Kimberley – population and health status

The Kimberley region is the State’s most Northern region forming part of the Northern and Remote Country Health Service and is within the boundaries of the Kimberley-Pilbara Medicare Local.

The region is remote from metropolitan areas, with major towns of Broome being 2,213 kilometres and Kununurra being 3,205 kilometres from Perth by road. Other major towns include Derby, Halls Creek, Wyndham and Fitzroy Crossing. There are over 100 Aboriginal communities throughout the region of varying population sizes. The region encompasses an area of 424,517 square kilometres and is almost twice the size of the State of Victoria.

The Kimberley has a diverse economy, with mining, tourism, agriculture and pearling all major contributors to its economic output. There are multiple commercial and charter air services and an extensive road network. Only 25% of roads in the region are sealed, with many being inaccessible during the wet season (November to April).

The towns of Broome, Derby and Wyndham have sea ports which are gateways for the Region’s imports and exports. These sea ports operate as trade links for the Kimberley region. There is also a State government-run north-west shipping service which operates between the ports of Fremantle, Broome, Wyndham and Darwin.

Leading causes of hospitalisation

The leading causes of hospitalisation of Kimberley residents between 2006 and 2010 were related to factors influencing health status, contact with health services, injury and poisoning.

Table 1:2006-2010 Kimberley residents-Leading causes of hospitalisation

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause of hospitalisation</th>
<th>Number</th>
<th>% of total</th>
<th>State rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Factors influencing health status and contact with health services*</td>
<td>40,928</td>
<td>41.3%</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Injury and poisoning**</td>
<td>9,224</td>
<td>9.3%</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Pregnancy and childbirth</td>
<td>6,517</td>
<td>6.6%</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>Respiratory diseases</td>
<td>6,433</td>
<td>6.5%</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Digestive diseases</td>
<td>5,631</td>
<td>5.7%</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>All hospitalisations</td>
<td>99,198</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Health services for examination and investigation, reproduction, specific procedures, renal dialysis, potential health hazards related to communicable diseases, socioeconomic and psychosocial circumstances, family and personal history.

**Transport accidents, other external injuries, intentional self-harm, assault, complications of medical and survival care.

Potential preventable hospitalisations

Potential preventable hospitalisations (PPH) refers to those 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 2006 to 2010 the following Kimberley trends were observed:

- PPH accounted for 8,910 (9%) of hospitalisations. This rate was significantly higher (2.6 times) when compared to all residents in the State.
- Vaccine preventable conditions were 4.6 times higher in the Kimberley when compared to that of the State.
- Diabetes with its complications ranked number one (20% of all PPHs).
- Among Aboriginal Kimberley residents the rate of PPH was four times greater than non-Aboriginal Kimberley residents.

Population

Estimated resident population in 2010 was 35,706, a 12% growth within five years. It is estimated that the population will increase to 46,730 by 2016 and 48,615 by 2021. The region also has a large transient population which will impact on the access to and delivery of health services.

The Broome Shire has over 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.

In 2010, 45% or 16,094 of the Kimberley population were Aboriginal people compared to the State’s proportion of 3%. The Aboriginal population has a younger age structure when compared to the State, with 43% being under 20 years of age. This will have an impact in the planning of health services and programs.

Measure of disadvantage

Socio-Economic Indexes for Areas (SEIFA) measures a broad range of socio-economic indexes. The baseline for SEIFA is 1,000.

A score above 1,000 indicates an area of socio-economic advantage and a score below 1,000 indicates an area of disadvantage. Research shows that a lower SEIFA correlates with a lower health status with increased risk factors to ill health.

When planning new outreach health services focus on current gaps and using an effective team approach model.
Kimberley – population and health status

The 2006* SEIFA scores for towns in the Kimberley are:

- Halls Creek 615
- Broome 942
- Wyndham-East Kimberley 893
- Derby-West Kimberley 774

The SEIFA shows differing levels of disadvantage within the region particularly in remote Aboriginal communities.

*2006 SEIFA is the most up to date data available from ABS, 2011 statistics will be available in 2013

Leading causes of death

During the period 2003-2007, the leading causes of death were diseases of the circulatory system and neoplasms, accounting for nearly 40% of deaths in the Kimberley region.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause of mortality</th>
<th>Count</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diseases of the circulatory system</td>
<td>170</td>
<td>20.1%</td>
</tr>
<tr>
<td>2</td>
<td>Neoplasms</td>
<td>161</td>
<td>19%</td>
</tr>
<tr>
<td>3</td>
<td>Injury and poisoning</td>
<td>135</td>
<td>16%</td>
</tr>
<tr>
<td>4</td>
<td>Endocrine, nutritional and metabolic diseases</td>
<td>70</td>
<td>8.3%</td>
</tr>
<tr>
<td>5</td>
<td>Respiratory diseases</td>
<td>66</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

During 2003 to 2007, there were 624 deaths of Kimberley Aboriginal residents. There were higher rates for diabetes, cardiovascular disease, respiratory disease, injury and poisoning, mental health, kidney failure, kidney disease, cancer, alcohol-related and tobacco-related conditions when compared to non-Aboriginal residents in the Kimberley region.

Avoidable mortality

Between 1997 and 2007, two thirds of deaths of Kimberley residents under the age of 75 were classed as avoidable. Effective primary care interventions could potentially have avoided the mortality for ischaemic heart disease, suicide and lung cancer in the region.

Figures 1 and 2 below show a count of the top five causes of avoidable mortality by gender for 1997 to 2007.

Planning outreach teams

- Focus on increasing vaccinations region wide
- Focus on health issues specific to the Aboriginal population
- Implement services which target the younger age structure of the region

Australian Standard Geographical Classification – Remoteness Area

The Australian Standard Geographical Classification (ASGC) – Remoteness Area (RA) uses a five category scale to class remote areas of Australia from major cities to very remote locations.

Planning outreach teams

- Focus on preventable morbidity health issues; mental health, diabetes, cancer, cardiovascular diseases

With thanks to WA Country Health Service for permission to use data from various sources including the Kimberley Regional Health Profile 2012 which can be accessed at http://www.wacountry.health.wa.gov.au/fileadmin/sections/publications/Kimberley_Health_Care_Profile_FINAL12_APRIL_2012.pdf

When planning new outreach health services focus on current gaps and using an effective team approach model.
Kimberley – population and health status

According to the 2006 ABS Census the following trends were seen for Kimberley residents:

- 47.8% lived in a very remote area
- 52.2% lived in a remote area

Major health service providers

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Community and public health services</th>
<th>Mental health and aged care services</th>
<th>Aboriginal Medical Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broome Hospital</td>
<td>Community Health Service – Broome, Derby, Fitzroy, Kununurra, Wyndham</td>
<td>Kimberley Aged and Community Services</td>
<td>Derby Aboriginal Health Services</td>
</tr>
<tr>
<td>Derby Hospital</td>
<td>Kimberley Population Health Unit</td>
<td>Kimberley Mental Health and Drug Service</td>
<td>Kimberley Aboriginal Medical Service Council</td>
</tr>
<tr>
<td>Fitzroy Crossing Hospital</td>
<td>Kimberley Remote Area Health – East, West</td>
<td>Germanus Kent Aged Care Facility Broome</td>
<td>Broome Regional Aboriginal Medical Service</td>
</tr>
<tr>
<td>Halls Creek Hospital</td>
<td>Numbala Nunga Nursing Home, Derby</td>
<td>Yura Yungi Aboriginal Medical Service</td>
<td></td>
</tr>
<tr>
<td>Kununurra Hospital</td>
<td></td>
<td></td>
<td>Ord Valley Aboriginal Medical Service</td>
</tr>
<tr>
<td>Wyndham Hospital</td>
<td></td>
<td></td>
<td>Beagle Bay Aboriginal Medical Service</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bidyadanga Aboriginal Community Health Service</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nindillingari Cultural Health Service</td>
</tr>
</tbody>
</table>

Planning outreach teams

✓ Contact major health care providers and discuss how your team could collaboratively work together in service delivery and coordination

The burden of disease

Aboriginal health

Chronic, non-communicable diseases contribute to over 70% of the total burden of illness and injury in Australia. In Western Australia, chronic disease is largely detected and managed by general practitioners and Aboriginal Medical Services, with specialist care available at WA Country Health Service Regional Resource Centres and from resident and visiting specialists.

The following information about the five chronic health conditions targeted by Medical Specialist Outreach Assistance Program – Indigenous Chronic Disease (MSOAP-ICD) and their impact has primarily been sourced from the Aboriginal Health Planning Forum Data reports prepared by the WA Health Epidemiology Branch and WA Country Health Service, November 2009.

Chronic disease amongst Aboriginal people

65% of Aboriginal people report at least one long-term health condition and approximately 27% of Aboriginal children have one or more long-term health condition.

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.

The high burden of disease is also reflected in a comparison of admission rates compared to the general population:

- 12 x greater for renal dialysis
- 8 x greater for diabetes
- 5.62 x greater due to cellulitis
- 6.64 x greater due to respiratory infections/inflammations
- 8.2 x greater due to disorders of the pancreas

Diabetes: Majority is type 2 diabetes. Risk factors for type 2 diabetes include being overweight, leading a sedentary lifestyle and consuming a high calorie diet.

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 such as: diabetes, high blood pressure, urinary tract infections and drug use.

In 2006, the most common causes of cancers in Western Australia for men were prostate, melanoma, colorectal and lung. For women the most common cancers were breast, colorectal, melanoma and lung.

Mortality – chronic conditions

Over the period 1997 to 2006, the leading causes of mortality among Aboriginal people from the Kimberley region were cancer, ischaemic heart disease and diabetes.

Figure 3 compares the age standardised mortality rate ratios for the Kimberley Aboriginal population with the State Aboriginal population, the combined State population and the Kimberley non-Aboriginal population for the period 1998 to 2007.

With thanks to WA Country Health Service for permission to use data from various sources including the Kimberley Regional Health Profile 2012 which can be accessed at http://www.wacountry.health.wa.gov.au/fileadmin/sections/publications/Kimberley_Health_Care_Profile_FINAL12_APRIL_2012.pdf

When planning new outreach health services focus on current gaps and using an effective team approach model.
Kimberley – population and health status

Table 3 below shows the leading cause of mortality that could have been avoided with effective primary interventions. Ischaemic heart disease and diabetes were leading causes of avoidable mortality for Aboriginal people, with one in seven deaths due to ischaemic heart disease.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Condition</th>
<th>Deaths</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ischaemic heart disease</td>
<td>109</td>
<td>14.9%</td>
</tr>
<tr>
<td>2</td>
<td>Diabetes</td>
<td>81</td>
<td>11.1%</td>
</tr>
<tr>
<td>3</td>
<td>Suicide and self inflicted injuries</td>
<td>67</td>
<td>9.1%</td>
</tr>
<tr>
<td>4</td>
<td>Alcohol related disease</td>
<td>50</td>
<td>6.8%</td>
</tr>
<tr>
<td>5</td>
<td>Selected invasive bacterial and protozoal infection</td>
<td>47</td>
<td>6.4%</td>
</tr>
</tbody>
</table>

(ABS Mortality Data)

Hospitalisations – chronic conditions

The Western Australian Hospital Morbidity Data System records all (Statewide) hospitalisations.

Figure 4 below compares the age standardised hospital separation rate ratios for the Kimberley Aboriginal population with the State Aboriginal population, the combined State population and the Kimberley non-Aboriginal population for the period 2004 to 2008.

Maternity

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. GP obstetricians play an important role in maternity care in hospitals where specialist services are often not available. All birthing services are supported by midwives and anaesthetists. Severe workforce shortages impact across all of these professions in rural areas. Planned birthing services are available in 19 public hospitals in Western Australia and at St John of God Geraldton and Bunbury Hospitals.

Kimberley birthing services

Planned birthing services are available at Broome Regional Hospital, Derby and Kununurra District Hospitals. Broome has Level 2 neonate facilities.

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.

Low birth weight

A baby’s 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 have a greater risk of poor health and dying, and are more likely to develop significant disabilities. Statewide from 2000 to 2006, 14.1% of babies born to Aboriginal mothers were of low birth weight, compared to 5.9% of babies born to non-Aboriginal mothers.

Figure 5: Comparison of babies born with a low birth weight between regions and the State

For rural Western Australia in 2008, 6.2% of all babies were born with a low birth weight. For Aboriginal babies, the percentage with low birth weight was significantly higher at 14.6%.

Figure 5 above shows that babies born to Kimberley Aboriginal mothers were among the lowest in birth weight, exceeding the State’s average low birth weight reported.

Birth trends

In 2005, women residing in country areas of Western Australia represented 25% of the total number of women who gave birth in Western Australia while 63.9% of births by women identifying as Aboriginal were from country regions. More country women are also delivering in the metropolitan area in public and private hospitals.
Kimberley – population and health status

From 2004 to 2008 there were 34,808 births recorded in rural Western Australia, with Aboriginal births representing an average of 18.96% of these births.

During 2004 to 2008 in the Kimberley region, there was a 0.2% annual increase in births with the number of Aboriginal women giving birth remaining the same. Figure 6 identifies the number of births in the Kimberley region.

Smoking and pregnancy

Risks associated with smoking during pregnancy include premature births, lower birth weights, organ malfunctions and stillbirths. Figure 8 shows that the proportion of Kimberley women who smoke during pregnancy has dropped for the non-Aboriginal population. Aboriginal women were twice more likely to smoke than non-Aboriginal women.

Mothers aged less than 20 years

The following trends were evident during 2004 to 2008:

- In Western Australia the overall proportion of births to women aged less than 20 years was 5.1%. For non-Aboriginal teenage mothers the proportion was 4% compared to 23.1% for young Aboriginal women.
- In the Kimberley, for Aboriginal women less than 20 years, births ranged from one in four in 2005 to one in five in 2007.
- In 2007, 22.7% of Aboriginal mothers in the region were teenagers compared to 23.1% being the State Aboriginal women teenage population.

Drinking and pregnancy

Miscarriage and stillbirth are among the consequences of drinking during pregnancy. Fetal alcohol syndrome is a common cause of medical, cognitive and behavioural problems for children including prematurity, brain damage, birth defects, growth restriction and developmental delay.

National reported rates per 100,000 children per annum indicate that the Aboriginal rate is significantly higher than the non-Aboriginal rate:

- Children <5 years at diagnosis (total population)    1.14
- Non-Aboriginal population      0.37
- Aboriginal population     14.60

The Western Australian Birth Defects Registry reported rates for 2002 also indicated a significantly higher Aboriginal rate:

- 0.02/1,000 for non-Aboriginal children
- 2.76/1,000 for Aboriginal children

The WA Aboriginal Child Health Survey 2001 found that one in five Aboriginal mothers drank alcohol during their pregnancy in the regional areas of Broome, Derby and Kununurra.

Infant mortality rate

The statewide infant mortality rate for 1998 to 2007 was 3.8 per 1,000 live births. This comprised a non-Aboriginal rate of 3.2 deaths per 1,000 live births compared with a rate of 12.9 per 1,000 for Aboriginal women.

Planning outreach teams

- Health promotion interventions on drinking and smoking during pregnancy
- Increase maternity services access including support for teenage mothers

When planning new outreach health services focus on current gaps and using an effective team approach model.

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Kimberley – population and health status

Mental health

In the Region in 2009, 14.6% of adults 16 years and over had suffered from a mental health problem with higher rates in females. A slight proportion (6.9%) accessed mental health care services in 2009.

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

Community mental health services accessed between 2006 and 2010 were significantly higher in the Kimberley when compared to that of the State.

Child and adolescent health

Vaccinations

The recommended Australian vaccination coverage goals aim for greater than 90% coverage of children at two years of age and almost 100% coverage at school entry age.

More than 90% coverage is needed to create community immunity against ongoing transmission of communicable disease.

In the Kimberley region, childhood vaccination coverage is above 90% for the 24 month age group for non-Aboriginal and Aboriginal children in the 2008 to 2009 period.

Table 4 below represents the current immunity for year 7’s in the Kimberley region. There is relatively low community immunity against chickenpox. Very low coverage of hepatitis (B1, B2) is evident with Year 7 students.

<table>
<thead>
<tr>
<th>Year</th>
<th>B1</th>
<th>B2</th>
<th>HPV1*</th>
<th>HPV2*</th>
<th>HPV3*</th>
<th>VZV**</th>
<th>DPT#</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>77</td>
<td>76</td>
<td>125</td>
<td>108</td>
<td>84</td>
<td>159</td>
<td>249</td>
</tr>
<tr>
<td>2007-08</td>
<td>21.3</td>
<td>21</td>
<td>71</td>
<td>61.4</td>
<td>47.7</td>
<td>43.9</td>
<td>68.8</td>
</tr>
</tbody>
</table>

*Cervical cancer **chickenpox #diphtheria, pertussis and tetanus

Australian Early Development Index

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

2009 ABS data classed 23.5% of Australian children as developmentally vulnerable on one or more domains. A child ranked in the bottom 10% is classed as “developmentally vulnerable” whereas a child ranked 75% and above is classed as “on track”.

In 2009, the Kimberley areas with high vulnerability included Halls Creek (56.3%) and the West Kimberley (48.6%). Other areas in the region reported high vulnerability statistics, with the East Kimberley (45%) and Broome (31.4%) showing more than one third of children surveyed as developmentally vulnerable on one or more domains.

Planning outreach teams

- Increase access to mental health services targeting females and the Aboriginal population
- Increase allied health professions to assist early childhood development. Teams could include speech pathologists, occupational therapists, physiotherapists and child health nurses