

# ***Health, Development and Wellbeing in Far Western NSW***

***A picture of our children***



**Suggested citation:**

Kennedy C, Buckland A, Alperstein G and Burke H on behalf of the Far West Aboriginal Child Development And Well-Being Management Group. *Health, development and wellbeing in far western NSW. A picture of our children.* Maari Ma Health Aboriginal Corporation, September 2009.

© Maari Ma Health Aboriginal Corporation on behalf of the Far West Aboriginal Child Development And Well-Being Management Group. It may be produced in whole or part for study or training purposes subject to the inclusion of an acknowledgement of the source and no commercial usage or sale.

Further copies of this document are available. Any requests for further information or copies of all or part of this document should be directed to:

Maari Ma Health Aboriginal Corporation  
PO Box 339 BROKEN HILL NSW 2880  
T: (08) 8082 9888  
F: (08) 8082 9889  
W: [www.maarima.com.au](http://www.maarima.com.au)

# **HEALTH, DEVELOPMENT AND WELLBEING IN FAR WESTERN NSW**

**A PICTURE OF OUR CHILDREN**



## Forward

When the agencies and community-based organisations providing services to children and their families in far west NSW came together in May 2008 to look at the evidence supporting improved outcomes in life for children, none of us were really prepared for the stark information presented. Dr Garth Alperstein, a community paediatrician who advises state and national policy-makers, presented the findings of local and overseas studies about what activities work most effectively to deliver improved child development and well-being. Dr Alperstein's presentation also highlighted why we should target children at an early age across program areas. Improved health, education and welfare at an early age has the most significant impact on our potential to lead a healthy and productive life.

The solutions were relatively simple: to work more effectively together, across traditional 'discipline' areas of education, health and human or community services, starting with the earliest years of a child's life.

Recognising the importance of improving the outcomes in life for Aboriginal children in our region, Maari Ma and the Department of Education agreed to co-chair a group to look at how we could work together more effectively and thus the Far West Aboriginal Child Development and Well-Being Management Group began.

The development of a strategic framework document was our first task, but in order to determine what needed to be achieved, we required information about how the children in the region were currently travelling and this regional child profile was developed.

We think this makes the argument for more effective collaborative efforts to improve outcomes for the Aboriginal children of our region loudly and clearly and we commend you to read it thoroughly and then think about how we can all work to improve outcomes for our children.

We look forward to working with you to 'close the gap' on disadvantage for Aboriginal children in far west NSW.



**WILLIAM JOHNSTONE**

A/Regional Director,  
Maari Ma Health  
Aboriginal Corporation



**TRISH WEBB**

School Education Director Broken Hill,  
Western Region,  
Dept of Education & Training

*Important note:*

The 'Strategic Framework Document' to improve child development and well-being for Aboriginal children in the Far West has a particular emphasis on the health of children from conception to 8 years of age. However, data in this profile does not exclusively relate to children in this age group. Where possible, data from far western NSW has been used. In cases where local data could not be obtained, Greater Western Area Health Service (GWAHS) data has been used.

Data presented here has been sourced from NSW Health, NSW Department of Education and Training, NSW Department of Community Services, the NSW Bureau of Crime Statistics and Research and the Australian Bureau of Statistics.



## Contents

<b>Executive summary .....</b>	<b>7</b>
Closing the gap .....	9
Availability of key indicators.....	11
<b>Where do our children live? .....</b>	<b>13</b>
The region's geography .....	15
The region's population .....	16
Socio economic status.....	17
<i>Housing overcrowding.....</i>	<i>17</i>
<i>Employment.....</i>	<i>18</i>
<i>Income.....</i>	<i>19</i>
<i>Government benefits.....</i>	<i>21</i>
<i>Education.....</i>	<i>21</i>
<i>SEIFA indices .....</i>	<i>22</i>
The region's children.....	23
<b>How healthy are our children? .....</b>	<b>25</b>
Mortality.....	27
<i>Perinatal and infant mortality.....</i>	<i>27</i>
Morbidity .....	28
<i>Ear and respiratory infections.....</i>	<i>28</i>
Disability .....	31
Mental health.....	31
<b>How well are we promoting healthy child development?.....</b>	<b>33</b>
Breastfeeding.....	35
Dental health .....	36
Physical activity.....	37
Early learning.....	37
<b>How well are our children learning and developing?.....</b>	<b>39</b>
Transition to primary school .....	41
Attending early childhood education programs .....	41
Attendance at school .....	42
<i>Primary school .....</i>	<i>42</i>
<i>Secondary school.....</i>	<i>42</i>
Literacy and numeracy .....	44
Social and emotional development.....	46

<b>What factors can affect children adversely? .....</b>	<b>47</b>
During the antenatal period.....	49
<i>First antenatal visit.....</i>	<i>49</i>
<i>Factors that influence pregnancy and birth.....</i>	<i>49</i>
<i>Fertility rate.....</i>	<i>50</i>
Overweight and obesity.....	51
Environmental tobacco smoke .....	52
Substance use .....	52
<b>What kind of families and communities do our children live in?.....</b>	<b>53</b>
Family functioning .....	55
Family economic situation.....	55
Children in out-of-home care.....	56
Parental health status.....	56
Neighbourhood safety .....	57
Social capital.....	58
<b>How safe and secure are our children?.....</b>	<b>59</b>
Injuries.....	61
School relationships and bullying .....	61
Child abuse and neglect .....	62
Children as victims of violence .....	63
Homelessness .....	64
Children and crime.....	65
<b>How well is the system performing in delivering quality health, development and well being actions to our children?.....</b>	<b>67</b>
Congenital anomalies .....	69
Newborn hearing screening .....	69
Childhood immunisation .....	69
Quality childcare.....	71
<b>Conclusion .....</b>	<b>73</b>
Conclusion .....	75
<b>Appendices.....</b>	<b>77</b>
References.....	79
Abbreviations.....	80
Data Sources .....	81
Glossary .....	83



# Executive summary

Health, development and wellbeing in far western NSW: A picture of our children



## Closing the gap

These key indicators will be followed over time to monitor how successful we are at closing the gap between outcomes for Aboriginal children in the Maari Ma Region with NSW as a whole.

The desired outcome is for 'The Gap' (in the table on the following page) to be equal to or less than 1 indicating that the result for the Aboriginal population in far western NSW is exactly the same as, or better than, the whole NSW population. For some indicators data can be shown over two different time periods (Period 1 and 2). This enables us to show (when available) where improvements have been made in 'closing the gap'.

If the figure in 'The Gap' column is equal to or less than 1 it shows an excellent result, whereby the Aboriginal population in far western NSW is doing better than the whole NSW population. A result in 'The Gap' column that is higher than 1 identifies that the figure for the Aboriginal population is worse than the NSW population as a whole. For example, the proportion of Aboriginal pregnant women in the Maari Ma region (MM-R) who smoke is 4.11 times higher than the proportion of NSW pregnant women who smoke; considerable work still needs to be done.

The final column on the table on the following page indicates when the 'gap has been closed'. This means that the reported results for far western NSW Aboriginal people in period 2 are the same as, or better than, the results for NSW as a whole.

Table: Closing the Gap, a comparison of Maari Ma region (MM-R) Aboriginal results with NSW total results

	Period 1		Period 2		Gap closed
	MM-R (Aboriginal)	NSW (Total)	MM-R (Aboriginal)	NSW (Total)	The Gap
<b>Health indicators</b>					
Smoking in pregnancy (1998-2002, 2003-2007)	73%	18%	4.06		
Perinatal mortality [per 1,000 live births] (1997-2001, 2002-2006) <sup>1</sup>	16.8	9.5	1.77	19%	4.11
Low birth weight (2003-2007)	-	-	-	8.9	0.71
Breastfeeding (2006-2007)	-	-	-	6%	2.00
Immunisation < 12 months <sup>2</sup> (December 2008)	-	-	-	79%	1.12
Immunisation ≤ 18 months (December 2008)	-	-	-	91%	0.98
Immunisation 4 years (December 2008)	-	-	-	94%	1.01
Average number of decayed, missing and filled baby teeth (2007)	-	-	-	87%	0.97
Average number of decayed, missing and filled permanent teeth (2007)	-	-	-	4.3 <sup>3</sup>	4.78
<b>Education indicators</b>					
Year 3 NAPLAN results – above minimum standard (2008)	-	-	-	0.5	3.40
Year 7-10 completion rate <sup>5</sup> (2002-2004, 2005-2007)	68%	95%	1.39	44%	2.01
<b>Social indicators</b>					
Children in out-of-home care [per 1,000 children] (30 June 2008)				77%	1.23
Children at risk of or being harmed [per 1,000 children] (2007/08)				78.4	7.84
Children as victims of crime <sup>6</sup> [per 1,000 children under 18] (2003 – 2008)				106.8	11.36
				72.2	5.23

<sup>1</sup> Due to the small number of perinatal deaths in far western NSW these results should be read with caution  
<sup>2</sup> Using Australian Childhood Immunisation Register coverage rates, comparing GWAHS total population with NSW population.  
<sup>3</sup> Average of the three towns participating in the 2007 School Kids Health Check  
<sup>4</sup> NSW Non-Indigenous result supplied by the Australian Research Centre for Population Oral Health  
<sup>5</sup> Of students who commenced school in Year 7, the percentage that are still attending school in Year 10  
<sup>6</sup> Victims of crime who are aged under 18 years

## Availability of key indicators

The Australian Institute of Health and Welfare (AIHW) describes many of the indicators in this report as 'key indicators' of child health, development and wellbeing. Data for many of the indicators is not available locally, nor is Indigenous status regularly available. The following table shows where the gaps in data are and where consideration should be given to developing local data collections.

**Table: Data availability of key indicators of child health, development and wellbeing**

		Location of reported data	Local data collection currently in place
<b>Health</b>			
Mortality	Perinatal mortality	LGA	✓
	Infant mortality	LGA	✓
Morbidity	Ear infections	Community	✓
	Respiratory infections	Community	✓
Disability		Not available	x
Mental health		State	?
Breastfeeding	At discharge	LGA	✓
	At 6 months	Maari Ma Region	✓
Dental health		Maari Ma communities	✓
Physical activity		State	x
During the antenatal period	1st antenatal visit	LGA	✓
	Births to teenage mothers	LGA	✓
	Low birth weight	LGA	✓
	Prematuring	LGA	✓
	Smoking during pregnancy	LGA	✓
	Alcohol use during pregnancy	Maari Ma communities	✓
Fertility rate		LGA	✓
Overweight and obesity		Maari Ma communities	✓
Environmental tobacco smoke		AHS	x
Substance use		State	x
Parental health status		Not available	x
Injuries		LGA	✓
Congenital anomalies		LGA	Small numbers
Newborn hearing screening		AHS	✓ but not reported
Childhood immunisation		Maari Ma communities	✓
<b>Education</b>			
Early learning		AHS	✓
Transition to primary school		Region	✓
Attending early childhood education programs		AHS	✓

		Location of reported data	Local data collection currently in place
Attendance at school	Primary school	Region	✓
	Secondary school	Region	✓
Literacy and numeracy		Region	✓
School relationships and bullying		Not available	✗
<b><u>Community Services</u></b>			
Children in out-of-home care		LGA	✓
Child abuse and neglect		LGA	✓
Homelessness		State	✗
Child protection re-substantiations		State	✓ <sup>7</sup>
<b><u>Bureau of Crime Statistics</u></b>			
Neighbourhood safety		LGA	✗
Children as victims of violence		LGA	✓
Children and crime		LGA	✓
<b><u>Other</u></b>			
Quality childcare		Community	✓
Social and emotional development		Not available	✗
Family functioning		AHS	✗
Family economic situation		Not available	✗
Social capital		AHS	✗

<sup>7</sup> Data collected locally but aggregated to State level for reporting.



# Where do our children live?

1

Health, development and wellbeing in far western NSW: A picture of our children



## The region's geography

Geography, climate, history, growth and development all influence our health status. The climate and vegetation influences what flora and fauna there are, as well as the organisms which act as carriers of disease. It also has an impact on the production and availability of foods. As people increase their capacity to adapt to this environment, the patterns of human settlement, levels of sanitation and the impact on our natural resources all have an impact on our health.

The Maari Ma region is situated in the far west of New South Wales (NSW), encompassing an area of 194,930 square kilometres. This equates to approximately one quarter of the total area of the state. However, only 31,251 people live in this vast area, with an average of 1 person per 5 square kilometres.

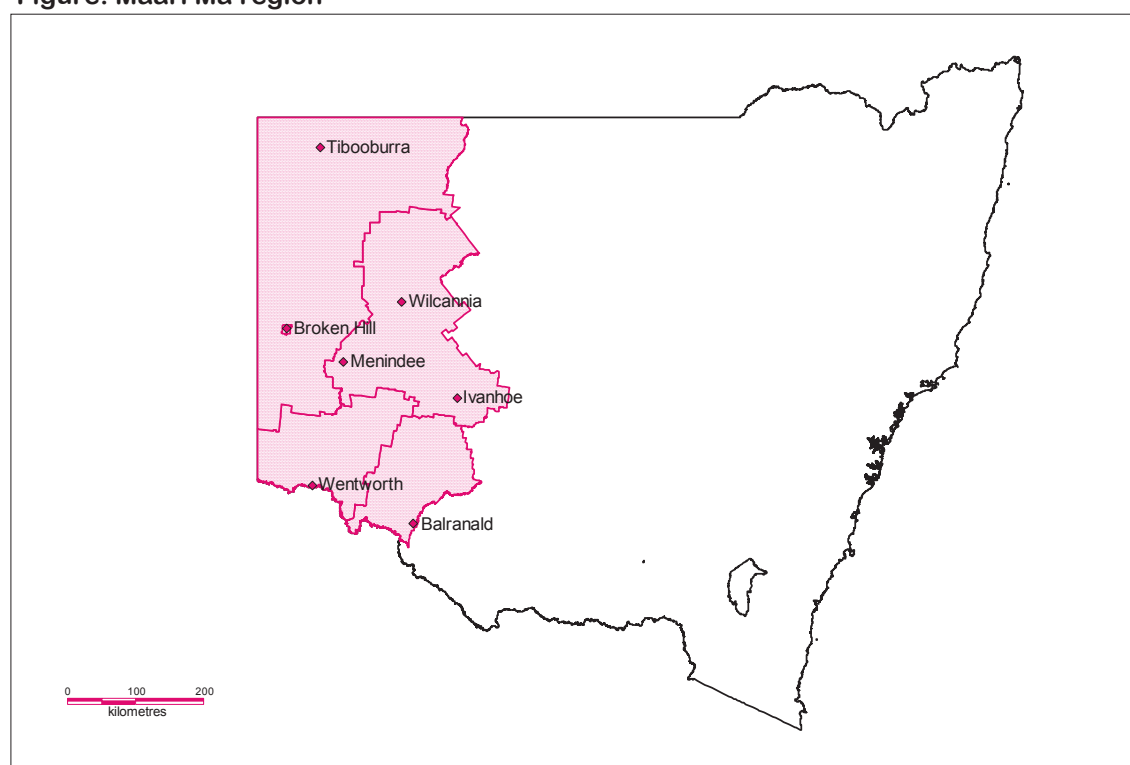
**Table: Area and population density, Maari Ma region, NSW and Australia, 2006**

Area	Population	Area (sq. km)	Density (persons per sq. km)
Maari Ma region	31,251	194,930	0.2
NSW	6,817,182	801,315	8.5
Australia	21,180,600	7,695,000	2.8

Source: ABS Census 2006

The Maari Ma region encompasses the local government areas of Balranald, Broken Hill, Central Darling (including the towns of Ivanhoe, Menindee and Wilcannia), Wentworth and the Unincorporated Far West (including the town of Tibooburra).

**Figure: Maari Ma region**



Source: MapInfo

Broken Hill is the major service centre for the region with the surrounding towns using the city for its wide range of facilities and services. Also, there are close family linkages between the Aboriginal population in Broken Hill and the nearby towns, as the majority of Broken Hill's Aboriginal residents have migrated from the neighbouring communities in the Central Darling Shire and the Unincorporated Area of the Far West in recent years.

Of the 5 Local Government Areas that make up the region, 4 have ARIA categories of either 'remote' or 'very remote'.

## The region's population

According to the 2006 Australian Bureau of Statistics Census, the population of the Maari Ma region was 31,251 persons, of which 50.1% were male. Aboriginal people account for 8.7% of the population, in comparison to 2.0% of the NSW population.

The population pyramid, below, is typical of remote and rural populations. It shows a high proportion of aged people and many young people leaving the region for schooling, university and employment opportunities.

**Chart: Population pyramid, Maari Ma region, 2006**



Source: ABS Census 2006

## Socio economic status

Socio-economic status is an important indicator of health in the community. People with the most limited economic resources experience poorer health with higher rates of death and illness. Of all the people in the community, those of low socio-economic status are more likely to suffer disability, have serious chronic illness or suffer recent illnesses.

Many diseases and illnesses affecting people of low socio-economic status are also likely to coexist with risk factors such as smoking, being overweight, being inactive and not breastfeeding children.

### *Housing overcrowding*

The Australian Institute of Health and Welfare (AIHW) reports that housing overcrowding can lead to the spread of infectious diseases, respiratory diseases and skin infections by putting too much pressure on bathroom, kitchen and laundry facilities. It has also been associated with poorer physical and mental health and higher rates of smoking and hazardous drinking.

The AIHW uses the internationally accepted measure of housing utilisation developed by the Canadian National Occupancy Standard. The Canadian model is sensitive to both household size and composition and uses the following criteria to assess bedroom requirements

- ◆ there should be no more than two people per bedroom
- ◆ a household of one unattached individual may reasonably occupy a bed-sit (i.e. have no bedroom)
- ◆ couples and parents should have a separate bedroom
- ◆ children less than five years of age, of different sexes, may reasonably share a bedroom
- ◆ children five years of age or over, of the opposite sex, should not share a bedroom
- ◆ children less than 18 years of age and of the same sex may reasonably share a bedroom
- ◆ single household members aged 18 years or over should have a separate bedroom.

Using this criteria and data from the 2006 census, the following table outlines overcrowding in far western NSW and NSW as a whole. It should be noted that an 'Aboriginal household' is one where at least one person has identified as being Aboriginal, not all household occupants need be Aboriginal.

The table shows that significantly more 'Aboriginal households' in far western NSW are overcrowded and significantly fewer are not overcrowded compared to 'Aboriginal households' in NSW. When comparing all households significantly more are not overcrowded in far western NSW compared to NSW.

**Table: Housing overcrowding, by household, Maari Ma region and NSW, 2006**

	Maari Ma				NSW			
	Aboriginal		Total		Aboriginal		Total	
	N	%	N	%	N	%	N	%
Over-crowded	34	* 4%	105	1%	1177	2%	21256	1%
Unable to be classified	310	35%	2058	#17%	18416	32%	490078	21%
Not over-crowded	501	#56%	9531	*79%	35424	62%	1765875	76%
Not stated	52	* 6%	359	* 3%	2226	4%	51007	2%

\* Significantly higher than the NSW comparative population

# Significantly lower than the NSW comparative population

Source: ABS Census 2006

## Employment

Those who are employed have better health than those who are not employed. Labour market trends over the past generation have shown that as the unemployment rate of individuals has fallen and an increasing number of families have two working parents, joblessness has become more concentrated within some households. Jobless households are disproportionately likely to be reliant on welfare, have low incomes and experience financial stress.

The AIHW reports on the effects of unemployment have identified relationships between parental joblessness and family conflict, family breakdown and child abuse. Secure employment provides financial stability, self-confidence and social contact for parents, with positive effects flowing onto their children.

According to the 2006 Census Dictionary the labour force includes people aged 15 and over who:

- ◆ Work for payment or profit, or as an unpaid helper in a family business, during the week prior to census night;
- ◆ Have a job from which they are on leave or otherwise temporarily absent;
- ◆ Are on strike or stood down temporarily; or



- ◆ Do not have a job but are actively looking for work and available to start work.

The following people are classified as being in the labour force:

- ◆ Employed people (the first three groups above)
- ◆ Unemployed people (the last group above)

People aged 15 years and over who are not employed or unemployed are classified as not in the labour force. This includes people who are retired, pensioners and people engaged solely in home duties.

The following table shows the percentage of employed and unemployed people in far western NSW. At the time of 2006 census the unemployment rate in the region was 8%, compared to 6% for NSW.

**Table: Employment, people aged 15 years and over, Maari Ma region and NSW, August 2006**

	Maari Ma	NSW
Employed		
- Full time	31%	36%
- Part time	14%	16%
- Not stated	4%	4%
<b>Employed total*</b>	<b>92%</b>	<b>94%</b>
Unemployed		
- Looking for full time work	3%	2%
- Looking for part time work	1%	1%
<b>Unemployed total*</b>	<b>8%</b>	<b>6%</b>
Total labour force	53%	59%
Not in the labour force	40%	34%
Not stated	7%	7%

\* Percentage of the total labour force  
Source: ABS Census 2006

## Income

People with high incomes generally experience better health than people on low incomes do. Low incomes have been linked to greater prevalence of risk factors.

According to the 2006 Census Dictionary people aged 15 and over are asked to state their usual gross weekly income, which is the income before tax, superannuation, health insurance, and other deductions are made.

Gross income includes family payments, additional family payments, pensions, unemployment benefits, student allowances, maintenance (child support), superannuation, wages, salary, overtime, dividends, rents received, interest received, business or farm income (less operation expenses) and worker's compensation received.

People are not asked to state their exact income, only to indicate the range into which their income falls.

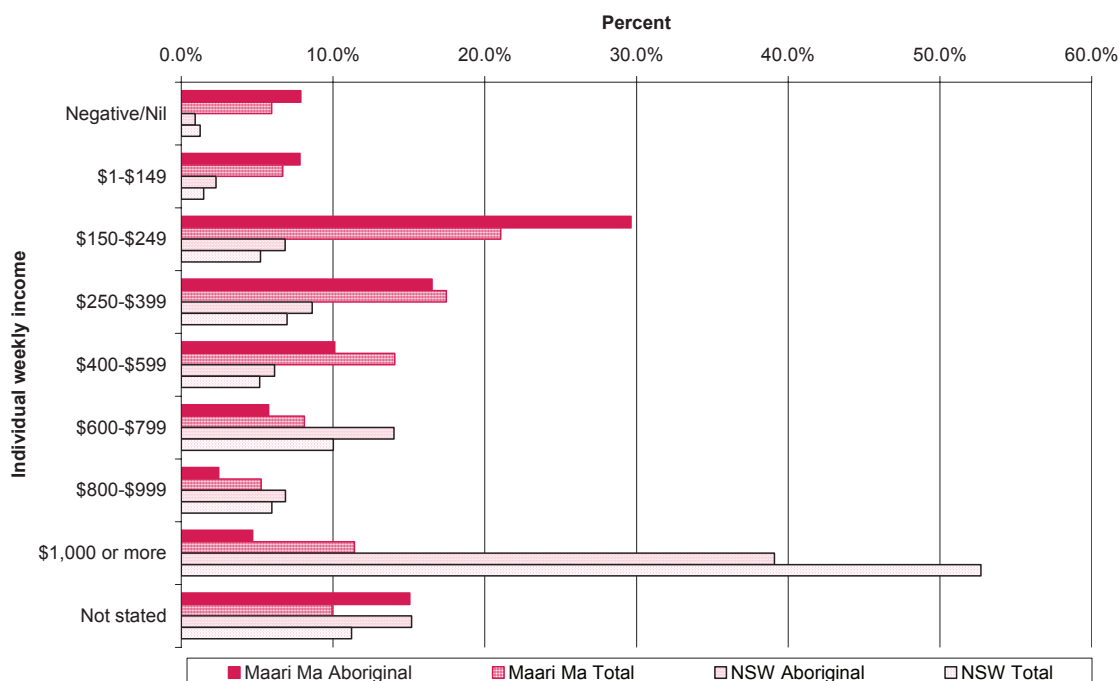
Income from some sources may be negative. In most cases income is reported as a positive figure (salaries and wages for instance) and you report the amount before taking into account deductions. But sometimes income can be reported as a negative figure where the amount of money earned will included the expenses used to earn that money – maybe if the only earnings are from rental properties or self employment.

Information on income distribution is important in planning public and private sector services such as social welfare and, particularly at the regional level, retail distribution and other commercial services. Information relating to income and its effects provide a basis for understanding the health of the community.

A question on income was first asked in the 1933 Census in an attempt to assess the effects of the Depression. The question has subsequently been included in all censuses since 1976.

The individual weekly income of the region's residents is shown in the following chart. People in the region have, on average, lower incomes than people in NSW as a whole. Within the Maari Ma region, Aboriginal people have lower average incomes than the total population.

**Chart: Individual income, Aboriginal and total population, Maari Ma region compared to NSW, 2006**



Source: ABS Census 2006

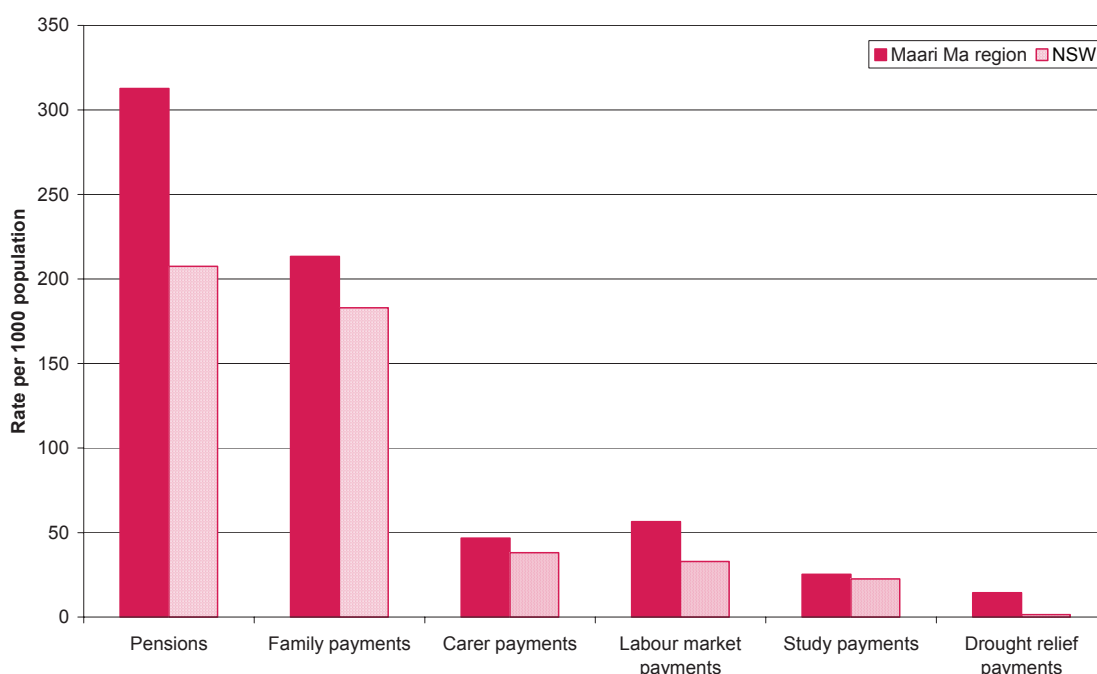
## Government benefits

Government benefits can be paid to people who are unemployed, people with children, students, people who are sick or disabled, carers and people who have reached retirement age and choose not to work.

In far western NSW, people received government benefits at a greater rate (738 per 1000 population) than in NSW (553 per 1000 population). The rate of people receiving pension payments (aged, disability or carer pensions for example) in the far west was approximately 50% higher than the NSW rate, whilst people received labour force payments (for example unemployment benefits) at a rate 80% higher than the state figure.

People in the far west received drought relief payments at a rate of 14 per 1000 population, compared to the state figure of 1 person per 1000.

**Chart: Government benefits, Maari Ma region and NSW, July-September 2008**



## Education

An educational institution, as defined by the Australian Bureau of Statistics (ABS), is a school (pre, primary and secondary), TAFE, university or tertiary institution. Also included are those institutions that offer courses such as Associations.

Of the total population living in the Maari Ma region, 29% (n=9174) were enrolled in an educational institution. Comparatively, 31% of people living in NSW were enrolled in an educational institution.

Twenty-seven percent of people in far western NSW left school before completing Year 10. This compares with only 16% in NSW.

### *SEIFA indices*

Socio-economic indices for areas (SEIFA) are used by the ABS to summarise aspects of socio-economic conditions. The five indices are:

- ◆ Urban index of relative socio-economic advantage
- ◆ Rural index of socio-economic advantage
- ◆ Index of relative socio-economic disadvantage
- ◆ Index of economic resources
- ◆ Index of education and occupation

Against all five indices, for the five census periods 1986, 1991, 1996, 2001 and 2006, the far western NSW was below the mean. This indicates the region has a relatively low proportion of high-income households and small proportions of people with tertiary qualifications and people employed in skilled occupations.

Central Darling Shire is ranked as the 3rd most disadvantaged area in the state. Social statistics on average show a socioeconomically disadvantaged region, with fewer residents completing their secondary education and more people in the social welfare system, compared with the rest of NSW.

## The region's children

In 2006, there were 6,282 children aged 0-14 years in the Maari Ma region, of which 16.1% were Aboriginal.

Over the last 5 years there have been an average of 382 babies born to women who live in the region (including babies born in Victorian hospitals). Sixteen percent of the babies born are Aboriginal.

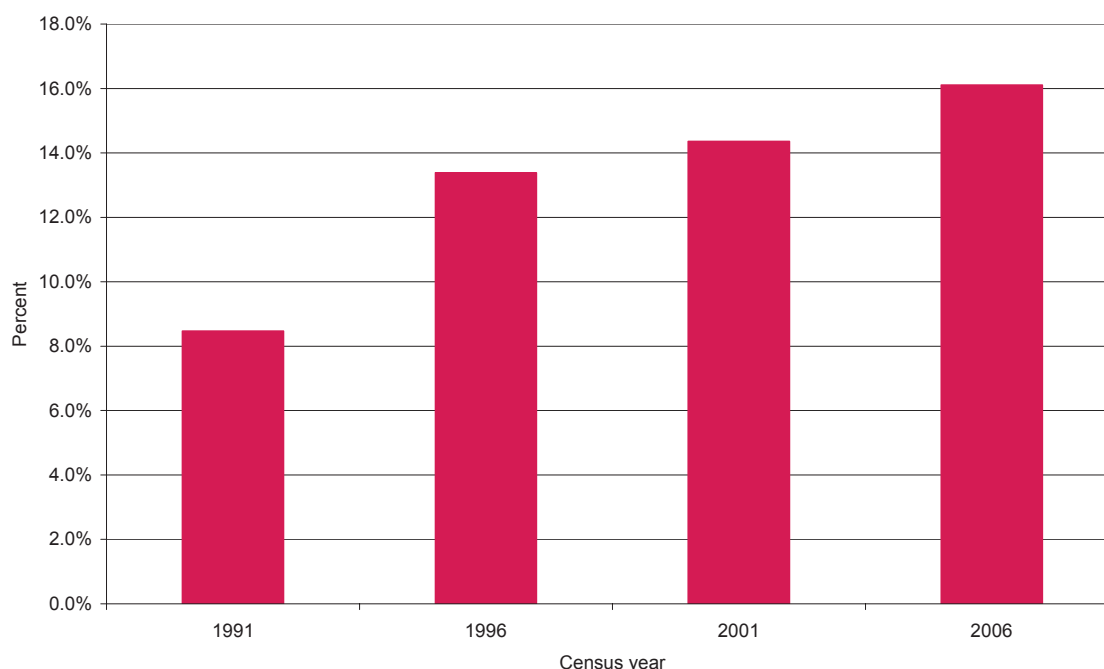
**Table: Population characteristics, Maari Ma region and NSW, 2006**

	Maari Ma			NSW		
	Aboriginal N	%	Total N	Aboriginal N	%	Total N
Number of children						
aged 0-4	331	16.9	1,960	17,221	4.1	420,434
aged 5-9	336	16.1	2,092	17,703	4.1	431,925
aged 10-14	345	15.5	2,230	18,263	4.1	446,561
<b>Number of children aged 0-14</b>	<b>1,012</b>	<b>16.1%</b>	<b>6,282</b>	<b>53,187</b>	<b>4.1%</b>	<b>1,298,920</b>

Source: ABS Census 2006

The proportion of the Aboriginal population aged 0-14 years has increased two-fold since the 1991 census – from 8.5% in 1991 to 16.1% in 2006.

**Chart: Percentage of children aged 0-14, ABS census, 1991-2006**



Source: ABS Census 2006





# How healthy are our children?

2

Health, development and wellbeing in far western NSW: A picture of our children



## Mortality

Mortality data is used to describe severe ill health that results in death and can be used to identify sections of the community most at risk. Due to the small number of deaths each year a number of years of data have been combined. Even with this in mind the numbers used to calculate rates are small and consequently can result in big fluctuations in these rates. This should be considered when interpreting the results.

### *Perinatal and infant mortality*

A perinatal death is a stillbirth or death of a baby within the first month of life while infant mortality is the death of a child aged less than 1 year.

A child's risk of death is greatest in the first year of life, and the first month in particular. The AIHW reports that the infant mortality rate reflects the effect of structural factors on population health, such as the prevailing health and hygiene conditions, and accessibility and effectiveness of the health system in maternal and perinatal health. The infant mortality rate is used internationally as the key measure of population and child health.

In the Maari Ma region, the perinatal mortality rate has declined at a far greater rate than in NSW. Infant mortality rates for both the Maari Ma region and NSW have declined over the last 10 years, however the Maari Ma region still has double the rate of infant deaths when compared with NSW.

**Table: Number of perinatal and infant deaths, perinatal mortality rate (per 1,000 births) and infant mortality rate (per 1,000 live births), Maari Ma region and NSW, 1997-2006**

		Maari Ma				NSW			
		Aboriginal N	Rate	N	Total Rate	Aboriginal N	Rate	N	Total Rate
Perinatal mortality	1997-2001	<5	16.8	18	11.9	175	17.1	4,116	9.5
	2002-2006	<5	6.3	15	7.9	156	13.2	3,926	8.9
Infant mortality	1997-2001	11	*47.0	25	*16.7	156	15.5	2,234	5.2
	2002-2006	<5	#13.6	13	*9.9	133	11.4	2,005	4.6

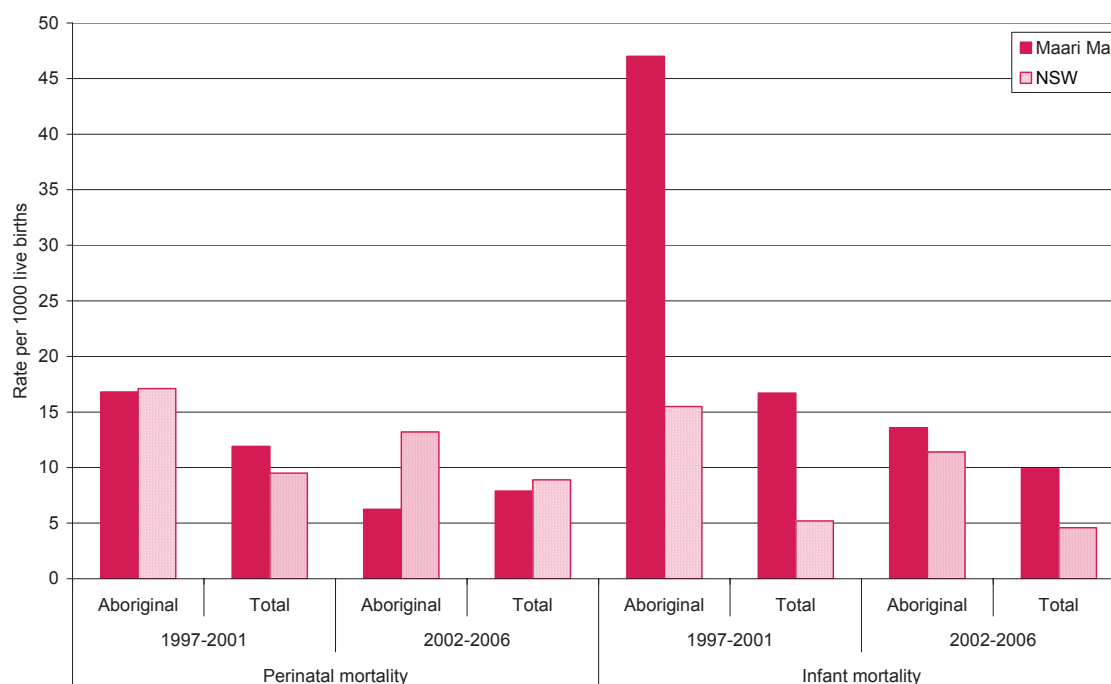
\* Significantly higher than the NSW comparative population

# Significantly lower than the previous 5 year rate

Source: MDC 1997-2006, ABS Census 2006, Death data 1997-2006

None of the region's perinatal mortality rates were significantly different to the comparative NSW rates, however, 3 of the 4 infant mortality rates were significantly higher. When comparing 5-year average rates for the Maari Ma region the infant mortality rate for the region's Aboriginal population had significantly decreased.

**Graph: Perinatal and infant mortality rates, Maari Ma region and NSW, 1997-2006**



Source: MDC 1997-2006, ABS Census 2006, Death data 1997-2006

## Morbidity

### *Ear and respiratory infections*

Otitis media (middle ear infection) in children commonly follows an upper respiratory tract infection. Repetitive unresolved episodes of otitis media can lead to perforations of the eardrum, hearing loss, and particularly with younger children, delayed speech development, reduced learning ability and reduced social interaction.

Chronic lung disease is an important contributor to the high rates of chronic illness in Indigenous communities and recurrent and chronic infections in childhood are recognised contributors to the development of chronic lung disease.

The following table and charts show the rates of admission to hospital for ear health and respiratory illnesses. None of the rates for the Maari Ma region are statistically different to the comparative NSW rates.

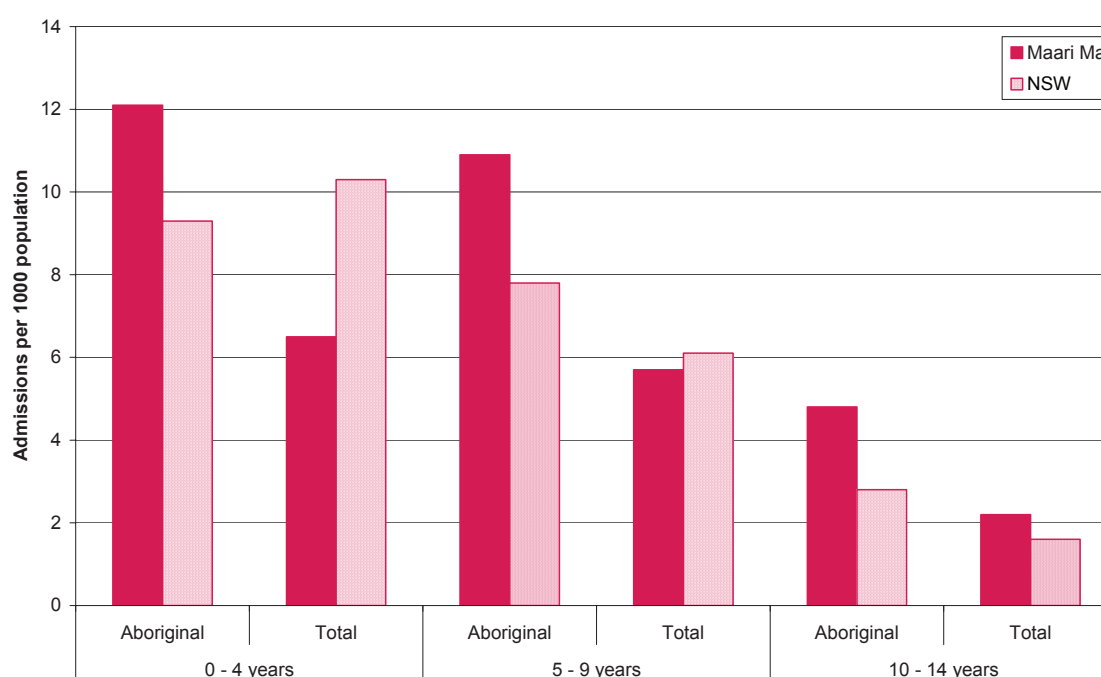
**Table: Ear and respiratory health, number of admissions to hospital (over 3 years) and rates (per 1,000 population, per year), Maari Ma region and NSW, 2005/06 – 2007/08**

		Maari Ma				NSW			
		Aboriginal N	Rate	N	Rate	Aboriginal N	Rate	N	Rate
Ear health	1-4 yrs	12	12.1	38	6.5	480	9.3	13,030	10.3
	5-9 yrs	11	10.9	36	5.7	414	7.8	7,892	6.1
	10-14 yrs	5	4.8	15	2.2	152	2.8	2,103	1.6
Respiratory illnesses	1-4 yrs	111	111.8	284	48.3	4,209	81.5	70,788	56.1
	5-9 yrs	21	20.8	127	20.2	921	17.3	23,916	8.8
	10-14 yrs	12	11.6	68	10.2	549	10.0	11,033	8.2

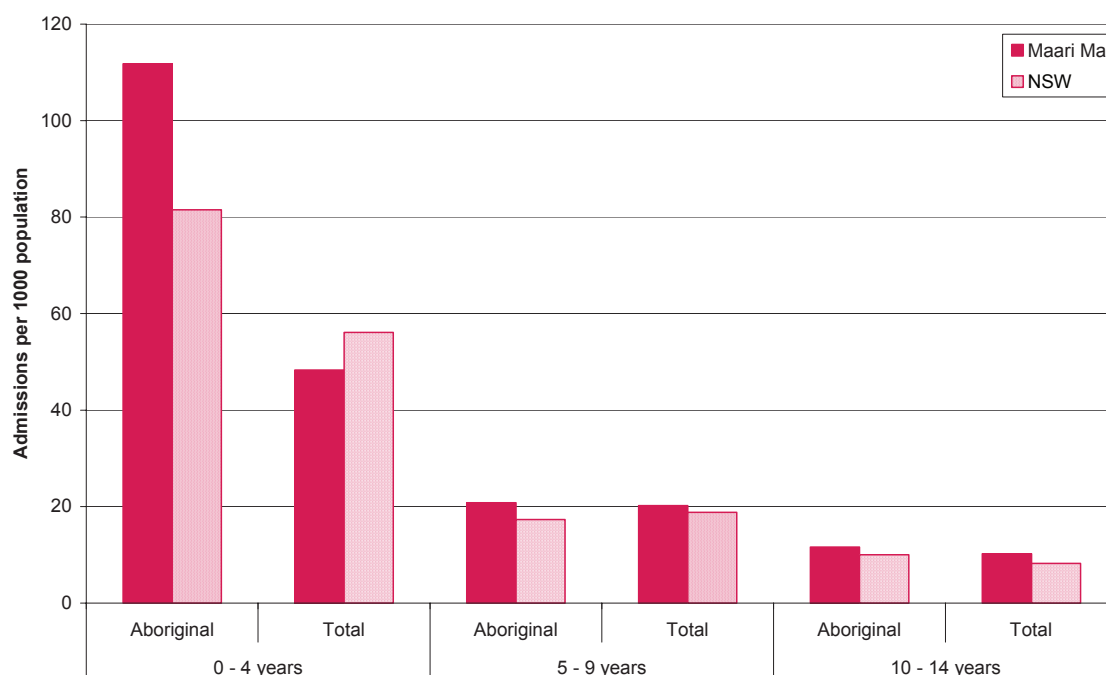
Source: ISC 2005/06 – 2007/08, ABS Census 2006

The following charts display the above ear health and respiratory admission rates. While not significantly different it is of interest that the admission rate for both ear health and respiratory disease for Aboriginal children in far western NSW is consistently higher than NSW across all three age groups.

**Graph: Ear health admission rate, Maari Ma region and NSW, 2005/06-2007/08**



Source: ISC 2005/06 – 2007-08, ABS Census 2006

**Graph: Admission rates for respiratory illnesses, Maari Ma region and NSW, 2005/06-2007/08**

Source: ISC 2005/06 – 2007-08, ABS Census 2006

The annual Audit and Best Practice for Chronic Disease (ABCD) clinical audits for child health reviewed abnormal clinical findings for recurrent and chronic ear infections and chronic respiratory disease. The following definitions are used

- ◆ Recurrent ear infection: two or more ear infections in the past year;
- ◆ Chronic ear infection: an ear infection persisting for two weeks or more;
- ◆ Recurrent or chronic respiratory disease: three or more episodes of chest infection requiring antibiotics in the previous year.

The table on the following page shows the results for the region for 2007 and 2008 compared to all participating sites in the nationwide ABCD program. In 2007 the percentage of children in the Maari Ma region with recurrent and chronic ear infections was significantly lower than that of other ABCD sites. This is to be expected as participating ABCD sites include those from Central Australia and the Top End of the Northern Territory where ear health is documented as being poorer.



**Table: Recurrent and chronic ear and respiratory infections, Maari Ma region and ABCD participating sites, 2007-2008**

		Maari Ma		ABCD sites	
		Percent	N audited	Percent	N audited
Ear infections	2007	* 9%	162	17%	563
	2008	10%	163	15%	1,070
Respiratory infections	2007	8%	162	11%	563
	2008	4%	163	6%	1,070

\* Significantly lower than the comparative national population

Source: ABCD website (accessed 2 December 2008)

## Disability

National bodies have identified that data pertaining to the level of disability suffered by children is important to collect, however, at present, there are no systems in place to allow the collection of this data to take place.

Therefore, we do not have any data for the level of disability experienced by children in the Maari Ma region and recognise this is a gap in the current data collection systems.

## Mental health

Psychological distress refers to a range of feelings experienced by people who may have identifiable mental health problems such as anxiety or mood disorders, or who may be highly stressed for situational reasons. NSW Health reports that high psychological distress has been shown to be associated with increased rates of substance use and poor school performance.

The NSW Chief Health Officer reported in 2006 that 21% of NSW females and 12% of NSW males, aged 12-16 years, reported high psychological distress.

No further data is available for this indicator at the regional or area health service level, confirming a gap in the current data collection systems.



# How well are we promoting healthy child development?

3

Health, development and wellbeing in far western NSW: A picture of our children



## Breastfeeding

Infants who have been breastfed have better health outcomes than those who have not, both in early life and beyond, including a reduced risk of Sudden Infant Death Syndrome (SIDS), gastrointestinal and respiratory infections, otitis media and learning difficulties.

The National Health and Medical Research Council (NH&MRC) recommends exclusive breastfeeding<sup>8</sup> for infants in the first six months of life, with breastfeeding to continue, along with the introduction of solid foods, until at least twelve months of age. These guidelines are in accordance with the World Health Organisation's policy on breastfeeding.

As the following table illustrates, far western NSW has a higher proportion of women breastfeeding at the time of discharge from hospital than in NSW, particularly amongst the Aboriginal women, which is an excellent result.

**Table: Breastfeeding, Maari Ma region and NSW, 2006-2007**

	Maari Ma		NSW	
	Aboriginal	Total	Aboriginal	Total
Breastfeeding at discharge from hospital <sup>9</sup>	70%	80%	62%	79%
Any breastfeeding at 6 months <sup>10</sup>		45%		

Source: MDC 2006/2007

<sup>8</sup> Infants who are exclusively breastfed only receive breast milk, along with any medications or vitamins that are required. No other food, drink or supplements are consumed by the child.

<sup>9</sup> This includes expressed breast milk, but excludes infants who are having both infant formula and breast milk

<sup>10</sup> Local "Healthy Start" program data, 2007

## Dental health

Poor dental health adversely affects children's health and overall wellbeing. Oral diseases can lead to failure to thrive and school absences, negatively affecting educational performance. Poor nutrition or an unbalanced diet high in sugar may place children at an increased risk of developing dental health problems such as gum disease and dental caries.

Dental health in the Maari Ma region is poor in comparison to NSW. Children have more decay in their teeth and a higher number of missing or filled teeth than other children across the state.

Practices to prevent dental disease in children include breastfeeding, no feeding from bottles, regular tooth brushing, avoidance of foods and drinks that are high in sugar and regular visits to a dental professional.

Local "school kids health check" data gives us a picture of the oral health outcomes of children across the Maari Ma region. The health check took place in 3 communities within the Maari Ma region, with a total of 218 children, aged 5-15 years, participating.

Compared to NSW the percentage of children with decay in either their baby or permanent teeth is between 2 and 3 times higher. The average number of decayed, missing or filled baby or permanent teeth in children in the Maari Ma region is also up to 3 times higher.

**Table: Dental health of children in the Maari Ma region, 2007**

	Town A	Town B	Town C	Indig	NSW Non-Indig
Children with decay in baby teeth	67%	77%	90%	31%	
Children with decay in permanent teeth	60%	37%	56%	23%	
Average number of decayed missing or filled baby teeth	3.00	4.07	5.78	2.21	0.93
Average number of decayed missing or filled permanent teeth	1.62	2.00	1.58	0.69	0.46

Source: Maari Ma School Kids Health Checks 2007

## Physical activity

It is recommended that children and adolescents have at least 60 minutes of moderate to vigorous physical activity every day. Children are also advised not to spend more than 2 hours per day engaged in sedentary activity, such as watching television, using the computer or using electronic media, such as video game consoles.

The following table from the NSW Child Health Survey shows that a slightly larger proportion of children in the wider area of the Greater Western Area Health Service (GWAHS) engage in adequate physical activity and they are less likely to have excessive sedentary behaviours.

It is important to note that the two categories in the table are not mutually exclusive – you could in fact be adequately physically active but also have excessive sedentary behaviour. Here 'adequate physical activity' is measured as 1 hour or more of physical activity outside of school hours each day and 'excessive sedentary activity' is more than 2 hours a day using electronic media for entertainment (for example, computer games, television, or the internet), particularly during daylight hours.

Data for the Maari Ma region is not available for this indicator. This is a gap in the current data collection practices that may need to be addressed.

**Table: Activity levels, children aged 5-15 years, GWAHS and NSW, 2005/06**

	GWAHS	NSW
Adequate physical activity	30%	26%
Excessive sedentary activity	81%	84%

Source: NSW Child Health Survey 2005/06

## Early learning

Reading to children is one of the ways they learn about communication. Improved communication leads to enhanced health and educational outcomes. Reading is an important way to encourage a range of important skills, such as talking and understanding language, imagination, concentration, creativity, listening and problem solving.

The NSW Child Health Survey reports that 70% of children aged 0-5 years who live in the wider area encompassed by GWAHS are read to daily. This compares with 73% of children in NSW.





## How well are our children learning and developing?

4

Health, development and wellbeing in far western NSW: A picture of our children



## Transition to primary school

The AIHW reports that research has shown that children experience greater success at school when they have developed the emotional capability to manage their feelings and behaviour when they have a base of strong academic and social skills.

At the beginning of 2008 the Best Start Kindergarten Assessment was implemented at 400 NSW schools with a further 600 implementing the program in 2009 and all 1,700 primary schools participating by 2010. Six Broken Hill schools participated in 2008.

The Best Start Kindergarten Assessment is a standardised set of observations that teachers can use to guide teaching practices in the Kindergarten year. It is a process where the child's teacher observes and records what the child already knows and can do in literacy and numeracy and uses the information to guide future teaching practices.

As this program has not been fully implemented in far western NSW no data is available for this report.

## Attending early childhood education programs

Engaging in early childhood programs assists children to prepare for school, leading to improved educational and health outcomes that are sustained throughout life.

Data for far western NSW is not available. It is recognised that there would be a greater number of childcare services in the eastern part of the GWAHS thus increasing access and attendance. Childcare services in far western NSW that are registered for accreditation with the National Childcare Accreditation Council are listed in Chapter 8.

**Table: Attendance at early childhood centres, child-care and pre-school, GWAHS and NSW, 2005/06**

	GWAHS	NSW
Attendance at playgroup or early childhood programs or activities, ever	64%	61%
Child care attendance, ever	51%	47%
Attendance at pre-school	74%	75%

Source: NSW Child Health Survey 2005/06

## Attendance at school<sup>11</sup>

Education is an extremely important determinant of health. Level of education is related to most lifestyle behaviours and health outcomes, from low birth weight and child death rates to rates of diabetes, heart disease and cancer.

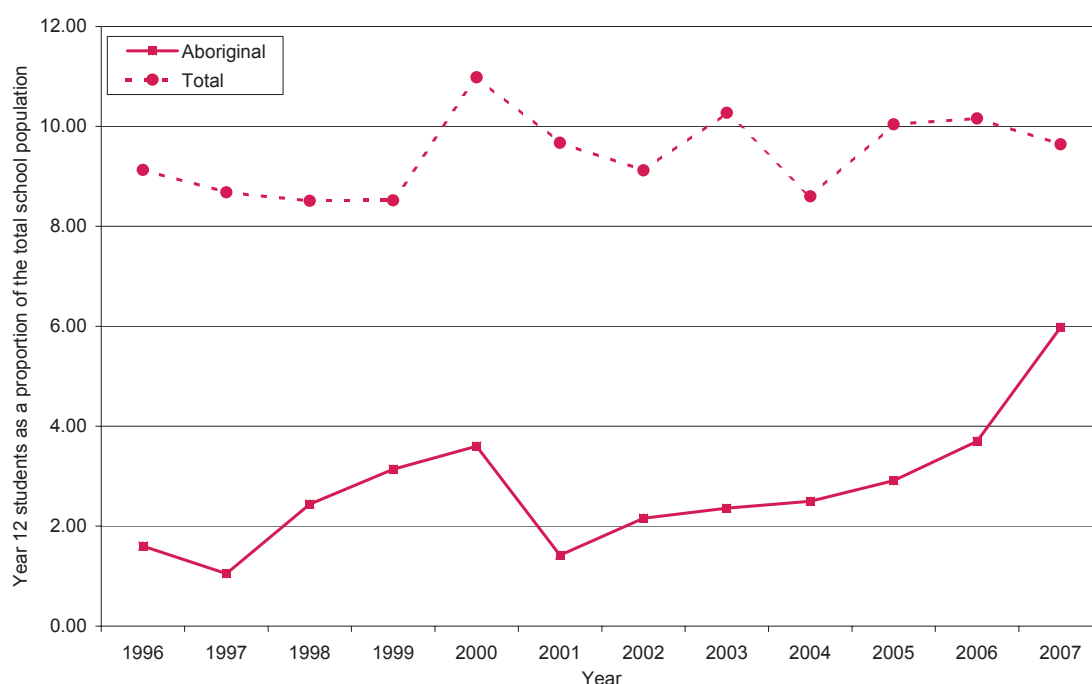
### Primary school

The attendance rate for primary school children across the region in 2007 was 93%, however there were wide variances, ranging from 41% for Year 1 boys at a regional school to 99% for kindergarten boys and girls at another school.

### Secondary school

The number of students enrolled at secondary schools across the Maari Ma region has gradually declined over the past 10 years. However, the number of Aboriginal students in years 9-12 has grown, with the following graph illustrating the increased proportion of Aboriginal students enrolling in Year 12 studies.

**Table: Enrolled year 12 students in the Maari Ma region, as a proportion of the total school population, 1996-2007**



Source: NSW Department of Education and Training, 1996-2007

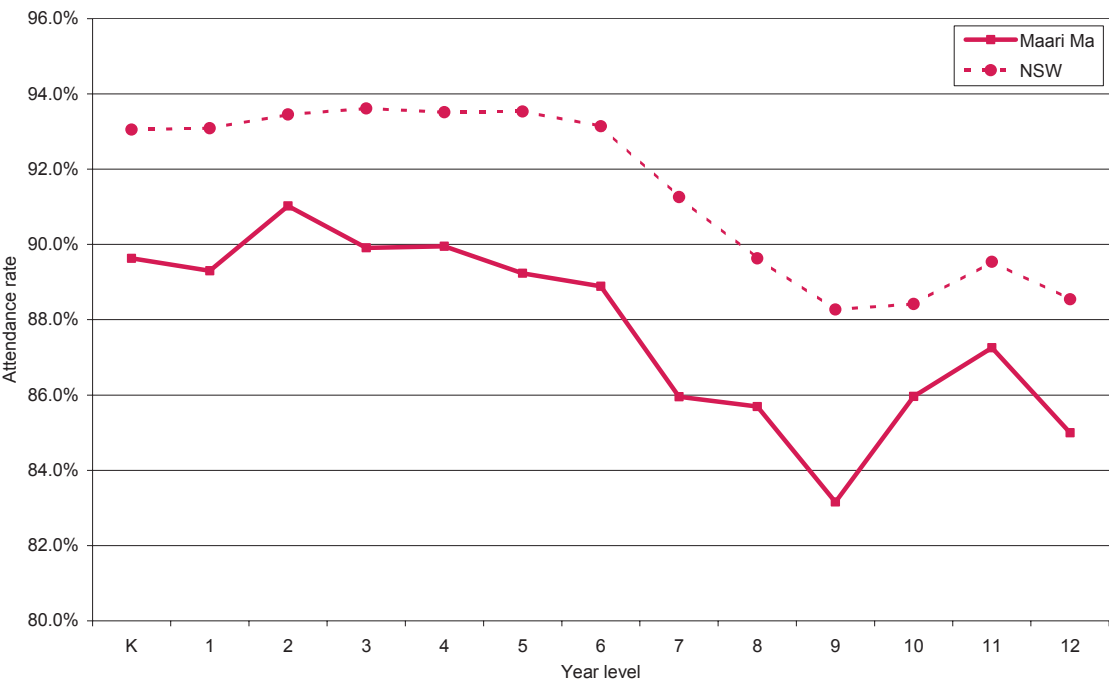
In the Maari Ma region, 53% of students who were enrolled in their Year 10 school certificate in 2005, progressed on to complete the Year 12 Higher School Certificate in 2007. This compares with 61% across NSW.

<sup>11</sup> Data from schools in Balranald local government area could not be sourced and therefore are not included in this part of the report.

School attendance rates in the Maari Ma region are lower across every year level of schooling. The attendance rates decrease by up to 5% as students move from Year 6 to Year 9. Improvement in attendance rates occurs in Year 10 and in Year 11 but in Year 12 it begins to decrease again.

This overall trend in attendance rates mirrors the NSW figures across every year level of schooling, albeit at a rate of approximately 4% less.

**Table: School attendance rates, Maari Ma region and NSW, 2007**



Source: NSW Department of Education and Training, 1996-2007

## Literacy and numeracy<sup>12</sup>

The National Assessment Program – Literacy and Numeracy (NAPLAN) tests have been developed collaboratively by the states, territories, Australian government and non-government schools sectors. Students across the nation were tested in the same year level, on the same items in reading, writing, language conventions (spelling, grammar and punctuation) and numeracy.

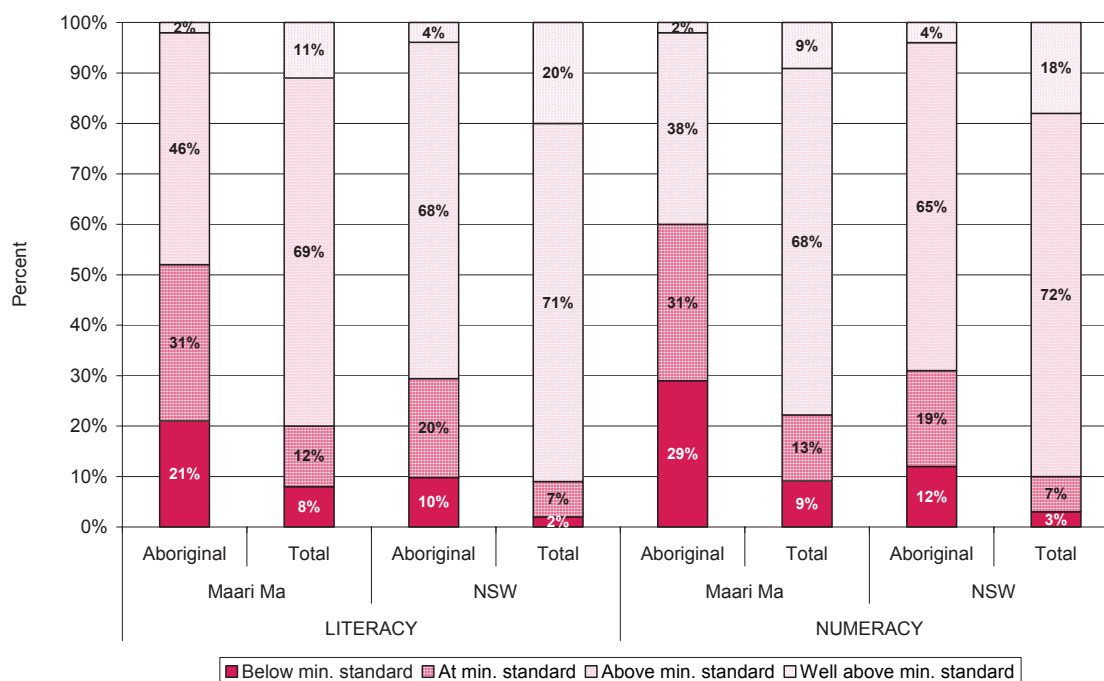
The NAPLAN results provide useful information for teachers, parents and children – teachers and schools are able to identify areas of strength and where further assistance may be required.

The following charts show children in the Maari Ma region, compared to NSW, at Years 3,5,7 and 9 and their performance on the literacy and numeracy tests.

Aboriginal students were represented at approximately double the rate of all students in the combined below and at minimum standard categories.

Aboriginal students are over-represented in the lower performing categories of literacy and numeracy in the 2008 NAPLAN tests. This occurred across all year levels where testing occurred.

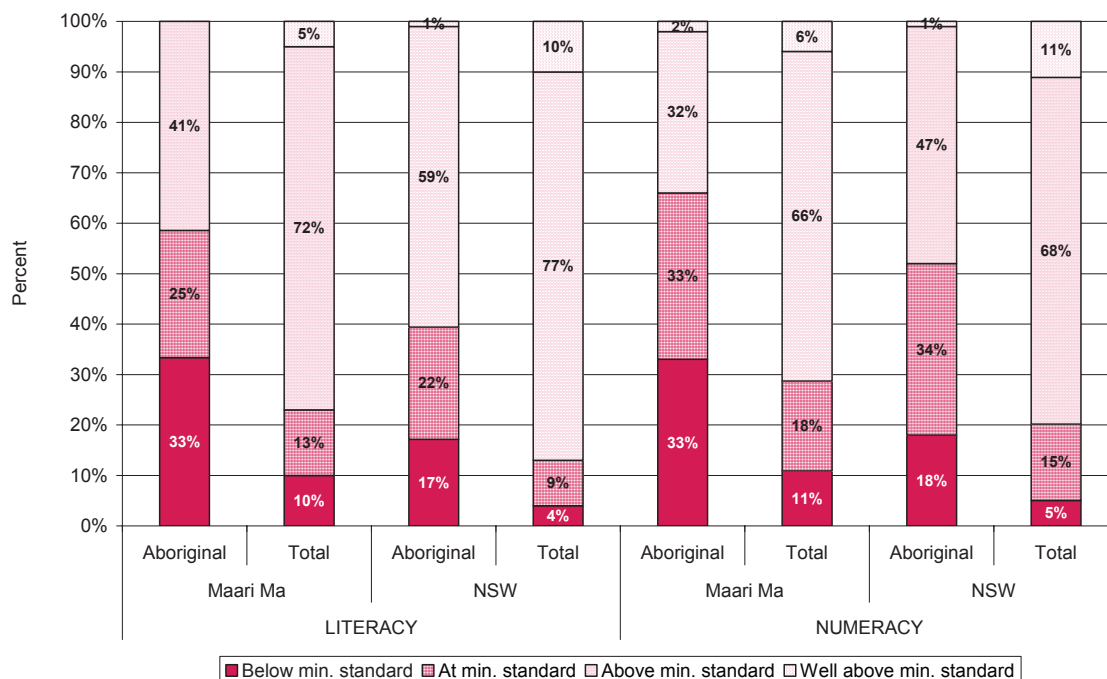
**Chart: Performance on Year 3 NAPLAN tests, literacy and numeracy, Maari Ma region and NSW, 2008**



Source: NSW Department of Education and Training, 2007

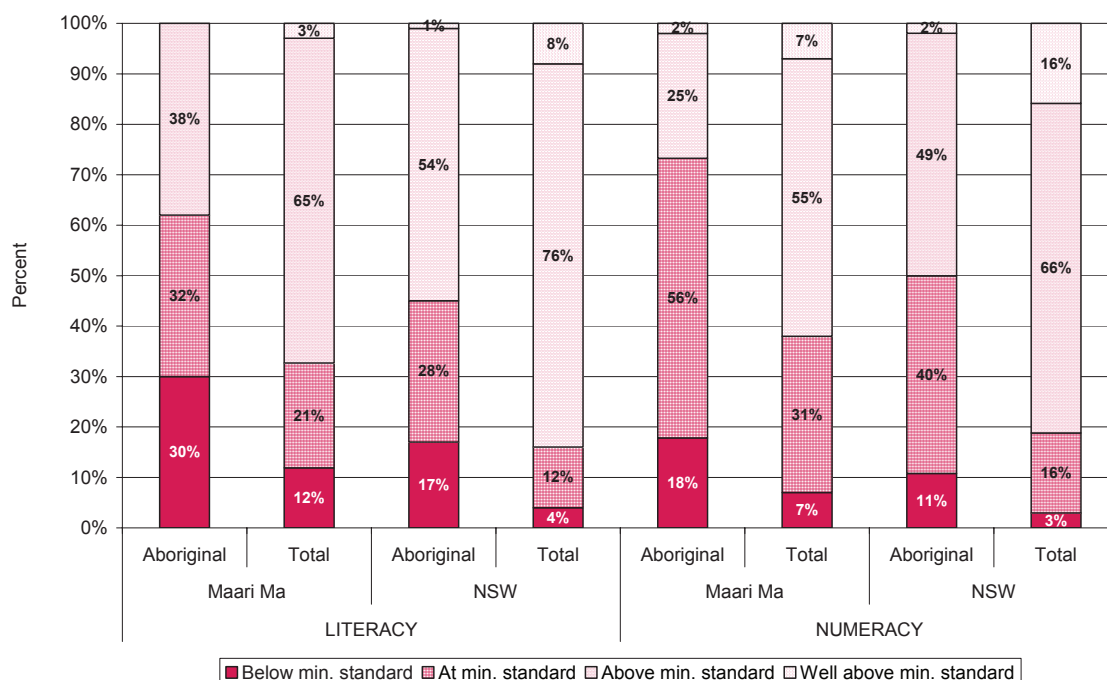
<sup>12</sup> Data from schools in Balranald local government area could not be sourced and therefore are not included in this part of the report.

**Chart: Performance on Year 5 NAPLAN tests, literacy and numeracy, Maari Ma region and NSW, 2008**



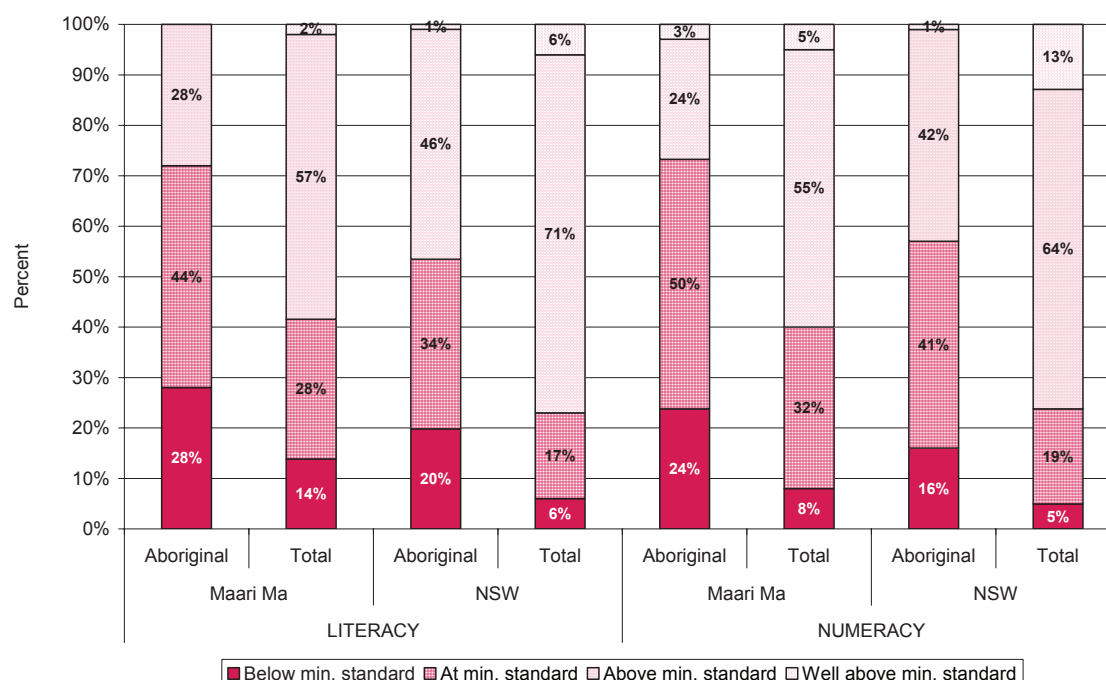
Source: NSW Department of Education and Training, 2007

**Chart: Performance on Year 7 NAPLAN tests, literacy and numeracy, Maari Ma region and NSW, 2008**



Source: NSW Department of Education and Training, 2007

**Chart: Performance on Year 9 NAPLAN tests, literacy and numeracy, Maari Ma region and NSW, 2008**



Source: NSW Department of Education and Training, 2007

## Social and emotional development

Mental health is one of the three National Health Priorities, along with asthma and diabetes. The Council of Australian Governments has committed to establishing a Preventive Health Care Partnership, which includes addressing the major risk factors contributing to increasing rates of poorer mental health in children. The AIHW reports that boys and Indigenous children are at increased risk of hospitalisation due to mental and behavioural issues.

Other than hospital admission data there are no systems in place to allow the collection of community mental health data to take place.

Therefore, we do not have any data to measure children's social and emotional development in the Maari Ma region and recognise this is a gap in the current data collection systems.



# 5

Health, development and wellbeing in far western NSW: A picture of our children

What factors can affect children adversely?



## During the antenatal period

Various factors can impact on the health and development of infants and young children, including being born to a teenage mother or having a mother who smoked cigarettes or drank alcohol during pregnancy. Babies born prematurely or with a low birth weight also have a greater risk of poorer health and social outcomes than other babies.

### *First antenatal visit*

When comparing the proportion of women who have their first antenatal visit before 20 weeks the Aboriginal women in the far west fair well. While higher than the NSW proportion, it is not significantly different. However, a statistically significantly lower proportion of the total far west antenatal population have their first antenatal visit prior to 20 weeks compared to the comparative NSW population.

**Table: First antenatal visit prior to 20 weeks gestation, Maari Ma region and NSW, 2003-2007**

	Maari Ma region		NSW	
	Aboriginal	Total	Aboriginal	Total
First antenatal visit before 20 weeks	76%	# 81%	79%	90%

# Significantly lower than the NSW comparative population  
Source: MDC 2003-2007

### *Factors that influence pregnancy and birth*

The table (on the following page) shows a number of indicators that can affect the development of babies in utero.

Teenage motherhood, particularly at younger ages, can pose significant long-term risks to both mother and child. Teenage mothers often delay having their pregnancy confirmed and/or seeking antenatal care, and are more likely to engage in risky behaviour, including smoking and drinking alcohol during pregnancy. Consequently teenage mothers face increased risk of miscarriage, preterm delivery, low birthweight and other complications, and perinatal mortality. Parenthood during the teenage years often results in interrupted schooling, a high risk of single parenthood, greater dependence on government assistance, increased problems in engaging with the labour market, and poverty. All of these factors can affect the health, education and economic futures of children born to teenage parents.

The proportion of Aboriginal teenage mothers in the Maari Ma region was similar to NSW, however the total proportion of teenage mothers (10%) in far western NSW, was significantly higher than NSW.

Birthweight is an important indicator of the baby's chance of survival and good health. Low birthweight increases the probability of lengthy hospitalisation after birth, the need for resuscitation, or death, and is a risk factor for neurological and physical disabilities.

Smoking during pregnancy not only impacts on the health of the mother, but also increases the risk of ill health for her unborn baby, including pre-term birth, SIDS, otitis media, asthma, behavioural problems and reduced intelligence.

Smoking rates during pregnancy are much higher in the Maari Ma region than NSW as a whole. Both the rates of smoking during pregnancy (for both the Aboriginal and total population) and the quantity smoked (again for both the Aboriginal and total populations) were significantly higher in far western NSW compared to NSW. Significant improvements in infants and children's health are possible with a reduction in smoking in pregnancy.

The use of alcohol during pregnancy can cause serious health effects for the unborn baby, the most serious being Foetal Alcohol Syndrome (includes poorer growth, delayed development, behaviour problems and reduced intelligence).

The proportion of women in far western NSW who have documentation in their maternal health files relating to drinking alcohol in the first and third trimesters is not significantly different to other ABCD sites.

**Table: Factors that affect children adversely, Maari Ma region and NSW<sup>13</sup>, 2003 – 2007 except alcohol (ABCD 2008)**

	Maari Ma region		NSW	
	Aboriginal	Total	Aboriginal	Total
Proportion of births to women aged 10-19 years <sup>\$</sup>	23%	* 8%	24%	5%
Low birth weight (<2500 grams) <sup>\$</sup>	12%	5%	13%	6%
Prematurity (<37 weeks gestation) <sup>\$</sup>	10%	7%	12%	7%
Smoking during pregnancy	* 78%	* 39%	63%	19%
More than 10 cigarettes per day <sup>14</sup>	* 65%	* 58%	54%	46%
Alcohol use during the first trimester	18%		19%	
Alcohol use during the third trimester	18%		14%	

\* Significantly higher than the NSW comparative population

<sup>\$</sup> Included in these data is 673 babies born in Victorian hospitals to women who reside in the Maari region

Source: MDC 2003 – 2007, ABCD 2008

## Fertility rate

Fertility rate refers to the actual number of children born to a woman. The fertile life is defined as being between 15 and 44. We have also included young women aged 10 to 14 years because, as described above, there is a significantly larger proportion of teenage women having babies in the far west.

<sup>13</sup> All data relates to NSW, except the alcohol data, where the comparison with Maari Ma region is made with data sourced from 60 health services across central Australia, far north Queensland, Western Australia, far western NSW and the top end of the Northern Territory. The ABCD data was accessed from the ABCD password protected website on 10 December 2008.

<sup>14</sup> As a proportion of women who smoked during pregnancy, not of all women

The fertility rate for Aboriginal women in far western NSW is 78 babies born to every 1000 women. This is significantly higher than the NSW total fertility rate (56 per 1000 women).

The fertility rate, however, for all women in far western NSW is not statistically different to the NSW rate (58 babies born to every 1000 women).

The fertility rate is influenced by the age of the mother. The following table shows the fertility rate by age group for Aboriginal and all far western NSW women in different age groups.

The fertility rates for Aboriginal and total far western NSW women aged 15-19 years and 20-24 years are all significantly higher than the comparative NSW rates. Conversely, the fertility rates for all far western NSW women aged 25-44 years is significantly lower than the comparative NSW rate.

**Table: Fertility rate (per 1000 live births, per year) by age Maari Ma region and NSW, 2003-2007**

Mother's age	Maari Ma region		NSW	
	Aboriginal	Total	Aboriginal	Total
10-14 years	1.1	0.4	0.8	0.1
15-19 years	* 92.6	* 33.6	69.5	15.3
20-24 years	206.0	120.5	143.9	59.2
25-44 years	74.1	# 68.5	65.1	77.8

\* Significantly higher than the NSW comparative population

# Significantly lower than the NSW comparative population

Source: MDC 2003 – 2007, ABS 2006

## Overweight and obesity

Children who are overweight are at risk of future physical health problems, including diabetes, sleep apnoea, respiratory difficulties and orthopaedic problems. Social health problems, including schoolyard bullying, are also a concern for overweight children.

Children and adolescents need at least 60 minutes (and up to several hours) of moderate to vigorous physical activity every day. Moderate activities include brisk walking, bike riding, skateboarding and dancing. Vigorous activities include football, netball, soccer, running, swimming laps, or training for sport and are those activities that make you 'huff and puff'.

Local "school kids health check" data details the proportion of children in the region who are overweight and/or obese. The health check took place in 3 communities within the Maari Ma region, with a total of 218 children, aged 5-15 years, participating.

**Table: Percentage of children who are overweight or obese, selected Maari Ma towns and NSW, 2007**

	3 SKHC towns	NSW
Overweight and/or obese	31% (n=67)	25%

Source: Maari Ma School Kids Health Checks 2007

## Environmental tobacco smoke

Young and unborn children who are exposed to tobacco smoke are at risk of serious health problems including increased risk and severity of asthma, infections of the lower respiratory tract, low birthweight, middle ear infections and sudden infant death syndrome.

While no data on environmental tobacco smoke exists for the Maari Ma region, the Child Health Survey reports that 90% of families across the larger region of the GWAHS have smoke free homes. This compares with 91% of families across NSW.

**Table: Percentage of families with children aged 0-15 with smoke-free homes and cars, 2005-06**

	GWAHS	NSW
Smoke-free homes	90%	91%
Smoke-free cars	89%	92%

Source: NSW Child Health Survey, 2005-06

## Substance use

Misuse of alcohol and use of other drugs (including tobacco) by young people can cause immediate and long-term health and social problems. In the short term, it may result in hospitalisations due to acute intoxication and related injuries, dependence and withdrawal symptoms. In the long-term, alcohol and other drug use can lead to depression, infections with blood-borne diseases, damage to the liver, heart and brain, and increased risk of cancers and other serious health conditions.

While no data on substance use is available for the Maari Ma region or the larger region of GWAHS, the 2005 NSW School Students Health Behaviours Survey report stated that 39% of 12-17 year olds in NSW had used alcohol in the month prior to the survey.

Most people who go on to become long-term smokers started smoking during their secondary school years and early uptake is associated with heavier smoking patterns and greater difficulty in quitting. The 2005 NSW School Students Health Behaviours Survey report stated that 11% of 12-17 year olds in NSW had smoked tobacco in the month prior to the survey.

## What kind of families and communities do our children live in?

6

Health, development and wellbeing in far western NSW: A picture of our children





## Family functioning

The ability of a family to function well affects the health and wellbeing of children, and many aspects of family life including acceptance of individuals, consensus on decisions, communication, and the ability to solve day-to-day problems. How a family functions is influenced by many factors, including quality of relationships, the health of family members, and the presence of employment, financial constraints and life stresses.

While no data on family functioning exists for the Maari Ma region, the Child Health Survey reports that 96% of families across the larger region of the GWAHS have healthy family functioning. This compares with 95% of families across NSW.

## Family economic situation

For most families household income is the most important determinant of their economic situation. Children living in low-income households are more likely to have insufficient economic resources to support a minimum standard of living and this can affect a child's nutrition, access to medical care, the safety of their environment, level of stress in the family and the quality and stability of their care.

National bodies have identified that data pertaining to family economic situation is important to collect, however, at present, there are no systems in place to allow the collection of this data to take place.

Therefore, we do not have any data to measure family economic situation in far western NSW and recognise this is a gap in the current data collection systems.

## Children in out-of-home care

Children in out-of-home care represent a particularly disadvantaged group. Many have suffered child abuse or neglect and /or family relationship breakdown. The AIHW reports that young people in out-of-home care have higher levels of aggressive/violent behaviour, substance use, intellectual disability and mental health problems and poorer education outcomes compared with other young people.

The following table shows the numbers and rates of children in out-of-home care. Children in far western NSW are almost twice as likely to be in out-of-home care compared to children in NSW. Aboriginal children are much more likely to be in out-of-home care.

**Table: Children (aged 0-14 years) in out-of-home care, and rates<sup>15</sup> (per 1,000 population), Maari Ma region and NSW, 30 June 2008**

	Maari Ma				NSW Total	
	Aboriginal		Total		N	Rate
	N	Rate	N	Rate		
0 – 5 years	19	48.6	24	12.0	4,109	8.5
6 – 10 years	28	80.2	35	19.6	4,564	11.0
11 – 14 years	33	117.4	43	28.1	3,833	11.1
<b>TOTAL</b>	<b>80</b>	<b>78.4</b>	<b>102</b>	<b>19.2</b>	<b>12,506</b>	<b>10.0</b>

Source: Department of Community Services 2007/08, ABS 2006 Census

## Parental health status

Parent's health and wellbeing impacts on the health and wellbeing of children in a number of ways. Children rely on their primary carer for their physical, emotional and economic needs, and support. When disruption to parenting occurs, as sometimes happens with the onset of a physical or mental illness, the needs of a child may receive less attention or may not be met at all.

Self-rated health status is a fundamental measure of health status and health outcomes, and is a strong and independent predictor of subsequent illness, premature death, and use of health services.

National bodies have identified that data pertaining to parental health status is important to collect, however, at present, there are no systems in place to allow the collection of this data to take place.

Therefore, we do not have any data to measure parental health status in far western NSW and recognise this is a gap in the current data collection systems.

<sup>15</sup> Rates where population is less than 3,000 should be read with caution. When comparing rates where numbers are small it should be noted that large changes in rates between groups will result from small changes in counts.

## Neighbourhood safety

High neighbourhood quality has been associated with positive outcomes for children, including lower levels of child maltreatment and youth delinquency and higher levels of children's physical and mental health, educational attainment and collective efficacy. One of the most common indicators of neighbourhood quality is parents' perception of neighbourhood safety.

The Child Health Survey reports that 81% of residents of the larger health service region felt the area they lived in had a safe reputation compared with 78% of residents in NSW.

Some indicators of neighbourhood safety are the rates of assaults, robbery and theft<sup>16</sup> in the local area for the whole population. The following table shows the rates of assaults, robberies and thefts for far western NSW compared to NSW. The rate of assaults and thefts in far western NSW is significantly higher than the rates in the NSW population. Conversely, the rate of robberies in far western NSW is significantly lower than the rate in NSW.

**Table: Rates<sup>17</sup> of assaults, robbery and theft (per 100,000 total population), Maari Ma region and NSW, 2003-2007**

	Maari Ma region		NSW	
	Number	Rate	Number	Rate
Assault	4,181	* 2,676	359,992	1,099
Robbery	58	# 37	42,343	129
Theft	8,553	* 5,474	1,588,997	4,853

\* Significantly higher than the NSW comparative population

# Significantly lower than the NSW comparative population

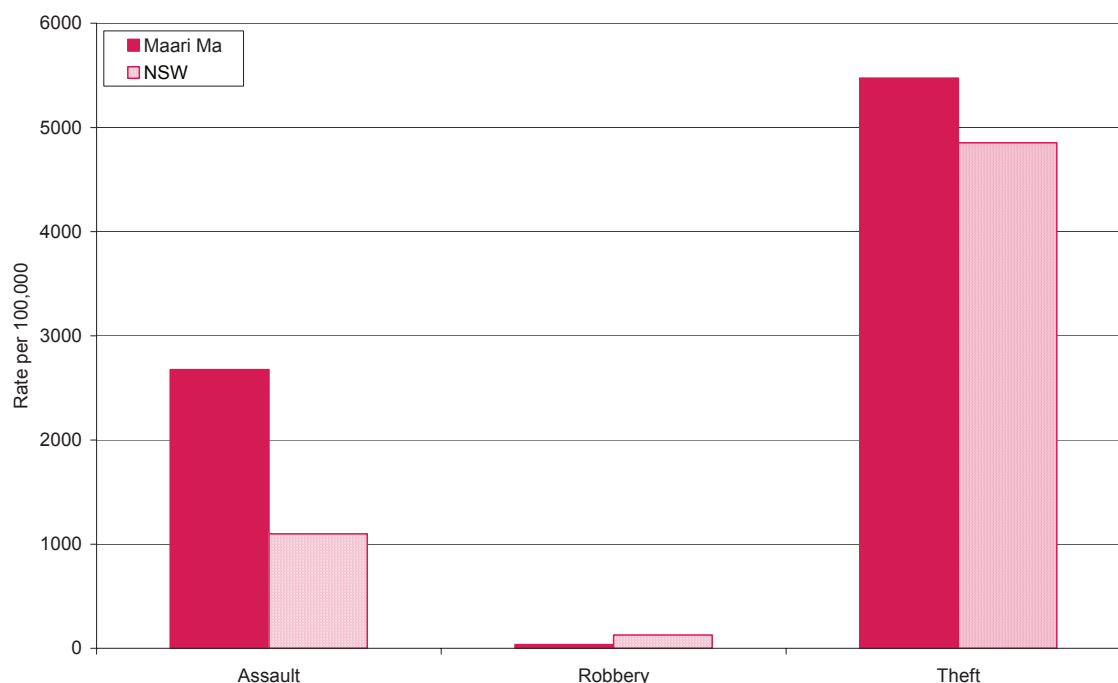
Source: BOCSAR, ABS

<sup>16</sup> The difference between 'robbery' and 'theft' is explained in the Glossary under 'Crime data'.

<sup>17</sup> Rates where population is less than 3,000 should be read with caution. When comparing rates where numbers are small it should be noted that large changes in rates between groups will result from small changes in counts.

The following chart shows the data for assaults, robberies and thefts graphically.

**Chart: Rates of assault, robbery and theft (per 100,000 total population), Maari Ma region and NSW, 2003-2007**



Source: BOCSAR, ABS

## Social capital

Social capital is an important part of the social context in which a child developed. It refers to the connections among individuals or the social networks that facilitate the norms of reciprocity and trustworthiness.

Families with rich social support networks have been found to have increased access to information, material resources, and friends and neighbours to assist them in managing their daily lives and problems.

The Child Health Survey reports that 62% of families in the wider region of the GWAHS say they could ask someone in the neighbourhood to care for their child compared to only 57% in NSW.

# How safe and secure are our children?

7

Health, development and wellbeing in far western NSW: A picture of our children



## Injuries

The AIHW reports that injury (including poisoning) is the leading cause of death and a major cause of hospitalisation among children aged 0-14 years in Australia. Injuries resulting in disability and disfigurement can impair a child's development and affect their future wellbeing.

Many injuries are preventable, and are therefore amenable to intervention. Injury prevention and control is a National Health Priority Area.

The following table shows the rates of injury death (mortality), injury admissions and injury presentation to the Emergency Department (ED) for the Aboriginal and total population. The rate of presentation to the ED is significantly higher than the comparative NSW population for Aboriginal people in far western NSW and for all people in far western NSW. The rates of injury related death (mortality) and admission to hospital is similar to that in NSW.

**Table: Mortality (per 100,000 children), admissions and presentations (per 1,000 children) attributed to injuries, accidents and poisoning for children aged 0-14 years, 2005-2007**

	Maari Ma				NSW			
	Aboriginal		Total		Aboriginal		Total	
	N	Rate	N	Rate	N	Rate	N	Rate
Mortality rate	<5	14.9	6	6.5	20	5.2	322	3.1
Admission to hospital rate	56	18.4	252	13.4	3228	20.2	65721	16.9
Presentations to the ED <sup>18</sup>	280	* 184.1	2416	* 212.0	10101	63.3	269202	69.1

\* Significantly higher than the NSW comparative population

Source: ABS deaths 1999-2006, ISC (2005/06-2007/08) and EDDC (2005-2007)

It is worth noting that the data for injury presentation is based on presentations to the Emergency Department at Broken Hill Health Service. Analysis of the complete data showed that only 5% of those presentations were children who lived outside Broken Hill. These presentations, and the respective population denominator have been removed from the data presented here. Thus the injury presentation data may not adequately reflect presentation practices in remote parts of NSW.

## School relationships and bullying

The AIHW reports that school connectedness and supportive social relationships have been associated with lower levels of absenteeism, delinquency, aggression, substance use and higher levels of academic achievement and self-esteem amongst children. Conversely bullying is associated with lower academic achievement, feeling 'unsafe' at school, depression and contributes to maladjustment of children at school.

<sup>18</sup> Data sourced from the Emergency Department Data Collection (EDDC) of which Broken Hill is the only contributing health service in the Maari Ma region.

National bodies have identified that data pertaining to school relationships and bullying is important to collect, however, at present, there are no systems in place to allow the collection of this data to take place.

Therefore, we do not have any data to school relationships and bullying in far western NSW and recognise this is a gap in the current data collection systems.

## Child abuse and neglect

There is a demonstrated relationship between the health and wellbeing of children and the environment in which they grow up. Children who are raised in supportive, nurturing environments are more likely to have better social, behavioural and health outcomes. Likewise, children who have been abused or neglected often have poor developmental outcomes, such as lower social competence, poor school performance and a higher likelihood of criminal offending later in life.

In Australia, statutory child protection systems are the responsibility of the state and territory governments. Child protection substantiation refers to the determination, after investigation, that a child has been, is being or likely to be, abused or neglected or otherwise harmed. Child abuse may include physical, sexual or emotional abuse or neglect.

The following table describes the number of children involved in reports where risk or actual harm had been satisfactorily determined. Children in far western NSW are considerably more likely to have determined harm and risk of harm compared to children in NSW.

**Table: Children (aged 0-14 years) involved in reports where secondary assessment determined actual harm and risk of harm, and rates<sup>19</sup> (per 1,000 children), Maari Ma region and NSW, 2007/08**

	Maari Ma				NSW Total	
	Aboriginal N	Aboriginal Rate	Total N	Total Rate	N	Rate
0 – 5 years	42	107.4	66	33.0	6,117	12.6
6 – 10 years	38	108.9	51	28.5	3,500	8.4
11 – 14 years	29	103.2	44	28.8	2,042	5.9
<b>TOTAL</b>	<b>109</b>	<b>106.8</b>	<b>161</b>	<b>30.3</b>	<b>11,659</b>	<b>9.4</b>

Source: Department of Community Services:  
KiDS - CIW annual data and Annual Statistical Report 2007/08,  
ABS 2006 Census

<sup>19</sup> Rates where population is less than 3,000 should be read with caution. When comparing rates where numbers are small it should be noted that large changes in rates between groups will result from small changes in counts.



## Children as victims of violence

Being a victim of crime can be detrimental to a child's health, wellbeing, sense of security, safety and feelings about the future. For some children being victimised may lead to diminished education attainment and social participation in early adulthood, or result in physical injury, disability and even death. Experience of crime is central to issues of community safety in general, and even more so for children as the most vulnerable members of society.

The following table describes the data supplied by the NSW Bureau of Crime Statistics and Research (BOCSAR). BOCSAR have supplied crime data where the victim of the crime was aged under 18 years. Compared to the respective NSW population both the 'children as victims of crime' rates for Aboriginal and the total population in far western NSW are significantly higher.

**Table: Victims aged under 18 years of offences<sup>20</sup>, recorded by NSW Police, numbers and rates<sup>21</sup> (per 1,000 children aged under 18 years), Maari Ma region and NSW, 2003 - 2008**

	Maari Ma region		NSW	
	Aboriginal	Total	Aboriginal	Total
Victims aged under 18 years	432 * 72.2	1159 * 30.6	8387 26.7	108360 13.8

\* Significantly higher than the NSW comparative population

Source: NSW Bureau of Crime Statistics and Research, 2003-2008

<sup>20</sup> Offences include murder, attempted murder, murder accessory, conspiracy, manslaughter, DV related assault, non DV related assault, sexual assault, indecent assault, act of indecency, & other sexual offences, abduction and kidnapping, blackmail and extortion, harassment, threatening behaviour and private nuisance & other offences against the person.

<sup>21</sup> Rates where population is less than 3,000 should be read with caution. When comparing rates where numbers are small it should be noted that large changes in rates between groups will result from small changes in counts.

## Homelessness

Children who are homeless, whether as part of a family unit or on their own, experience significant negative social and health consequences. Homelessness is associated with increased prevalence of a number of health conditions including gastroenteritis, bronchitis and asthma. The factors contributing to homelessness are complex, and may be the result of domestic violence, family or relationship breakdown, poverty or financial crisis, mental illness or lack of affordable housing.

The Supported Accommodation Assistance Program (SAAP) began in 1985 to assist homeless people and women and children leaving violent relationships. The following two tables, while pertaining to NSW as a whole, provides a snapshot of the program's influence.

**Table: SAAP assistance, demographic profile of clients, NSW 2006/07**

	NSW
Number of clients (adults)	31,850
Number of clients (accompanying children)	16,900
Mean age (adults)	
Total	31.1 years
Male	32.8 years
Female	29.9 years
Mean age (children)	
Total	6.1 years
Male	6.0 years
Female	6.2 years
Indigenous	
Adults	18.5%
Children	29.5%

Source: AIHW SAAP NDCA

**Table: SAAP assistance, reason for access and services provided, NSW 2006/07**

	NSW
Main reason for seeking assistance	
Domestic/family violence	21.4%
Problematic drug/alcohol/substance use	13.9%
Financial difficulty	10.2%
Relationship/family breakdown	10.2%
Emergency/previous accommodation ended	7.6%
SAAP services provided to adults	
Basic support <sup>22</sup>	97.2%
General support/advocacy <sup>23</sup>	95.8%
Personal support <sup>24</sup>	91.7%
Housing /accommodation <sup>25</sup>	82.4%
SAAP services provided to children	
Basic support <sup>26</sup>	98.3%
General support/advocacy <sup>27</sup>	95.3%
School liaison/childcare	91.5%
Personal support <sup>28</sup>	90.2%

Source: AIHW SAAP NDCA

No data is available for this indicator at the regional or area health service level. This is a gap in the current data collection systems and may need to be addressed in the future.

## Children and crime

The AIHW reports that research has shown that children who have been victimised are at greater risk of later offending. For most children engaged in criminal activities, the nature of the offence is relatively minor and the behaviour is short lived. However for a small number of children this behaviour becomes more serious or persistent and results in contact with the juvenile justice system.

Young people in the criminal justice system represent a particularly disadvantaged population, characterised by high levels of socio-economic stress, significant physical and mental health needs, and history of physical abuse and childhood neglect. Childhood neglect is one of the strongest predictors of later youth offending.

The following table shows court outcome data, supplied by BOCSAR. BOCSAR recommend collapsing all categories of outcomes into four broad categories – bonds, custodial sentences, youth conferences and other. A

<sup>22</sup> Includes meals, laundry, showers and transport

<sup>23</sup> Includes personal development, assistance with legal and court issues and the retrieval/storage and/or removal of belongings

<sup>24</sup> Includes information and advice regarding incest/sexual assault, domestic/family violence, problem gambling and emotional support

<sup>25</sup> Includes access to SAAP accommodation and assistance to obtain short-, medium-, long-term and independent accommodation

<sup>26</sup> Includes meals, showers, recreation and transport

<sup>27</sup> Includes access arrangements, advice, information and advocacy

<sup>28</sup> Includes help with behavioural problems, sexual/physical abuse counselling/support, skills education, structured play and skill development

table in the glossary of this document shows the outcomes included in each of the categories shown.

The following table describes the data supplied by BOCSAR. Compared to the NSW Aboriginal population there are significantly more custodial sentences given to far western NSW Aboriginal youth. Rates of bonds, youth conferences and all other court outcomes were significantly higher for all far western NSW youth compared to the rates for NSW youth.

**Table: Court outcomes for children aged 10-17 years, numbers and rates<sup>29</sup> (per 100,000 children aged 10-17 years), Maari Ma region and NSW, 2005-2007**

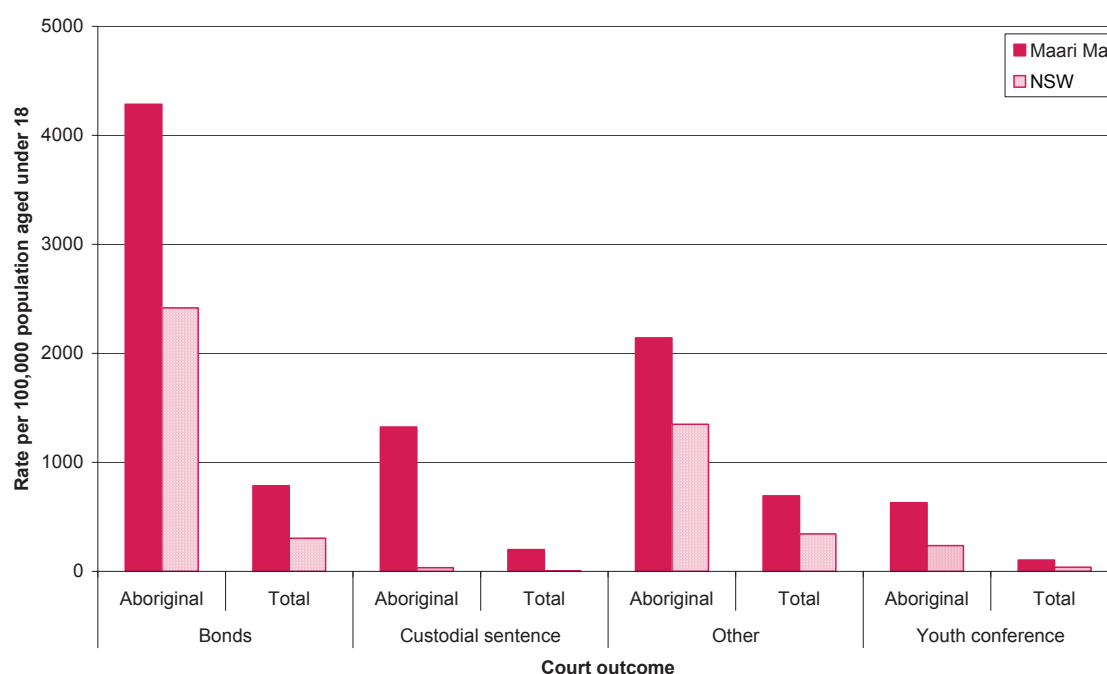
	Maari Ma region				NSW			
	Aboriginal N	Rate	Total N	Rate	Aboriginal N	Rate	Total N	Rate
Bonds	23	4,285	28	*786	677	2,418	2,165	302
Custodial sentence	7	*1,323	7	*199	9	33	25	3
Youth conference	<5	630	<5	104	66	236	275	38
Other	11	2,142	24	*691	378	1,349	2,458	343

\* Significantly higher than the NSW comparative population

Source: NSW Bureau of Crime Statistics and Research, 2005-2007

The following chart shows the court outcome data detailed in the previous table.

**Chart: Court outcomes rates for children aged 10-17 years, (per 100,000 children aged 10-17 years), Maari Ma region and NSW, 2005-2007**



Source: NSW Bureau of Crime Statistics and Research, 2005-2007

<sup>29</sup> Rates where population is less than 3,000 should be read with caution. When comparing rates where numbers are small it should be noted that large changes in rates between groups will result from small changes in counts.

How well is the system performing in delivering quality health, development and well being actions to our children?

8

Health, development and wellbeing in far western NSW: A picture of our children



## Congenital anomalies

Congenital anomalies are a major cause of hospitalisation in infancy and childhood and a leading cause of infant mortality in Australia. Congenital rubella and neural tube defects are two conditions amenable to prevention through folate supplementation before and immediately after conception and improved population immunisation against rubella, respectively. However, cases are few in far western NSW.

## Newborn hearing screening

The AIHW reports that congenital hearing impairment is traditionally reported late in Australia and, for many children, deafness remains a disability leading to severe and lasting language impairment. Early diagnosis and intervention can improve language, cognitive and social outcomes in hearing-impaired children.

Newborn hearing testing has been done routinely in NSW since 2003. The NSW Statewide Infant Screening – Hearing (SWISH) aims to identify babies with significant permanent hearing loss by three months of age and for those children to be able to access appropriate intervention by 6 months of age.

In 2007 100% of babies born at Broken Hill Health Service were screened. During her two years with the program, the GWAHS SWISH Coordinator advises that there are no children in Broken Hill who required hearing aids. This is not unexpected given the state rate. We expect to detect one child with hearing loss every three years.

All travel for follow-up of abnormal screening tests is fully funded for the infant and one parent. It is disappointing to note that the travel is only funded if the infant is referred to John Hunter Hospital in Newcastle, the Children's Hospital at Westmead or the Sydney Children's Hospital at Randwick. No travel is funded if the infant is referred to a closer hospital in South Australia or Victoria.

## Childhood immunisation

Immunisations from childhood diseases such as measles, whooping cough, diphtheria and polio is one of the most cost effective public health interventions in preventing childhood morbidity and mortality. In 2000 the World Bank reported that the rate of immunisation coverage reflects the capacity of a health system to effectively target and provide vaccinations to all children.

ABCD audit data has been used for the Maari Ma region, as this considers timeliness of immunisation as a factor when deciding if a child has been fully immunised. Comparisons are made with the Australian Childhood Immunisation Register data, however these figures will be higher, as timeliness of immunisation is not considered.

Timeliness of immunisation is important to reduce the excess morbidity and mortality suffered by Aboriginal children.

The following tables show overall good immunisation rates. However, the timeliness of vaccination requires significant improvement to eradicate some of the vaccine preventable infections.

**Table: Childhood immunisation, Maari Ma region and NSW**

Age	Timeframe		ABCD		ACIR	
			Maari Ma	Total <sup>30</sup>	GWAHS	NSW
Birth	Before 7 days old	Hep B	56%	61%	93.0%	91.4%
2 months	Before 3 months	DTPa	74%	75%		
		Hep B	74%	74%		
		Polio	74%	75%		
		HiB	74%	75%		
		PCV7V	74%	74%		
4 months	Before 5 months	DTPa	59%	68%		
		Hep B	59%	67%		
		Polio	59%	67%		
		HiB	59%	68%		
		PCV7V	59%	66%		
6 months	Before 7 months	DTPa	51%	63%	94.8%	93.8%
		Hep B	51%	45%		
		Polio	51%	62%		
		HiB	34%	34%		
		PCV7V	51%	62%		
12 months	Before 14 months	MMR	53%	65%		
		HiB	51%	62%		
		Men C	51%	64%		
18 months	Before 20 months	VZV	34%	37%		
4 years	Before 4½ years	DTPa	55%	58%	89.9%	87.2%
		MMR	55%	58%		
		Polio	55%	54%		

Source: ABCD 2008, ACIR December 2008

<sup>30</sup> 'Total ABCD' is based on 1332 children's files audited in far western NSW, Central Australia, Far North Queensland, Northern Territory Top End and Western Australia.



## Quality childcare

Good-quality childcare provides support for a child's learning, socialisation, development and their transition to school. Good-quality childcare can also be an effective intervention for disadvantaged children or those with special education needs. Conversely, poor-quality childcare may be associated with developmental risk.

The National Childcare Accreditation Council (NCAC) works in partnership with families, services, government and other key stakeholders to facilitate and support continuous improvement to the quality of childcare provided for children in Australia. NCAC has been appointed by the Australian Government to implement quality improvement into childcare services. The government has linked quality improvement to the Child Care Benefit scheme and payments received by services on behalf of the parents of children in their care. Sanctions, including suspending or cancelling a service's Child Care Benefit approval, can be imposed on those services that fail to comply or show an effort to improve the quality of childcare service they provide.

The following table shows the services in far western NSW that are registered with the NCAC. Other services may not be registered with NCAC but given the direct link to the Child Care benefit it would be a clear objective to assist those services to register and move towards accreditation.

**Table: Childcare services registered with NCAC, December 2008**

Facility	Town	Service type	Accreditation history
Balranald Early Learning Centre	Balranald	Long Day Care	Accredited June 2008
Jack & Jill Midway Childcare Centre	Buronga	Long Day Care	Accredited February 2008
Stepping Stones – Buronga Gol Gol OSHC	Buronga	Out of School Hours Care Vacation Care	New registration June 2008
Broken Hill Family Day Care	Broken Hill	Family Day Care Scheme	Accredited April 2008
Broken Hill Happy Day PreSchool Kindergarten	Broken Hill	Long Day Care	Not accredited September 2008
Lilliput Early Learning Centre	Broken Hill	Long Day Care	Accredited February 2008
Broken Hill Vacation Care	Broken Hill	Out of School Hours Care Vacation Care	Not accredited December 2008
Broken Hill PCYC KidzCare (Vacation Care)	Broken Hill	Out of School Hours Care Vacation Care	New registration August 2008

Source: NCAC website (accessed 2 March 2009)



# Conclusion

9

Health, development and wellbeing in far western NSW: A picture of our children



## Conclusion

This collection of data will serve as a baseline against which to measure progress over time. It is envisaged that this comprehensive collection of data will be repeated every 5 years. However, as the strategies from the 'Strategic Framework to Improve Child Development and Well-being for Aboriginal Children in the Far West' are implemented, additional specific data may be collected annually or every two years as appropriate to monitor change. Furthermore, there are important indicators that are currently not collected (as indicated in the AIHW's National key indicators of child health, development and well-being [pages 11 and 12]), but as they become available, will be added to the data set. Finally, this process of implementation of strategies and regular monitoring of key outcomes will facilitate achieving our goal to improve the health and well-being of Aboriginal children in the Far West and close 'the gap' that currently exists between Aboriginal and non-Aboriginal children.



## Appendices

---

Health, development and wellbeing in far western NSW: A picture of our children





## References

- Australian Bureau of Statistics 2006, Basic Community Profile. <http://www.abs.gov.au>
- Australian Bureau of Statistics. 2006 Census Dictionary. Cat 2901.0. Canberra, 2007.
- Australian Bureau of Statistics 2006, Indigenous Profile. <http://www.abs.gov.au>
- Australian Bureau of Statistics 2006, SEIFA indices.  
<http://www.abs.gov.au/ausstats/abs@.nsf/mf/2033.0.55.001/>
- Australian Childhood Immunisation Register. Immunisation coverage, 30 June 2008.  
Australian Government  
<http://medicareaustralia.gov.au/provider/patients/acir/statistics.jsp> (Accessed 3 March 2009)
- Australian Institute of Health and Welfare. *Homeless people in SAAP: SAAP National Data Collection annual report New South Wales supplementary tables*. SAAP NDCA report series 12. Cat. No. HOU 177. Canberra, April 2008
- Australian Institute of Health and Welfare. *Key national indicators of children's health, development and wellbeing – Indicator framework for 'A picture of Australia's children-2009'*. Bulletin 58. Canberra, April 2008
- Australian Institute of Health and Welfare. *Making progress: the health, development and wellbeing of Australia's children and young people*. Cat. No. PHE 104. Canberra, 2008
- Australian Institute of Health and Welfare. *The health and welfare of Australia's Aboriginal and Torres Strait Islander Peoples*. Cat. No. 4704.0. Canberra 2008
- Child and Youth Health, South Australian Health Department. October 2008.  
<http://www.cyh.com/HealthTopics/HealthTopicDetails.aspx?p=114&np=122&id=1910>  
(accessed 17 December)
- Giffin M, Jorm L, Taylor L, & Thomas M. The health behaviours of secondary school students in New South Wales 2002. New South Wales Public Health Bulletin Supplementary Series (2004) 15, 1–85
- Kennedy C. Health in the Murdi Paaki. Broken Hill Centre for Remote Health Research, July 2005
- Menzies School of Health Research. *ABCD Child health clinical audit protocol (version 2.3)*. Department of Health and Ageing, Australian Government, 17 December 2007
- Menzies School of Health Research. *ABCD Maternal health clinical audit protocol (version 2.4)*. Department of Health and Ageing, Australian Government, 19 December 2007
- National Childcare Accreditation Council Inc (NCAC). Childcare accreditation status. Register updated 27 February 2009. <http://www.ncac.gov.au/Search/Search1.asp> (accessed 2 March 2009)
- NSW Department of Community Services. *NSW Department of Community Services Annual Report 2006/07*. Sydney, 2007
- NSW Department of Education. Best Start Kindergarten Assessment. February 2008.  
[https://www.det.nsw.edu.au/media/downloads/languagesupport/best\\_start/letter/english.pdf](https://www.det.nsw.edu.au/media/downloads/languagesupport/best_start/letter/english.pdf)  
(accessed 10 December 2008)
- Population Health Division. *NSW Health Population Health Survey. 2005-2006 Report on Child Health*. NSW Department of Health. Sydney 2007
- Population Health Division. *The health of the people of New South Wales – Report of the Chief Health Officer 2008. Summary Report*. NSW Department of Health. Sydney 2008
- Population Health Division. *The health of the people of New South Wales - Report of the Chief Health Officer*. NSW Department of Health. Sydney, 2008.  
[http://www.health.nsw.gov.au/public-health/chorep/beh/beh\\_alcsmoillistud\\_type.htm](http://www.health.nsw.gov.au/public-health/chorep/beh/beh_alcsmoillistud_type.htm)  
(accessed 10 December 2008).

## Abbreviations

ABCD	Audit and Best Practice for Chronic Disease
ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
BOCSAR	NSW Bureau of Crime Statistics and Research
CI	Confidence Interval
DTPa	Diphtheria-tetanus-acellular pertussis vaccine
ED	Emergency Department
EDDC	Emergency Department Data Collection
HepB	Hepatitis B vaccine
HiB	Haemophilus influenzae bacillus
HOIST	Health Outcomes Information Statistical Toolkit
LGA	Local Government Area
ICD	International Classification of Diseases
ISC	Inpatient Statistics Collection
MDC	Midwives Data Collection
MenC	Meningococcal C conjugate vaccine
MM-R	Maari Ma region
MMR	Measles, mumps and rubella vaccine
NCAC	National Childcare Accreditation Council Inc.
NDCA	National Data Collection Agency (SAAP data)
NHMRC	Nation Health and Medical Research Council
NSW	New South Wales
PCYC	Police Citizens Youth Club
PCV7v	Conjugate pneumococcal vaccine
SAAP	Supported Accommodation Assistance Program
SEIFA	Socio-economic indices for Areas
SKHC	School Kids Health Check
SIDS	Sudden Infant Death syndrome
SIR	Standardised Incidence Ratio
SMR	Standardised Mortality Ratio
sq. km	square kilometres
SSR	Standardised Separation Ratio
SWISH	NSW Statewide Infant Screening - Hearing
UFW	Unincorporated Far West
VZV	Varicella Zoster Virus vaccine

## Data Sources

### *ABCD [Audit and Best Practice for Chronic Disease]*

ABCD is an action research program that supports health services to develop continuous improvement approaches to strengthen systems for prevention and management of chronic disease.

The data is obtained through clinical audits of medical records. Medical records of women who have a baby, young children, well people and those with diabetes are audited against a selection of key criteria. This data is reported back to the services and services set goals to improve the results in the next year.

### *Australian Bureau of Statistics*

Data was sourced from the 2006 Census through the ABS website. The Census provides a wide range of demographic information on age, sex, housing, Aboriginality, income, employment and more. This information can then be used to identify specific populations or areas of need.

### *Acute illness*

Morbidity data was obtained from NSW Health's Inpatient Statistics Collection (ISC) and includes information on patients admitted to all public, private and psychiatric hospitals. Data from the financial years 2005/06 to 2007/08 was aggregated.

Important issues affecting the reliability and interpretation of ISC data include

- Ambiguities in determining principal diagnosis and sequencing diagnoses
- Completeness of the information supplied on the discharge summary
- Accuracy of coding.

### *Deaths*

Mortality data was obtained for deaths that occurred between 1997 and 2006. The data file contains information on the principal cause of death, age, sex and place of usual residence and was obtained from the Registry of Births, Deaths and Marriages, through the ABS.

Important issues affecting the reliability and interpretation of mortality data include

- The accuracy of the diagnosis recorded on the death certificate. If multiple conditions are present at the time of death, the decision about which was the underlying cause of death might be equivocal
- Misinterpretation of the guidelines for determining the underlying causes of death by the attending physician completing the death certificate
- Errors in transcription and coding of death certificates.

### *Education data*

NSW Department of Education and Training supplied data pertaining to education enrolments and attendances. Results of the first round of NAPLAN scores were also provided.

### *Juvenile Justice data*

The NSW Bureau of Crime Statistics and Research (BOCSAR) supply data to describe the Juvenile Justice system.

Established in 1969, BOCSAR is a department of the NSW Attorney General. The Bureau aims to

- identify factors that affect the distribution and frequency of crime;
- identify factors that affect the effectiveness, efficiency or equity of the NSW criminal justice system;
- ensure that information on these factors and on crime and justice trends is available and accessible to our clients.

The information stored in the Bureau's databases are used to assess crime and justice patterns in NSW. The Bureau has two databases – one of crimes reported to police, the second of criminal court appearances. The information in the police crimes database

includes the type of offence and when and where it was committed. The information in the database of criminal court appearances includes age, gender, type of offence(s), plea, outcome of court appearance and penalty, for persons who appear before the courts charged with criminal offences.

### *Maternal data*

The Midwives Data Collection (MDC) was used to provide information on mothers and babies in the Region. The MDC monitors pregnancies resulting in live or stillbirth, as well as perinatal outcomes. It covers all births in NSW public and private hospitals as well as home births. Major limitations of the MDC are inconsistent recording of Aboriginality and notifications of births to NSW women that happen outside the State. Perinatal mortality may also be underestimated.

Data from the Victorian Perinatal Statistics Unit has been sourced to complement the NSW data where possible. Victorian data is included in statistics relating to low birth weight, prematurity, age specific fertility and perinatal outcomes.

Data reported in this document are for the years 2003 to 2007.

## Glossary

### Admission

A patient who is admitted to hospital for treatment as an inpatient (including day-only admission). Admissions do not include

- Staff receiving care in their quarters;
- Patients in the Emergency Department who are not transferred to another ward;
- Newly born children whose mothers are inpatients except if the child is admitted to ICU or receives extensive medical treatment (> 9 days).

### Birth

A birth is a live birth, that is, the delivery, irrespective of the duration of pregnancy, or a child who, after being born, breathes or shows any other evidence of life such as a heartbeat.

### Crime data

Criminal court outcome data sourced from the NSW Bureau of Crime Statistics and Research (BOCSAR) has been categorised using the following table.

#### Criminal court outcome data categories

Category	Inclusions
Bonds	Bond with no conviction Bond with supervision Bond without supervision Probation order (Children's Court) S33 (1)(b) bond with and without supervision (Children's Court) Suspended control order/bond (Local Court) Suspended sentence with supervision Suspended sentence without supervision
Custodial sentence	Detention in juvenile justice /control order Imprisonment and periodic detention
Youth conferencing	Youth conferencing
Other	Care and treatment order (Magistrate's, District or Supreme Court) Community service order Fine No conviction recorded Nominal sentencing/rising of the court Dismissed with caution S31 (1) young offenders

BOCSAR also supplies crime data. They advised that the difference between 'robbery' and 'theft', in broad terms, is that 'robbery' has an element of violence and threat involved whereas 'theft' does not. In both robbery and theft incidents however, something is intended on being stolen.

### Demography

The scientific and statistical study of population, and in particular the size of populations.

### Ear health

Admissions for diseases of the ear and mastoid process are grouped using the International Classification of Diseases [ICD10 H60 – H95]. Diseases in this classification include otitis externa, otitis media, perforation of the tympanic membrane (ear drum), otosclerosis, and conductive and sensorineural hearing loss.

### Fertility Rate

The number of live births to mothers aged 15 – 44 per 1,000 females in this age group.

### Incidence

The number of new cases of a particular health problem within a specified time period. This is usually expressed as a rate per head of population per unit of time.

### *Infant mortality rate*

The infant mortality rate is the number of deaths among children aged less than one year per 1000 live births.

### *Low birth weight*

The birth of a baby weighing less than 2500g.

### *Morbidity*

Illness.

### *Mortality*

Death.

### *NAPLAN test results*

The National Assessment Program – Literacy and Numeracy (NAPLAN) tests have been developed collaboratively by the states, territories, Australian government and non-government schools sectors. Results are reported as 'bands' and have been collapsed into categories using the following table.

#### **NAPLAN test results band categories**

Category	Year 3	Year 5	Bands	Year 7	Year 9
Below minimum standard	1	3		4	5
At minimum standard	2	4		5	6
Above minimum standard	3, 4, 5	5, 6, 7		6, 7, 8	7, 8, 9
Well above minimum standard	6	8		9	10

### *Perinatal mortality rate*

The number of perinatal deaths (stillbirths and neonatal deaths) per 1,000 total births (live births and still births) during a calendar year.

### *Prevalence*

The extent of a particular health problem within a specified population at one point in time. This is usually expressed as a rate per head of population.

### *Respiratory illness*

Admissions for diseases of the respiratory system are grouped using the International Classification of Diseases [ICD10 J00 – J99]. Diseases in this classification include acute upper respiratory infections (sinusitis and tonsillitis), influenza and pneumonia, bronchitis and asthma.

### *SEIFA indices*

The ABS has developed socio-economic indices for areas (SEIFA) as scores that are combined measures of individual socio-economic indicators. These indices summarise different aspects of socio-economic conditions by geographical areas.

There are five indices. Each index is constructed with a mean "score" of 1000 and a standard deviation of 100 for Australia. All geographical areas are described relative to the Australian estimates. However, SEIFA indices are ordinal measures only. An index of 1100 does not infer that the particular area is 10% better than the Australian average, only that it is better.

### *Significance level*

The statistical significance level defines the degree of certainty that an observation or health event is real and not due to chance. Significance levels can be expressed either as a proportion or "p" value or as a confidence interval. A standard level of significance is  $p < 0.05$ , that is, there is less than 5% probability that the value is due to chance. An alternative way of expressing this p value is to quote the 95% confidence interval in which there is a 95% certainty that the real value lies within the given range.



