The Australian Indigenous HealthInfoNet is an innovative Internet resource that contributes to 'closing the gap' in health between Indigenous and other Australians by informing practice and policy in Indigenous health.

Two concepts underpin the HealthInfoNet’s work. The first is evidence-informed decision-making, whereby practitioners and policy-makers have access to the best available research and other information. This concept is linked with that of translational research (TR), which involves making research and other information available in a form that has immediate, practical utility. Implementation of these two concepts involves synthesis, exchange and ethical application of knowledge through ongoing interaction with key stakeholders.

The HealthInfoNet’s work in TR at a population-health level, in which it is at the forefront internationally, addresses the knowledge needs of a wide range of potential users, including policy-makers, health service providers, program managers, clinicians, Indigenous health workers, and other health professionals. The HealthInfoNet also provides easy-to-read and summarised material for students and the general community.

The HealthInfoNet encourages and supports information-sharing among practitioners, policy-makers and others working to improve Indigenous health – its free online yarning places enable people across the country to share information, knowledge and experience. The HealthInfoNet is funded mainly by the Australian Department of Health. Its award-winning web resource (www.healthinfonet.ecu.edu.au) is free and available to everyone.

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Suggested citation:

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ISBN 0-9580963-1-7
Contents

Introduction ........................................................................................................................................................................ 1

What do we know about WA’s Indigenous population? ........................................................................................................ 3

What do we know about Indigenous births in WA? .............................................................................................................. 4

What do we know about Indigenous deaths in WA? ............................................................................................................ 4

Specific health conditions .................................................................................................................................................... 5

  What do we know about heart health in WA’s Indigenous population? .............................................................................. 5

  What do we know about cancer in WA’s Indigenous population? ....................................................................................... 5

  What do we know about diabetes in WA’s Indigenous population? .................................................................................... 6

  What do we know about the social and emotional wellbeing of WA’s Indigenous people? .................................................. 7

  What do we know about kidney health in WA’s Indigenous population? ....................................................................... 9

  What do we know about injury in WA’s Indigenous population? ........................................................................................ 9

  What do we know about respiratory health in WA’s Indigenous population? ................................................................. 10

  What do we know about eye health in WA’s Indigenous population? ............................................................................. 10

  What do we know about ear health in WA’s Indigenous population? .............................................................................. 11

  What do we know about oral health in WA’s Indigenous population? .............................................................................. 12

  What do we know about disability in WA’s Indigenous population? ............................................................................. 12

  What do we know about communicable diseases in WA’s Indigenous population? ......................................................... 13

  What do we know about factors contributing to Indigenous health in WA? .................................................................... 14

    Nutrition ........................................................................................................................................................................... 14

    Physical activity ............................................................................................................................................................... 14

    Tobacco use ................................................................................................................................................................. 15

    Alcohol use ................................................................................................................................................................. 15

Concluding comments ............................................................................................................................................................ 17

References ............................................................................................................................................................................ 18
This Summary of Indigenous health in Western Australia provides brief information in plain language about health problems and common risk and protective factors in the Aboriginal and Torres Strait Islander population in Western Australia (WA).

For more comprehensive information about Indigenous health status, please access the HealthInfoNet’s Overview of the health of Indigenous people in Western Australia (http://www.healthinfonet.ecu.edu.au/states-territories-home/wa/reviews/our-review).

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

Introduction

This summary includes the following information about Aboriginal and Torres Strait Islander peoples in WA:

- population
- births
- deaths
- common health problems
- health risk and protective factors.

It uses information from the most up-to-date sources to help create a picture of the health of WA’s Indigenous people including:

- reports in the Health and welfare of Australia’s Aboriginal and Torres Strait Islander peoples series produced by the Australian Bureau of Statistics (ABS) and the Australian Institute of Health and Welfare (AIHW)
- the Indigenous compendium to the Report on government services produced by the Steering Committee for the Review of Government Service Provision (SCRGSP)
- reports on key indicators of Indigenous disadvantage produced by SCRGSP
- reports in the Aboriginal and Torres Strait Islander health performance framework series produced by the Australian Health Ministers’ Advisory Council for the Department of Health and ageing.

Data for these reports are collected through health surveys, by hospitals, and by doctors across Australia.

It is important that health data are accurate; if some details are missing the information may not be accurate. For example, to understand data about the health of Indigenous people, states and territories need to collect information about their patients, including whether a person is Indigenous. Some states and territories (including WA, and also South Australia (SA) and the Norther Territory (NT)) reliably collect this data, but others (like the Australian Capital Territory (ACT) and Tasmania (Tas)) do not. This means that most information about the health of Indigenous people is fairly accurate for WA, but not for Australia as a whole. The information about the Indigenous population is getting better, but there are still limitations.

To create a complete picture of Indigenous health, all the information in this report should be looked at in the context of the ‘social determinants of health’. The ‘social determinants of health’ is a term used to talk about factors that affect people’s health [1-3], including if a person:

- is working
- feels safe in their community (no discrimination)
- has a good education
• has enough money
• feels connected to friends and family.
• Social determinants that are particularly important to many Indigenous people are:
  • their connection to land
  • the historical past that took people from their traditional lands and away from their families.

If a person feels safe, has a job that earns enough money, and feels connected to their family and friends, they will generally be healthier. Indigenous people are generally worse off than non-Indigenous people when it comes to the social determinants of health \[1\].

A lot of health services are not as accessible and user-friendly for Indigenous people as they are for non-Indigenous people, adding to higher levels of disadvantage. Sometimes this is because more Indigenous people than non-Indigenous live in remote locations and not all health services are offered outside of cities. Sometimes health services are not culturally appropriate (do not consider Indigenous culture and the specific needs of Indigenous people). Also, some Indigenous people may not be able to use some services because they are too expensive.

What makes health services more accessible for Indigenous people?

• having Indigenous Health Workers on staff
• increasing the number of Indigenous people working in health (doctors, dentists, nurses, etc.)
• having culturally competent non-Indigenous staff
• designing health promotion campaigns especially for Indigenous people
• making important health services available in rural and remote locations (so Indigenous people living in rural and remote areas do not have to travel to cities, away from their family and friends)
• funding health services so they are affordable for Indigenous people who might otherwise not be able to afford them.

More detailed information about the health of Indigenous peoples, social issues, and risk and protective factors, is available from the HealthInfoNet's web resource (www.healthinfonet.ecu.edu.au).
What do we know about WA’s Indigenous population?

According to the most recent Census, it was estimated there were 88,277 Indigenous people living in WA in 2011 [4]. Indigenous people made up almost 4% of WA’s population. Around one-in-three of WA’s Indigenous people lived in Perth, and one-in-six lived in the South-West. The table below provides more details about where Indigenous people in WA lived (Table 1).

Table 1. Indigenous population in WA, 30 June 2011

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of Indigenous people</th>
<th>% of Indigenous people in WA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perth</td>
<td>25,531</td>
<td>37</td>
</tr>
<tr>
<td>South-Western WA</td>
<td>10,552</td>
<td>15</td>
</tr>
<tr>
<td>South Hedland</td>
<td>7,260</td>
<td>10</td>
</tr>
<tr>
<td>Geraldton</td>
<td>6,330</td>
<td>9</td>
</tr>
<tr>
<td>Kalgoorlie</td>
<td>5,618</td>
<td>8</td>
</tr>
<tr>
<td>Kununurra</td>
<td>5,504</td>
<td>8</td>
</tr>
<tr>
<td>Broome</td>
<td>4,372</td>
<td>6</td>
</tr>
<tr>
<td>West Kimberley</td>
<td>4,041</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>69,670</td>
<td>100</td>
</tr>
</tbody>
</table>

Notes: 1 The regions are the ‘Indigenous regions’ used by the ABS for population estimates  
2 The table presents 2011 Census ‘count’ numbers which have not been adjusted; these numbers are likely to underestimate the numbers of Indigenous people  
3 There were high proportions of the regions’ populations where Indigenous status was not known, ranging from 18% in the South Hedland region to around 5% in Perth and the South-Western region  
Source: Derived from ABS, 2013 [5]

The number of Indigenous people counted in the 2011 Census was much higher than the number counted in the 2006 Census [6]. This could be explained by a number of factors:

- the number of Indigenous people has increased
- more Indigenous people were counted because of improvements in how the Census was conducted
- more Indigenous people identified as Indigenous in their response.

In 2011, 96% of Indigenous people in WA identified as Aboriginal, 2% identified as Torres Strait Islanders, and 2% identified as both Aboriginal and Torres Strait Islander [7].

The Indigenous population is younger than the non-Indigenous population in WA [4]. In 2011, more than one-third of Indigenous people were less than 15 years old (compared with one-in-five for non-Indigenous people). About 3% of Indigenous people were 65 years or over (compared with 12% of non-Indigenous people). Figure 1 shows a comparison of the age profiles of the Indigenous and non-Indigenous populations in WA.

Figure 1. Population pyramid of Indigenous and non-Indigenous populations in WA, 2011

What is a ‘rate’?

One way of looking at how common a disease is in a population is by calculating a ‘rate’. You can calculate a rate by dividing the number of cases of a disease by the population, for a specific amount of time. By calculating rates, you can compare how common a disease is in different populations (like Indigenous and non-Indigenous people) or between sexes (men and women). You can also calculate rates for deaths, which lets you compare the number of deaths in two different populations.

There is a special calculation for ‘infant mortality rates’. To calculate this rate, the number of infants (children under one year of age) who died in one calendar year is divided by the number of live births in the same year.

What do we know about Indigenous births in WA?

In 2011, there were 2,506 births registered in WA where one or both parents were Indigenous (eight out of every 100 births) [8]. Indigenous women had more children and had them at younger ages than did non-Indigenous women.

Indigenous women in WA had, on average, three births in their lifetime (compared with two births in their lifetime for all women in WA) [8]. Around four-in-five Indigenous mothers were younger than 30 years when they had their babies, compared with less than one-half of non-Indigenous mothers. Indigenous women were five times more likely to give birth when they were teenagers than were non-Indigenous women.

In 2010, the average weight for babies born to Indigenous women in WA was 3,139 grams, more than 200 grams less than the average of babies born to all Western Australian mothers [9]. Babies born to Indigenous women were more than twice as likely to be of low birthweight (less than 2,500 grams) than were those born to non-Indigenous women. Low birthweight can increase the risk of a child developing health problems.

What do we know about Indigenous deaths in WA?

Indigenous people are much more likely than non-Indigenous people to die before they are old [10, 11]. The most recent estimates show that an Indigenous boy born in WA in 2005-2007 could be expected to live to 65 years, 14 years less than a non-Indigenous boy (Figure 2) [10]. An Indigenous girl born in 2005-2007 could be expected to live to 70.4 years, 12.5 years less than a non-Indigenous girl. (In 2010, the ABS changed the way it calculates Indigenous life expectancy, so recent estimates cannot be compared with older estimates.)

Indigenous people are much more likely than non-Indigenous people to die before they are old [10, 11]. The most recent estimates show that an Indigenous boy born in WA in 2005-2007 could be expected to live to 65 years, 14 years less than a non-Indigenous boy (Figure 2) [10]. An Indigenous girl born in 2005-2007 could be expected to live to 70.4 years, 12.5 years less than a non-Indigenous girl. (In 2010, the ABS changed the way it calculates Indigenous life expectancy, so recent estimates cannot be compared with older estimates.)

In 2011, there were 454 Indigenous deaths registered in WA [12]. Many Indigenous deaths are incorrectly counted as non-Indigenous because the person or family are not identified as Indigenous – the actual number of Indigenous deaths is not known, but would be higher than the number registered.
The leading causes of death in 2006-2010 for Indigenous people in WA were:

- cardiovascular disease (including heart attacks and strokes)
- injury (including transport accidents and self-harm)
- cancer [13].

Babies born to Indigenous women are more likely to die in their first year than those born to non-Indigenous women [12]. In 2009-2011, the infant mortality rate (see boxed information, What is a rate?, for details) for Indigenous babies in WA was more than twice as high as that for non-Indigenous babies. The rate for Indigenous male babies was higher than that for Indigenous female babies.

**Specific health conditions**

**What do we know about heart health in WA's Indigenous population?**

Many Indigenous people are affected by cardiovascular disease (CVD), a group of diseases affecting the heart and circulatory system [14]. The most common types of CVD are coronary heart disease (including heart attack), stroke, heart failure, and high blood pressure. Risk factors (a behaviour or characteristic that makes it more likely for a person to get a disease) for CVD include: smoking tobacco, not eating well, and having diabetes.

In the 2004-2005 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS), one-in-ten Indigenous people in WA reported having a heart and circulatory problem [15]. Heart and related conditions were more common for Indigenous women than for non-Indigenous women, but the same for Indigenous and non-Indigenous men. High blood pressure (the most commonly reported condition nationally) was reported more often by Indigenous people than by non-Indigenous people.

CVD was the most common cause of death for Indigenous people in WA in 2006-2010 [15]. One-quarter of Indigenous deaths were from CVD. Deaths from CVD happened more than twice as often for Indigenous people as for non-Indigenous people.

**What do we know about cancer in WA’s Indigenous population?**

Cancer is a disease of the body’s cells (the basic building blocks of the body) [16]. Cancer can occur almost anywhere in the body. Normally cells multiply and grow in an ordered way, but sometimes the DNA (genetic blueprint) of cells is damaged resulting in uncontrolled growth. If cancer cells spread into surrounding areas, or to different parts of the body (metastasise), they are known as ‘malignant’; malignant cancers can cause illness and death.

In 2004-2005, 1% of Indigenous people in WA reported having cancer, which is about half as many as non-Indigenous people [17].

In 2007-2011, the rate of new cases (incidence rate) of cancer was the same for Indigenous and non-Indigenous people in WA [18]. Incidence rates varied depending on the type of cancer. Indigenous people had higher incidence rates than did non-Indigenous people for:

- lung and other smoking-related cancers
- cancer of the pancreas
- liver cancer
- cancers of ‘unknown primary site’ (the part of the body where the cancer started) [18].

The rate of new cases of cervical cancer was two times higher for Indigenous women than for non-Indigenous women in WA in 2004-2008 [15].
In 2007-2011, Indigenous people had lower incidence rates than did non-Indigenous people in WA for:

- breast cancer (for women)
- prostate cancer (for men) [18].

Death rates from cancer tend to be higher for Indigenous people than for non-Indigenous people. In 2006-2010, cancer was the third most common cause of death for Indigenous people in WA [13]. The types of cancer that caused the most deaths among Indigenous people were cancer of digestive organs and lung cancer [15]. The chance of getting lung cancer increases when people smoke tobacco.

The fact that Indigenous people are more likely than non-Indigenous people to die from cancer could be because:

- the types of cancers Indigenous people develop (such as cancers of the lung and liver) are more likely to be fatal
- the cancer may be more advanced by the time it is found (which is partly because Indigenous people may visit their doctor later and/or may not participate in screening programs)
- Indigenous people are less likely to receive adequate treatment [19].

**What do we know about diabetes in WA’s Indigenous population?**

Diabetes is a condition where the body cannot properly process glucose (a type of sugar) [20]. Normally the body can convert glucose into energy with the help of a hormone called insulin. If someone has diabetes, their body doesn't produce insulin properly. Without enough insulin the body cannot turn glucose into energy, and it stays in the blood. The treatment of diabetes depends on the type of diabetes – if someone has type 1 diabetes they will need insulin injections; if someone has type 2 diabetes they may be able to manage it by living a healthy lifestyle or taking some medicines. It is possible for a person to have type 2 diabetes without knowing it.

Diabetes is a major health problem for Indigenous people, but it is hard to know just how many Indigenous people have the disease. Diabetes or high sugar levels was reported by 9% of Indigenous people in WA in the 2004-2005 NATSIHS [17], but it is believed that only around one-half of Indigenous people with diabetes actually know they have it; it has been estimated that between 10% and 30% of Indigenous people Australia-wide may have the condition [21, 22]. Diabetes was almost four times more common for Indigenous people than for non-Indigenous people in WA (Figure 3).

In 2006-2010, diabetes caused almost one-in-ten Indigenous deaths in WA [13]. Deaths from diabetes were nine times more common for Indigenous people than for non-Indigenous people.

**Figure 3.** Proportions (%) of Indigenous and non-Indigenous people in WA reporting diabetes as a long-term health condition, by age-group, 2004-2005

<table>
<thead>
<tr>
<th>Age-groups (years)</th>
<th>Indigenous people</th>
<th>Non-Indigenous people</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>35-44</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>45-54</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>55+</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: AIHW, 2013 [15]
What do we know about the social and emotional wellbeing of WA’s Indigenous people?

Social and emotional wellbeing is a term used to talk about a person’s overall social, emotional, psychological (mental), spiritual, and cultural wellbeing. Factors that are important to social and emotional wellbeing include a person’s:

- connection to land
- ancestry (family history)
- relationships with family members and friends
- connection to community [23].

Social and emotional wellbeing is often confused with mental health, but it is much broader: social and emotional wellbeing is concerned with the overall wellbeing of the person. On the other hand, mental health describes how a person thinks and feels, and how they cope with and take part in everyday life. It is often seen, incorrectly, as simply the absence of a mental illness.

Many things can influence a person’s social and emotional wellbeing, including:

- historical/past events
- serious illness or disability
- death of family members or friends
- substance and/or alcohol use
- social and economic factors (education, employment, income, housing) [23, 24].

Measuring social and emotional wellbeing is difficult, but it usually relies on self-reported feelings (like happiness or calmness) or ‘stressors’ (stressful events in a person’s life).

The 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) collected information on positive wellbeing and asked people to report on feelings of happiness, calmness and peacefulness, fullness of life, and energy levels. The survey found that most (nine-out-of-ten) Indigenous people in WA felt happy some, most, or all of the time [15]. Around four-out-of-five Indigenous people reported feeling calm and peaceful, full of life, and that they had a lot of energy some, most, or all of the time.

Similar information has not been collected from non-Indigenous people, so there is no way to compare Indigenous and non-Indigenous people's positive wellbeing. It is likely, however, that Indigenous people would report lower levels of social and emotional wellbeing overall because they experience higher levels of psychological distress and more stressors when compared with non-Indigenous people [25, 26].

The 2008 NATSISS and the 2007-2008 National Health Survey (NHS) found that Indigenous adults in WA were almost three times more likely to feel high or very high levels of psychological distress than were non-Indigenous adults [15]. The 2008 NATSISS found that, nationally, almost eight-out-of-ten Indigenous people experienced one or more significant stressors in the year before the survey interview [25]; this compared with six-out-of-ten for the general Australian population [26].
Compared with the stressors reported by the general Australian population in the 2010 General Social Survey (GSS), many more Indigenous people Australia-wide reported stressors like: the death of a family member or friend; alcohol related problems; and trouble with the police (Figure 4) [25]. Almost one-in-eight Indigenous people also reported that either they, a family member, or friend had been sent to jail in the previous 12 months, but this stressor was not reported by the general population.

In 2008-10, Indigenous men in WA were three times more likely, and Indigenous women two times more likely, to be hospitalised for mental health-related conditions than were non-Indigenous men and women. The most common mental-health related conditions that Indigenous people in WA required hospitalisation for included ‘mental and behavioural disorders due to psychoactive substance use’ and ‘schizophrenia, schizotypal, and delusional disorders’ [15].

In 2005-2009, the death rate from ‘mental and behavioural disorders’ was more than three times higher for Indigenous people than non-Indigenous people in WA (‘mental and behavioural disorders’ occur when a person becomes unwell in the mind and experiences changes in their thinking, feelings, and/or behaviour that affects their day-to-day life) [27].

Deaths from ‘mental and behavioural disorders’ do not include deaths from ‘intentional self-harm’ (suicide). In 2011, intentional self-harm was the third leading cause of death for Indigenous people in WA [28]. In 2005-2009, deaths from intentional self-harm were three times higher for Indigenous people than for non-Indigenous people [27].

The most detailed information on the social and emotional wellbeing of Indigenous children comes from the Western Australian Aboriginal Child Health Survey (WAACHS). This survey found that almost one-quarter of Indigenous children and young people were rated by their carer (parent or guardian) as being at high risk of ‘clinically significant emotional or behavioural difficulties’ (emotional or behavioural problems that affect a person’s day-to-day life); this compares with one-in-seven children for the general WA population [29].

Indigenous children whose carers had been forcibly separated (taken away) from their families were at high risk of having ‘clinically significant emotional or behavioural difficulties’, more than twice the risk of children whose carer had not been forcibly separated [29]. These children also had twice the rates of alcohol and other drug use.

The WAACHS also found that seven-in-ten Indigenous children were living in families that had experienced three or more major life stress events (like a death in the family, serious illness, family breakdown, financial problems, or arrest) in the year before the survey, and one-in-five had experienced seven or more major stress events [29].
What do we know about kidney health in WA’s Indigenous population?

Healthy kidneys help the body by removing waste and extra water, and keeping the blood clean and chemically balanced [30]. When the kidneys stop working properly – as is the case when someone has kidney disease – ‘waste’ can build up in the blood and damage the body. Chronic kidney disease (CKD) is when the kidneys gradually stop working [31]. End-stage kidney disease (ESKD) is when the kidneys have totally or almost totally stopped working. People with ESKD must either have regular dialysis (be hooked up to a machine that filters the blood) or have a kidney transplant to stay alive.

Kidney disease is a serious health problem for many Indigenous people in WA. In 2008-2010, 132 Indigenous patients were newly diagnosed with ESKD [15]. ESKD was 12 times more common for Indigenous people than for non-Indigenous people in WA.

ESKD affects Indigenous people when they are much younger than it does for non-Indigenous people. In 2008-2010, Indigenous people in WA aged 25-44 years were 15 times more likely to be diagnosed with ESKD than non-Indigenous people (Figure 5) [15].

**Figure 5. Notification rates of end-stage kidney disease for Indigenous and non-Indigenous people in WA, by age-group, 2008-2010**

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Rate of ESKD per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-24</td>
<td></td>
</tr>
<tr>
<td>25-44</td>
<td></td>
</tr>
<tr>
<td>45-54</td>
<td></td>
</tr>
<tr>
<td>55-64</td>
<td></td>
</tr>
<tr>
<td>65+</td>
<td></td>
</tr>
<tr>
<td>All ages</td>
<td></td>
</tr>
</tbody>
</table>

Note: Rates are per 100,000 population. These rates show how many Indigenous and non-Indigenous people in WA had ESKD per 100,000. This means, for example, that for every 100,000 Indigenous people in WA aged 55-64 years, around 340 had ESKD in 2008-2010.

Source: AIHW, 2013 [15]

Across Australia, dialysis was the most common reason for Indigenous people to be admitted to hospital in 2010-11 [32]. Almost one-half of all Indigenous hospital admissions were for dialysis. Indigenous people were admitted to hospital for dialysis 11 times more often than were other Australians.

Some people need to have dialysis every day. People can have dialysis at hospitals, special out-of-hospital satellite units, or in the home (which requires special equipment and training for the patient and their carer(s), and is very costly) [33]. Accessing dialysis can sometimes be difficult for Indigenous people who live in rural or remote locations because they may have to travel to receive treatment.

In 2006-2010, Indigenous people in WA were more than five times more likely to die from kidney disease than were non-Indigenous people [13].

What do we know about injury in WA’s Indigenous population?

Injury generally refers to physical harm to a person’s body [34] including:

- assault
- self-harm
- environmental injuries (e.g. being bitten by a dog or being poisoned by inhaling poisonous fumes)
- transport accidents [35].
Cultural and everyday life situations for Indigenous people can affect the types of injuries they experience and how often injuries occur. Some factors that can increase the risk of injury include:

- disruption to culture
- socioeconomic disadvantage [35]
- living in rural and remote locations (including increased use of roads)
- risky behaviour
- limited access to health services and support services [36].

It is hard to know exactly how many Indigenous people in WA suffered injuries, but in 2004-2005 Indigenous people across Australia reported injuries around one-and-a-half times more often than did non-Indigenous people [37].

In WA, injury was the second most common reason that Indigenous people were admitted to hospital (after dialysis) in 2008-2010 [13]. Indigenous people were admitted to hospital for injuries around three times more often than were non-Indigenous people. The main causes of Indigenous injury-related hospital admissions were assault and falls.

In 2006-2010, injury was the second most common cause of death for Indigenous people in WA [13]. Indigenous people were more than three times as likely as non-Indigenous people to die from injuries.

What do we know about respiratory health in WA's Indigenous population?

The respiratory system includes all the parts of the body involved with breathing, including the nose, throat, larynx (voice box), trachea (windpipe), and lungs [38]. Respiratory disease occurs if any of these parts of the body is damaged or diseased and breathing is affected. Common types of respiratory disease include colds and similar viral infections, asthma and pneumonia.

Risk factors for respiratory disease include: infections, smoking (including passive smoking, breathing in another person’s tobacco smoke, which is particularly bad for children), poor environmental conditions (especially areas that are dusty or have lots of pollen or pollution), poor living conditions, and other diseases (like diabetes, heart and kidney disease) [38].

In WA, Indigenous and non-Indigenous people had similar levels of respiratory disease in 2004-2005 [17]. Asthma (the most common respiratory condition for Indigenous people) was reported by 14% of Indigenous people in WA.

In 2008-10, Indigenous people in WA were admitted to hospital because of a respiratory condition four times more often than non-Indigenous people [13].

Indigenous people in WA were three times more likely to die from a respiratory disease than were non-Indigenous people in 2006-2010 [15].

What do we know about eye health in WA’s Indigenous population?

Having healthy eyes is important for everyday life; they are needed to read and study, play sports, drive, and work [39]. There are a number of problems that can affect the health of the eye [40]. The most common conditions are:

- refractive error (problems focussing the eyes)
- cataract (clouding of the eyes’ lenses)
- diabetic retinopathy (caused by diabetes and can lead to blindness)
- infectious diseases like trachoma (a bacterial infection that can cause blindness).
Eye problems are associated with: getting older, smoking, injuries, exposure to ultra-violet (UV) light from the sun, and not eating enough healthy food [40]. Eye health problems can result in low vision (not being able to see properly) and sometimes result in impaired eyesight and blindness. This can be corrected with glasses, contact lenses or eye surgery.

Many Indigenous people do not have access to specialised eye health services, including optometrists and ophthalmologists (specialist eye doctors) [41]. As a result, Indigenous people are more likely than non-Indigenous people to have eye health problems that are preventable. In the 2004-2005 NATSIHS, eye and/or sight problems were reported by almost one-third of Indigenous people in WA [37].

The 2008 National Indigenous Eye Health Survey (NIEHS) found that, in WA, 12% of Indigenous adults and 2% of Indigenous children had low vision. The main causes of low vision and blindness for Indigenous adults were refractive error, cataracts, diabetic retinopathy, and trachoma [42, 43].

Diabetes, a major problem for Indigenous people, can cause eye disease and loss of vision. The 2008 NIEHS found that 12% of Indigenous people with diabetes in WA had sight problems, and only 16% had an eye examination in the last year [42].

The 2008 NIEHS reported that the prevalence of vision loss due to cataract was 5% in WA - higher than in any other state or territory [43].

In 2012, 4% of Indigenous children aged 1-14 years who were screened in WA had active trachoma [44]. The prevalence was highest (10%) among screened children in the Goldfields region, followed by 4% in the Mid-West region, and 2% in the Pilbara and Kimberley regions.

The 2008 NIEHS found Indigenous children had better vision than other children in Australia, especially in remote areas [43]. There were similar findings for Indigenous children in the WAACHS [45].

What do we know about ear health in WA’s Indigenous population?

Ear health is very important for hearing, learning and balance [46]. If ears get damaged, people might:

- not be able to hear properly, either for a short time, a long time, or for the rest of their lives
- have problems learning (because they cannot hear)
- have problems learning to speak properly.

There are a number of ear diseases, but the most common is called otitis media (OM) which can cause hearing loss [46]. OM is an ear disease where the middle ear is affected by infection from bacteria or viruses and it can be very painful. Fluid may build up in the middle ear and sometimes the ear drum is damaged; fluid may also leak from the ear.

Ear disease is associated with people living in crowded homes (particularly with people who smoke), living in poor conditions, or having poor hygiene. Children who go to day-care centres are often more likely than others to get ear infections.

The 2008 NATSISS found that 9% of Indigenous children in WA had ear or hearing problems [47]. Of these children, 5% had OM and 2% had partial or total hearing loss. The 2004-2005 NATSIHS found that 4% of Indigenous children in WA had OM [15], a level more than twice as high as that for non-Indigenous children [48]. Around 5% of Indigenous children were completely or partially deaf, which was twice as common as for non-Indigenous children.

The WAACHS found that almost one-in-five Indigenous children had recurring ear infections (ear infections that keep coming back) [45]. Young children (0-11 years) were more likely to have recurring ear infections than were older children (12-17 years). Carers reported hearing that wasn’t normal for 7% of Indigenous children. There is a strong link between recurring ear infections and abnormal hearing: 28% of children who had recurring ear infections with discharge (runny ears) also had abnormal hearing, compared with 1% of those without ear infections.
What do we know about oral health in WA’s Indigenous population?

Oral health is a term used for the health of a person’s teeth and gums [49]. If people have unhealthy teeth and gums they will probably have some pain; they may not be able to eat a variety of healthy foods or talk to other people comfortably. Two common oral health problems are caries and gum diseases. Caries is caused by bacteria that decay (break down) the enamel (hard outer part of the tooth); if caries is not treated the tooth will continue to decay and will eventually have to be removed. Caries is caused by poor oral hygiene and eating a lot of sticky and sweet foods that let bacteria grow and multiply. Gum disease (also known as periodontal disease) is caused by bacteria that attack the gums causing them to swell and bleed. If gum disease is not treated, the gums start to break down and the teeth will become loose because the gums won't be strong enough to hold them in place. Gum disease is caused by poor oral hygiene (poor care of the teeth and gums) and linked with not going to the dentist regularly, being older, tobacco use, low education, low income, and some medical conditions including diabetes and osteoporosis [50-52].

The 2004-2005 NATSIHS found that three-in-four Indigenous adults in WA had lost less than five adult teeth in their lifetime [17]. Indigenous people lost more teeth as they got older. The NATSIHS also found that one-in-six Indigenous adults in WA had never seen a dentist or other health professional about their teeth.

The 2008 NATSISS found that almost one-third of Indigenous children in WA had problems with their teeth and gums [13]. The WAACHS found that one-in-five Indigenous children in WA had holes in their teeth; two-in-five had tooth decay, teeth removed, or fillings [45].

A study in five remote communities in WA found that tooth decay was more common and more severe for Indigenous children than for non-Indigenous children [53]. The study also found that Indigenous children had more toothaches than did non-Indigenous children; only half of the Indigenous children in the study brushed their teeth every day, and one-third never brushed their teeth.

What do we know about disability in WA’s Indigenous population?

Disability may affect how a person moves around and looks after themselves, how they learn, or how they communicate [54, 55]. There are a lot of different kinds of disability:

- some affect the body, others affect how the brain works
- some are temporary, others last for a person's whole life
- some people are born with a disability, some people become disabled as the result of an event (such as a car crash).

A disability where a person ‘needs assistance with core activities’ is one that is severe and affects how a person is able to live their life [13].

In 2008, one-half of Indigenous adults in WA had some form of disability or long term health condition [15]. Around one-in-twelve Indigenous adults needed assistance with core activities because of a disability.

Disability becomes more common as people get older [7]. In 2011, Indigenous adults in WA were more likely to need assistance with core activities than non-Indigenous adults in every age-group (Figure 6), and a higher proportion of Indigenous adults needed assistance with a core activities from a younger age [7, 56]. Overall, Indigenous people were more than twice as likely as non-Indigenous adults to need assistance with core activities.
What do we know about communicable diseases in WA’s Indigenous population?

Communicable diseases are diseases that are passed from person to person either by direct contact with an infected person or indirectly, such as through contaminated (dirty/unclean) food or water. Another example of indirect transmission is when the disease is spread through the air, such as when an infected person coughs or sneezes and another person breathes in the air that contains the germs. Communicable diseases can be caused by:

- bacteria (e.g. tuberculosis)
- viruses (e.g. HIV)
- fungi (e.g. tinea)
- parasites (e.g. malaria) [57].

Improvements to personal and environmental cleanliness, and the introduction of new immunisations (vaccines), have greatly reduced the number of people who catch some communicable diseases [58].

If a person contracts (catches/develops) certain communicable diseases (like tuberculosis), the disease must be ‘notified’; this means that the information is collected by health authorities. Unfortunately, Indigenous status is often not reported in notifications. Only WA, SA, and the NT reliably identify Indigenous status in the notification of communicable diseases [59].

Recent information about communicable diseases in WA includes:

**Hepatitis:** an inflammation of the liver caused by viral infections, alcohol or other drugs, toxins, or an attack by the body’s immune system on itself [60].

- In 2009-2011, notification rates for hepatitis C were four times higher for Indigenous people than for non-Indigenous people in WA [15].
- In 2009-2011, hepatitis B notification rates were almost three times higher for Indigenous people than those for non-Indigenous people in WA [15].
- In 2011, there were no notifications for hepatitis A among Indigenous people in WA [61].

**Invasive pneumococcal disease (IPD):** caused by a bacterium and can lead to several major health conditions, such as pneumonia and meningitis [62].

- In 1997-2007, notification rates for IPD were almost seven times higher for Indigenous people in WA than for non-Indigenous people [63].
Sexually transmissible infections (STIs): caused by bacteria and viruses and can lead, if left untreated, to a range of health conditions, such as pelvic inflammatory disease (which can cause blocked fallopian tubes) in women [64, 65].

- In 2011, notification rates for gonorrhoea, syphilis, and chlamydia were 4 to 44 times higher (according to condition and age group) for Indigenous people than for non-Indigenous people living in WA [61].

HIV (human immunodeficiency virus): an infection that destroys cells in the body's immune system [66].

- In 2011, there were 98 cases, including five identified as Indigenous, of newly diagnosed HIV infection in WA [61].

What do we know about factors contributing to Indigenous health in WA?

Nutrition

If a person eats healthy food they are more likely to be healthy [67]. A healthy diet includes:

- fresh vegetables and fruits
- whole grains
- low-fat dairy products
- lean meats
- foods low in fat and salt.

Having access to healthy foods can be a challenge for some Indigenous people who live in remote locations because food that has to be shipped over long distances is not always available, or because fresh foods may be expensive [67].

The 2004-2005 NATSIHS found that most Indigenous people in WA ate fruit (85%) and vegetables (94%) every day [17]. More Indigenous people living in non-remote areas ate fruits and vegetables daily than did those living in remote areas. This may be because fruit and vegetables are more available and less expensive in non-remote areas than in remote areas.

The 2008 NATSISS found that, for Indigenous children in WA, four-in-ten ate the recommended daily serve of vegetables, and eight-in-ten ate the recommended amount of fruit [15].

The 2004-2005 NATSIHS found that most Indigenous people in WA drank whole milk, and only around one-in-six Indigenous people drank reduced fat or skim milk [17]. Most Indigenous people added salt to their food after it was cooked.

Physical activity

Keeping physically active is important for staying healthy. Physical exercise is good for a person's social and emotional wellbeing and reduces the risks of heart problems, diabetes, and some cancers [68].

The 2008 NATSISS found that one-third of Indigenous adults, and two-thirds of Indigenous children, in WA took part in sport in the year before survey [Derived from 69].

The 2005-2005 NATSIHS found that, among Indigenous adults in WA, almost one-half were sedentary (very little or no exercise) (Figure 7). Around one-third of Indigenous people undertook moderate or high levels of physical activity.
Figure 7. Proportions (%) of Indigenous adults by levels of physical activity, WA, 2004-2005

Note: Indigenous adults are those people aged 15 years and older
Source: AIHW, 2011 [25]

Tobacco use

Smoking tobacco is a major cause of:

- heart disease
- stroke
- some cancers
- lung disease
- a variety of other health conditions [70].

Passive smoking also contributes to poor health, particularly for children [70].

The 2008 NATSISS found that two-in-five Indigenous people in WA were current smokers [71]. This level is the same as that in the 2004-2005 NATSIHS [17], but a decrease from the level in 2002 [72]. In 2004-2005, smoking was twice as common for Indigenous adults as for non-Indigenous adults in WA [17].

In 2009, half of Indigenous mothers in WA smoked when they were pregnant, a level four times higher than that for non-Indigenous mothers [13].

In 2008, seven-in-ten Indigenous children lived with someone who was a daily smoker, and two-in-ten lived with someone who usually smoked inside the house on a daily basis [13].

Alcohol use

Drinking too much alcohol is related to:

- health conditions like liver disease, diabetes, cardiovascular disease, and some cancers
- brain damage
- injury and violence
- self-harm [73].

If a woman drinks alcohol when she is pregnant, the unborn child may be affected by fetal alcohol spectrum disorder (FASD), the term used to describe the physical, behavioural, and learning problems caused by alcohol damage to the brain and other parts of the body of the unborn baby [74]. The 2008 NATSISS found that most (79%) mothers of Indigenous children in WA did not drink during pregnancy, and 16% drank less alcohol during pregnancy [75]. Only 5% drank the same amount or more alcohol during pregnancy.
Indigenous people are much more likely to not drink alcohol (abstain) than non-Indigenous people [76]. The 2008 NATSISS found that more than one-third of Indigenous adults in WA did not drink alcohol [77]. However, Indigenous people who drink alcohol are more likely to drink at high-risk levels than non-Indigenous people. The 2008 NATSISS found that one-in-five Indigenous adults in WA were drinking at medium or high-risk levels [17].

In 2005-2009, the alcohol-related death rate was 11 times higher for Indigenous people than that for non-Indigenous people in WA [27].
Concluding comments

Overall Indigenous people in WA are not as healthy as non-Indigenous people, but there have been a number of improvements in WA and across Australia recently, including:

- reductions in death rates [13]
- a decrease in infant mortality rates [13]
- reductions in some communicable diseases, including trachoma [43, 44, 78]. Reductions in other communicable diseases, like invasive pneumococcal pneumonia [79-81] and hepatitis B infection [82], are largely because more Indigenous people are getting vaccinated
- a decrease in smoking [47], and a national decrease in the number of cigarettes smoked per day by Indigenous people [83].

The reasons why the health of Indigenous people is worse than that of non-Indigenous people are complex, but represent a combination of general factors (like education, employment, income, and socioeconomic status) and factors having to do with the health sector (like not having access to culturally appropriate services or support).

Within the health sector, there is a need for:

- more health advancement programs
- better identification of health conditions before they become serious
- more primary health care services that are accessible to Indigenous people
- greater cultural competence of service providers.

Improvements to the health of Indigenous people in Australia need an ongoing commitment by all Australian governments, through the Council of Australian Governments (COAG), to ‘close the gap’ in health and other disadvantages between Indigenous and other Australians.

In addressing the COAG ‘closing the gap’ commitments, the Australian and state and territory governments gave $4.6 billion in 2008 over four years to address early childhood development, health, housing, economic participation, and remote service delivery. COAG also arranged a number of supportive commitments in the corporate and community sectors.

Each state and territory had to develop plans explaining how they would help in ‘closing the gap’. The WA State Government agreed to a process that involved genuine engagement and partnership with the Western Australian Aboriginal community [84, 85].

In April 2013, the Australian Government announced $777 million to fund its share of a renewed National partnership agreement on closing the gap in Indigenous health outcomes for another three years (to 30 June 2016) [86]. The state and territory governments were asked to continue their investment to renew the National partnership agreement. In June 2013, the WA State Government announced new funding of $31 million to continue services to improve the health and wellbeing of Aboriginal West Australians [86].

The COAG commitments to date are encouraging, but ‘closing the gaps’ in health and other disadvantages will not be easy and will take a long time. Improvements in the health and wellbeing of Indigenous people will depend on a long-term commitment by all Australian governments and the involvement of Indigenous communities. This commitment will need to include strategies that address health services and the social and other factors that affect the health disadvantages faced by Indigenous people.
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Jiyirriny Ngarrangkarni - Kangaroo Dreaming

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