Wheatbelt – population and health status

The Wheatbelt region covers 154,051 square kilometres with 42 local government authorities and has four sub-regional centres – Merredin, Moora, Narrogin and Northam. The towns of Northam and Jurien Bay are part of the $85.5m Royalties for Regions WA SuperTowns State government initiative.

The region forms part of the Southern Country Health Service and is within the boundaries of the South West WA Medicare Local. The region’s geography and dispersed population poses challenges to health service delivery.

Agriculture contributes significantly to the Western Australia economy, with prosperous productions of wheat and wool.

The region is serviced by educational, health and recreational services including Curtin University Muresk Institute of Agriculture and the CY O’Connor College of TAFE. The region has well developed major highways and rail services which provide links to Perth. A range of private air charter services are available, however, no commercial air services exist.

Leading causes of hospitalisation

Overall, the hospitalisation rate for Wheatbelt residents was lower than that of the State in 2006 to 2010. Similar trends were seen in causes of hospitalisations when compared to that of the State.

Table 1: 2006-2010 Wheatbelt 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>23,406</td>
<td>17.4%</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Digestive diseases</td>
<td>14,813</td>
<td>11.0%</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Injury and poisoning**</td>
<td>11,282</td>
<td>8.4%</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Musculoskeletal disease</td>
<td>10,728</td>
<td>8.0%</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Neoplasms</td>
<td>10,419</td>
<td>7.7%</td>
<td>3</td>
</tr>
<tr>
<td>All</td>
<td>All hospitalisations</td>
<td>134,515</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(WA Morbidity Data System)

*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 Wheatbelt trends were observed:

- PPH accounted for 12,335 (12%) of hospitalisations. This rate was three times greater when compared to all residents in the State.
- Chronic conditions accounted for 50% of these hospitalisations.
- Dental conditions ranked number one (11% of all PPH’s).
- Vaccine preventable conditions were significantly low in the Wheatbelt region.

Population

The Wheatbelt region is the second most populated country region in Western Australia. Estimated resident population in 2010 was 77,227 an 8% increase within four years. The population is highly dispersed with Northam, the largest centre having only 9% of the population. More than 50% of the region’s population is located in 30 towns with the remainder in groups of fewer than 200 people. Significant population growth to 2016 is expected in the 25-44 and 65+ age brackets.

The Aboriginal population represented 3,747 (5.1%) of people in 2010. The Wheatbelt Aboriginal population has a younger age structure and a higher proportion of females when compared to the non-Aboriginal population.

It is estimated that the resident population in the Wheatbelt region will increase to 85,205 by 2016 and 89,125 by 2021.

Measure of disadvantage

Socio-Economic Indexes for Areas (SEIFA) measures a broad range of socio-economic indices. 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.

The 2006* SEIFA scores for towns in the Wheatbelt region are:

- Narrogin: 953
- Moora: 985
- Northam: 930
- York: 998
- Merredin: 973

(ABS 2006)

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

Planning outreach teams

- Early intervention and management of diabetes with a focus on the Aboriginal population
- Management of respiratory and digestive diseases

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

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

Leading causes of death
Diseases of the circulatory system and neoplasms accounted for more than half of the deaths in the Wheatbelt region in 2003 to 2007.

Table 2: 2003-2007 Wheatbelt residents - Leading causes of mortality

<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>730</td>
<td>32.7%</td>
</tr>
<tr>
<td>2</td>
<td>Neoplasms</td>
<td>684</td>
<td>30.6%</td>
</tr>
<tr>
<td>3</td>
<td>Injury and poisoning</td>
<td>197</td>
<td>8.8%</td>
</tr>
<tr>
<td>4</td>
<td>Respiratory diseases</td>
<td>153</td>
<td>6.8%</td>
</tr>
<tr>
<td>5</td>
<td>Endocrine, nutritional and metabolic</td>
<td>112</td>
<td>5.0%</td>
</tr>
<tr>
<td></td>
<td>diseases (ABS Mortality Data)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There is still a discrepancy between the life expectancy of Aboriginal people when compared to non-Aboriginal people. Significantly higher mortality rates for diabetes, cardiovascular disease, respiratory disease, injury and poisoning, alcohol and tobacco related conditions were seen in Aboriginal Wheatbelt residents when compared to non-Aboriginal residents.

Avoidable mortality
The number of avoidable deaths under the age of 75 in the Wheatbelt population was 64% for non-Aboriginal residents and 77% for Aboriginal residents. Effective primary care interventions could have potentially decreased mortality in the Wheatbelt region.

Figures 1 and 2 below show a count of the top five causes of avoidable mortality by gender between 1997 and 2007. Similar trends are seen for both the female and male populations. For the Aboriginal population, the leading causes of avoidable mortality were ischaemic heart disease and diabetes.

According to the 2006 ABS Census the following trends for Wheatbelt residents are:

- 19.5% lived in a remote area
- 47.6% lived in an outer regional area
- 32.9% lived in an inner regional area

Health status
When compared to the State average the following trends for Wheatbelt residents are:

- Higher rates of teenage births, male youth suicide, prostate cancer, cardiovascular disease, diabetes, obesity and arthritis in men.
- Lower rates of breast cancer and sexually transmitted diseases.

---

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

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

Major health service providers

<table>
<thead>
<tr>
<th>Hospital services</th>
<th>Community and public health services</th>
<th>Mental health services and aged care services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moora Hospital</td>
<td>Wheatbelt Public Health Unit</td>
<td>Narrogin Mental Health Unit</td>
</tr>
<tr>
<td>Merredin Hospital</td>
<td>Southern Wheatbelt Primary Health Service</td>
<td>Wheatbelt Mental Health Service</td>
</tr>
<tr>
<td>Narrogin Hospital</td>
<td>Avon and Central Primary Health Service</td>
<td>Wheatbelt Aboriginal Health Service</td>
</tr>
<tr>
<td>Northam Hospital</td>
<td>Merredin Community Health Service</td>
<td>Northam Aged Care Assessment Team</td>
</tr>
<tr>
<td>Southern Cross Hospital</td>
<td>Southern Cross Community Health Service</td>
<td>Narrogin Aged Care Assessment Team</td>
</tr>
</tbody>
</table>

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-IDC) and their impact has primarily been sourced from the Aboriginal Health Planning Forum Data reports prepared by the Western Australian 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 conditions.

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 including 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

Between 1997 and 2006, the leading causes of mortality among Aboriginal people from the Wheatbelt region were ischaemic heart disease, cancer and cerebrovascular disease.

Figure 3 compares the age standardised mortality rate ratios for the combined Great Southern, South West and Wheatbelt Aboriginal populations with the State Aboriginal population, the combined State population and the combined Great Southern, South West and Wheatbelt non-Aboriginal population for the period 1998 to 2007.

Table 3 below shows the leading cause of mortality that could have been avoided with effective medical interventions. One in three avoidable deaths for Aboriginal Wheatbelt residents was ischaemic heart disease.

Table 3: 1997-2007 Wheatbelt residents 0-74 years - Leading causes of avoidable mortality by Aboriginal status

<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>37</td>
<td>31.6%</td>
</tr>
<tr>
<td>2</td>
<td>Diabetes</td>
<td>13</td>
<td>11.1%</td>
</tr>
<tr>
<td>3</td>
<td>Cerebrovascular diseases</td>
<td>11</td>
<td>9.4%</td>
</tr>
<tr>
<td>4</td>
<td>Alcohol related disease</td>
<td>10</td>
<td>8.5%</td>
</tr>
<tr>
<td>5</td>
<td>Suicide and self inflicted injuries</td>
<td>7</td>
<td>6.0%</td>
</tr>
</tbody>
</table>

(ABS Mortality Data)

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

The following chart compares the age standardised hospital separation rate ratios for the Wheatbelt Aboriginal population with the State

---

2 Improving Chronic Disease Services in Country WA: Priority Chronic Disease Models of Care. WA Country Health Service. Oct 2009
3 Ibid. Page 20. Data from 2006/07
5 Ibid. Pages 7-8. Base on ASR per 100,000 persons.

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

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

Aboriginal population, the combined State population and the Wheatbelt non-Aboriginal population for the period 2004 to 2008.

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

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

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

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 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.

Wheatbelt birthing services

Planned birthing services are available at Northam and Narrogin District Hospitals.

Figure 4: Wheatbelt: age standardised hospital separation rate ratios

Percentage of low birth weight babies: all WACHS 2008

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%.

NB: the percentage of low birth weight Aboriginal babies in the Wheatbelt was very high in 2008 (23%), compared to previous years with a range of 11.6% to 18%.

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 Aboriginal women were from country regions. More country women are also delivering in the metropolitan area in public and private hospitals. 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.

Between 2004 and 2008, there was a 1.8% average annual increase in births each year. Births to Aboriginal women increased each year by 4.9% with Aboriginal births being an average of 8% of all births in the region.

Ibid. Pages 11-13. Based on ASR per 1,000 persons.

Ibid. Pages 11-13. Based on ASR per 1,000 persons.
Wheatbelt – population and health status

Figure 6 identifies the number of births in the Wheatbelt region between 2004 and 2008.

Mothers aged less than 20 years

The following trends were seen between 2004 and 2008:

- In Western Australia the 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 teenage Aboriginal women.
- The number of Wheatbelt Aboriginal teenage mothers giving birth decreased from 25.8% in 2004 to 12.6% in 2007.
- In 2008, 17.3% of Aboriginal mothers in the region were teenagers compared to 23.1% being the State Aboriginal women teenage population.

Figure 7: Comparison of babies born to teenage mothers by Aboriginal status of mother and region

Smoking and pregnancy

Risks associated with smoking during pregnancy include premature births, lower birth weights, organ malfunctions and stillbirths. Figure 8 shows the proportion of Wheatbelt mothers who smoke during pregnancy has not changed in the two year period with a slight increase in uptake of smoking for non-Aboriginal women.

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

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.

Mental health

In 2009 13.4% of adults 16 years and over had suffered from a mental health problem with higher rates in females. Only a slight proportion had accessed mental health care services within the year.

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 was not significantly different to that of the State.

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

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

Child and adolescent health

Vaccinations

The recommended Australian vaccination coverage aims 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 diseases.

In the Wheatbelt region, childhood vaccination coverage is 90% for 12-24 month age group however this drops to 80% in the age ranges of 60-72 months.

Figure 9 below shows that a higher number of non-Aboriginal Wheatbelt children were vaccinated when compared to Aboriginal children during 2004 to 2009.

Table 4 below represents the current immunity for Year 7s in the Wheatbelt. There is relatively low community immunity against chickenpox with more than two thirds of the girls receiving all three doses of cervical cancer vaccinations.

Table 4: 2009 Year 7 Wheatbelt vaccinations

<table>
<thead>
<tr>
<th></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>No</td>
<td>515</td>
<td>452</td>
<td>277</td>
<td>268</td>
<td>235</td>
<td>207</td>
<td>518</td>
</tr>
<tr>
<td>%</td>
<td>75.8</td>
<td>66.6</td>
<td>82.7</td>
<td>80.0</td>
<td>70.1</td>
<td>30.5</td>
<td>76.3</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, a number of Wheatbelt areas had children who were developmentally vulnerable on one or more domains. High vulnerability was seen in Toodyay (52.5%), Moora (46.4%) and Northam (40.3%) with nearly half of the children ranked in the bottom 10%. Areas such as Gingin (10%) and Merredin (11.4%) have a lower proportion of children who are developmentally vulnerable.