes increases with age, with the increase occurring at much younger ages among Indigenous people – the prevalence reported by Indigenous people aged 35–44 years was five times that reported by non-Indigenous people [31].

It is difficult to reach an estimate of the overall prevalence due to considerable limitations in data collection [32] and it is likely that for every diagnosed case of diabetes there is an undiagnosed case [33].

Some separate information is available about the levels of gestational diabetes mellitus (GDM): the incidence of GDM among Indigenous women aged 15–44 years who gave birth in hospital in NSW, Vic, Qld, WA, SA and the NT in 2005–06 was 1.5 times that of their non-Indigenous counterparts [34]. In terms of general practitioner (GP) encounters, as measured in the BEACH Survey, [16] GDM was managed for Indigenous females at four times the rate for other Australian females.

In the period July 2004–June 2006, the age-standardised rate of hospitalisation for diabetes as a principal diagnosis of Indigenous females living in NSW, Vic, Qld, WA, SA and the NT was nearly six times that of non-Indigenous females (after adjusting for the under-identification of Indigenous people in hospital data collections) [16]. The disparity was greatest in the NT (rate ratio 7.7) and WA (rate ratio 7.1). Hospitalisation rates for diabetes were much higher for Indigenous females than for other females in all age groups from 25–34 years onwards. The greatest difference in rates occurred in the 45–54 year age group, for which age group Indigenous females were hospitalised at around 14 times the rate of other females.

The numbers of deaths from diabetes of Indigenous females living in Qld, WA, SA and the NT in 2001-2005 was almost 15 times the number expected from rates for non-Indigenous females [26]. Death rates from diabetes for Indigenous females aged 35-44 years and 45-54 years were 32 and 46 times those for their non-Indigenous counterparts [26]. In 2008, there were 104 deaths of Indigenous women due to diabetes; the sex ratio of Indigenous deaths due to diabetes was 82 male deaths per 100 female deaths [35].

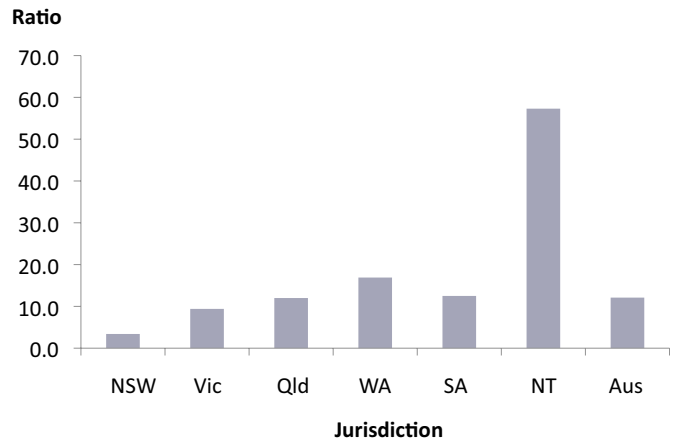
KIDNEY HEALTH

According to the 2004-2005 NATSIHS, 3% of Indigenous females had kidney disease as a long-term health condition, a level 8.3 times that of non-Indigenous females [31]. (The NATSIHS only collected data from private homes, so this is likely to underestimate the true prevalence of kidney disease among Indigenous females as kidney disease is a frequent cause of hospitalisation, and patients within health-care facilities were not sampled.)

With the exception of end-stage renal disease (ESRD), however, little is known about the specific conditions contributing to this very high level of kidney disease among Indigenous females. Information about ESRD, the most severe form of chronic kidney disease for which renal replacement therapy is required as either dialysis or renal transplantation, is collected by ANZDATA, the Australian and New Zealand register of people with this level of kidney disease. Nearly 17,580 people, of which 9% were Indigenous, were registered with ESRD at 31 December 2008 [36].

A total of 339 Indigenous females were newly identified with ESRD in the three-year period 2004-2006 [16]. The age-adjusted notification rate for Indigenous females was over 12 times the rate for their non-Indigenous counterparts, with the rate ratio being particularly high for females living in the NT (Figure 10).

Figure 10. Indigenous:non-Indigenous rate ratios of notifications of end-stage renal disease, females, by state/territory, Australia, 2004-2006



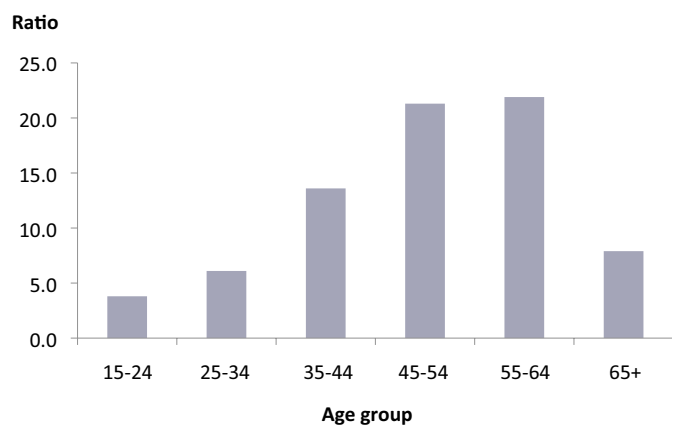
Source: AIHW, 2008, [16]

NOTES:

1. Rate ratio is the Indigenous rate divided by the non-Indigenous rate
2. Data has been sourced from the ANZDATA registry of end stage renal disease

Over one-half (54%) the Indigenous females newly registered with the ANZDATA in 2004-2006 were aged less than 55 years, with ratio of Indigenous to non-Indigenous notifications being particularly high for females aged between 45 and 64 years (Figure 11) [16].

Figure 11. Indigenous:non-Indigenous ratios of notifications of end-stage renal disease, females, by age group, Australia, 2004-2006



Source: AIHW, 2008, [16]

NOTES:

1. Ratio is the Indigenous rate divided by the non-Indigenous rate
2. Data has been sourced from the ANZDATA registry of end stage renal disease

Separate information about the incidence of ESRD among Indigenous females 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 [16].

There were 107,964 episodes of hospitalisation for kidney disease for Indigenous females living in NSW, Vic, Qld, WA, SA and the NT in the two-year period July 2004–June 2006, with an admission rate more than fifteen times that of non-Indigenous females [16]. The most common reason for hospitalisation was for 'care involving dialysis', with the admission rate of Indigenous females almost sixteen times that of non-Indigenous females.

The death rate from chronic kidney disease among Indigenous females living in Qld, WA, SA and the NT in 2002–2006 was more than six times that of their non-Indigenous counterparts [16]. The greatest difference in death rates between Indigenous and non-Indigenous females living in Qld, WA, SA and the NT in 2001–2005 was for the 45–54 year age group, for which the ratio was 51 [26].

SEXUAL HEALTH

Sexual health remains a significant public health issue for Aboriginal and Torres Strait Islander females. Forming a major component of sexual health is the presence or absence of sexually transmissible infections (STIs). STIs refer to infections that are spread by heterosexual or homosexual contact with an infected person [37]. The majority of STIs are asymptomatic or produce mild symptoms. Most STIs can be effectively treated if diagnosed early, but if left untreated, they may lead to serious health complications [38].

The National Notifiable Diseases Surveillance System collects data on some STIs and those of greater prevalence include chlamydia, gonorrhoea, and syphilis [39]. It is understood that human papilloma virus and herpes are the most common STIs but as they are not notifiable diseases, it is difficult to monitor their actual incidence. The available data reporting on the rate of chlamydia, gonorrhoea, and syphilis show Indigenous people are disproportionately represented when compared with the non-Indigenous population [40].

Regrettably current surveillance data pertaining to the rate of notified STIs fails to discern between Indigenous males and females thus rate comparisons between the genders is not possible. Research has identified gender as a risk factor for many STIs with Indigenous females showing a higher prevalence for some STIs than Indigenous males [41–43]. The most recent surveillance data reporting on the number of notified STI diagnoses also shows Indigenous females have a higher number of chlamydia and gonorrhoea diagnoses than Indigenous males [40].

SOCIAL AND EMOTIONAL WELLBEING (INCLUDING MENTAL HEALTH)

Analysis of the 2004–2005 NATSIHS shows that more than 32% of Indigenous females reported having experienced a high or very high level of psychological distress in the previous 12 months, a level more than twice that of non-Indigenous females [44]. Separate details by age are not available for females, but the levels of psychological distress were higher among Indigenous people than non-Indigenous people in all age groups, but there were no significant differences between age groups.

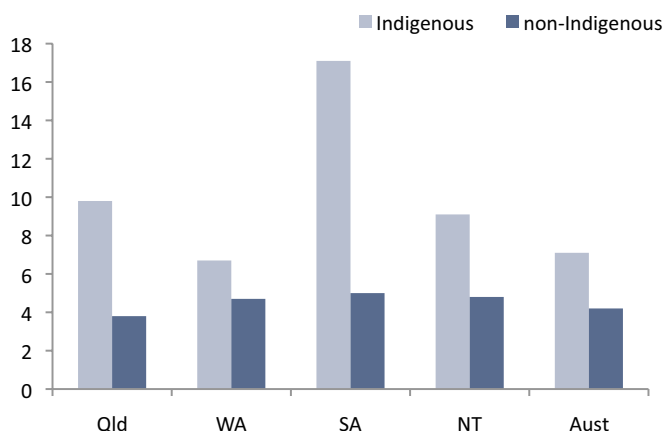
The higher levels of psychological distress among Indigenous people are generally related to higher levels of specific stressors, such as death of a family member or friend. The NATSIHS collected responses on whether respondents had experienced each of 15 specific stressors in the previous 12 months. Analysis of these responses established a clear pattern whereby respondents reporting high/very high psychological distress levels reported a significantly higher average number of stressors than those with low/moderate distress levels (3.2 and 3.6 as opposed to 1.9 and 2.6, respectively) [44]. 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 of 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 [45].

Reflecting the higher levels of distress, hospitalisation rates for mental and behavioural disorders were 1.6 times higher for Indigenous females living in NSW, Vic, Qld, WA, SA and the NT in 2004–2006 than for non-Indigenous females [16]. Hospitalisation for 'mental and behavioural disorders due to psychoactive substance use', 'schizophrenia, schizotypal and delusional disorders' and 'behavioural and emotional disorders' were 3.3, 2.3 and 1.9 times higher, respectively, for Indigenous females than for non-Indigenous females.

The mental health related mortality rate in 2002–2006 among Indigenous females living in Qld, WA, SA and the NT was 1.8 times the number expected from rate for non-Indigenous females [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 females than for non-Indigenous females in 2003–2007 in NSW, Qld, WA, SA and the NT [45]. Suicide deaths rates for Indigenous females were between 6.7 and 17.1 per 100,000 compared with between 3.5 and 5.0 per 100,000 for non-Indigenous women particularly in the NT and SA (Figure 12).

Figure 12. Female 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, [11]

NOTES:

1. Rate is number per 100,000 population
2. Rates have been indirectly age-standardised using ABS, 2004, [4]

Injury

HOSPITALISATION AND DEATHS

There were 8,185 hospital admissions of Indigenous females for injury in NSW, Vic, Qld, WA, SA and the NT in 2005-06, representing 6% of all hospitalisations for Indigenous females (Table 6) [26]. The number of admissions for Indigenous females was 2.4 times the number expected from rates for non-Indigenous females.

Table 6. Observed and expected numbers of Indigenous female hospital admissions for injury, and Indigenous:non-Indigenous ratios, by injury type, NSW, Vic, Qld, WA, SA and the NT, 2005-2006

Injury type	Observed	Expected	Ratio
Assault	2,572	78	33.0
Accidental falls	1,352	948	1.4
Complications of medical and surgical care	943	550	1.7
Exposure to inanimate mechanical forces	752	366	2.1
Intentional self-harm	687	361	1.9
Transport accidents	547	422	1.3
Other causes of accidental injury	465	335	1.4
Exposure to animate mechanical forces	248	100	2.5
Other external causes	601	58	2.1
All external causes	8,185	3,454	2.4

Source: AIHW, 2008, [26]

NOTES:

1. Ratio is observed hospitalisations divided by expected hospitalisations. Expected hospitalisations were calculated based on the age, sex, and cause-specific rates of other Australians.
2. Due to the incomplete identification of Indigenous status, these figures probably under-estimate the true differences between Indigenous and non-Indigenous people

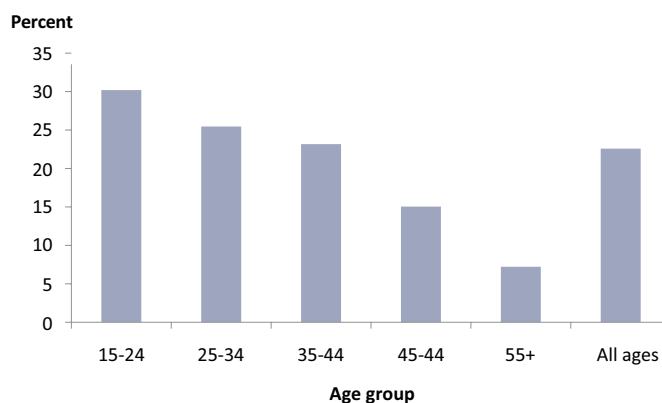
The death rate from injury for Indigenous females living in Qld, WA, SA and the NT in 2002-2006 was 69 per 100,000, a rate 3.0 times that for non-Indigenous females [16]. Transport accidents and intentional self-harm were the leading causes of injury deaths for Indigenous females at rates 4.1 and 1.8 times higher than those for non-Indigenous females. Indigenous females died as a result of assault at a rate 9.9 times that of non-Indigenous females.

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 almost one-quarter (23%) of Indigenous females aged 15 years or older had been a victim of physical or threatened violence in the previous 12 months (Figure 13) [45]. 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 [46].

Figure 13. Percentages of Indigenous female who were victims of physical or threatened violence in the previous 12 months, by age group, Australia, 2002



Source: ABS, 2004, [45]

NOTE:

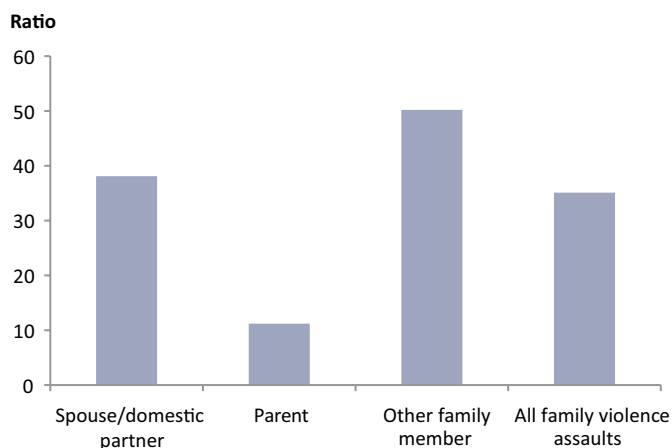
1. Figures based on self reported data from the 2002 NATSISS

Assault was the most common cause of hospitalisation for injury among Indigenous females during 2005-2006, with 33 times more admissions than the number expected from rates for non-Indigenous females [26].

Hospitalisation rates for assaults from family violence were 35 times more common for Indigenous females living in Qld, WA, SA and NT in 2003-04 than for their non-Indigenous counterparts [46]. For Indigenous females, one-half of hospitalisations for assault were as a consequence of family violence during this period [46]. Hospitalisation rates for family-violence related assaults were highest among women aged 25-34 years [46].

The numbers of hospital admissions of Indigenous females living in Qld, WA, SA and NT in 2003-04 for family-violence assaults were much higher than the numbers expected from rates for their non-Indigenous counterparts across all perpetrator categories (Figure 14) [46].

Figure 14. Hospitalisations for family violence assaults, Indigenous:non-Indigenous rate ratios, by relationship of victim to perpetrator, Qld, WA, SA and NT, 2003-04



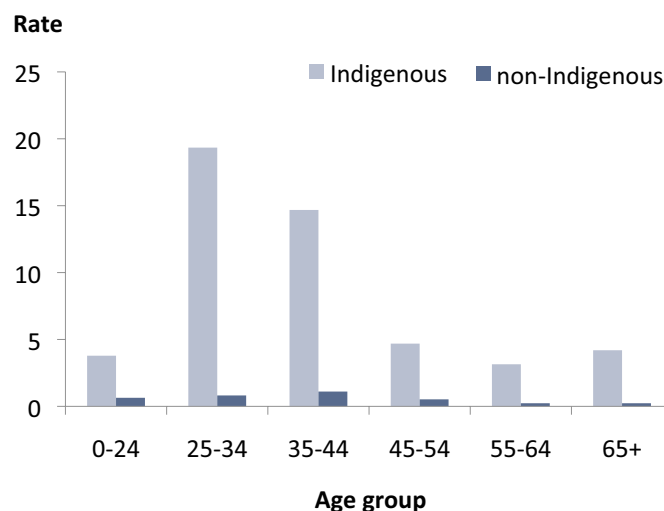
Source: AIHW, 2006, [46]

NOTES:

1. Rate ratio is the observed hospitalisations divided by the expected hospitalisations. Expected hospitalisations are based on the age, sex and assault type specific rates for other Australians in these jurisdictions.
2. Due to the incomplete identification of Indigenous status, these figures probably under-estimate the true differences between Indigenous and non-Indigenous people

Over the period 2001-2005, Indigenous females died as a result of assault at rates between 6 and 23 times the equivalent age-specific rates for non-Indigenous females, accounting for 16% of all deaths due to external causes (Figure 15) [26].

Figure 15. Female death rates from assault, by Indigenous status and age group, Australia, 2001-2005



Source: ABS, AIHW, 2008, [26]

NOTES:

1. Rates are per 100,000 population
2. Due to the incomplete identification of Indigenous status, these figures probably under-estimate the true differences between Indigenous and non-Indigenous people

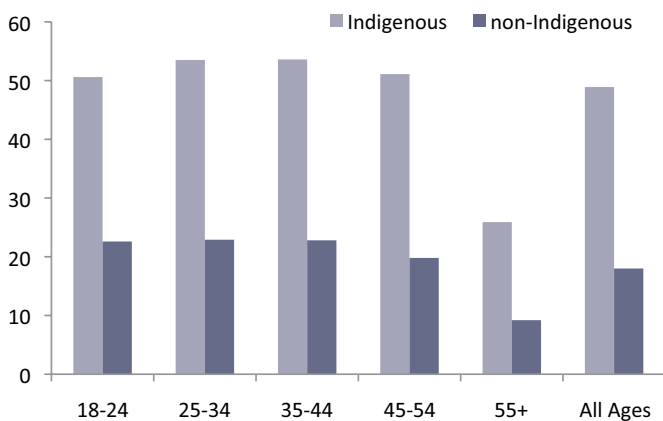
Risk factors

TOBACCO USE

Prevalence

According to analysis of the 2004-2005 NATSIHS, around one-half (49%) of Indigenous females smoked cigarettes on a daily basis, around two and a half times the proportion of non-Indigenous females who smoked daily at that time (Figure 16) [11]. The proportions of Indigenous females who smoked on a daily basis were high for most age groups, only decreasing slightly among females aged 55 years or older. The proportions of females who were daily smokers were similarly high in remote and very remote areas (47%) and in other areas (50%) [11].

Figure 16. Percentages of females smoking daily, by Indigenous status, jurisdiction and age group, Australia, 2004-2005



Source: Steering Committee for the Review of Government Service Provision, 2009, [11]

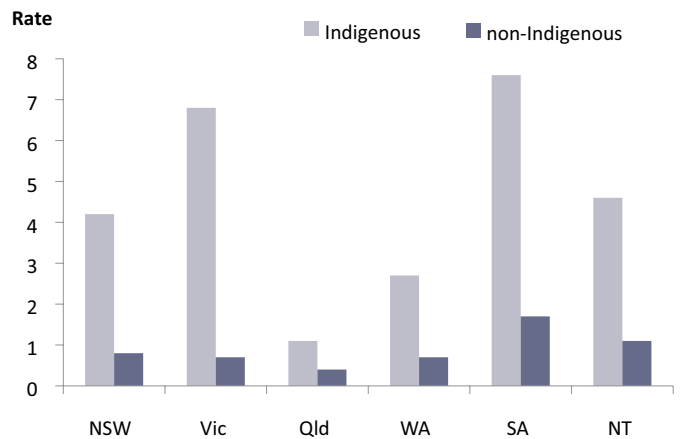
NOTES:

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

HOSPITALISATION

The hospitalisation of Indigenous females in 2006-07 for conditions directly attributable to tobacco smoking varied across jurisdictions, ranging from 1.1 episodes per 1,000 for Qld to 7.6 per 1,000 for SA (Figure 17) [11]. (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 females than for non-Indigenous females for all jurisdictions.

Figure 17. Female hospitalisation rates for conditions directly attributable to tobacco smoking, by jurisdiction, 2006-07



Source: Steering Committee for the Review of Government Service Provision, 2009, [11]

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 [47]. 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 attributed to tobacco smoking were coronary/ischaeamic heart disease (220 deaths, 7.7% of all deaths), lung cancer (116 deaths, 4.0% of all deaths), chronic obstructive pulmonary disease (99 deaths, 3.5% of all deaths) and stroke (59 deaths, 2.0% of all deaths) [47].

ALCOHOL CONSUMPTION

Prevalence

In the 2004-2005 NATSIHS, 14% of Indigenous females aged 18 years or older reported never having consumed alcohol or had not done so in the previous 12 months[31]. On the other hand, 8% of Indigenous females aged 18 years or older reported consuming alcohol at a 'risky' (defined as daily consumption for females of two to four standard drinks) and 6% at 'high risk' level (more than four standard drinks). Almost one-half (46%) of Indigenous females consumed alcohol at short-term risky to high risk levels at least once in the previous 12 months and 15% at least once a week in the previous 12 months [11, 31]. Consumption at risky and high risk levels was the same for Indigenous females aged 18 years or older

living in non-remote areas (14%) and their counterparts living in remote areas (14%) [31].

In view of the known health outcomes of alcohol consumption for Indigenous females (see Tables 7 and 8), it has been suggested that estimates like those obtained by the 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) under-estimate the differences between Indigenous and non-Indigenous females [48]. 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 [48].

Hospitalisation

Reflecting their higher level of risky and high risk consumption, the hospitalisation rate for alcohol-related conditions for Indigenous females living in NSW, Vic, Qld, WA, SA and the NT in 2006-07 was three times higher than that of non-Indigenous females [11]. Rates were higher for Indigenous females than non-Indigenous females for a number of specific alcohol-related disorders (Table 7).

Table 7. Female hospitalisation for selected alcohol-related disorders, by Indigenous status and age group, and Indigenous:non-Indigenous rate ratios, NSW, Qld, WA, SA and the NT, 2006-07

Disorder	Indigenous	Non-Indigenous	Ratio
Mental/behavioural disorders	5.0	1.5	3.3
Acute intoxication	2.2	0.4	5.5
Harmful use	0.2	-	-
Dependence syndrome	1.3	1.0	1.3
Other	0.7	0.1	7.0
Alcoholic liver disease	1.1	0.1	11.0

Source: Steering Committee for the Review of Government Service Provision, 2009, [11]

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 12.3 times more common among Indigenous females living in Qld, WA, SA and the NT in 2002-2006 than among their non-Indigenous counterparts (Table 8) [16].

Table 8. Female age standardised death rates, by Indigenous status and diagnosis, Qld, WA, SA and the NT, 2002-2006

Diagnosis	Indigenous	Non-Indigenous	Ratio
Alcoholic liver disease	18.0	1.5	12.1
Mental and behavioural disorders due to alcohol use	4.8	0.4	12.7
All causes	23.8	1.9	12.3

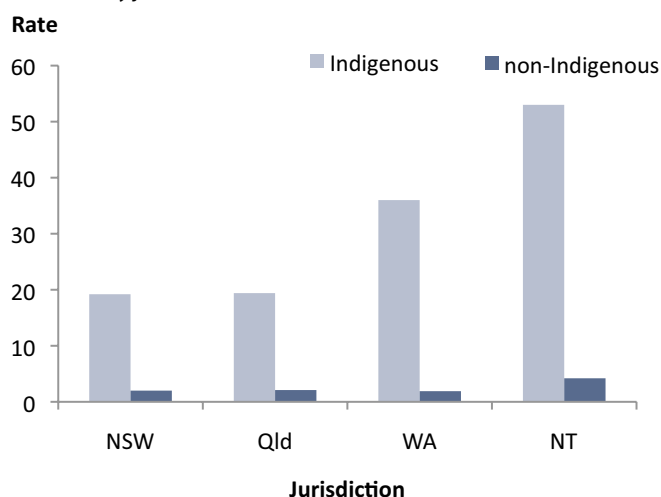
Source: AIHW, 2008, [16]

NOTES:

1. Rates per 1,000 have been directly age-standardised using the Australian 2001 standard population
2. Rate ratio is Indigenous rate divided by non-Indigenous rate

The rates of alcohol related deaths for Indigenous females living in NSW, Qld, WA and NT in 2003-2007 was significantly higher than those for their non-Indigenous counterparts (Figure 18) [11].

Figure 18. Female age-standardised death rates, alcohol related deaths, by jurisdictions, NSW, Qld, WA, and the NT, 2003-2007



Source: Steering Committee for the Review of Government Service Provision, 2009, [11]

NOTE:

1. Rates per 100,000 have been indirectly standardised using the estimates from ABS, 2004 [4]

ILLICIT DRUG USE

Prevalence

Indigenous people are more likely to have used an illicit drug than non-Indigenous people, and are almost twice as likely to be recent users (Table 9) [49]. The use of illicit drugs is a contributing factor to illness and disease among Indigenous women. 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 [50].

Table 9. Percentages of persons aged 14 years and older using illicit drugs, by Indigenous status and use status, Australia, 2007

Diagnosis	Indigenous	Non-Indigenous
Never used	47	62
Ex-users	29	25
Recent users	24	13

Source: AIHW, 2008, [49]

NOTE:

1. Based on self-reported data from the 2007 National Drug Strategy Household Survey [49]

Mortality

Deaths from illicit drug use were 2 times as common among Indigenous females living in NSW in 2003-2007 than for their non-Indigenous counterparts, and 1.4 times more common for those living in SA (comparative information was not available for other states and the territories) [11].

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 and there are no comprehensive data specific to Indigenous females [51]. The situation is further compounded by fluctuating usage patterns. 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 [51].

Petrol sniffers are more likely to be male than female: between two-thirds and three-quarters of Indigenous sniffers in central Australian were male [51]. 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 NT [52].

NUTRITION

The 2004-2005 NATSIHS collected some limited information about the dietary habits and food security⁵ of Indigenous people [31]. In terms of dietary habits, 11% of Indigenous females consumed five or more serves of vegetables and 44% two or more serves of fruit

daily, compared with 16% and 60% of non-Indigenous females [16]. Almost three-quarters (71%) of Indigenous females reported that they usually used whole milk, compared with 37% of non-Indigenous females [16].

Information about food security related to whether Indigenous people aged 15 years or over 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 (24%) of respondents had run out of food, and almost 8% 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 (36% compared with 20%) [16].

Cost has been confirmed as a major influence on the ability of Indigenous people living in remote communities to attain a healthy diet [54]. 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 than in major cities [55]. Similarly, a healthy basket of food in the NT in 2008 cost 23% more in remote areas than in a Darwin supermarket [56].

As well as impacting at an individual level, food insecurity can also occur at a community level [57]. Apart from traditional food sources, community stores are frequently the only source of food in many remote areas. 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.

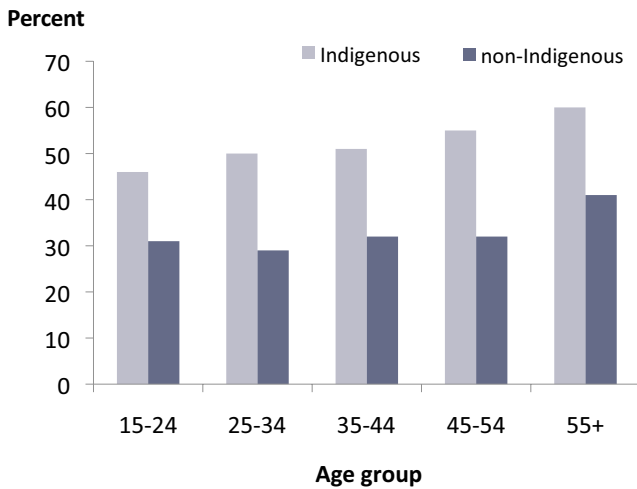
Food use can also be influenced by limited knowledge of basic nutrition, but research in the NT suggests that people generally have a good understanding of healthy eating and the components of a healthy diet [58]. Poverty was identified as the key driver of food choice and eating behaviour.

⁵ 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) [53].

PHYSICAL ACTIVITY

Almost one-half of Indigenous females 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 [16]. The proportions of Indigenous females not having done any physical activity in the previous two weeks were higher than those for non-Indigenous females for all age groups (Figure 19).

Figure 19. Percentages of females inactive in the preceding two weeks, by Indigenous status and age group, non-remote areas, Australia, 2004-2005



Source: AIHW, 2008, [16]

NOTE:

1. Data is based on self-reported figures

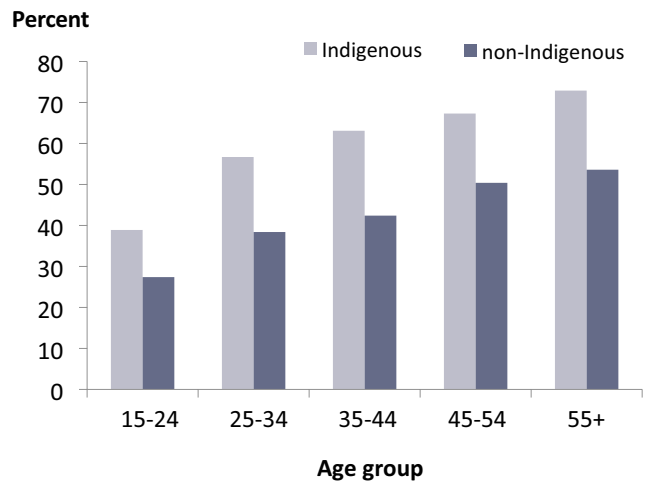
OVERWEIGHT AND OBESITY

According to the 2004-2005 NATSIHS, almost three-fifths (58%) of Indigenous females aged 18 years or older were overweight or obese [16]. The proportions of both Indigenous and non-Indigenous females who were overweight or obese generally increased with age (Figure 20).

After age adjustment, the level of overweight and obesity was 1.4 times higher for Indigenous females than for non-Indigenous females in major cities [16].

Separate information is not available for Indigenous females, but the proportion of Indigenous people who were overweight or obese showed little inter-regional variation [59].

Figure 20. Percentages of overweight and obese females, by Indigenous status and age group, Australia, 2004-2005



Source: ABS, 2006, [16]

NOTES:

1. Derivation of proportions excludes people for whom BMI was not known
2. Data is based on self-reported figures from the 2004-2005 NATSIHS

Vulnerable groups

YOUNG CHILDREN AND ADOLESCENTS

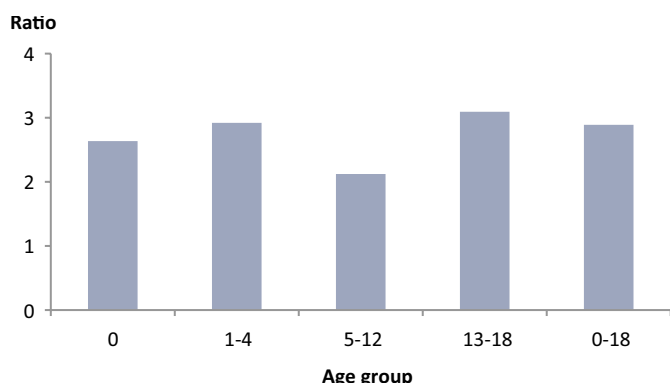
There is very little information specifically on the health of Indigenous girls, but, compared with non-Indigenous counterparts, Indigenous children are:

- 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[60].

Of the infant females who died in Qld, WA, SA and the NT in 2002-2006, about one fifth were Indigenous – the infant mortality rate of 10.1 deaths per 1,000 live births for Indigenous females was 2.6 times the rate of 3.9 per 1,000 for non-Indigenous females [16].

Beyond infancy, death rates for Indigenous female children and teenagers living in Qld, WA, SA and the NT in 2002-2006 were between 2 and 4 times higher than those of their non-Indigenous counterparts (Figure 21) [60].

Figure 21. Indigenous:non-Indigenous ratios of death rates for female children and teenagers, by age group, Qld, WA, SA and the NT, 2002-2006



Source: Freemantle et al., 2009, [60]

NOTES:

1. Rate ratio is the Indigenous rate divided by the non-Indigenous rate
2. Due to the incomplete identification of Indigenous status, these figures probably under-estimate the true differences between Indigenous and non-Indigenous people

Injuries were the main causes of death for both Indigenous and non-Indigenous females aged between 5 and 18 years, but Indigenous female children died as a result of injury at a rate 3.5 times that of their non-Indigenous counterparts [60]. It is not known what proportion of these injury deaths were due to intentional self-harm, but deaths from that cause were five times more common for Indigenous females aged 24 years or younger living in Qld, WA, SA and the NT in 2001-2005 than for their non-Indigenous counterparts [60].

A further point of difference in explaining differences in rates of injury related deaths is that for the years 2006-07 Indigenous female children aged between 0 and 14 years were 14 times more likely to be hospitalised for assault [61].

As with other aspects of Indigenous health, the health and wellbeing of Indigenous female 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 [62].

The Western Australian Aboriginal Child Health Survey (WAACHS), the most comprehensive assessment ever undertaken of the health of Indigenous children, found that one-fifth (21%) of Indigenous females aged 4-17 years were at high risk of clinically significant emotional or behavioural difficulties, 1.5 times the proportion for non-Indigenous females (14%) [62]. Consistent with the overall pattern for females, Indigenous females aged 4-11 years had a slightly higher level of risk (23%) than those aged 12-17 years (18%) [62].

Despite the high risk levels among Indigenous female children, few had been seen by the state's Mental Health Services: less than 1% of those aged under 4 years, 3% of those aged 4-11 years and 11% of those aged 12-17 years [62].

The main factors associated with clinically significant emotional or behavioural difficulties were family life stress events, quality of parenting, and family dysfunction [62]. Importantly, the children of Indigenous 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 [63].

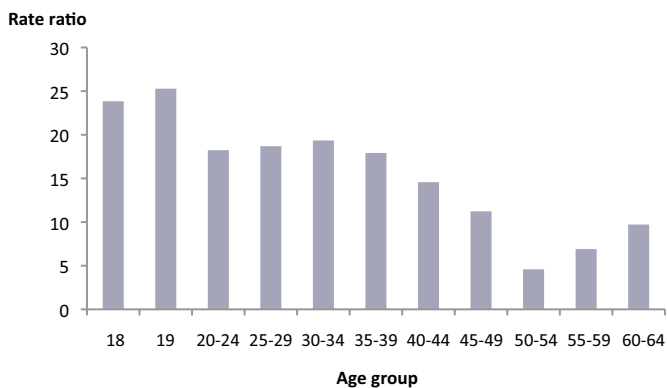
The high risk of clinically significant emotional or behavioural difficulties among Indigenous female children in WA was associated with:

- Low self-esteem – 32% (Ages 12-17 years) [62];
- High risk of clinically significant conduct problems and hyperactivity – 29% and 12% respectively (Ages 4 to 17)[62];
- Suicidal thoughts and behaviour – in the previous 12 months, 20% aged 12-17 years had thought about ending their life, and 9% had attempted suicide [62];
- The WAACHS found that Indigenous females aged 12-17 years had high levels of behaviours harmful to health:
- Two-fifths (40%) smoked regularly (60% of 17 year-olds (males and females) smoked regularly)[62];
- More than one-quarter (27%) drank alcohol (43% of 17 year-olds drank alcohol) [62];
- More than one fifth (21%) of 17 year-olds had used marijuana at least weekly [62]; and
- More than one-third (36%) had not done strenuous exercise in the previous week (49% of 17 year-olds had not done strenuous exercise in the previous week) [62].

FEMALE PRISONERS AND JUVENILE DETAINEES

In 2009, the overall rate of imprisonment for Indigenous females was 360 per 100,000 population compared with 18 per 100,000 for non-Indigenous females. The rate ratio for imprisonment of Indigenous females was highest in those aged 18-19 (Figure 22). This highlights the fact that Indigenous female prisoners tend to be of a younger age than non-Indigenous females prisoners (median ages of prisoners are 32 and 36 years respectively) [64]. The proportion of the prison population that was Indigenous varied greatly from over 80% in the NT to under 10% in Vic [64].

Figure 22. Rate ratio imprisonment of Indigenous:non-Indigenous females, by age group, 2009



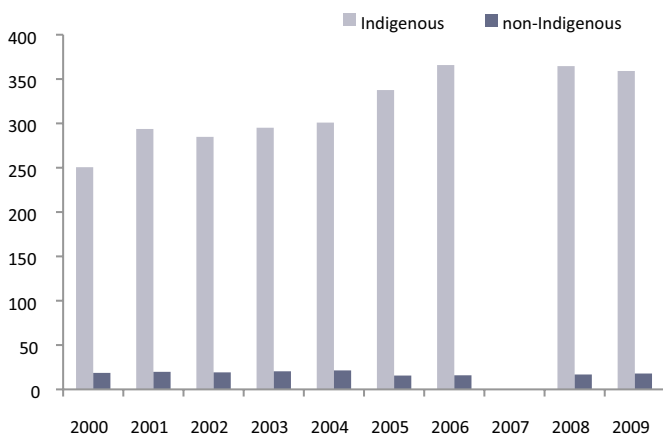
Source: ABS, 2009, [64]

NOTES:

1. Rate ratio is the Indigenous rate divided by the non-Indigenous rate
2. Data is not available for both groups in the under 18 and the 65 and over age groups

The age-standardised rate of Indigenous-female imprisonment has grown steadily over the past decade whilst the rate of non-Indigenous female imprisonment has remained relatively consistent (Figure 23) [64-72]. Indigenous females represent one of the fastest growing sub-sections of the adult prison population, a fact of concern when considering Indigenous over-representation in the criminal justice system and the socio-cultural effects of female imprisonment on families and communities [73].

Figure 23. Rates of imprisonment of Indigenous and non-Indigenous females, Australia, by year, 2000-2009



Source: Derived from ABS, 2000; 2001; 2002; 2003; 2004; 2005; 2006; 2008; 2009, [64-72].

NOTES:

1. Rate is per 100,000 population
2. Data is not available for 2007

The type of offences that Indigenous and non-Indigenous females are imprisoned for differs significantly. In 2009 Indigenous females were primarily imprisoned for 'Acts intended to cause injury' (31%) and 'Offences against justice procedures, government security and operations' (14%) while non-Indigenous females were imprisoned for 'Illicit drug offences' (22%) and 'Fraud, deception and related offences' (15%) [64]. A point of note, however, is that Indigenous people were generally expected to serve shorter sentences than the non-Indigenous prisoner population [64].

There is little current empirical information available on the characteristics of offenders taken into police custody. The most recent police custody survey occurred in 2002, finding that while non-Indigenous and Indigenous males comprised the majority of incidents of police custody, females were significantly more highly represented among Indigenous than non-Indigenous incidents [74]. This is a significant contributor to the over-representation of Indigenous females at later stages of the criminal justice system.

Studies within the female prison populations of QLD and WA have found that female prisoners are likely to report the following health risks prior to being imprisoned: mental illness, illicit drug use (and needle sharing), harmful levels of drinking, poor nutrition, little exercise, high rates of obesity, physical, emotional and sexual abuse, unprotected sex and unplanned pregnancies [75, 76].

In WA, Indigenous female prisoners post-imprisonment have been shown to face poorer health outcomes than Indigenous females who have not been imprisoned. For the period 1995-2003 the standardised mortality rates for Indigenous females ex-prisoners aged 20 -39 years and those aged 40 - 59 years were 2.3 and 1.8 respectively. Similarly the rate of hospitalisation due to mental illness and injury and poisoning for Indigenous female ex-prisoners was approximately three times the rate in the general Indigenous female population in WA [77].

The number of Indigenous juveniles in detention in Australia increased by 65% between 2001 and 30 June 2007, while non-Indigenous juveniles in detention increased by only 1.3% in the same period. In 2007 Indigenous female juveniles were imprisoned at a rate of 24 times that of non-Indigenous female juveniles [11].

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. They are thus much more likely to have a history of detention and incarceration by the time they reach adulthood [11].

Concluding comments

It is clear from this review that Indigenous women and girls remain less healthy than non-Indigenous women and girls. Being a 'snapshot' of the most recent indicators of health status, however, this review doesn't reflect the evidence that the health status of Australia's Indigenous females 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 women living in WA and SA and the NT declined by around 15% over the period 1991-2006 [16]. 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 females.

The most recent estimate of life expectancy at birth for Indigenous females, 72.9 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 [13].

Indigenous infant mortality rates for WA, SA and the NT declined significantly over the 16-year period 1991-2006 [16]. The Indigenous rate declined by 47% over that period, slightly more than the 34% decline of the rate for non-Indigenous people. The Indigenous:non-Indigenous rate ratio declined from 4.3 to 3.2.

In terms of specific health conditions, substantial improvements have occurred in the overall impact of many infectious diseases (partly due to immunisation programs) [78] [79] [80] [81] [82] [83].

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 females and that of non-Indigenous females is still very, very wide.

POLICY DEVELOPMENTS

There have been national and state level policy responses designed to better guide how health services can meet the needs of women and girls, and the Australian Government is currently developing a new national women's health policy. It is proposed that the policy be based on five core principles: gender equity; health equity between women; focus on prevention; evidence base; and a life course approach [1].

The Australian Government will give particular attention to groups of women who experience greater health problems and poorer health outcomes for social, cultural or biological reasons. Indigenous women 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 will address the health needs of Indigenous females in a holistic manner that takes into account both the historical and contemporary social determinants of their health.

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 [84]. In 2007, Australian governments, through the Council of Australian Governments (COAG)⁶ committed to 'closing the gaps' in disadvantage between Indigenous and other Australians [85].

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 [86].

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 supportive commitments by the corporate and community sectors [86]. Agreement has been reached also on the establishment of a new national Indigenous representative body.

Together, the Australian Government's specific attention to Indigenous females in the development of new strategies for women'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 females and males.

⁶ COAG is 'the peak intergovernmental forum in Australia, comprising the Prime Minister, State Premiers, Territory Chief Ministers and the President of the Australian Local Government Association (ALGA)'.

References

1. Australian Department of Health and Ageing (2009) *Development of a new national women's health policy – consultation discussion paper 2009*. Canberra: Australian Department of Health and Ageing
2. National Aboriginal Health Strategy Working Party (1989) *A National Aboriginal Health Strategy*. Canberra: Department of Aboriginal Affairs
3. Queensland Aboriginal and Islander Health Forum (1999) *Queensland Aboriginal and Islander Health Forum corporate plan*. Brisbane: Queensland Aboriginal and Islander Health Forum
4. 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
5. Australian Bureau of Statistics (2007) *Population distribution, Aboriginal and Torres Strait Islander Australians, 2006*. (ABS Catalogue no. 4705.0) Canberra: Australian Bureau of Statistics
6. Australian Bureau of Statistics (2008) *Population projections, Australia, 2006 to 2101*. (ABS Catalogue no 3222.0) Canberra: Australian Bureau of Statistics
7. Siggers S, Gray C, Reid J, Trompf P (1991) Policy and practice in Aboriginal health. In: *The health of Aboriginal Australia*. Marrickville, NSW: Harcourt Brace Jovanovich Group [Australia] Pty Ltd:381-420
8. Carson B, Dunbar T, Chenhall RD, Bailie R, eds. (2007) *Social determinants of Indigenous health*. Crows Nest, NSW: Allen and Unwin
9. Marmot M (2004) *The status syndrome: how social standing affects our health and longevity*. New York: Holt Paperbacks
10. Wilkinson R, Marmot M (2003) *Social determinants of health: the solid facts*. (second edition) Denmark: World Health Organisation
11. Steering Committee for the Review of Government Service Provision (2009) *Overcoming Indigenous disadvantage: key indicators 2009*. Canberra: Productivity Commission, Australia
12. Australian Bureau of Statistics (2008) *Population characteristics, Aboriginal and Torres Strait Islander Australians: 2006*. (ABS Catalogue no. 4713.0) 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 (2009) *Deaths Australia, 2008*. (ABS Catalogue no 3302.0) Canberra: Australian Bureau of Statistics
15. Australian Bureau of Statistics (2009) *Causes of death Australia, 2007*. (ABS Catalogue no 3303.0) Canberra: Australian Bureau of Statistics
16. 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
17. Sullivan E, Hall B, King J (2008) *Maternal deaths in Australia 2003-2005*. (AIHW Catalogue no. PER 42) Canberra: Australian Institute of Health and Welfare
18. Australian Bureau of Statistics (2009) *Births Australia, 2008*. (ABS Catalogue no 3301.0) Canberra: Australian Bureau of Statistics
19. Laws P, Sullivan EA (2009) *Australia's mothers and babies 2007*. (AIHW Catalogue no PER 48) Sydney: AIHW National Perinatal Statistics Unit
20. Ashdown-Lambert JR (2005) A review of low birth weight: predictors, precursors and morbidity outcomes. *Journal of the Royal Society for the Promotion of Health*;125:76-83
21. Leeds K, Gourley M, Laws P, Zhang J, Al-Yaman F, et al. (2007) *Indigenous mothers and their babies, Australia 2001-2004*. (AIHW Catalogue no. PER 38) Canberra: Australian Institute of Health and Welfare
22. Zubrick SR, Lawrence DM, Silburn SR, Blair E, Milroy H, et al. (2004) *The health of Aboriginal children and young people*. (The Western Australian Aboriginal Child Health Survey, v. 1) Perth: Telethon Institute for Child Health Research
23. 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
24. Lehoczy S, Isaacs J, Grayson N, Hargreaves J (2002) *Hospital statistics: Aboriginal and Torres Strait Islander Australians, 1999-2000*. (ABS Catalogue no. 4711.0) Canberra: Australian Bureau of Statistics and Australian Institute of Health and Welfare
25. Australian Institute of Health and Welfare, 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
26. 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
27. Cunningham J, Rumbold AR, Zhang X, Condon JR (2008) Incidence, aetiology, and outcomes of cancer in Indigenous peoples in Australia. *Lancet Oncology*;9:585-595
28. Binns PL, Condon JR (2006) Participation in cervical screening by Indigenous women in the Northern Territory: a longitudinal study. *Medical Journal of Australia*;185:490-494
29. Panaretto KS, Dallachy D, Manassis V, Larkins S, Tabrizi S, et al. (2006) Cervical smear participation and prevalence of sexually transmitted infections in women attending a community-controlled Indigenous health service in North Queensland. *Australian and New Zealand Journal of Public Health*;30:171-176
30. 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
31. Australian Bureau of Statistics (2006) *National Aboriginal and Torres Strait Islander Health Survey: Australia, 2004-05*. (ABS Catalogue no. 4715.0) Canberra: Australian Bureau of Statistics

32. Australian Institute of Health and Welfare (2009) *Diabetes prevalence in Australia: an assessment of national data sources*. (AIHW Catalogue no CVD 46) Canberra: Australian Institute of Health and Welfare
33. Australian Institute of Health and Welfare (2008) *Diabetes: Australian facts 2008*. (AIHW Catalogue no. CVD 40) Canberra: Australian Institute of Health and Welfare
34. Templeton M, Pieris-Caldwell I (2008) *Gestational diabetes mellitus in Australia, 2005–06*. (AIHW Catalogue no. CVD 44) Canberra: Australian Institute of Health and Welfare
35. Australian Bureau of Statistics (2010) *Causes of death Australia, 2008*. (ABS Catalogue no 3303.0) Canberra: Australian Bureau of Statistics
36. Australia and New Zealand Dialysis and Transplant Registry (ANZDATA) (2009) *The 32nd annual report 2009 report - data to 2008: Australia and New Zealand Dialysis and Transplant Registry (ANZDATA)*. Adelaide: Australia and New Zealand Dialysis and Transplant Registry (ANZDATA)
37. Burns J, Burrow S, Genovese E, Pumphrey M, Sims E, et al. (2003) Other communicable diseases. In: *The health of Indigenous Australians*. South Melbourne: Oxford University Press:397-441
38. Bowden FJ, Tabrizi SN, Garland SM, Fairley CK (2002) Sexually transmitted infections: new diagnostic approaches and treatments. *Medical Journal of Australia*;176:551-557
39. Australian Institute of Health and Welfare (2008) *Australia's health 2008: the eleventh biennial health report of the Australian Institute of Health and Welfare*. (AIHW Catalogue no. AUS 99) Canberra: Australian Institute of Health and Welfare
40. National Centre in HIV Epidemiology and Clinical Research (2009) *HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia: annual surveillance report 2009*. Sydney: National Centre in HIV Epidemiology and Clinical Research
41. Miller PJ, Law M, Torzillo PJ, Kaldor J (2001) Incident sexually transmitted infections and their risk factors in an Aboriginal community in Australia: a population based cohort study. *Sexually Transmitted Infections*;77:21-25
42. Miller GC, McDermott R, McCulloch B, Fairley CK, Muller R (2003) Predictors of the prevalence of bacterial STI among young disadvantaged Indigenous people in north Queensland, Australia. *Sexually Transmitted Infections*;79:332-335
43. Smith K, Watson C, Senior K, Latif A (2008) Central Australian STI risk factor study. *The Northern Territory Disease Control Bulletin*;15:19-21
44. Australian Institute of Health and Welfare (2009) *Measuring the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples*. (AIHW Catalogue no. IHW 24) Canberra: Australian Institute of Health and Welfare
45. Australian Bureau of Statistics (2004) *National Aboriginal and Torres Strait Islander Social Survey, 2002*. (ABS Catalogue no. 4714.0) Canberra: Australian Bureau of Statistics
46. 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
47. Vos T, Barker B, Stanley L, Lopez A (2007) *Burden of disease and injury in Aboriginal and Torres Strait Islander peoples: 2003*. Brisbane: Centre for Burden of Disease and Cost-Effectiveness: School of Population Health, University of Queensland
48. 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*;26:221-222
49. Australian Institute of Health and Welfare (2008) *National Drug Strategy Household Survey 2007: detailed findings*. (AIHW Catalogue no. PHE 107) Canberra: Australian Institute of Health and Welfare
50. Urbis Keys Young (2004) *The relationship between drugs and crime*. Canberra: Attorney-General's Department, Australia
51. d'Abbs P, Maclean S (2008) *Volatile substance misuse: a review of interventions*. Barton, ACT: Department of Health and Ageing
52. 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
53. 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
54. 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*;190:549-551
55. Queensland Health (2006) *The 2006 healthy food access basket survey*. Brisbane: Queensland Health
56. Northern Territory Department of Health and Families (2008) *NT market basket survey 2008*. Darwin: Northern Territory Government
57. National Aboriginal and Torres Strait Islander Nutrition Working Party (2000) *National Aboriginal and Torres Strait Islander nutrition strategy and action plan, 2000–2010, and first phase activities, 2000–2003*. Strategic Inter-Governmental Nutrition Alliance of the National Public Health Partnership
58. Brimblecombe J (2007) Poverty underlies poor nutrition. *Chronicle*;10:16-17
59. Australian Institute of Health and Welfare (2008) *Rural, regional and remote health: indicators of health status and determinants of health*. (AIHW Catalogue no. PHE 97) Canberra: Australian Institute of Health and Welfare
60. Freemantle J, McAullay D, Smylie J (2009) Health of Aboriginal and Torres Strait Islander children in Australia. In: *Indigenous children's health report: health assessment in action*. Toronto: Centre for Research on Inner City Health, Keenan Research Centre:67-93
61. Australian Institute of Health and Welfare (2009) *A picture of Australia's children 2009*. (AIHW Catalogue no. PHE 112) Canberra: Australian Institute of Health and Welfare
62. Zubrick SR, Silburn SR, Lawrence DM, Mitrou FG, Dalby RB, et al. (2005) *The social and emotional wellbeing of Aboriginal children and young people*. (The Western Australian Aboriginal Child Health Survey, v. 2) Perth: Telethon Institute for Child Health Research and Curtin University of Technology

63. 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.* (The Western Australian Aboriginal Child Health Survey, v. 2) Perth: Telethon Institute for Child Health Research and Curtin University of Technology
64. Australian Bureau of Statistics (2009) *Prisoners in Australia, 2009.* (ABS Catalogue no 4517.0) Canberra: Australian Bureau of Statistics
65. Australian Bureau of Statistics (2008) *Prisoners in Australia, 2008.* (ABS Catalogue no 4517.0) Canberra: Australian Bureau of Statistics
66. Australian Bureau of Statistics (2000) *Prisoners in Australia, 2000.* (ABS Catalogue no 4517.0) Canberra: Australian Bureau of Statistics
67. Australian Bureau of Statistics (2001) *Prisoners in Australia, 2001.* Canberra: Australian Bureau of Statistics
68. Australian Bureau of Statistics (2002) *Prisoners in Australia, 2002.* (ABS Catalogue no 4517.0) Canberra: Australian Bureau of Statistics
69. Australian Bureau of Statistics (2003) *Prisoners in Australia, 2003.* (ABS Catalogue no 4517.0) Canberra: Australian Bureau of Statistics
70. Australian Bureau of Statistics (2005) *Prisoners in Australia, 2005.* (ABS Catalogue no 4517.0) Canberra: Australian Bureau of Statistics
71. Australian Bureau of Statistics (2006) *Prisoners in Australia, 2006.* (ABS Catalogue no 4517.0) Canberra: Australian Bureau of Statistics
72. Australian Bureau of Statistics (2004) *Prisoners in Australia, 2004.* (ABS Catalogue no. 4517.0) Canberra: Australian Bureau of Statistics
73. Salomone J (2005) Addressing the needs of Aboriginal women prisoners and their families in Western Australia. *Indigenous Law Bulletin*;17. Retrieved from <http://www.austlii.edu.au/au/journals/ILB/2005/56.html>
74. Taylor N, Bareja M (2005) *2002 National Police Custody Survey.* (Technical and background paper no.13) Canberra: Australian Institute of Criminology
75. Kraemer S, Gately N, Kessell J (2009) *HoPE (Health of Prisoner Evaluation): pilot study of prisoner physical health and psychological wellbeing.* Perth: Edith Cowan University, School of Law & Justice
76. Hockings BA, Young M, Falconer A, O'Rourke PK (2002) *Queensland women prisoners' health survey.* Brisbane: Queensland Department of Corrective Services
77. Hobbs MS, Krazlan K, Ridout S, Mai Q, Knuiman M, et al. (2006) *Mortality and morbidity in prisoners after release from prison in Western Australia, 1995-2003.* (Research and public policy series no. 71) Canberra: Australian Institute of Criminology
78. Australian Indigenous HealthInfoNet (2005) *Review of respiratory disease among Indigenous peoples.* Retrieved 16 January 2010 from <http://www.healthinfonet.ecu.edu.au/chronic-conditions/respiratory/reviews/our-review>
79. Roche PW, Krause V, Cook H, Barralet J, Coleman D, et al. (2008) Invasive pneumococcal disease in Australia, 2006. *Communicable Disease Intelligence*;32(1):18-30
80. Taylor HR, National Indigenous Eye Health Survey Team (2009) *National Indigenous eye health survey.* Melbourne: Indigenous Eye Health Unit, The University of Melbourne
81. Menzies R, Turnour C, Chiu C, McIntyre P (2008) *Vaccine preventable diseases and vaccination coverage in Aboriginal and Torres Strait Islander people, Australia, 2003 to 2006.* (Volume 32, supplement) Canberra: Department of Health and Ageing
82. Penny M, Thomson N (1987) A preliminary analysis of Aboriginal tuberculosis, 1984. *Aboriginal Health Information Bulletin*;8:15-18
83. Barry C, Konstantinos A, and the National Tuberculosis Advisory Committee (2009) Tuberculosis notifications in Australia, 2007. *Communicable Disease Intelligence*;33(3):304-315
84. Aboriginal and Torres Strait Islander Social Justice Commissioner (2005) *Social justice report 2005.* Sydney: Human Rights & Equal Opportunity Commission
85. Council of Australian Governments (2009) *National Indigenous reform agreement (closing the gap).* Canberra: Council of Australian Governments
86. Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) (2009) *Closing the gap on Indigenous disadvantage: the challenge for Australia.* Canberra: Commonwealth of Australia

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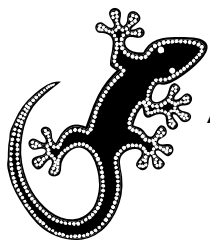
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This summary – or an updated version – can be viewed at:
http://www.healthinfonet.ecu.edu.au/women_review

FEATURED ARTWORK



Seven sisters
by Josie Boyle



Australian Indigenous HealthInfoNet

The Australian Indigenous HealthInfoNet'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 HealthInfoNet 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.healthinfolnet.ecu.edu.au). The HealthInfoNet'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.

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