

Kimberley – population and health snapshot

The Kimberley is the State's most northern region and forms one sixth of Western Australia's total landmass. The Kimberley is remote from metropolitan areas with major towns of Broome being 2,213km from Perth by road and Kununurra being 3,205km from Perth but only 829km from Darwin by road. Understanding these distances is important when looking at where people access health services. Other major towns include Derby, Halls Creek, Wyndham and Fitzroy Crossing. There are more than 100 Aboriginal communities throughout the region of varying population sizes.

Based on the Accessibility/Remoteness Index of Australia (ARIA), the Kimberley region is classified as:

- 97% very remote
- 3% remote (areas around Broome and Kununurra)



Population

The estimated resident population in 2013 was 39,890, a growth of 25% since 2006. The Kimberley region population is generally younger (73% under 45 years old) and highly mobile. Aboriginal people represented 43% of the region's population in 2011. The Aboriginal people within the Kimberley have a comparatively younger age-structure, with almost 50% under 20 years old.

The Broome Shire has more than 40% of the region's population, the Derby-West Kimberley Shire 25%, Wyndham-East Kimberley Shire 22% and Halls Creek Shire 12%. The Aboriginal population is larger than the non-Aboriginal population in the Shires of Derby-West Kimberley and Halls Creek.

Planning outreach teams

- ⇒ Factors impacting health service access and delivery include low population density, differing cultural make-up, age structure and seasonal population changes.
- ⇒ Implement services which target the younger age structure of the region.



Measure of disadvantage

Socio-Economic Indexes for Areas (SEIFA) measures a broad range of socio-economic indices from a baseline of 1,000. Research shows that a lower SEIFA (<1000) correlates with a lower health status with increased risk factors to ill health.

In 2011, all Local Government Areas (LGAs) in the Kimberley except Broome had a SEIFA score in the lowest 10% in Australia, indicating that most areas in the Kimberley have high levels of disadvantage. These LGAs account for 57% of residents in the Kimberley. The 2011 SEIFA scores for shires in the Kimberley are¹:

Halls Creek	671
Derby-West Kimberley	791
Wyndham-East Kimberley	911
Broome	966

¹ ABS, 2033.0.55.001 – Socio-economic Indexes for Areas (SEIFA), Data Cube only, 2011.

Overview of rural maternity services

Community based pregnancy and maternity care services are provided by WA Country Health Service, private general practitioners, Aboriginal Community Controlled Health Services and a range of community based and non-government organisations. Specialist obstetric services are mainly provided at the regional hospitals. In the Kimberley, planned birthing services are available at Broome, Derby and Kununurra Hospitals².

Aboriginal maternity issues

There is a large body of evidence to demonstrate that Aboriginal women experience poorer maternal health outcomes, higher rates of perinatal and infant mortality and deliver babies with lower average birth weights when compared to non-Aboriginal women.

Birth rates

The following trends were seen within the Kimberley region during 2009-2013:

- There was a 21% increase in total number of births within the region. On average, births by Aboriginal women increased by 4.2% per year and by 5.7% per year in non-Aboriginal women.
- The age-specific birth rate for Aboriginal women was 95 per 1,000 women which is 1.6 times higher than the non-Aboriginal rate (60 per 1,000).

Teenage pregnancy

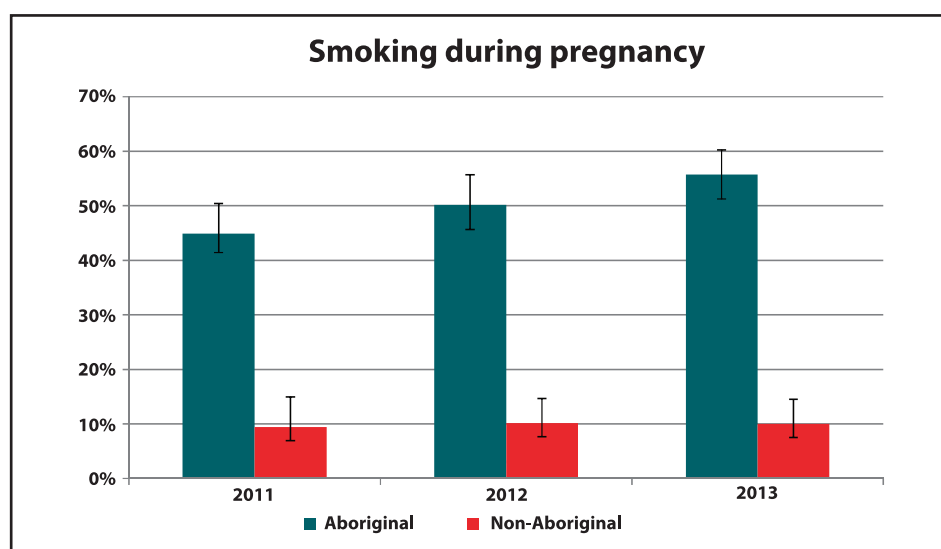
In 2012, 12% of Kimberley women who gave birth were aged less than 20 years, a proportion 3 times greater than the State. In 2012, the percentage of Aboriginal teenage women giving birth was 19% and 3% in non-Aboriginal teenage women.

Smoking during pregnancy

Risks associated with smoking during pregnancy include low birth weight, premature birth, placental complications and stillbirths.

Figure 1 shows the proportion of births to Kimberley women who reported smoking during pregnancy. In 2013, 56% of Aboriginal mothers and 10% of non-Aboriginal mothers smoked during pregnancy.

Figure 1: 2011-2013 proportion of women smoking during pregnancy, Kimberley residents.



Notes: The error bars represent the 95% confidence interval of the proportion: 2013 is preliminary data. Source: Midwives Notification System

Alcohol during pregnancy

Fetal Alcohol Spectrum Disorder (FASD), miscarriage and stillbirth are among the consequences of drinking during pregnancy. FASD is a common cause of medical, cognitive and behavioural problems for children including prematurity, brain damage, birth defects, growth restriction and developmental delay.

The FASD birth prevalence has been reported to be 0.26 per 1,000 births within all of the WA population. Of these, 89% were Aboriginal. The FASD birth prevalence was 4.08 per 1,000 within the WA Aboriginal population, significantly higher than non-Aboriginal children (0.03 per 1,000). Table 1 below shows the proportion of Australian women drinking during pregnancy.

Table 1: 2012-2013 levels of drinking during pregnancy, Australian women aged 18-44 years.

	Low risk levels of drinking	High risk levels of drinking
Aboriginal	28.4%	11.6%
Non-Aboriginal	42%	9.5%

Sources: WA Register for Developmental Anomalies and the Midwives Notification System

² www.healthywa.wa.gov.au/Articles/F_I/Having-a-baby-in-a-public-country-hospital-in-WA

Maternal health

Gestational diabetes mellitus

Diabetes in pregnancy increases the risk of complications of pregnancy, labour and delivery for mothers and their babies. It is also an indicator of increased risk of developing type 2 diabetes later in life. The risk is increased for those with pre-existing diabetes prior to pregnancy. Aboriginal mothers and their babies generally experienced the adverse effects of gestational diabetes mellitus (GDM) at higher rates.

7% of Western Australian women who gave birth in 2012 were diagnosed with GDM. Table 2 provides an overview of gestational diabetes mellitus status in Australia during 2005-2007.

Table 2: 2005-2007 women who gave birth in Australia and gestational diabetes mellitus status.

	Gestational diabetes mellitus		Births
	Percent	Number	Total
Aboriginal	5.1%	1,562	30,518
Non-Aboriginal	4.7%	37,539	802,175

Source: Australian Institute of Health and Welfare, 2010

Planning outreach teams

- ⇒ Culturally appropriate and targeted health promotion interventions on drinking and smoking during pregnancy.
- ⇒ Increase access to maternity services particularly support for teenage mothers.
- ⇒ Strengthen partnerships with primary care providers such as local GPs and Aboriginal Medical Services.



Child and adolescent health

Low birth weight

A baby's birth weight is a key indicator of health status. The World Health Organisation defines low birth weight as less than 2,500 grams. Babies born with a low birth weight are more likely to develop significant disabilities and have a greater risk of poor health and mortality outcomes.

From 2008-2012 in the Kimberley, 14% of babies to Aboriginal mothers

were born with a low birth weight, similar to the State rate for Aboriginal babies.

Australian Early Development Census

The Australian Early Development Census (AEDC) is a measure of how children are developing upon commencing full-time school for the first time.

In 2012, Australian Bureau of Statistics data classed 22% of Australian children as developmentally vulnerable on one or more domains of the AEDC. In addition, 11% were developmentally vulnerable on two or more domains.

Within Kimberley communities, the proportion of children rated as developmentally vulnerable on one or more domains ranged from 20% to 85%.

The towns with almost 50% or more of children classed as developmentally vulnerable are shown in Table 3.

To learn more about the AEDC, visit www.aedc.gov.au/about-the-aedc.

Planning outreach teams

- ⇒ Increase allied health professionals to assist early childhood development. Teams could include speech pathologists, occupational therapists, physiotherapists and child health nurses.



Table 3: 2012 AEDC, Kimberley children vulnerable on at least one domain.

Community	Children vulnerable: 1+ domains		Children vulnerable: 2+ domains	
	Number	% of total surveyed	Number	% of total surveyed
Derby	29	47	16	26
Fitzroy Crossing	29	85	23	68
Halls Creek	11	50	6	27
Outer Halls Creek	19	79	15	63

Ear health

Ear diseases, in particular otitis media, and associated hearing loss are highly prevalent among Aboriginal children. In 2012-2013, national prevalence of chronic otitis media causing hearing problems in Aboriginal children aged 0-14 years was double that of non-Aboriginal children (7% as compared to 3.6%)³.

Otitis media begins within weeks of birth and can persist into adolescence with reoccurring episodes. Preventing ear disease is a high priority as it can significantly reduce delays in child learning and development. Risk factors include poor environmental-

household conditions, passive smoking, premature birth and malnutrition⁴.

In the Kimberley, the following ear health trends were observed during 2008-2012 for children aged 0-14 years:

- Ear, nose and throat (ENT) infections were the leading cause of potentially preventable hospitalisations (PPH) and was 3.7 times the State rate.
- The majority of these hospitalisations were for very young children aged 0-4 years.

- Rate of PPH due to ENT infections was significantly higher for Aboriginal children than for non-Aboriginal children (2,556 vs 570 per 100,000).

Planning outreach teams



- ⇒ Focus on ENT infections and respiratory disease in children especially Aboriginal children.
- ⇒ Increase programs aimed at prevention and management of risk factors.
- ⇒ Identify links with other primary health care services.

Adult health

Chronic disease prevalence

Chronic disease refers to long-term conditions that last for six months or more. Prevalence data within the Kimberley population collected during 2009-2012 by WA population based surveys found that:

- One third of adults (30%) reported an injury requiring medical treatment, a percentage that is significantly higher than the State.
- One in seven adults (15%) reported arthritis.
- 13% of adults reported a currently diagnosed mental health problem.
- 8% of adults had asthma.

The top five cancer incidence rates in the Kimberley from 2008-2012 were for cancers of the skin (melanoma), prostate gland, breast, colorectal and lung, bronchus and trachea.

Melanoma and respiratory cancer rates were significantly higher (1.4 times) than the State rate.

Chronic disease amongst Aboriginal people

Available national evidence reports a greater burden and prevalence of chronic disease among Aboriginal people. The demographic factors of remoteness (isolation) and socio-economic disadvantage of the Aboriginal population contribute to the significantly greater burden of disease compared to non-Aboriginal people.

Research collected from 2011-2013 indicates that compared to non-Aboriginal people, Aboriginal people were found to be:

- Half as likely to report excellent or very good health.
- 3.5 times more likely to report having diabetes.

- 1.2 times more likely to report having cardiovascular diseases.
- 2 times more likely to report having asthma.
- 2 times more likely to report kidney disease^{5,6}.

Diabetes: Majority have type 2 diabetes. Risk factors include being overweight/obese, leading a sedentary lifestyle and poor nutritional intake.

Cardiovascular disease: The leading types are ischaemic heart disease and stroke.

Respiratory disease: The two major types being asthma and chronic obstructive pulmonary disease.

Kidney disease: Often develops as a complication of other medical conditions including diabetes, high blood pressure, urinary tract infections and drug use.

Strategic focus areas that have been identified as major priorities for Aboriginal health planning in the Kimberley region are renal health, mental health and sexual health. Other priorities include ear health, chronic disease and maternal and child health⁷.

Planning outreach teams

- ⇒ Health promotion interventions targeting the prevention and management of modifiable risk factors for chronic disease.
- ⇒ Consider how services can align with the strategic focus areas of the region.
- ⇒ Contact major health care providers and discuss how your team could collaboratively work together in service delivery and coordination.



³ ABS 2013. Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012-2013.

⁴ Closing the Gap Clearinghouse (AIHW and AIFS) 2014. Ear disease in Aboriginal and Torres Strait Islander children. Resource sheet no.35.

⁵ AIHW 2015. Cardiovascular disease, diabetes and chronic kidney disease – Australian facts: Aboriginal and Torres Strait Islander people.

⁶ ABS 2013. Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012-2013.

⁷ Kimberley Regional Aboriginal Health Planning Forum data.

Mental health

Health trends

For 2009-2012, one in eight (13%) Kimberley adults 16 years and over suffered from a diagnosed mental health problem, with prevalence twice as high among females than males. Yet only 6% reported accessing a mental health care service in the last year.

Aboriginal residents have reported levels of psychological stress 2.7 times higher than non-Aboriginals on a national level.

During 2010-2013, dementia rates were 3-4 times higher in Aboriginal adults than with non-Aboriginal adults over 45 years old.

Access: In 2003-2012, Kimberley Aboriginal residents aged 15-64 years accessed community mental health services nearly three times the rate of non-Aboriginal residents.

Table 4: 2002-2011 youth suicide rates, Kimberley residents, 15-24 years.

Youth suicides (per 100,000 person)*	Kimberley	Metro	State
Males (15-24 years)	135.1	15.6	19.9
Females (15-24 years)	35.0	5.4	6.0

*These rates have been age-standardised to the Australian 2001 population.
Source: DoH, Health Tracks

Community mental health services accessed in the Kimberley between 2006 and 2010 were at a significantly higher rate than the State, primarily for serious psychiatric disorders. Rates for alcohol and drug disorders in the Kimberley were more than double the State rate, presenting mostly in males.

Youth Suicide: From 2007-2011, the youth suicide rate for males was (8 times) and females (6 times) higher in the Kimberley than the State youth suicide rate. Table 4 shows the Kimberley youth suicide rates by gender during 2002-2011 to preserve confidentiality.

Planning outreach teams

- ⇒ Health promotion interventions on alcohol consumption as linked with injury and chronic disease.
- ⇒ Increase access to mental health services targeting youth and Aboriginal population.



Eye health

Eye health conditions are very common in Australia and can contribute to disadvantage due to childhood learning delays, lower participation in education and employment and social isolation.

In 2011-2012, over half (53.7%) of Australians reported having a chronic eye condition. In 2013-2014, Aboriginal people had a lower rate of hospitalisations for cataract extraction as compared to non-Aboriginals

(7.3 compared with 8.9 per 1,000 population)⁸. Diseases of the eye accounted for 3% of hospitalisations of Kimberley residents aged 65 years and over, from 2008-2012.

Hospitalisations

Regional hospitalisations

Overall, the hospitalisation rate for Kimberley residents was 2 times higher than the State in 2008-2012, meaning Kimberley residents are hospitalised twice as often. The hospitalisation rate for Aboriginal residents in the Kimberley was 4 times higher than the rate for non-Aboriginals. Renal dialysis accounted for 36% of total hospitalisations in the Kimberley. For Aboriginal residents, dialysis accounted for 47% of hospitalisations compared to 3% for non-Aboriginal residents.

Table 5 shows the leading causes of hospitalisation other than renal dialysis, by major category.

Table 5: 2008-2012 leading causes of hospitalisation by major category, Kimberley residents.

Rank	Cause of hospitalisation	Number	% of total (15-64 yrs)	State rank
1	Injury and poisoning	10,129	9	3
2	Respiratory diseases	7,521	7	9
3	Digestive diseases	6,444	6	1
4	Pregnancy and childbirth	6,398	6	6
5	Ill-defined conditions	4,806	4	2
All hospitalisations		108,364	100	

Note: leading causes exclude 'factors influencing health status and contact with health services' and 'attending health services for examination and investigation', reproduction, specific procedures, and other circumstances, and potential health hazards related to communicable diseases, socioeconomic and psychosocial circumstances, family and personal history. This also includes renal dialysis.

Source: DoH, Health Tracks

⁸ www.aihw.gov.au/eye-health-cataract-surgery

Hospitalisations

Potentially preventable hospitalisations

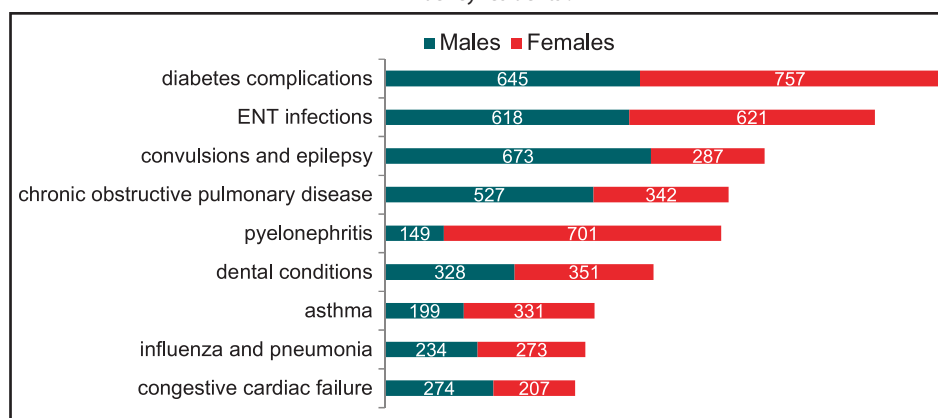
Potential preventable hospitalisations (PPH) are hospitalisations which could have been avoided with disease intervention plans and various methods of preventative care. Three categories are identified: acute, chronic and vaccine preventable.

During 2008-2012 the following trends were observed for PPH in Kimberley residents:

- PPH accounted for 9,149 (8%) of hospitalisations. This rate was significantly higher when compared to all residents in the State.

- Diabetes with its complications ranked as the number one cause in the Kimberley, accounting for 15% of all PPH. Other conditions are shown in Figure 2, which all except dental, have rates at least double the State rates.
- ENT infections was the leading condition (14%) for PPH for non-Aboriginals, and diabetes complications (19%) was the leading condition for PPH for Aboriginals in the Kimberley.

Figure 2: 2008-2012 leading conditions for potentially preventable hospitalisations, Kimberley residents .



Source: DoH, Health Tracks

Major health services

Hospital services	Community and public health services	Mental health and aged care services	Aboriginal Medical Services
<ul style="list-style-type: none"> • Broome Health Campus • Derby Hospital • Fitzroy Crossing Hospital • Halls Creek Hospital • Kununurra Hospital • Wyndham Hospital 	<ul style="list-style-type: none"> • Community Health Service – Broome, Derby, Fitzroy Crossing, Halls Creek, Kununurra, Wyndham • Kimberley Population Health Unit • Kimberley Remote Area Health – East, West • Warmun Remote Area Health Service • Kalumburu Remote Area Health Service 	<ul style="list-style-type: none"> • Kimberley Aged and Community Services Broome, Derby, Fitzroy Crossing, Halls Creek, Kununurra • Kimberley Mental Health and Drug Service - Broome, Derby, Fitzroy Crossing, Kununurra • Germanus Kent Aged Care Facility Broome • Juniper Numbala Nunga Nursing Home, Derby • Kununurra Aged Care and Community Care • Marlgu Village, Wyndham • Halls Creek People's Church Aged Care • Juniper Guwardi Ngadu, Fitzroy Crossing 	<ul style="list-style-type: none"> • Kimberley Aboriginal Medical Service Council • Derby Aboriginal Health Services • Jarrugk Aboriginal Health Service • Broome Regional Aboriginal Medical Services • Yura Yungi Medical Service • Ord Valley Aboriginal Health Service • Beagle Bay Aboriginal Community • Bidyadanga Aboriginal Community • Nindilingarri Cultural Health Services

Further health service information can be found at www.myhospitals.gov.au and www.ruralhealthaustralia.gov.au.

Mortality

Mortality is an important population health indicator. Knowing the reasons for and causes of death can assist in the planning of primary and community care services to prevent avoidable mortality. There is still a discrepancy between the life expectancy of Aboriginal people when compared to non-Aboriginal people. Current estimations suggest that non-Aboriginal people live around ten years longer than Aboriginal people.

Leading causes of death

The Kimberley mortality rate was double the State rate in 2007-2011.

During this period, the leading causes of death in the Kimberley region were found to be⁹:

- ischaemic heart diseases, intentional self-harm (3 times the State rate), diabetes including impaired glucose regulation (5 times the State rate), transport accidents and cerebrovascular diseases.

For Aboriginal residents, the leading causes of death were¹⁰:

- ischaemic heart diseases, diabetes including impaired glucose regulation, intentional self-harm, transport accidents and cerebrovascular diseases.

Avoidable mortality

During 2007-2011, 52% of Kimberley resident deaths under the age of 75 could have been avoided through the better use of primary prevention and treatment interventions.

The avoidable mortality rate for Aboriginal people was 5 times higher than for non-Aboriginal people in the Kimberley. In 2002-2011, ischaemic heart disease (10%) was the leading cause of avoidable death in Aboriginal Kimberley residents, followed by diabetes (8%).

Ischaemic heart disease (12%) was also the leading cause of avoidable deaths in non-Aboriginal residents in 2007-2011, followed by lung cancer (7%).

Planning outreach teams

- ⇒ Interventions should consider modifiable risk factors for leading causes of avoidable mortality.
- ⇒ Explore partnerships with existing primary and therapeutic services.
- ⇒ Programs and services for Aboriginal people need to be targeted and culturally appropriate.



^{9,10} All mortality and avoidable mortality statistics were sourced from the Department of Health, Health Tracks – Epidemiology Branch (PHI) in collaboration with the Cooperative Research Centre for Spatial Information (CRC-SI).