

# Population health profile of the Dubbo/Plains

## Division of General Practice

Population Profile Series: No. 28

PHIDU

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The data in this report are designed to be used for needs assessment and planning purposes: while they are based on the best available data and analytic processes, data available by postcode or Statistical Local Area, as used in this report, cannot be precisely translated to Division. Division totals in the report should, therefore, be seen as estimates. Interpretation of differences between data in this profile and similar data from other sources needs to be undertaken with care as such differences may be due to the use of different methodology to produce the data.

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# Population health profile of the *Dubbo/Plains Division of General Practice*

## Introduction

This profile has been designed to provide a description of the population of the Dubbo/Plains Division of General Practice, and aspects of their health. Its purpose is to provide information to support a population health approach, which aims to improve the health of the entire population and to reduce health inequalities among population groups: a more detailed discussion of a population health approach is provided in the supporting information, page 21.

## Contents

The profile includes a number of tables, maps and graphs to profile population health in the Division and provides comparisons with other areas (eg. country New South Wales and Australia) and Aboriginal and Torres Strait Islanders elsewhere in Australia. Specific topics covered for the Dubbo/Plains Division include:

- a socio-demographic profile (pages 2-5)
- GP workforce data (page 7);
- immunisation rates (page 7);
- rates of premature death (page 8); and
- estimates of the prevalence of chronic disease and selected risk factors (pages 9-13).

## Key indicators

**Location:** New South Wales

**Division number:** 230

<b>Population‡:</b>	<b>No.</b>	<b>%</b>
<b>Indigenous:</b>	<b>9,765</b>	
<25	5,871	60.1%
65+	264	2.7%
<b>Non-Indigenous:</b>	<b>91,923</b>	
<25	30,863	33.6%
65+	13,118	14.3%

**Disadvantage score<sup>1</sup>:** 968

### GP services per head of population:

Division‡	4.1
Australia	4.7

### Population per FTE GP:

Division‡	1,490
Australia	1,403

### Premature death rate<sup>2</sup>:

Division‡	357.6
Australia	290.4

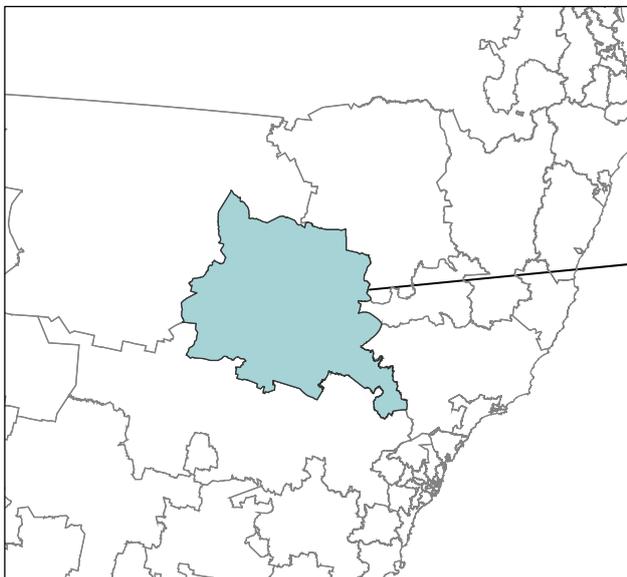
<sup>1</sup> Numbers below 1000 (the index score for Australia) indicate the Division is relatively disadvantaged

<sup>2</sup> Deaths at ages 0 to 74 years per 100,000 population

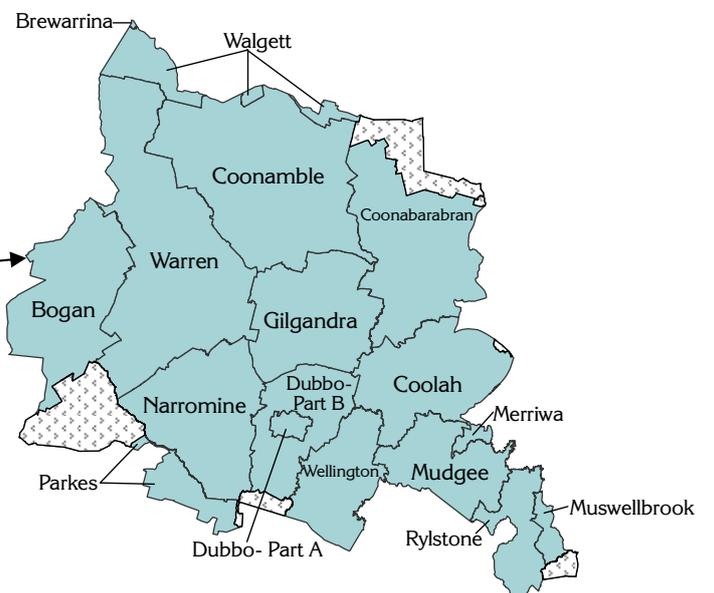
‡ See note "Data converters and mapping" re calculation of Division Total

## Dubbo/Plains Division of General Practice

*NSW Divisions of General Practice*



*Dubbo/Plains DGP by SLA*



# Socio-demographic profile

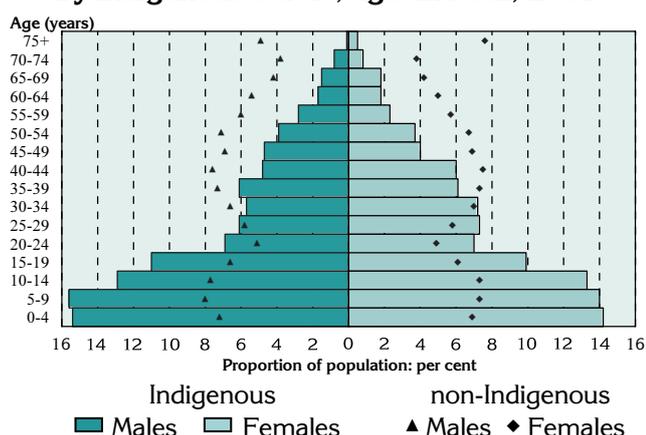
## Population

The population figures used here have been adjusted to take account of the estimated under-counting at the 2001 Census of Aboriginal and Torres Strait Islander people.

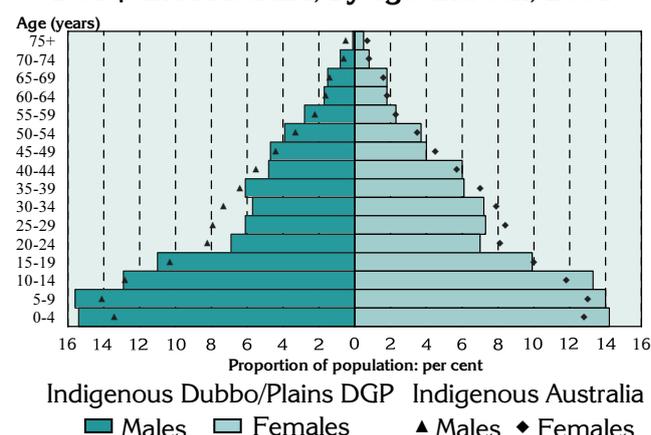
The Dubbo/Plains Division had a population of 101,688 at the 2001 Census. Aboriginal and Torres Strait Islander people comprised 9.6% of the population of the Division, and had a markedly younger age structure than for the non-Indigenous population in the Division. The bars in the chart for the 0 to 4 years and 5 to 9 years age groups clearly show the effect of high Indigenous birth rates in the Division; this gives the chart a much broader base compared to the non-Indigenous population of the Division (Figure 1). The very marked drop in the proportion of the Indigenous population between each age group from 5 to 9 years suggests extremely high death rates (and perhaps some out-migration) are occurring from that age group through to 24 years of age, after which the rate of decline slows.

The profile for the non-Indigenous population (shown by the shapes) is quite different and shows the impact, at younger ages, of a lower birth rate and, possibly, out-migration for schooling in the teenage years and further education and employment opportunities at ages 20 to 24 years; followed by an increase in the population from age 25 to 44 years; after which the proportions gradually decline to age 74 years. From 75 years and over, there is a notable increase, particularly for older females: this may reflect the in-migration of people from surrounding areas to retire in Dubbo.

**Figure 1: Population in Dubbo/Plains DGP‡, by Indigenous status, age and sex, 2001**



**Figure 2: Indigenous population in Dubbo/Plains DGP‡ and Australia, by age and sex, 2001**



‡ See note under 'Data converters and mapping' re calculation of Division totals

The profile of the Division's Indigenous population is similar to that for Indigenous people across Australia (Figure 2). The major differences are that the Division had a higher proportion of children (males and females aged 0 to 9 years and females aged 0 to 14 to years); a lower proportion of males and females aged 20 to 34 years; and, at the oldest ages, a lower proportion of males aged 75 years and over. The data on which the charts in Figures 1 and 2 are based are shown in Table 1: they highlight the differences in the age distribution of the Indigenous and non-Indigenous populations in the Dubbo/Plains DGP and Australia.

**Table 1: Population by Indigenous status and age\*, Dubbo/Plains DGP‡ and Australia, 2001**

Age group (years)	Dubbo/Plains DGP				Australia			
	Indigenous		Non-Indigenous		Indigenous		Non-Indigenous	
	No.	%	No.	%	No.	%	No.	%
0-14	4,175	42.8	20,386	22.2	178,622	39.0	3,807,808	20.1
15-24	1,695	17.4	10,477	11.4	83,942	18.3	2,570,934	13.6
25-44	2,414	24.7	25,154	27.4	128,474	28.0	5,715,858	30.2
45-64	1,216	12.5	22,789	24.8	54,206	11.8	4,435,376	23.4
65-74	238	2.4	7,394	8.0	10,249	2.2	1,310,587	6.9
75+	27	0.3	5,724	6.2	2,768	0.6	1,111,844	5.9
<b>Total</b>	<b>9,765</b>	<b>100.0</b>	<b>91,923</b>	<b>100.0</b>	<b>458,261</b>	<b>100.0</b>	<b>18,952,407</b>	<b>100.0</b>

\* Experimental estimates of Aboriginal and Torres Strait Islander people, ABS 2001

‡ See note under 'Data converters and mapping' re calculation of Division totals

Almost two fifths (37.6%) of the Indigenous population in Dubbo/Plains DGP lived in Dubbo - Part A Statistical Local Area (SLA – see page 23), slightly higher than the proportion for the non-Indigenous population (34.3%) (Table 2). One in eight (12.2%) of the Division's Indigenous population lived in Wellington, with slightly smaller proportions in Narromine (11.3%) and Coonamble (11.2%).

**Table 2: Population by Indigenous status\*, SLAs in Dubbo/Plains DGP‡, 2001**

Statistical Local Area	Indigenous		Non-Indigenous		Total	
	No.	%	No.	%	No.	%
Dubbo - Part A	3,671	37.6	31,520	34.3	35,191	34.6
Wellington	1,188	12.2	7,119	7.7	8,307	8.2
Narromine	1,106	11.3	6,011	6.5	7,117	7.0
Coonamble	1,089	11.2	3,737	4.1	4,836	4.8
Coonabarabran	586	6.0	6,084	6.6	6,670	6.6
Gilgandra	519	5.3	4,280	4.7	4,799	4.7
Mudgee	459	4.7	17,894	19.5	18,353	18.0
Warren	426	4.4	2,894	3.1	3,320	3.3
Bogan	328	3.4	2,506	2.7	2,834	2.8
Coolah	109	1.1	3,731	4.1	3,840	3.8
Other	284	2.9	6,138	6.7	6,421	6.3
<b>Total</b>	<b>9,765</b>	<b>100.0</b>	<b>91,923</b>	<b>100.0</b>	<b>101,688</b>	<b>100.0</b>

\* Experimental estimates of Aboriginal and Torres Strait Islander people, ABS 2001

‡ See note under 'Data converters and mapping' re calculation of Division totals

At 30 June 2004, the Estimated Resident Population of the Division was 101,065.

## Socioeconomic status and Indigenous status

*The indicators presented in this section describe geographic variations in the distribution of the population for a number of key socioeconomic influences, which impact on the health and wellbeing of populations. Where data are available, comparisons are made between the Indigenous and non-Indigenous populations.*

At the 2001 Census, almost one-tenth (9.6%) of the population of the Dubbo/Plains DGP was estimated to be of Aboriginal or Torres Strait Islander origin, four times the Australian average of 2.4% (Figure 3 and Table 3).

The proportion of Indigenous single parent families in the Division (31.8%) was higher than the Indigenous rate for country New South Wales<sup>1</sup> (27.5%), and three times that of the non-Indigenous population (10.4%).

Almost two thirds (62.5%) of Indigenous 16 year olds living in the Division were involved in full-time secondary school education, fewer than for the non-Indigenous population (77.5%), but notably higher than the Indigenous participation rate in country New South Wales (52.5%).

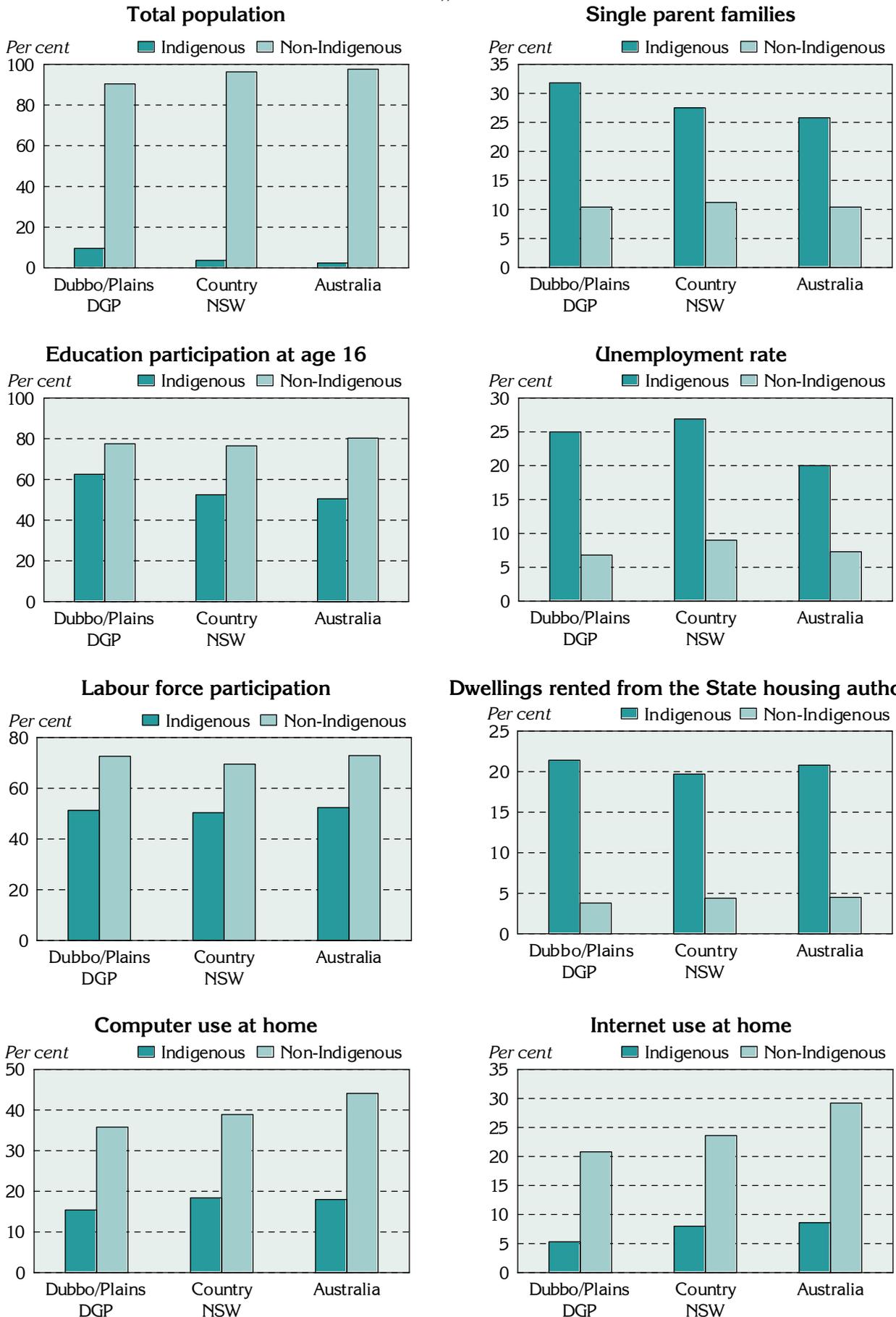
A much higher proportion of the Indigenous population in the Division lived in dwellings rented from the State housing authority (21.4%), was consistent with that for the Indigenous population in country New South Wales (19.7%) and over five times that of the non-Indigenous population (3.8%). The proportion of the population (Indigenous and non-Indigenous combined) in the Division receiving rent assistance from Centrelink (15.7%) was marginally lower than that for country New South Wales (18.3%).

One seventh of the Indigenous population (15.4%) in Dubbo/Plains DGP reported using a computer at home, lower than the rate of computer use by the Indigenous population in country New South Wales (18.4%), and less than half the proportion of the non-Indigenous population in the Division (35.8%). Similarly, the rate of Internet use at home by the Indigenous population in the Division (5.3%) is lower than the rate for the Indigenous population in country New South Wales (8.0%), and was one quarter that of the non-Indigenous population (20.8%).

<sup>1</sup>References to 'country New South Wales' relate to New South Wales excluding the Sydney Statistical Division

**Figure 3: Socio-demographic indicators by Indigenous status, Dubbo/Plains DGP‡, country New South Wales and Australia, 2001**

*Note the different scales*



Note: The 'Total population' figure is based on the experimental estimates of Aboriginal and Torres Strait Islander people; the remaining figures are based on ABS Census data

‡ See note under 'Data converters and mapping' re calculation of Division totals

**Table 3: Socio-demographic indicators, Dubbo/Plains DGP‡, country New South Wales and Australia, 2001\***

Indicator	Dubbo/Plains DGP‡		Country NSW		Australia	
	No.	%	No.	%	No.	%
Population						
- Indigenous	9,765	9.6	91,036	3.7	458,261	2.4
- Non-Indigenous	91,923	90.4	2,355,909	96.3	18,952,407	97.6
Single parent families						
- Indigenous	712	31.8	5,881	27.5	26,487	25.7
- Non-Indigenous	2,439	10.4	67,924	11.2	503,382	10.4
Full-time secondary school education at age 16						
- Indigenous	124	62.5	938	52.5	5,997	50.5
- Non-Indigenous	903	77.5	24,828	76.5	327,055	80.3
Dwellings rented from State housing authority						
- Indigenous	548	21.4	4,868	19.7	23,974	20.8
- Non-Indigenous	1,179	3.8	35,585	4.4	284,502	4.5
People who used a computer at home						
- Indigenous	1,331	15.4	14,924	18.4	73,636	18.0
- Non-Indigenous	30,513	35.8	854,211	38.9	7,761,390	44.1
People who used the Internet at home						
- Indigenous	461	5.3	6,454	8.0	35,384	8.6
- Non-Indigenous	17,677	20.8	518,491	23.6	5,135,445	29.2
Households receiving rent assistance	5,496	15.7	156,074	18.3	1,006,599	15.0

Note: The 'Total population' data are based on the experimental estimates of Aboriginal and Torres Strait Islander people; the remaining data are based on ABS Census data

‡ See note under 'Data converters and mapping' re calculation of Division totals

The Indigenous unemployment rate in Dubbo/Plains DGP of 25.0% was just below the country New South Wales Indigenous average (26.9%), and four times the rate of the non-Indigenous population (6.8%) (Table 4). However, when taking into account the Indigenous population receiving payments as part of the Community Development Employment Projects (CDEP) scheme (effectively an Aboriginal work-for-the-dole scheme), the 'real' Indigenous unemployment rate is 33.3%. This is marginally less than the 'real' Indigenous unemployment rate of 34.1% in country New South Wales and 34.2% for Australia as a whole.

**Table 4: Unemployment and labour force participation, Dubbo/Plains DGP‡, country New South Wales, and Australia, 2001**

Labour force indicators	Dubbo/Plains DGP		Country NSW		Australia	
	No.	%	No.	%	No.	%
Unemployment rate						
- Indigenous	595	25.0	6,155	26.9	24,930	20.0
- Non-Indigenous	2,645	6.8	87,454	9.0	624,337	7.3
Labour force participation (incl. CDEP as employed)						
- Indigenous	2,378	51.2	22,902	50.4	124,517	52.4
- Non-Indigenous	39,175	72.4	972,088	69.5	8,609,525	72.9
Female labour force participation (incl. CDEP as employed)						
- Indigenous	957	42.7	9,403	44.3	52,981	46.6
- Non-Indigenous	15,399	68.9	390,835	67.2	3,564,409	69.8
Indigenous unemployment rate (incl. CDEP)						
- excluding CDEP	595	25.0	6,155	26.9	24,930	20.0
- CDEP	197	8.3	1,650	7.2	17,662	14.2
- Total (including CDEP)	792	33.3	7,805	34.1	42,592	34.2

‡ See note under 'Data converters and mapping' re calculation of Division total

The Division's Indigenous labour force participation rate (51.2%) (in this case with those under the CDEP counted as employed) was similar to the Indigenous rate for country New South Wales (50.4%), but notably lower than for the non-Indigenous population (72.4%) (Table 4). The Indigenous female labour force participation rate (42.7%) was consistent with the Indigenous female rate for country New South Wales (44.3%), but was much lower than the non-Indigenous rate (68.9%).

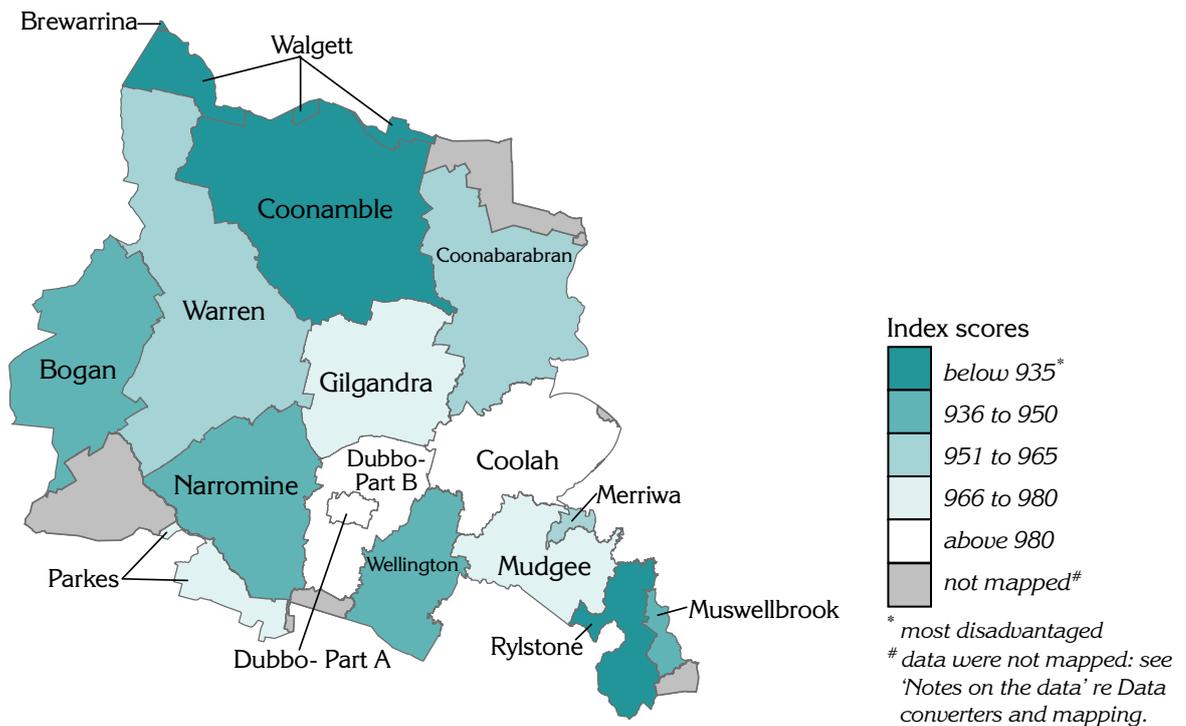
**Summary of the socioeconomic ranking of the Dubbo/Plains DGP**

Following the 2001 Census, the Australian Bureau of Statistics (ABS) produced four socioeconomic indexes for areas (SEIFA) which describe various aspects of the socioeconomic profile of populations in areas. The scores for these indexes for each Statistical Local Area (SLA) or part SLA in Dubbo/Plains DGP are shown in the supporting information, Table 13, page 21. SLAs are described on page 23.

The Dubbo/Plains DGP area's SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) score is 968, 3.2% below the average score for Australia (1000) and below that for country New South Wales (973); this highlights the slightly lower socioeconomic status profile of the Dubbo/Plains DGP population. There are also notable variations in the IRSD within the Division at the SLA level (Map 1).

**Map 1: Index of Relative Socio-Economic Disadvantage by SLA, Dubbo/Plains DGP, 2001**

*See 'Notes on the data' re Data converters and mapping concerning SLAs mapped to the Division. This is of particular relevance where part of an SLA is mapped to the Division.*



## General medical practitioner (GP) supply

A total of 60.9 full-time equivalent (FTE) GPs and 70.3 full-workload equivalent (FWE<sup>2</sup>) GPs worked in the Division in 2003/04 (Table 5). Of the FWE GPs, 17.0% were female, and 26.2% were over 55 years of age (compared to 26.4% and 33.4%, respectively, for New South Wales).

Apart from the day-time population, the rates of population per FTE GP varied, depending on the population measure used, from a high of 1,662 people per GP (calculated on the average Estimated Resident Population (ERP) as at 30 June 2003 and 2004), to a low of 1,596 people per GP (calculated on the 1 August 2001 Census count – all people counted in the Division on Census night, including visitors from Australia and overseas). The rates of population per FWE GP were lower, ranging from 1,383 (calculated on the Census count) to 1,440 (calculated on the ERP). When calculated on the estimated day-time population, the rates of population in the Division were 2.9% below those calculated on the Usual Resident Population (usual residents of the Division counted in Australia on Census night).

Based on the ERP, the rates of population per GP in the Dubbo/Plains DGP were higher than the rates for New South Wales and Australia, indicating a lower level of provision of GP services in the Division.

**Table 5: Population per GP in Dubbo/Plains DGP, New South Wales and Australia, 2003/04**

Population measure	Population	GPs		Population per GP	
		FTE	FWE	FTE	FWE
<b>Dubbo/Plains DGP</b>					
Census count (adjusted)*	97,224	60.9	70.3	1,596	1,383
Usual Resident Population (URP) (adjusted)*	97,333	..	..	1,598	1,385
Estimated Resident Population (ERP)	101,238	..	..	1,662	1,440
Day-time population (estimated on URP)* ‡	94,553	..	..	1,552	1,345
<b>New South Wales (ERP)</b>	<b>6,706,674</b>	<b>4,819</b>	<b>5,969</b>	<b>1,392</b>	<b>1,124</b>
<b>Australia (ERP)</b>	<b>19,989,303</b>	<b>14,246</b>	<b>16,872</b>	<b>1,403</b>	<b>1,185</b>

The Census count, Usual Resident Population and Day-time population were adjusted to reflect population change between 2001 and 2003/04, as measured by the ERP

‡ See note under 'Data converters and mapping' re calculation of Division totals

## Immunisation

Data from the Australian Childhood Immunisation Register show that 93.5% of children in the Division in 2002 were fully immunised at age one, marginally below the Australian proportion of 94.2%.

Immunisation by provider type for children between the ages of 0 to 6 is shown in Table 6. The proportion of children in the Division who were immunised by GPs was 30.8%, markedly lower than for Australia (70.0%), with 29.9% immunised at a public hospital, and 24.5% at a community health centre, or by a community health worker.

**Table 6: Childhood immunisation at ages 0 to 6 by provider type, Dubbo/Plains DGP and Australia, 2003/04**

Provider	Dubbo/Plains DGP	Australia
	%	%
General practitioners	30.8	70.0
Local government council	14.9	16.6
Community health centre/ worker	24.5	9.8
Public hospital	29.9	2.1
Aboriginal health service/ worker	0.0	0.9
Other*	0.0	0.6
<b>Total: Per cent</b>	<b>100.0</b>	<b>100.0</b>
<b>Number</b>	<b>22,198</b>	<b>3,843,610</b>

\* Includes immunisations in/ by State Health Departments, RFDS and private hospitals

<sup>2</sup> The FWE value is calculated for each GP location by dividing the GP's total Medicare billing (Schedule fee value of services provided during the reference period) by the mean billing of full-time doctors in that derived major speciality for the reference period. Thus, a GP earning 20% more than the mean billing of full-time doctors is shown as 1.2 FWE: this differs from full-time equivalent (FTE) counts, where the FTE value of any GP cannot exceed 1.0

## Premature mortality

Deaths at ages below 75 years are used as an indicator of health status, as they largely reflect premature deaths, given the current levels of life expectancy in Australia.

The 'all causes' death rate in the Division at ages 0 to 74 years (363.6 deaths per 100,000 population) is substantially higher than for country New South Wales (318.3) and for Australia (290.4): the rates have been age standardised to allow for comparisons between areas, regardless of differences in age profiles between the Division and Australia.

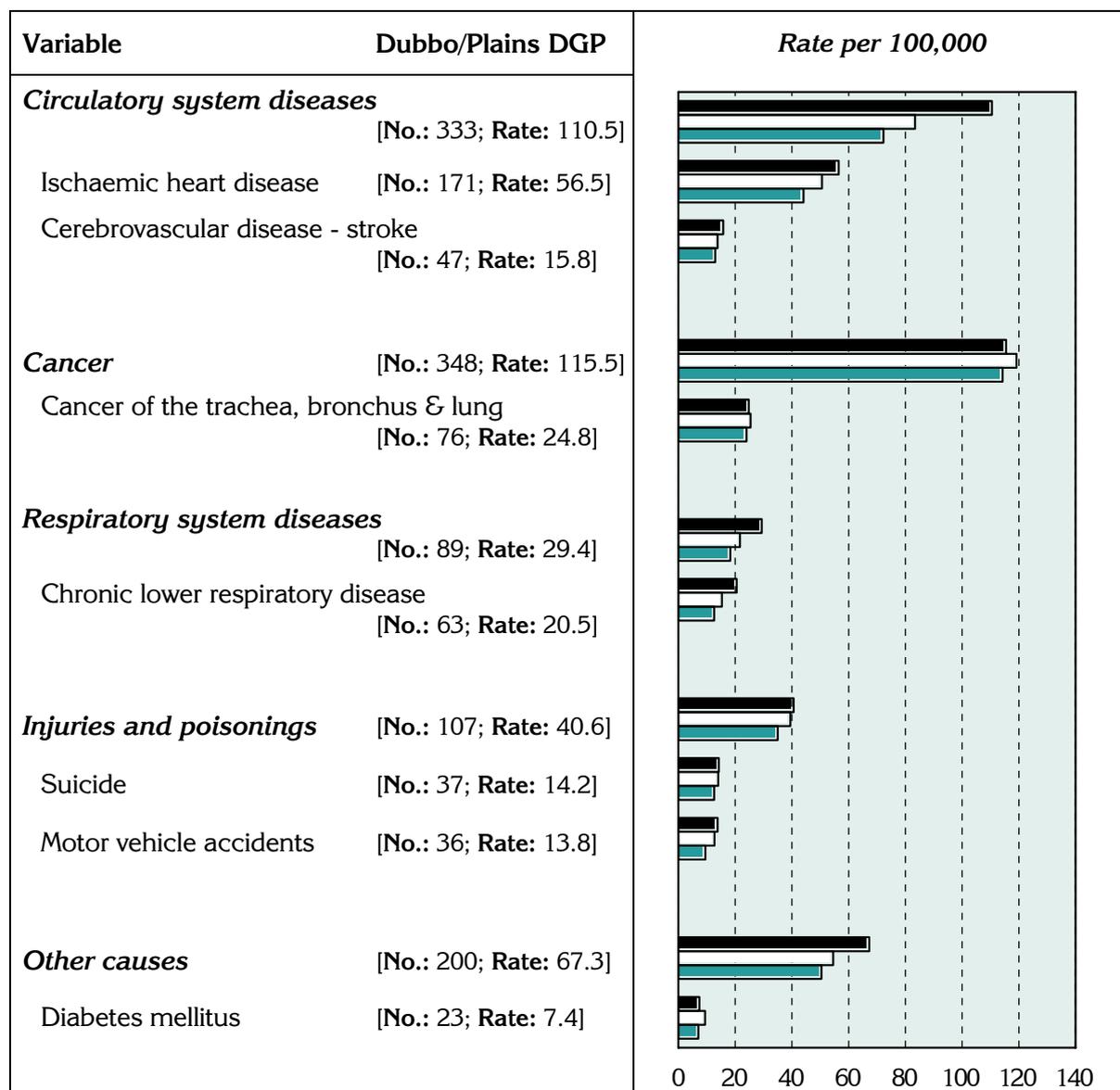
The major causes of premature mortality in the Division, as for country New South Wales and Australia as a whole, are cancer and diseases of the circulatory system (Figure 4). The death rates in the Division for the conditions and causes shown were all higher than those for Australia, and, with the exceptions of cancer, suicide and diabetes mellitus, higher than the rates for country New South Wales.

The data on which the following chart is based are in Table 16.

**Figure 4: Deaths before 75 years of age, by major condition group and selected cause, Dubbo/Plains DGP‡, country New South Wales and Australia, 2000-02\***

*Indirectly age standardised rate per 100,000 population*

■ Dubbo/Plains DGP      □ Country NSW      ■ Australia



\* 'No.' is the total number of deaths for the 2000-02 period; 'Rate' is an annual rate, based on the 3 year average

‡ See note under 'Data converters and mapping' re calculation of Division totals

## Chronic diseases and risk factors

*The term “chronic disease” describes health problems that persist across time and require some degree of health care management (WHO 2002). Chronic diseases tend to have complex causes, are often long lasting and persistent in their effects, and can produce a range of complications (Thacker et al. 1995). They are responsible for a significant proportion of the burden of disease and illness in Australia and other westernised countries. Given the ageing of the population, this trend is likely to continue.*

*At different life stages, risk factors for chronic diseases and their determinants include genetic predisposition; poor diet and lack of exercise; alcohol misuse and tobacco smoking; poor intra-uterine conditions; stress, violence and traumatic experiences; and inadequate living environments that fail to promote healthy lifestyles (NPHP 2001). Risk factors are also more prevalent in areas of low socioeconomic status, and in communities characterised by low levels of educational attainment; high levels of unemployment; substantial levels of discrimination, interpersonal violence and exclusion; and poverty. There is a higher prevalence of risk factors among Indigenous communities, and other socioeconomically disadvantaged Australians (NPHP 2001).*

### Background

In this section, estimates of the prevalence of selected chronic diseases and risk factors, and two summary measures of health, are shown for the Division‡, and for non-remote SLAs within the Division. These estimates are only available for some SLAs in this Division – generally the ‘non-remote’ areas – as remote areas were not included in the 2001 National Health Survey. Note that the estimates have been predicted from self-reported data, and are not based on clinical records or physical measures. The chronic diseases and risk factors are those for which sufficiently reliable estimates can be made for the Division from national survey data. The process by which the estimates have been made, and details of their limitations, are described in the Notes section, pages 19-20. The data on which the following charts are based are in Table 17.

The estimates provide information of relevance to a number of the National Health Priority Areas (NHPAs – asthma; cardiovascular health; diabetes mellitus; injury prevention and control; mental health; and arthritis and musculoskeletal conditions: estimates have not been made for cancer control, the other NHPA). The risk factors for which estimates have been made are those which are accepted as being associated with these important chronic conditions. They are overweight (not obese), obesity, smoking, lack of exercise and high risk alcohol use.

*The numbers are estimates for an area, not measured events as are death statistics: they should be used as indicators of likely levels (and not actual levels) of a condition or risk factor in an area.*

### Prevalence estimates: chronic disease‡

It is estimated that, with the exceptions of injury, musculoskeletal system diseases, and osteoporosis (females), relatively more people in Dubbo/Plains DGP reported having the listed conditions than in Australia as a whole (Figure 5); that is, the prevalence rates per 1,000 population were higher.

### Prevalence estimates: self-reported health‡

The NHS includes two measures of self-reported health. One is the Kessler Psychological Distress Scale–10 items (K–10). This is a scale of non-specific psychological distress based on 10 questions about negative emotional states in the four weeks prior to interview, asked of respondents 18 years and over (ABS 2002). The other asks respondents aged 15 years and over to rate their health on a scale from ‘excellent’, through ‘very good’, ‘good’ and ‘fair’, to ‘poor’ health.

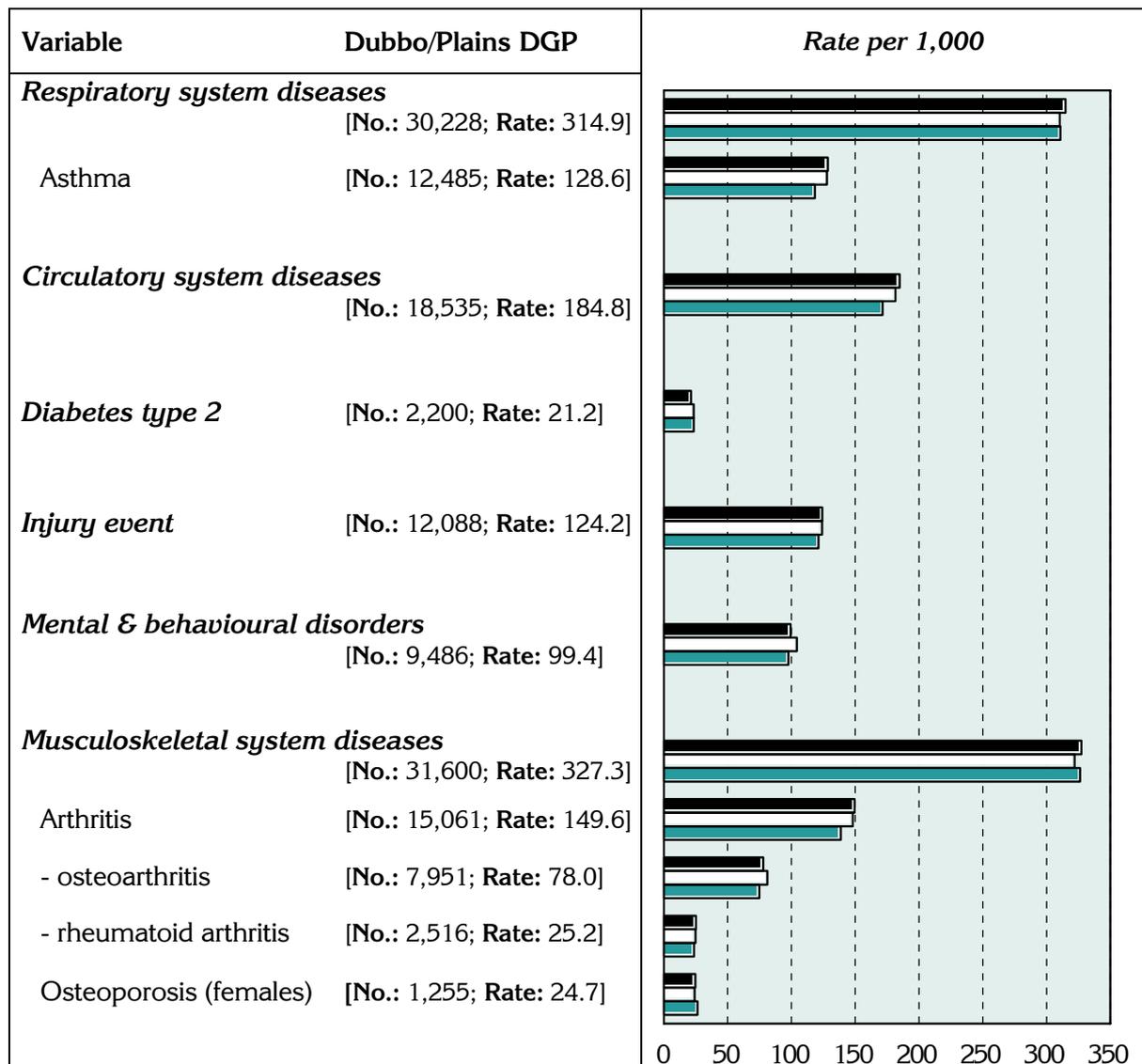
The population of the Division aged 18 years and over is estimated to have marginally more people with very high psychological distress levels as measured by the K–10 (Figure 6) compared to Australia as a whole. The proportion of the population aged 15 years and over estimated to have reported their health as ‘fair’ or ‘poor’ is also above the national average.

‡ See note under ‘Data converters and mapping’ re calculation of Division totals

**Figure 5: Estimates\* of chronic disease and injury, Dubbo/Plains DGP‡, country New South Wales and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

■ Dubbo/Plains DGP    □ Country NSW    ■ Australia



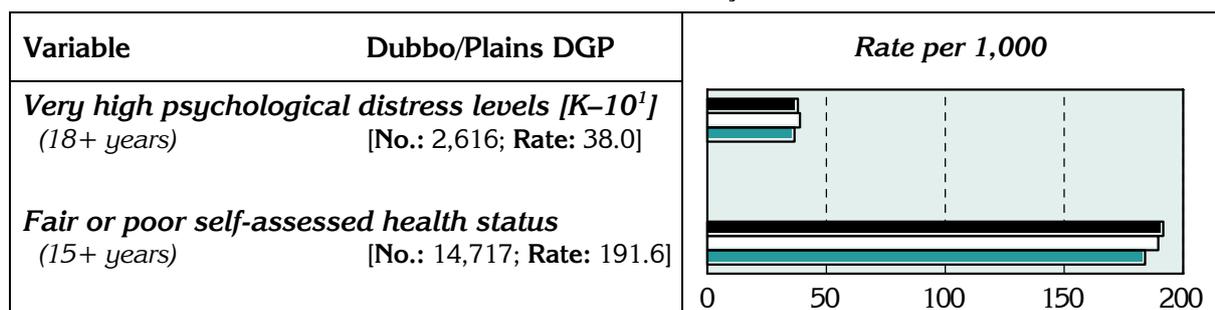
\* 'No.' is a weighted estimate of the number of people in Dubbo/Plains DGP reporting each chronic condition and is derived from synthetic predictions from the 2001 NHS

‡ See note under 'Data converters and mapping' re calculation of Division totals

**Figure 6: Estimates\* of measures of self-reported health, Dubbo/Plains DGP‡, country New South Wales and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

■ Dubbo/Plains DGP    □ Country NSW    ■ Australia



\* 'No.' is a weighted estimate of the number of people in Dubbo/Plains DGP reporting under these measures and is derived from synthetic predictions from the 2001 NHS

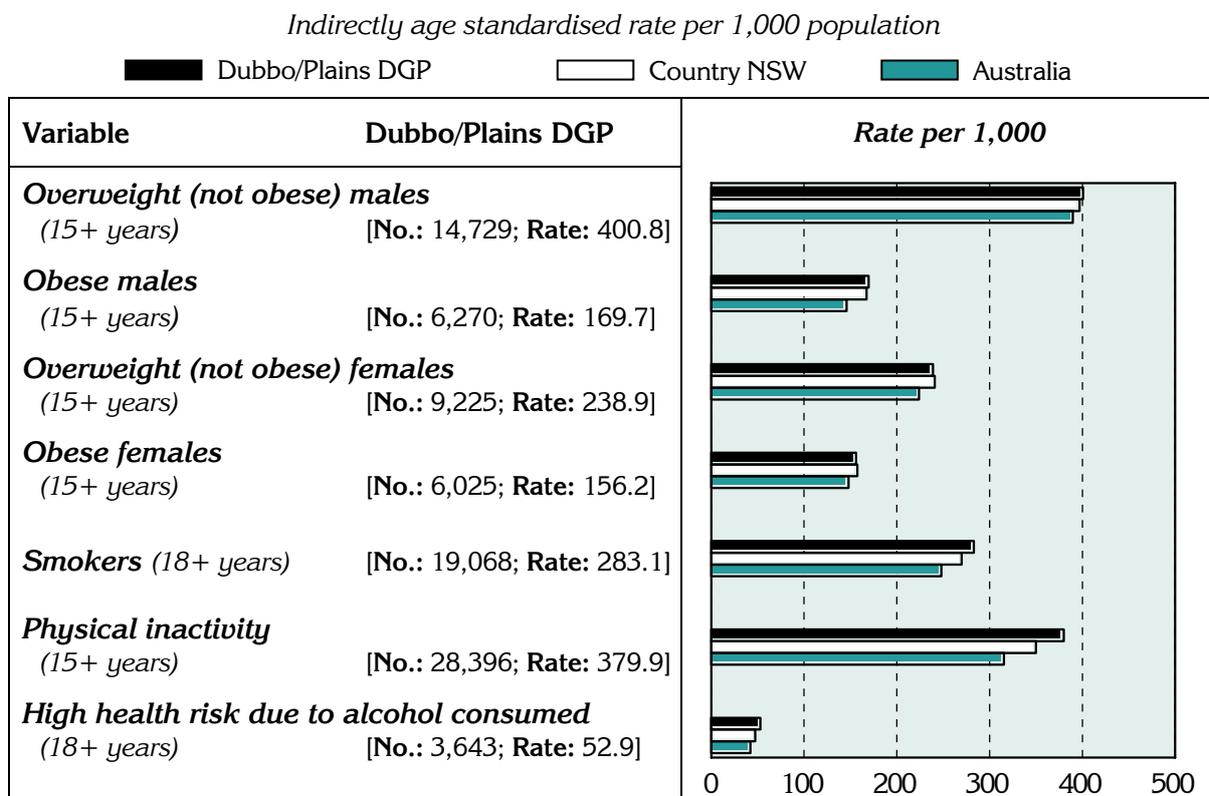
<sup>1</sup> Kessler 10

‡ See note under 'Data converters and mapping' re calculation of Division totals

## Prevalence estimates: risk factors‡

The relatively higher rates (when compared with the Australian population) for all of the selected risk factors (Figure 7) are consistent with the socioeconomic status profile of the area.

**Figure 7: Estimates\* of selected risk factors, Dubbo/Plains DGP, country New South Wales‡ and Australia, 2001**



\* 'No.' is a weighted estimate of the number of people in Dubbo/Plains DGP with these risk factors and has been predicted using data from the 2001 NHS and known data for the Division

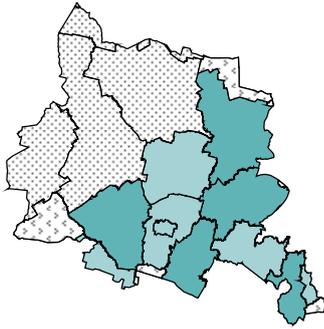
‡ See note under 'Data converters and mapping' re calculation of Division totals

The following maps provide details of the geographic distribution, at the SLA level, of the estimated prevalence of chronic disease (Map 2), self-reported health (Map 3) and risk factors associated with chronic disease (Map 4).

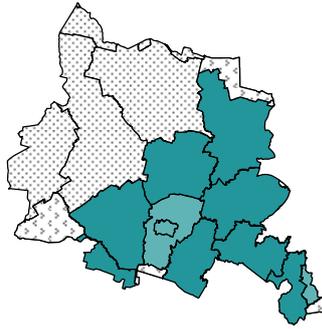
In the following maps, users should note that the estimates shown for part SLAs in the Division (see Table 15, page 23, for per cent of SLA population in the Division) represent the estimates for the whole SLA, and not just the part shown. However, SLAs with only a small proportion of their population in the Division are likely to have little influence on the total estimates for the Division, which have been based on the percentage of the SLA population in the Division.

Map 2: Estimates\* of chronic disease and injury by SLA, Dubbo/Plains DGP, 2001

Respiratory system diseases



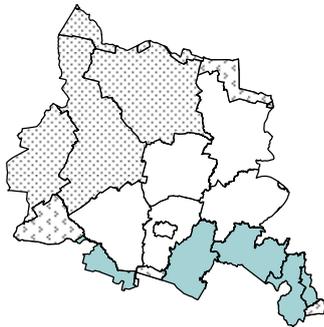
Respiratory system diseases: Asthma



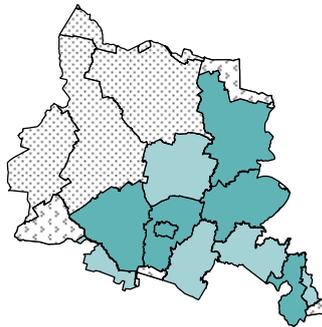
Circulatory system diseases



Diabetes type 2



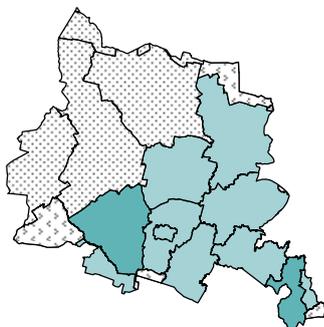
Injury event



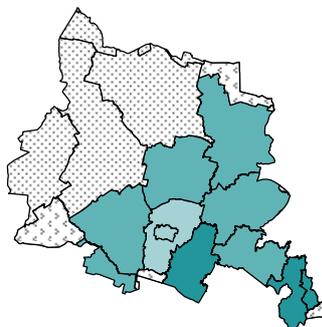
Mental & behavioural disorders



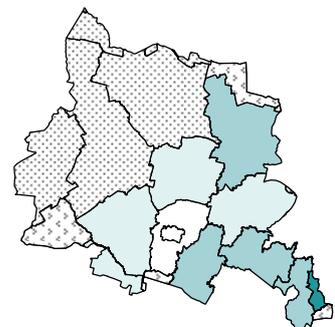
Musculoskeletal system diseases



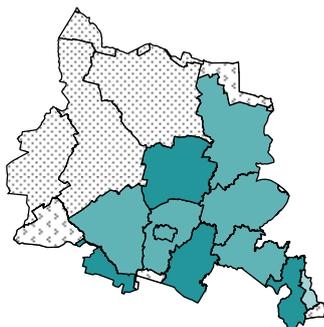
Musculoskeletal system diseases: Arthritis



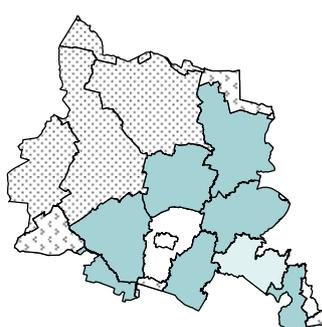
Arthritis: Osteoarthritis



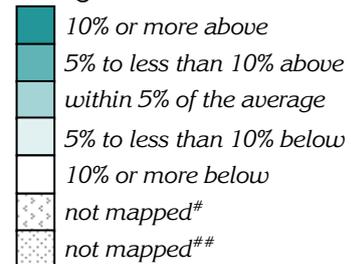
Arthritis: Rheumatoid arthritis



Osteoporosis (females)



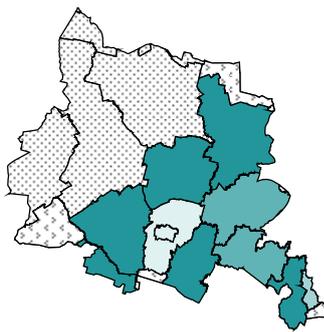
Per cent difference from Australian average



\* See Notes on the data re these estimates.  
 # Data not mapped: see 'Data converters and mapping' section under Notes on the data.  
 ## Estimates not available for remote areas

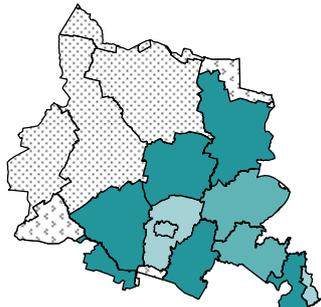
Map 3: Estimates\* of measures of self-reported health by SLA, Dubbo/Plains DGP, 2001

Very high psychological distress levels [K-10<sup>1</sup>] (18+ years)

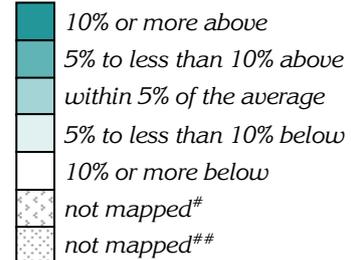


<sup>1</sup> Kessler 10

Fair or poor self-assessed health status (15+ years)



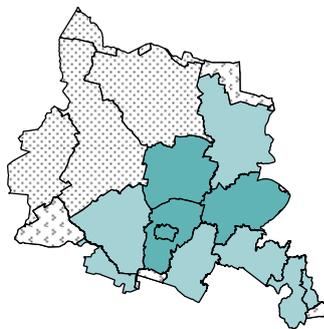
Per cent difference from Australian average



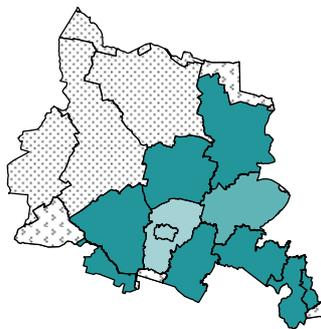
\* See Notes on the data re these estimates.  
 # Data not mapped: see 'Data converters and mapping' section under Notes on the data.  
 ## Estimates not available for remote areas

Map 4: Estimates\* of selected risk factors by SLA, Dubbo/Plains DGP, 2001

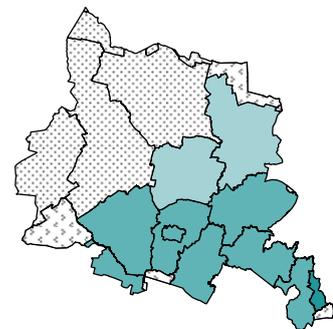
Overweight (not obese) males (15+ years)



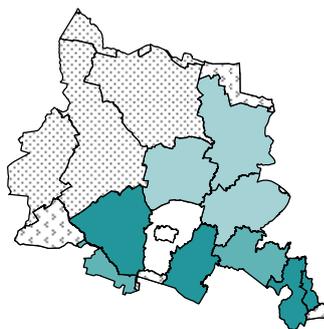
Obese males (15+ years)



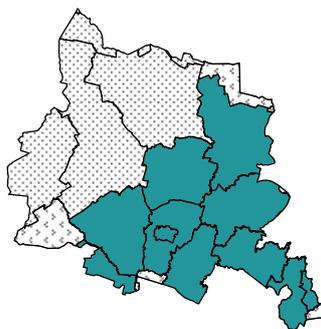
Overweight (not obese) females (15+ years)



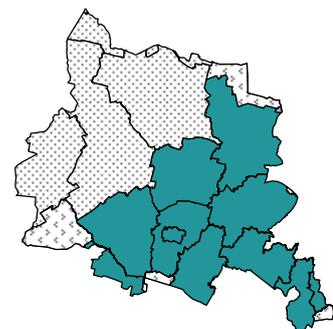
Obese females (15+ years)



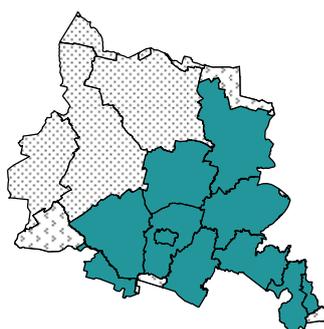
Smokers (18+ years)



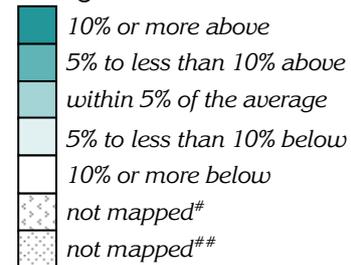
Physical inactivity (15+ years)



High health risk due to alcohol consumed (18+ years)



Per cent difference from Australian average



\* See Notes on the data re these estimates.  
 # Data not mapped: see 'Data converters and mapping' section under Notes on the data.  
 ## Estimates not available for remote areas

# Health and wellbeing of Aboriginal and Torres Strait Islanders in remote areas

## Background

As the Dubbo/Plains DGP has a relatively high proportion of Indigenous population, some data from the 2002 National Aboriginal and Torres Strait Islander Social Survey and the 2001 National Health Survey have been included in this profile. These data provide a description of aspects of the health and wellbeing of Aboriginal and Torres Strait Islander people living in remote areas; in some cases they also allow for a comparison of aspects of the health of Indigenous and non-Indigenous populations and, in others, for a comparison of people living in remote and non-remote areas. More detailed disaggregations than those shown here (eg. for the non-Indigenous population in remote areas) were not available from these surveys.

Remote areas in this context cover 86.4% of Australia's land mass; and, while they comprise just 3.0% of the total population, 28.0% of the Indigenous population lives in these areas. The Dubbo/Plains Division is classed as partly Remote under the ARIA+ remoteness classification (see *Notes on the data*, page 19); under this classification approximately 10.0% of the Division's population lives in areas classed as Remote and with some representation in Very Remote: the majority of the population (approximately 90.0%) lives in areas classed as Moderately Accessible or Accessible.

Although these data can provide a guide to average levels of health and wellbeing in the Division, they should not be read to say that Indigenous health and wellbeing in the Dubbo/Plains DGP is the same as is shown by these data. Clearly, the large area of Australia covered by this term 'remote' is very diverse in nature: it includes a range of population groups, living in a variety of situations, from urban to rural to isolated communities. Other data are available from a variety of sources (including State and Territory health agencies) and those of relevance to Divisions could be included in subsequent editions of the profiles.

## National Aboriginal and Torres Strait Islander Social Survey and Health Survey

*The data in this section are from the ABS publications 2001 National Health Survey and National Aboriginal and Torres Strait Islander Social Survey, Australia, 2002 (or were provided by the ABS as special data extractions from data in this survey). The data are self-reported and are not based on clinical records or physical measures.*

Just over half (54.2%) of the Indigenous population in the remote areas of Australia reported speaking an Indigenous language. Those in the lowest income group were almost two and a half times more likely (than those in the three highest income groups) to do so: for ease of reading, these income groups are referred to in the text below as 'low' and 'high'. The difference in this characteristic between people in remote and non-remote areas is over six times (6.3). Note that almost one quarter (23.6%) of Aboriginal and Torres Strait Islander people in the remote areas did not have an income defined, so were not included in the comparisons by income group. For almost all of the characteristics in Table 9, the outcome for those where an income was not defined showed poorer health, or greater disadvantage, than those for whom income was available. For example, Indigenous people living in remote areas and for whom an income was not available were 37% more likely (than those reporting an income) to speak an Indigenous language (a rate ratio of 1.37).

*The information in Table 7 has been restricted to show the rate (proportion) for the remote areas only, and the rate ratios between income groups and the remote and non-remote areas: the data from which the rate ratios have been calculated are available on the PHIDU web site.*

**Table 7: Summary characteristics of Aboriginal and Torres Strait Islander people, by remoteness and income group, Australia, 2002**

Characteristic	Remote areas	Low income cf. with high income (RR*)		Remote cf. with non-remote (RR**)
	Per cent	Remote	Non-remote	
<b>Family and culture</b>				
Able to get support in time of crisis from outside household	86.9	0.99	0.93	0.95
At least one stressor experienced in last 12 months	85.5	1.09	1.03	1.06
Speaks an Indigenous language	54.2	2.45	1.69	6.30
<b>Health and disability</b>				
Self-assessed health status				
Excellent/very good	44.2	0.94	0.66	1.00
Fair/poor	20.0	1.25	2.34	0.82
Disability or long term health condition	35.4	1.30	1.64	0.96
Risk behaviour/characteristic				
Current daily smoker	50.4	1.16	1.66	1.05
Risky/high risk alcohol consumption in last 12 months	16.8	0.81	0.97	1.16
<b>Educational attainment</b>				
Has a post-school qualification	18.1	0.36	0.47	0.57
Does not have a post-school qualification				
Completed Year 12	9.0	0.72	0.31	0.83
Completed Year 10 or Year 11	27.8	0.97	1.34	1.01
Completed Year 9 or below, or did not attend	45.1	2.06	3.01	1.51
Total without a post-school qualification	81.9	1.35	1.44	1.20
<b>Employment</b>				
Employed: CDEP				
Non-CDEP	19.2	0.11	0.12	0.48
Total employed	51.7	0.39	0.17	1.17
Unemployed	5.9	4.52	3.38	0.35
Not in the labour force	42.5	3.91	4.99	1.09
<b>Financial stress</b>				
Unable to raise \$2,000 in a week for something important	73.0	2.02	3.55	1.54
<b>Law and justice</b>				
Victim of physical, threatened violence in last 12 months	22.7	0.89	1.82	0.91
<b>Transport access</b>				
Can easily get to the places needed	65.6	0.74	0.71	0.91
Cannot, or often has difficulty, getting to places needed	16.6	3.96	3.31	1.69
<b>Mobility</b>				
Moved dwellings in last 12 months	27.2	0.80	1.26	0.84
<b>Information technology</b>				
Used computer in last 12 months	34.4	0.45	0.63	0.54
Accessed the Internet in last 12 months	21.6	0.37	0.50	0.45

\* RR is ratio of the rate for the 20% of the Indigenous population with the lowest income to the rate for the 60% with the highest income

\*\* RR is ratio of the rate for the Indigenous population in the remote areas compared to that in the non-remote areas

Source: ABS 2002 NATSIS, 2002 (unpublished data)

The relevance of the measure of self-reported health for Aboriginal and Torres Strait Islander people has been questioned. For example, while 20% of Aboriginal and Torres Strait Islander people in the remote areas reported their health to be fair or poor, this was 18% fewer than in the non-remote areas, a finding that would not appear to be supported by other data. Despite this result, there is a variation within the remote areas, with low income Aboriginal and Torres Strait Islander people 25% more likely than those with a high income to report their health as fair, or poor (a rate ratio of 1.25).

In the remote areas, disability and smoking (reported by 35.4% and 50.4%, respectively) show a relationship with disadvantage (higher rates in low, compared with high, income groups), but risky/high risk levels of alcohol consumption over the previous 12 months do not. However, reported rates of alcohol consumption at high-risk levels (reported by 16.8%) are 16% higher in remote than in non-remote areas.

Similarly, there is a clear association for Aboriginal and Torres Strait Islander people between high levels of educational attainment and income. For example, Aboriginal and Torres Strait Islander people in the low income group were more likely to report having no post-school qualifications (i.e. no qualification beyond secondary school) (35% higher for low income than high income groups); and those in remote areas 20% higher compared with those in non-remote areas.

Not surprisingly, the employment rate (including CDEP) is extremely strongly related to income levels, with 61% fewer in the low income group having employment (a rate ratio of 39%) in remote areas: conversely, four and a half times the number in the low income group are unemployed, compared with the high income group. Similarly, striking differentials apply in the non-remote areas.

The impact of disadvantage among Aboriginal and Torres Strait Islander people in remote areas is evident in a number of the remaining variables, with almost three quarters (73.0%) unable to raise \$2,000 in a week for something important, two-thirds (65.6%) reporting difficulty with transport and high proportions reporting lack of access to a computer and the Internet.

Reporting by Aboriginal and Torres Strait Islander people of selected long-term conditions (Table 8) is generally higher in remote than non-remote areas; the differentials for a number of conditions are even larger between the Indigenous and non-Indigenous populations. The impacts on the Indigenous community of diabetes and circulatory problems/ diseases are examples of these differences. The situation is similar for health-related actions, with the notable exception of doctor consultations, which are 11% lower in remote areas than non-remote areas for the Indigenous population; however, the Indigenous population across Australia as a whole reported more doctor consultations than did the non-Indigenous population.

**Table 8: Summary health characteristics, by Indigenous status and remoteness, Australia, 2001**

*Age standardised rates (as per cent)*

Health characteristic	Indigenous			Non-Indigenous	RR**
	Remote	Non-remote	RR*	Total	
<b>Selected long-term conditions</b>					
Diabetes	16	9	1.78	3	3.67
Eye/sight problems	38	49	0.78	51	0.90
Ear/hearing problems	17	18	0.94	14	1.29
Circulatory problems/diseases	24	18	1.33 <sup>#</sup>	17 <sup>#</sup>	1.12 <sup>#</sup>
Asthma	15	18	0.83	12	1.42
Back problems	21	22	0.95 <sup>#</sup>	21 <sup>#</sup>	1.05
No long-term condition	29	20	1.45 <sup>#</sup>	22 <sup>#</sup>	1.00
<b>Health-related actions<sup>1</sup></b>					
Admitted to hospital	21	19	1.11	12	1.67
Visited casualty/outpatients	9	5	1.80	3	2.00
Doctor consultation (GP and/or specialist)	24	27	0.89 <sup>#</sup>	24 <sup>#</sup>	1.13
Dental consultation	7	5	1.40 <sup>#</sup>	6 <sup>#</sup>	0.83
Consultation with other health professional	27	16	1.69	13	1.38
Day(s) away from work/study	11	9	1.22 <sup>#</sup>	10 <sup>#</sup>	1.00

\* RR is ratio of % in remote to % in non-remote for the Indigenous population

\*\* RR is ratio of % Indigenous to % non-Indigenous

<sup>#</sup> Difference between total Indigenous and non-Indigenous data is not statistically significant

<sup>1</sup> Hospital admissions relate to the 12 months prior to interview. All other health-related actions relate to the two weeks prior to interview

Source: ABS 2001 NHS Cat. No. 4714.0, Table 1

Details of the immunisation status of adult Australians are not available from administrative sources (as are children's immunisations) so self-reported data again provide the only picture of the characteristics of the population groups who are immunised against various conditions (Table 9).

Aboriginal and Torres Strait Islander people living in remote areas were 67% more likely than those living in non-remote areas to have reported having a vaccination for influenza in last 12 months; and overall (the Indigenous population living in remote and non-remote areas) were 9% more likely to have had this vaccination than the non-Indigenous population. The ratio of the rates for those reporting having a vaccination for pneumonia in last 12 months were substantially stronger, being 2.53 (more than two and a half times higher for Indigenous population in remote areas) and 1.79 (79% higher for Indigenous compared with non-Indigenous).

**Table 9: Immunisation status of people aged 50 years and over, by Indigenous status and remoteness, Australia, 2001**

*Per cent*

Immunisation status	Indigenous				Non-Indigenous	
	Remote	Non-remote	Total	RR*	Total	RR**
<b>Influenza</b>						
Had vaccination for influenza in last 12 months	75	45	51	1.67	47	1.09
Had vaccination for influenza but not in last 12 mths	na	11	10	..	11	1.10
Never had vaccination for influenza	16 <sup>#</sup>	43	37	0.37	41	0.90
<b>Pneumonia</b>						
Had vaccination for pneumonia in last 5 years	48	19	25	2.53	14	1.79
Had vaccination for pneumonia but not in last 5 years	na	4 <sup>#</sup>	3 <sup>#</sup>	..	1	..
Never had vaccination for pneumonia	38	75	67	0.51	84	0.80

\* RR is ratio of % in remote to % in non-remote for the Indigenous population

\*\* RR is ratio of % Indigenous to % non-Indigenous

<sup>#</sup> estimate has a relative standard error of between 25% to 50% and should be used with caution

Source: ABS 2001 NHS Cat. No. 4714.0, Table 19

The limited range of health information available for Aboriginal and Torres Strait Islander women living in remote areas shows that they are more likely (than Indigenous women in non-remote areas) to have breastfed their child (77% and 59%, respectively) (and also more likely (53%) than the non-Indigenous population). Lower proportions also reported not having children (Table 10).

Indigenous women are more likely to have had a Pap smear test. However, Indigenous women who reported having a Pap smear test were more likely to be living in remote than in non-remote areas (17% higher).

**Table 10: Summary women's health characteristics, by Indigenous status and remoteness, Australia, 2001**

*Age standardised rates (as per cent)*

Women's health characteristics	Indigenous				Non-Indigenous	
	Remote	Non-remote	Total	RR*	Total	RR**
<b>Mammograms (aged 40 years and over)</b>						
Has regular mammograms	36 <sup>#</sup>	45	43	0.80	46	0.93
Never had a mammogram	41	20	25	2.05	25	1.00
<b>Pap Smear test</b>						
Has regular Pap smear tests	56	48	50	1.17	55	0.91
Never had a Pap smear test	19	8	11	2.38	12	0.92
<b>Breastfeeding history</b>						
Children breastfed	77	59	63	1.31	53	1.19
Children not breastfed	4 <sup>#</sup>	12	11	0.33	9	1.22
Has not had children	13	15	14	0.87	29	0.48

\* RR is ratio of % in remote to % in non-remote for the Indigenous population

\*\* RR is ratio of % Indigenous to % non-Indigenous

<sup>#</sup> estimate has a relative standard error of between 25% to 50% and should be used with caution

Source: ABS 2001 NHS Cat. No. 4714.0, Table 22

# Notes on the data

## Data sources and limitations

### General

References to 'country New South Wales' relate to New South Wales, excluding Sydney Statistical Division.

### Data sources

Table 11 details the data sources for the material presented in this profile.

**Table 11: Data sources**

Section	Source
<b>Key indicators</b>	
GP services per head of population	GP services data supplied by Department of Health and Ageing, 2003/04 Population data: Estimated Resident Population, ABS, mean of 30 June 2003 and 30 June 2004 populations
<b>Socio-demographic profile</b>	
Figures 1, 2 and 3; Tables 1 and 2	Experimental estimates of Aboriginal and Torres Strait Islander people, ABS 2001 (unpublished)
Figure 4, Tables 3 and 4	Data were extracted by postal area from the ABS Population Census 2001, except for the following indicators: - <i>Total population</i> – Experimental estimates, ABS 2001 (unpublished) - <i>Full-time secondary education participation at age 16</i> – Census 2001 (unpublished) - <i>Households receiving rent assistance</i> – Centrelink, December Quarter 2001 (unpublished)
Map 1; Table 13	ABS SEIFA package, Census 2001
<b>General medical practitioner (GP) supply</b>	
Table 5	GP data supplied by Department of Health and Ageing, 2003/04 Population estimates used in calculating the population per GP rates are the: - Census count <sup>1</sup> , ABS Population Census 2001, scaled to 2003/04 - Usual Resident Population <sup>2</sup> , ABS Population Census 2001, scaled to 2003/04 - Day-time population: calculated from journey to work data, ABS Population Census (URP) 2001 (unpublished); and 2001 Census URP, scaled to 2003/04 - Estimated Resident Population, ABS, June 2003/2004
<b>Immunisation</b>	
Text comment: 1 year olds	National Centre for Immunisation Research and Surveillance, 2002
Table 6	Australian Childhood Immunisation Register, Health Insurance Commission, 2003/04 (unpublished)
<b>Premature mortality</b>	
Figure 5; Table 16	ABS Deaths, 2000 to 2002
<b>Chronic diseases and associated risk factors<sup>3</sup></b>	
Figures 6, 7 and 8; Maps 2, 3 and 4; Table 17	Estimated from 2001 National Health Survey (NHS), ABS (unpublished)
<b>National Aboriginal and Torres Strait Islander Social Survey and Health Survey</b>	
Table 7	ABS 2002 NATSIS, 2002 (unpublished)
Tables 8, 9 and 10	ABS 2001 NHS Cat. No. 4714.0 – Tables 1, 19 and 22

<sup>1</sup> *Census count* - those counted in the Division on Census night, including tourists, business people and other visitors

<sup>2</sup> *Usual Resident Population* - those who usually live there and who were in Australia at the time and would have provided details in the Census at the address where they were counted

<sup>3</sup> See notes below

## Remote areas

The Department of Health and Ageing have developed a classification of remoteness (ARIA+), subsequently amended by the ABS, which includes five area classes - Highly Accessible, Accessible, Moderately Accessible, Remote and Very Remote (a sixth category, Migratory, applies to Census data). Areas in the Remote and Very Remote classes were excluded from the 2001 National Health Survey.

## Chronic diseases and associated risk factors

The data for chronic conditions and risk factors have been estimated from the 2001 National Health Survey (NHS), conducted by the ABS: see note below on synthetic estimates. The NHS sample includes the majority of people living in private households, but excludes the most remote areas of Australia. These areas cover 86.4% of Australia's land mass and comprise just 3% of the total population, however, 28% of Australia's Indigenous population live in these areas. Thus it has not been possible to produce these estimates for Divisions with relatively high proportions of their population in the most remote areas of Australia.

The data for chronic conditions and risk factors are self-reported data, reported to interviewers in the 2001 NHS. Table 12 includes notes relevant to this data.

**Table 12: Notes on estimates of chronic diseases and associated risk factors**

Indicator	Notes on the data
<b>Estimates of chronic disease and injury</b> (Figure 5 and Map 2)	
Long term conditions	- Respondents were asked whether they had been diagnosed with any long term health condition (a condition which has lasted or is expected to last for 6 months or more), and were also asked whether they had been told by a doctor or nurse that they had asthma, cancer, heart and circulatory conditions, and/or diabetes
Injury event	- Injuries which occurred in the four weeks prior to interview
<b>Estimates of measures of self-reported health</b> (Figure 6 and Map 3)	
Very high psychological distress levels (K10)	- Derived from the Kessler Psychological Distress Scale-10 items (K-10), which is a scale of non-specific psychological distress based on 10 questions about negative emotional states in the 4 weeks prior to interview. 'Very high' distress is the highest level of distress category (of a total of four categories)
Fair or poor self-assessed health status	- Respondent's general assessment of their own health, against a five point scale from excellent through to poor – 'fair' or 'poor' being the two lowest in the scale
<b>Estimates of selected risk factors</b> (Figure 7 and Map 4)	
Overweight (not obese)	- Based on self-reported height and weight; BMI calculated and grouped into categories (to allow reporting against both WHO and NHMRC guidelines) - overweight: 25.0 to less than 30.0
Obese	- Based on self-reported height and weight; BMI calculated and grouped into categories (to allow reporting against both WHO and NHMRC guidelines) – obese: 30.0 and greater
Smokers	- Respondent's undertaking regular (or daily) smoking at the time of interview
Physical inactivity	- Did not exercise in the two weeks prior to interview through sport, recreation or fitness (including walking) – excludes incidental exercise undertaken for other reasons, such as for work or while engaged in domestic duties
High health risk due to alcohol consumed	- Respondents estimated average daily alcohol consumption in the seven days prior to interview (based on number of days and quantity consumed). Alcohol risk levels were grouped according to NHMRC risk levels for harm in the long term, with 'high risk' defined as a daily consumption of more than 75 ml for males and 50 ml for females

**Note:** For a full description, refer to *ABS 2001 National Health Survey, Cat. No. 4364.0* and *ABS 2001 Health Risk Factors, Cat. No. 4812.0*

## Methods

### Synthetic estimates

The estimates of the prevalence of chronic disease and associated risk factors have been predicted for a majority of SLAs across Australia, using modelled survey data collected in the 2001 ABS National Health Survey (NHS) and known characteristics of the area. A synthetic prediction can be interpreted as the likely value for a 'typical' area with those characteristics: the SLA is the area level of interest for this project (where SLAs had small populations they were grouped to larger areas). This work was undertaken by the Australian Bureau of Statistics, as they hold the NHS unit record files: the small area data were compiled by PHIDU.

The approach used is to undertake an analysis of the survey data for Australia to identify associations in the NHS data between the variables that we wish to predict at the area level (eg. prevalence of chronic conditions and risk factors) and the data we have at the area level (eg. socioeconomic status, use of health services). The relationship between these variables for which we have area level data (the predictors) and the reporting of chronic conditions in the NHS is also a part of the model that is developed by the ABS. For example, such associations might be between the number of people reporting specified chronic conditions in the NHS and:

- the number of hospital admissions (in total, to public and to private hospitals, by age, sex and diagnosis),
- socioeconomic status (as indicated by Census data, or for recipients of government pensions and benefits), and
- the number of visits to a general medical practitioner.

The results of the modelling exercise are then applied to the SLA counts of the predictors. The prediction is, effectively, the likely value for a typical area with those characteristics. The raw numbers were then age-standardised, to control for the effects of differences in the age profiles of areas.

*The numbers are estimates for an area, not measured events as are death statistics: they should be used as indicators of likely levels of a condition or risk factor in an area.*

### Premature deaths

Details of deaths by SLA were purchased from the ABS. The raw numbers were then age-standardised, by the indirect method, to control for the effects of differences in the age profiles of areas.

### Data converters and mapping

#### [Conversion to Division of data available by postcode](#)

The allocation of postcodes to Divisions was undertaken using information from the Department of Health and Ageing's web site, which shows the proportion of a postcode in a Division (Table 14).

#### [Conversion to Division of data available by SLA](#)

(marked in this profile as ‡ See note under 'Data converters and mapping' re calculation of Division total)

Where the data presented in these profiles were only available by SLA they have been converted to Division of General Practice areas using a concordance based on data at the 2001 Census. A copy of the concordance is included in the Population data: A Guide for Divisions of General Practice: it is also available from the Divisions' data area on PHIDU web site.

In brief, the concordance splits the data (eg number of deaths) for each SLA across one or more Divisions. The proportion of an SLA's data that is allocated to each Division was calculated from (a) CD level Census 2001 data that splits SLAs across approximations to postcodes (referred to as postal areas) and (b) data on the DoHA website that splits postcodes across Divisions. This concordance can be adjusted to meet any new configuration of Division boundaries based on the 2001 Collection Districts, or combinations thereof.

The estimated population of each SLA in this Division is shown in Table 15.

#### [Mapping](#)

In some Divisions the maps may include a very small part of an SLA which has not been allocated any population, or either has a population of less than 100 or has less than 1% of the SLA's total population: these areas are mapped with a pattern.

## Supporting information

This and other information is also available at [www.publichealth.gov.au](http://www.publichealth.gov.au)

### A definition of population health

Population health, in the context of general practice, has been defined<sup>1</sup> as:

*“The prevention of illness, injury and disability, reduction in the burden of illness and rehabilitation of those with a chronic disease. This recognises the social, cultural and political determinants of health. This is achieved through the organised and systematic responses to improve, protect and restore the health of populations and individuals. This includes both opportunistic and planned interventions in the general practice setting.”*

The key determinants of health are social support networks, employment and working conditions, social environments, physical environments, geographical isolation, personal health practices, healthy child development, ageing and disability, biology and genetic endowment, health services, gender and culture.

In the Aboriginal and Torres Strait Islander context this means that a population health approach to health services will assist in ensuring “that Aboriginal and Torres Strait Islander people enjoy a healthy life equal to that of the general population, that is enshrined by a strong living culture, dignity and justice”.<sup>2</sup> This recognises the importance of achieving improvements to Aboriginal and Torres Strait Islander health and respects the particular health issues facing Indigenous people.

<sup>1</sup> “The role of general practice in population health – A Joint Consensus Statement of the General Practice Partnership Advisory Council and the National Public Health Partnership Group” (Joint Advisory Group on General Practice and Population Health 2001)

<sup>2</sup> As defined in the Strategic Framework for Aboriginal and Torres Strait Islander Health

### SEIFA scores

Following the 2001 Census, the Australian Bureau of Statistics (ABS) produced four socioeconomic indexes for areas (SEIFA). The indexes describe various aspects of the socioeconomic make-up of populations in areas, using data collected in the 2001 Census.

The Index of Relative Socio-Economic Disadvantage (labelled ‘Disadvantage’ in Table 13) includes all variables that either reflect or measure disadvantage. The Index of Advantage/Disadvantage is used to rank areas in terms of both advantage and disadvantage: any information on advantaged persons in an area will offset information on disadvantaged persons in the area. The Index of Economic Resources and the Index of Education and Occupation were targeted towards specific aspects of advantage/disadvantage.

For further information on the composition and calculation of these indexes see the ABS Information Paper ABS Cat No. 2039.0 available on the ABS web site [www.abs.gov.au](http://www.abs.gov.au). The scores for these indexes for each Statistical Local Area (SLA) or part SLA in Dubbo Plains DGP are shown in Table 13.

In using this table, users should note that the index score shown for SLAs with less than 100 per cent in the Division represents the score for the whole SLA, and not just the part shown. However, SLAs with small proportions may have little influence on the average index score for the Division which has been based on the postcodes in the Division.

Table 13: SEIFA scores by SLA, Dubbo/Plains DGP, 2001

SLA code	SLA name (% per cent of SLA in the Division)	Index score				
		Disadvantage	Advantage	Economic Resources	Education & Occupation	
10950	Bogan	(89.1)	949	917	916	926
11200	Brewarrina	(5.8)	845	907	912	915
11950	Coolah	(97.4)	988	924	891	944
12100	Coonabarabran	(96.6)	955	919	879	953
12150	Coonamble	(100.0)	910	910	905	918
12601	Dubbo - Part A	(100.0)	984	972	980	968
12604	Dubbo - Part B	(100.0)	1024	982	966	979
12950	Gilgandra	(100.0)	971	919	894	944
15250	Merriwa	(5.4)	963	905	885	915
15400	Mudgee	(100.0)	972	935	938	935
15650	Muswellbrook	(1.3)	945	949	995	910
15850	Narromine	(100.0)	948	926	919	931
16200	Parkes	(8.5)	966	933	921	941
16750	Rylstone	(25.5)	926	903	898	906
17900	Walgett	(1.3)	876	896	898	907
17950	Warren	(100.0)	960	936	943	924
18150	Wellington	(94.4)	937	912	888	941

\* Proportions are approximate and are known to be incorrect in some cases, due to errors in the concordance used to allocate CDs to form postal areas

Note: Scores are not shown for SLAs in the Division with estimated populations of less than 100 or with less than 1% of the SLA's total population (refer to Table 15)

### Statistical geography of the Dubbo/Plains Division of General Practice

The Dubbo/Plains DGP covers 72,041 square kilometres, based on 2001 SLA data.

The postcodes in the Division are shown below (Table 14).

Table 14: Postcodes in Dubbo/Plains DGP, 2004

Postcode	Per cent of postcode population in the Division *	Postcode	Per cent of postcode population in the Division *	Postcode	Per cent of postcode population in the Division *
3291	50	3387	100	3418	100
3311	100	3388	100	3419	100
3315	100	3390	100	3422	100
3317	100	3391	100	3423	100
3318	100	3392	100	3424	100
3319	100	3393	100	3464	100
3373	100	3395	100	3465	100
3375	100	3399	100	3467	100
3377	100	3400	100	3468	100
3378	100	3401	100	3469	100
3379	100	3402	100	3478	100
3380	100	3409	100	3480	100
3381	100	3412	100	3482	100
3384	100	3414	100	3483	100
3385	100	3417	100		

\* Proportions are approximate

Source: Department of Health and Ageing web site (accessed online version as at February 2005):

<http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pcd-programs-divisions-divspc.htm>

Statistical Local Areas (SLAs) are defined by the Australian Bureau of Statistics to produce areas for the presentation and analysis of data. In this Division, SLAs are, generally, equivalent to Local Government Areas (LGAs): the exception is Dubbo LGA (split into two SLAs, Part A and Part B, both wholly in the Division). The majority of the Division comprises SLAs from within the ABS North Western Statistical Division and from three of the four ABS Statistical Subdivisions of Dubbo, Central Macquarie and Macquarie-Barwon. The SLAs, and the proportion of their population estimated to be in Dubbo Plains Division (based on their 2001 Census Population), are shown in (Table 15).

**Table 15: SLAs in Dubbo/Plains DGP by 2001 boundaries**

SLA code	SLA name	Per cent of SLA population in the Division*	Estimate of the SLA's 2004 population in the Division
10950	Bogan	89.1	2,777
11200	Brewarrina	5.8	125
<b>11750</b>	<b>Cobar</b>	<b>0.6</b>	<b>#</b>
11950	Coolah	97.4	3,770
12100	Coonabarabran	96.6	6,435
12150	Coonamble	100.0	4,721
12601	Dubbo - Part A	100.0	35,504
12604	Dubbo - Part B	100.0	3,512
12950	Gilgandra	100.0	4,675
15250	Merriwa	5.4	125
15400	Mudgee	100.0	18,392
15650	Muswellbrook	1.3	194
15850	Narromine	100.0	7,009
16200	Parkes	8.5	1,271
16750	Rylstone	25.5	975
17900	Walgett	1.3	107
17950	Warren	100.0	3,277
18150	Wellington	94.4	8,168

\* Proportions are approximate and are known to be incorrect in some cases, due to errors in the concordance used to allocate CDs to form postal areas. In addition, in a small number of cases, part(s) of an SLA can be allocated to another Division, sometimes several hundred kilometres away. Although adjustments have not been made to the concordance to correct these errors, the affected SLAs are highlighted in the table (shown in bold italic typeface)

# Not shown as the total population is less than 100

## Supporting data

The numbers and rates of premature mortality used in Figure 4 are shown in Table 16 below.

**Table 16: Deaths before 75 years of age by major condition and selected cause, Dubbo/Plains DGP‡, country New South Wales and Australia, 2000-02\***

*Indirectly age standardised rate per 100,000 population*

Variable	Dubbo/Plains DGP		Country NSW		Australia	
	No.	Rate	No.	Rate	No.	Rate
<b>Circulatory system diseases</b>	333	110.5	6,468	83.4	38,357	72.3
Ischaemic heart disease	171	56.5	3,929	50.6	23,364	44.1
Cerebrovascular disease – stroke	47	15.8	1,080	13.8	6,920	13.0
<b>Cancer</b>	348	115.5	9,113	119.2	60,603	114.3
Cancer of the trachea, bronchus & lung	76	24.8	1,980	25.4	12,715	24.0
<b>Respiratory system diseases</b>	89	29.4	1,700	21.7	9,726	18.3
Chronic lower respiratory disease	63	20.5	1,209	15.3	6,657	12.6
<b>Injuries and poisonings</b>	107	40.6	2,541	39.5	18,573	35.0
Suicide	37	14.2	888	14.0	6,706	12.6
Motor vehicle accidents	36	13.8	809	12.7	5,014	9.5
<b>Other causes</b>	200	67.3	3,998	54.6	26,735	50.4
Diabetes mellitus	23	7.4	442	9.4	3,734	7.0

\* 'No.' is the total number of deaths for the 2000-02 period; 'Rate' is an annual rate, based on the 3-year average

‡ See note under 'Data converters and mapping' re calculation of Division totals

The rates used to illustrate the prevalence estimates of chronic disease (Figure 5), measures of self-reported health (Figure 6), and selected risk factors (Figure 7), are shown in Table 17 below.

**Table 17: Estimates of chronic disease and associated risk factors, Dubbo/Plains DGP‡, country New South Wales and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

Variable	Dubbo/Plains DGP	Country NSW	Australia
<b>Chronic disease and injury (Figure 5)</b>			
Respiratory system diseases	314.9	310.4	310.8
Asthma	128.6	127.9	118.3
Circulatory system diseases	184.8	181.6	171.5
Diabetes type 2	21.2	23.4	23.4
Injury event	124.2	124.0	121.2
Mental & behavioural disorders	99.4	104.3	97.6
Musculoskeletal system diseases	327.3	322.0	326.2
Arthritis	149.6	148.1	138.8
- Osteoarthritis	78.0	81.1	74.9
- Rheumatoid arthritis	25.2	24.8	23.6
Osteoporosis (females)	24.7	24.1	26.4
<b>Measures of self-reported health (Figure 6)</b>			
Very high psychological distress levels (18+ years)	38.0	38.9	36.6
Fair or poor self-assessed health status (15+ years)	191.6	189.5	184.0
<b>Risk factors (Figure 7)</b>			
Overweight (not obese) males (15+ years)	400.8	397.0	389.7
Obese males (15+ years)	169.7	167.5	145.9
Overweight (not obese) females (15+ years)	238.9	240.9	223.9
Obese females (15+ years)	156.2	157.5	148.0
Smokers (18+ years)	283.1	269.8	248.0
Physical inactivity (15+ years)	379.9	349.9	315.5
High health risk due to alcohol consumed (18+ years)	52.9	47.4	42.1

‡ See note under 'Data converters and mapping' re calculation of Division totals

## References

Australian Bureau of Statistics (ABS) (2002). *2001 National Health Survey: summary of results*. Australia. (ABS Cat. No. 4364.0). Canberra: ABS.

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## Further developments and updates

Subject to agreement and funding, a number of developments could be undertaken:

- Details of hospitalisations potentially avoidable through ambulatory care interventions are currently being prepared and will be forwarded to Divisions (and posted on the PHIDU web site) when they are available. Other enhancements will be considered as appropriate datasets become available.

The profiles could be updated as the data are updated. For example:

- Population estimates, avoidable hospitalisations, immunisation, and GP activity and workforce data – annually;
- Chronic disease estimates – three-yearly;
- Census data – five-yearly.

Any developments would be informed by consultation, including with Divisions.

## PHIDU contact details

**For general comments, data issues or enquiries re information on the web site, please contact PHIDU:**

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