

# Population health profile of the Murrumbidgee

## Division of General Practice

Population Profile Series: No. 30

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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This publication, the maps and supporting data, together with other publications on population health, are available from the PHIDU website ([www.publichealth.gov.au](http://www.publichealth.gov.au)).

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# Population health profile of the *Murrumbidgee Division of General Practice*

## Introduction

This profile has been designed to provide a description of the population of the Murrumbidgee 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 19.

## 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. New South Wales and Australia). Specific topics covered include:

- a socio-demographic profile (pages 2-6);
- GP workforce data (page 9);
- immunisation rates (page 9);
- rates of premature death (page 10); and
- estimates of the prevalence of chronic disease and selected risk factors (pages 11-15).

## Key indicators

**Location:** New South Wales

**Division number:** 232

Population‡:	No.	%
Total	63,277	
65+	9,072	14.3%
<25	22,315	35.3%
Indigenous	2,506	4.0%

**Disadvantage score<sup>1</sup>:** 977

**GP services per head of population:**

Division‡	3.3
Australia	4.7

**Population per FTE GP:**

Division‡	1,799
Australia	1,403

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

Division‡	306.2
Australia	290.4

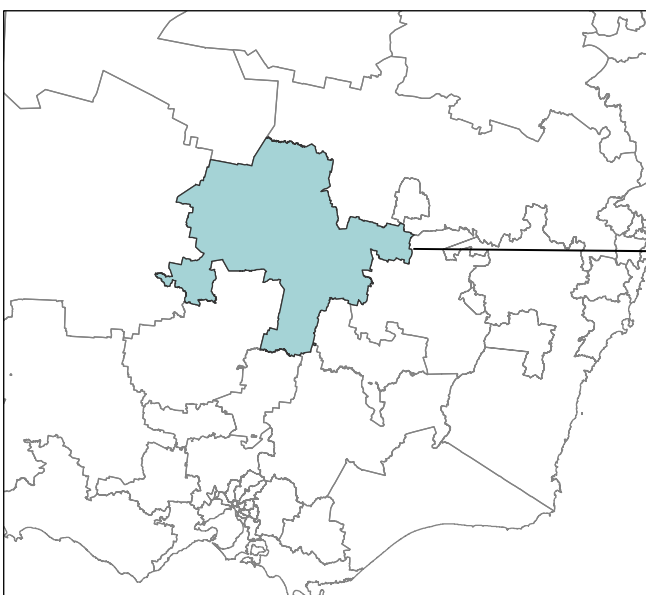
<sup>1</sup> Numbers below 1000 (the index score for Australia) indicate the Division is relatively disadvantaged

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

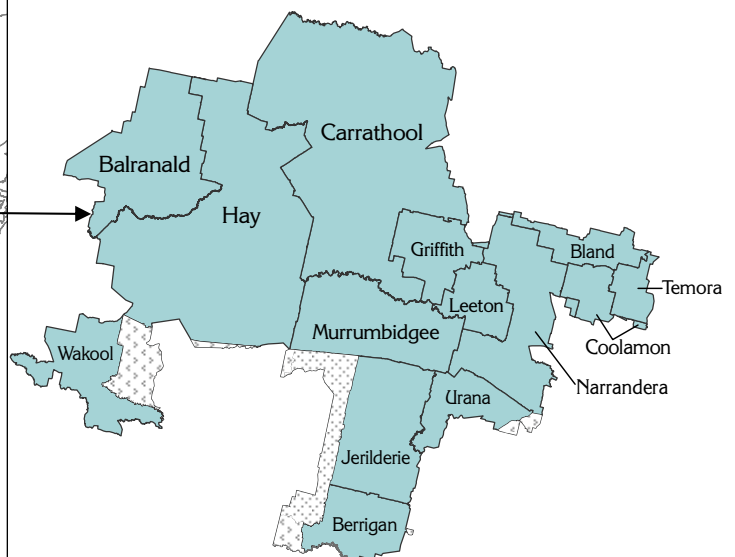
‡ See note "Data converters and mapping" re calculation of Division Total

## Murrumbidgee Division of General Practice

*NSW Divisions of General Practice*



*Murrumbidgee DGP by SLA*

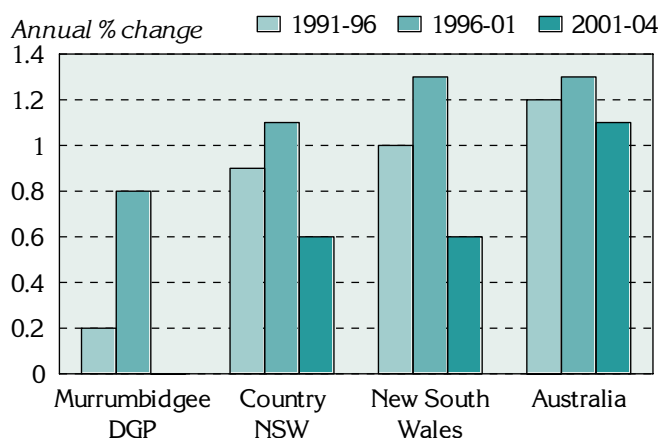


# Sociodemographic profile

## Population

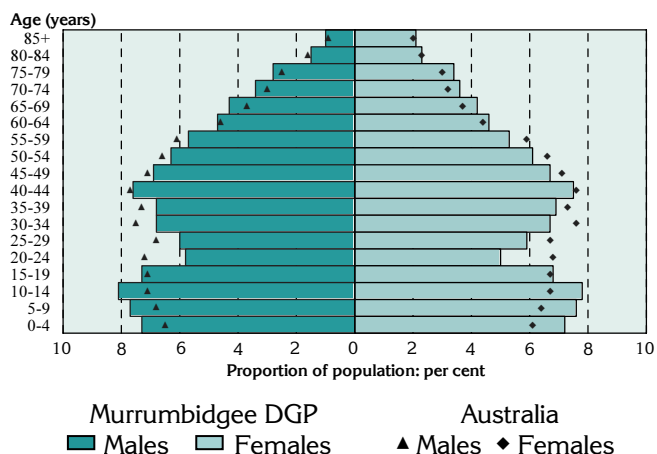
The Murrumbidgee DGP had an Estimated Resident Population of 63,277 at 30 June 2004.

**Figure 1: Annual population change, Murrumbidgee DGP‡, country New South Wales<sup>1</sup>, New South Wales and Australia, 1991 to 1996, 1996 to 2001 and 2001 to 2004**



Over the five years from 1991 to 1996, the Division's population increased by 0.2% on average each year, lower than in country New South Wales (0.9%), New South Wales (1.0%) and Australia (1.2%). From 1996 to 2001, the annual percentage increase was 0.8%, lower than in country New South Wales (1.1%), New South Wales (1.3%), and Australia (1.3%). The Division's population remained the same from 2001 to 2004, compared to annual increases of 0.6% for country New South Wales and New South Wales, and 1.1% for Australia.

**Figure 2: Population in Murrumbidgee DGP‡ and Australia, by age and sex, 2004**



The age distribution of the Division's population is similar to that for Australia. The most notable differences are:

- at younger ages - notably higher proportions of children aged 0 to 14 years;
- from 20 to 39 years - notably lower proportions of males and females (perhaps moving away to continue education, or to seek employment opportunities); and
- at older ages - relatively fewer males aged 65 to 79 years and females aged 60 to 79 years.

**Table 1: Population by age, Murrumbidgee DGP‡ and Australia, 2004**

Age group (years)	Murrumbidgee		Australia	
	No.	%	No.	%
0-14	14,452	22.8	3,978,751	19.8
15-24	7,862	12.4	2,762,769	13.8
25-44	17,192	27.2	5,881,048	29.3
45-64	14,698	23.2	4,864,037	24.2
65-74	4,955	7.8	1,374,792	6.8
75-84	3,153	5.0	934,505	4.7
85+	963	1.5	295,602	1.5
<b>Total</b>	<b>63,277</b>	<b>100.0</b>	<b>20,091,504</b>	<b>100.0</b>

As shown in the age-sex pyramid above, the Murrumbidgee DGP had a higher proportion of children aged 0 to 14 years (22.8%) compared to Australia as a whole (19.8%) but fewer young people aged 15 to 24 years (12.4%, compared to 13.8%) (Table 1). There were smaller proportions of the Division's population in the 25 to 64 years age groups, and marginally more people aged 65 to 84 years, compared to Australia.

The Murrumbidgee DGP comprised 5.5% of people born in predominantly non-English speaking countries and resident in Australia for five years or more (Table 2), higher than for country New South Wales (4.1%). Recent arrivals (those resident in Australia for less than five years) from non-English speaking countries comprised 1.3% of the Division's population (compared to 0.5% in country New South Wales).

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

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

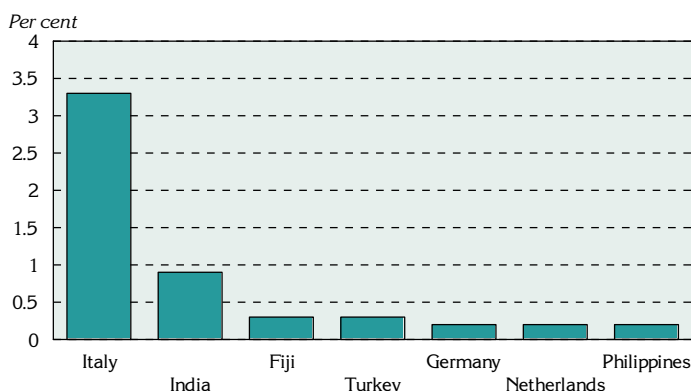
Of these non-English born residents aged five years and over, 1.8% had poor proficiency in English (determined when people born overseas in predominantly non-English speaking countries reported in the Census speaking another language and speaking English 'not well' or 'not at all'), a higher proportion than in country New South Wales (0.6%), but lower than the proportion in New South Wales (3.2%).

**Table 2: Non-English speaking born, Murrumbidgee DGP, country New South Wales, New South Wales and Australia, 2001**

People born in predominantly non-English speaking countries	Murrumbidgee DGP		Country NSW		NSW		Australia	
	No.	%	No.	%	No.	%	No.	%
Resident in Australia for five years or more	3,350	5.5	97,983	4.1	803,824	12.7	2,019,410	10.8
Resident in Australia for less than five years	794	1.3	12,392	0.5	182,972	2.9	408,074	2.2
Poor proficiency in English <sup>1</sup>	1,037	1.8	13,587	0.6	189,874	3.2	425,399	2.4

<sup>1</sup> Calculated on persons aged 5 years and over who reported speaking another language and speaking English 'not well' or 'not at all'

**Figure 3: Major non-English speaking birthplaces, Murrumbidgee DGP, 2001**



Australian-born people comprised 89.8% of the Division's population, well above the Australian figure of 72.6%. Of the 3.0% of people from English speaking countries, 1.7% were from the UK & Eire. The major birthplace of the non-English speaking population was Italy (3.3%), followed by India (0.9%); Turkey and Fiji (both 0.3%); and Germany, The Netherlands and the Philippines (all 0.2%).

## Socioeconomic status: Total population

*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.*

The Murrumbidgee DGP had a smaller proportion of single parent families (8.7%), compared to country New South Wales as a whole (11.7%), and a similar proportion of Aboriginal and Torres Strait Islanders (4.0%, compared to 3.7%) (Figure 4, Table 3).

Full-time secondary school education participation of 16 year olds living in the Division (69.6%) was marginally lower than country New South Wales (73.4%).

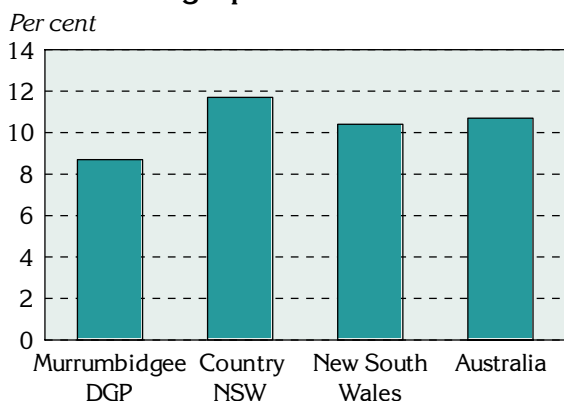
A smaller proportion of the Division's households received rent assistance from Centrelink (13.3%) compared to country New South Wales (18.3%), and there were fewer dwellings rented from the State housing authority (3.3%, compared to 4.6%). The proportion of dwellings with no access to a motor vehicle (8.3%) was also lower than that for country New South Wales (10.2%).

The Division had notably lower proportions of the population who reported using, at home, a computer (32.5%) and the Internet (18.0%), compared to country New South Wales (37.0% and 22.2%).

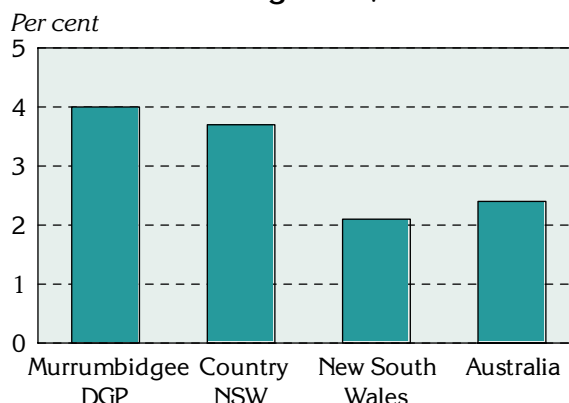
**Figure 4: Socio-demographic indicators, Murrumbidgee DGP, country New South Wales, New South Wales and Australia, 2001**

*Note the different scales*

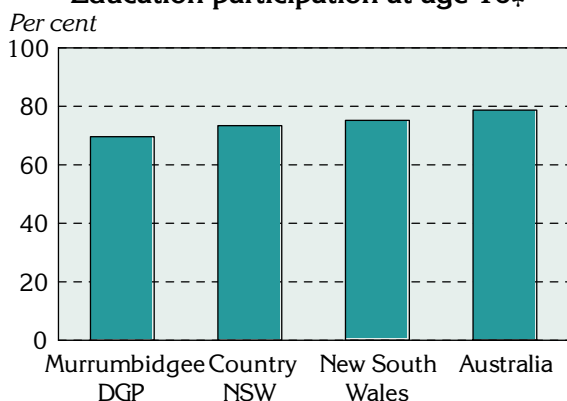
**Single parent families**



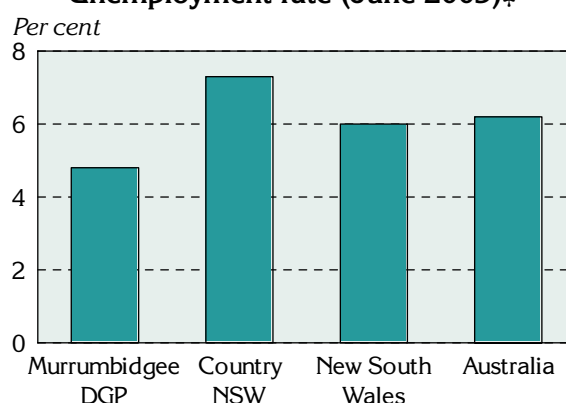
**Indigenous‡**



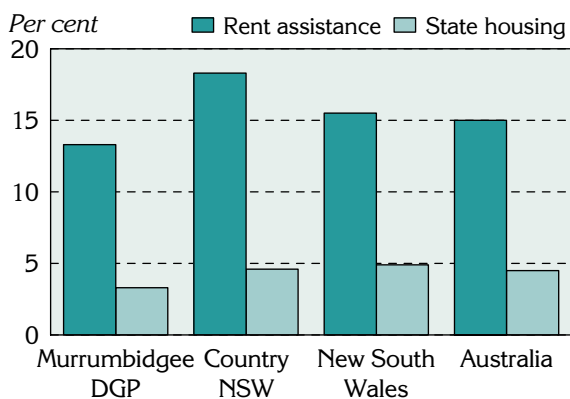
**Education participation at age 16‡**



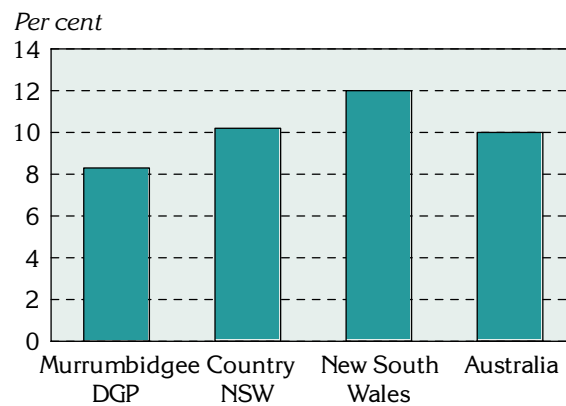
**Unemployment rate (June 2003)‡**



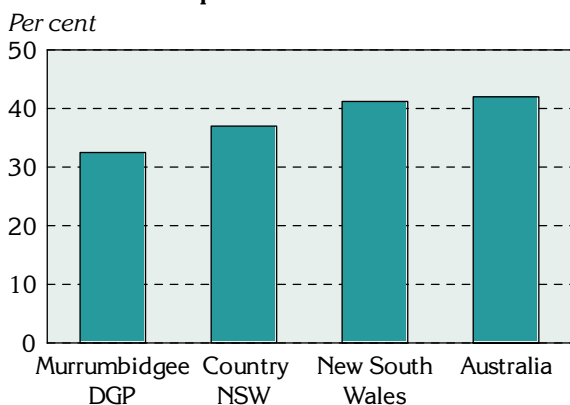
**Households receiving rent assistance & Dwellings rented from State housing authority**



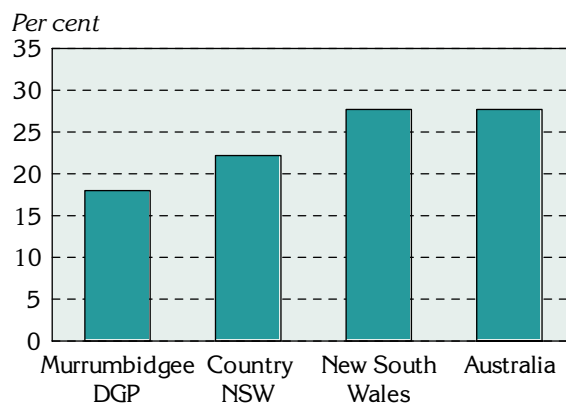
**Dwellings with no motor vehicle**



**Computer use at home**



**Internet use at home**



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

**Table 3: Sociodemographic indicators, Murrumbidgee DGP, country New South Wales, New South Wales and Australia, 2001**

Indicator	Murrumbidgee		Country NSW		NSW		Australia	
	No.	%	No.	%	No.	%	No.	%
Single parent families	1,384	8.7	73,805	11.7	172,199	10.4	529,969	10.7
Indigenous‡	2,506	4.0	91,036	3.7	134,886	2.1	458,261	2.4
Full-time secondary school education at age 16‡	62.6	69.6	24,254	73.4	65,205	75.2	130,198	78.7
Households: rent assistance	2,841	13.3	156,074	18.3	343,540	15.5	1,006,599	15.0
Dwellings rented from the State housing authority	739	3.3	41,406	4.6	114,130	4.9	317,171	4.5
Dwellings: no motor vehicle	1,853	8.3	92,576	10.2	280,434	12.0	708,073	10.0
Computer use at home	19,757	32.5	874,207	37.0	2,600,257	41.2	7,881,983	42.0
Internet use at home	10,929	18.0	523,994	22.2	1,751,626	27.7	2,019,410	27.7

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

The unemployment rate of 4.8% in Murrumbidgee DGP was notably lower than the rates for country New South Wales (7.3%) and New South Wales (6.0%) (Figure 4, Table 4). The labour force participation rate (83.3%) was substantially higher than for country New South Wales (72.3%), and New South Wales (74.6%). The female labour force participation rate (70.4%) was higher than the rates for country New South Wales (66.8%) and New South Wales (69.0%).

**Table 4: Unemployment and labour force, Murrumbidgee DGP, country New South Wales, New South Wales and Australia, 2003**

Labour force indicators	Murrumbidgee		Country NSW		NSW		Australia	
	No.	%	No.	%	No.	%	No.	%
Unemployment rate ‡	1,604	4.8	83,231	7.3	198,946	6.0	623,791	6.2
Labour force participation‡	33,354	83.3	1,142,496	72.3	3,331,064	74.6	10,038,147	75.2
Female labour force participation (2001)	9,534	70.4	361,345	66.8	1,093,243	69.0	3,306,521	69.7

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

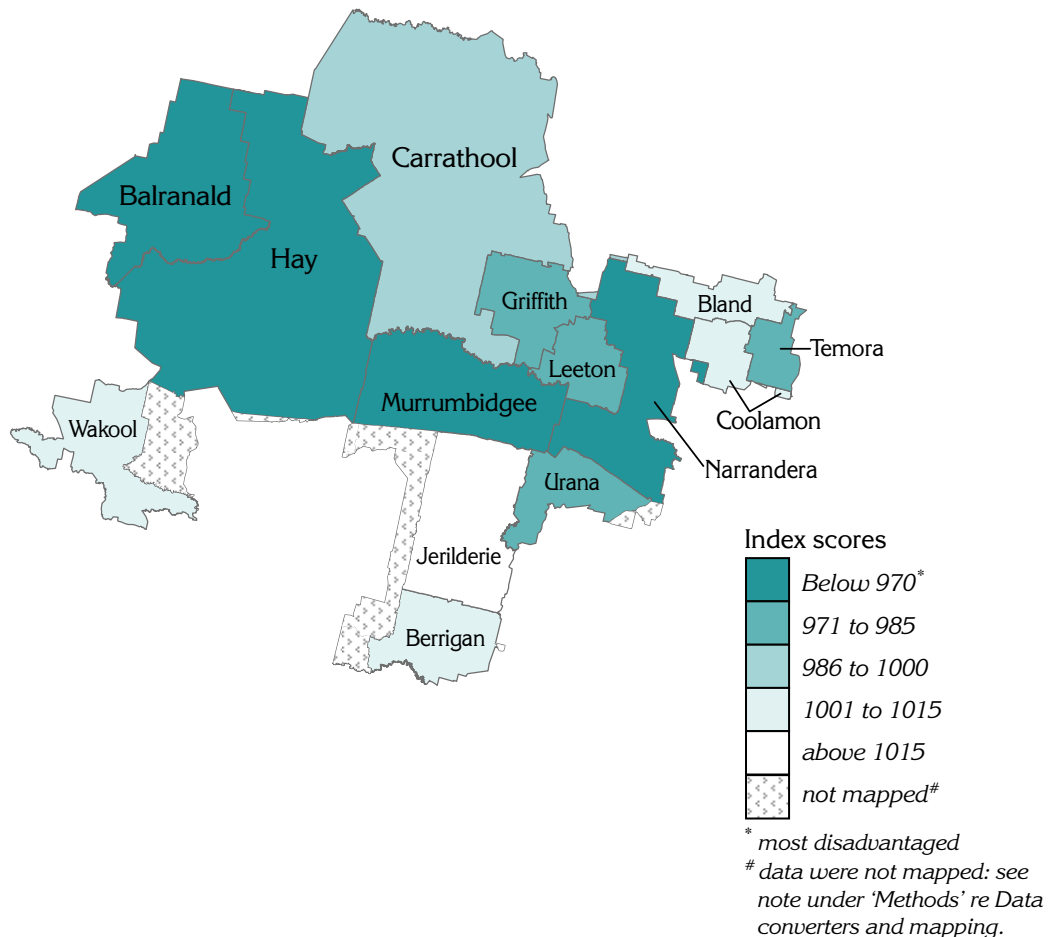
## Summary of the socioeconomic ranking of the Murrumbidgee DGP

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 Murrumbidgee DGP are shown in the supporting information in Table 12, page 19: SLAs are described on page 21.

The Division's SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) score is 977, 2.3% below the average score for Australia (1000), and similar to that for country New South Wales (973); this highlights the marginally lower socioeconomic status profile of the Division's population, relative to Australia as a whole. Variations in the IRSD are shown at the SLA level (Map 1).

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

*See note under 'Methods' 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.*





## Socioeconomic status: Indigenous population

At the 2001 Census, 4.0% of the population of the Murrumbidgee DGP were estimated to be of Aboriginal or Torres Strait Islander origin, consistent with the proportion for country New South Wales (3.7%). The largest Indigenous populations were in the SLAs of Griffith (an estimated 963 people, 38.4% of the Indigenous population), Narrandera (563 people, 22.5%) and Leeton (386 people, 15.4%) (Table 5).

**Table 5: Population by Indigenous status\*, SLAs in Murrumbidgee DGP‡, 2001**

Statistical Local Area	Indigenous		Non-Indigenous		Total	
	No.	%	No.	%	No.	%
Griffith	963	38.4	23,641	38.9	24,604	38.9
Narrandera	563	22.5	5,880	9.7	6,443	10.2
Leeton	386	15.4	11,539	19.0	11,925	18.9
Murrumbidgee	189	7.5	2,473	4.1	2,662	4.2
Hay	131	5.2	3,468	5.7	3,599	5.7
Carrathool	122	4.9	2,211	3.6	2,332	3.7
Berrigan	56	2.3	6,320	10.4	6,376	10.1
Other	96	3.8	5,179	8.5	5,275	8.3
<b>Total</b>	<b>2,506</b>	<b>100.0</b>	<b>60,710</b>	<b>100.0</b>	<b>63,216</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

The proportion of Indigenous single parent families in the Division (27.4%) was consistent with the rate for the Indigenous population in country New South Wales (27.5%), but more than three times that of the Division's non-Indigenous population (8.0%) (Table 6).

Two fifths (39.3%) of Indigenous 16 year olds living in the Division were involved in full-time secondary school education, notably lower than the Indigenous participation rate for country New South Wales (52.5%), and substantially lower than for the Division's non-Indigenous 16 year olds (73.9%).

A similar proportion of the Indigenous population lived in dwellings rented from the State housing authority (20.2%) compared to the Indigenous population in country New South Wales (19.7%), but the rate was substantially higher than for the Division's non-indigenous population (2.8%).

**Table 6: Socio-demographic indicators, Murrumbidgee DGP‡, country New South Wales and Australia, 2001\***

Indicator	Murrumbidgee DGP‡		Country NSW		Australia	
	No.	%	No.	%	No.	%
Population						
- Indigenous	2,533	4.0	91,036	3.7	458,261	2.4
- Non-Indigenous	61,243	96.0	2,355,909	96.3	18,952,407	97.6
Single parent families						
- Indigenous	176	27.4	5,881	27.5	26,587	25.8
- Non-Indigenous	1,228	8.0	67,924	11.2	503,382	10.4
Full-time secondary school education at age 16						
- Indigenous	20	39.3	938	52.5	5,997	50.5
- Non-Indigenous	600	73.9	24,828	76.5	327,055	80.3
Dwellings rented from State housing authority						
- Indigenous	150	20.2	4,868	19.7	23,974	20.8
- Non-Indigenous	573	2.8	35,585	4.4	284,502	4.5
People who used a computer at home						
- Indigenous	356	15.6	14,924	18.4	73,636	18.0
- Non-Indigenous	19,418	34.4	854,211	38.9	7,761,390	44.1
People who used the Internet at home						
- Indigenous	112	5.0	6,454	8.0	35,384	8.6
- Non-Indigenous	10,765	19.1	518,491	23.6	5,135,445	29.2

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

A smaller proportion of the Indigenous population in Murrumbidgee DGP reported using a computer at home (15.6%) compared to the Indigenous population in country New South Wales (18.4%), and the rate was less than half that of the Division's non-Indigenous population (34.4%) (Table 6).

Similarly, a smaller proportion of Indigenous people in the Division used the Internet at home (5.0%) compared to the Indigenous population in country New South Wales (8.0%), and the rate was one quarter that of the Division's non-Indigenous population (19.1%).

The Division's unemployment rate for the Indigenous population was 19.8%, notably lower than for the Indigenous population in country New South Wales (26.9%), but more than four times the rate of the Division's non-Indigenous population (4.6%) (Table 7).

The Indigenous labour force participation rate (53.0%) was higher than that for the Indigenous population in country New South Wales (50.4%); the Indigenous female labour force participation rate (45.2%) was similar to the rate for Indigenous females in country New South Wales (44.3%). Both participation rates were notably lower than for the Division's non-Indigenous population (75.6% and 70.9%).

**Table 7: Unemployment and labour force participation, Murrumbidgee DGP‡, country New South Wales and Australia, 2001**

Labour force indicators	Murrumbidgee DGP‡		Country NSW		Australia	
	No.	%	No.	%	No.	%
Unemployment rate						
- Indigenous	131	19.8	6,155	26.9	24,930	20.0
- Non-Indigenous	1,242	4.6	87,454	9.0	624,337	7.3
Labour force participation						
- Indigenous	662	53.0	22,902	50.4	124,517	52.4
- Non-Indigenous	26,934	75.6	972,088	69.5	8,609,525	72.9
Female labour force participation						
- Indigenous	269	45.2	9,403	44.3	52,981	46.6
- Non-Indigenous	10,220	70.9	390,835	67.2	3,564,409	69.8

## General medical practitioner (GP) supply

A total of 35.2 full-time equivalent (FTE) GPs and 41.3 full-time workload equivalent (FWE<sup>2</sup>) GPs worked in the Murrumbidgee DGP in 2003/04 (Table 8). Of the FWE GPs, 25.4% were female, and 16.2% were over 55 years of age (compared to 26.4% and 33.4%, respectively, for New South Wales).

Apart from the estimated day-time population, the rates of population per FTE GP varied, depending on the population measure used, from a high of 1,799 per GP (calculated on the average Estimated Resident Population (ERP) as at 30 June 2003 and 30 June 2004), to a low of 1,723 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 1,467 (calculated on the Census count) to 1,532 (calculated on the ERP). When calculated on the estimated day-time population, the rates of population were 2.5% 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 Murrumbidgee DGP were notably higher than for New South Wales and Australia, indicating a much lower level of provision of GP services in the Division.

**Table 8: Population per GP in Murrumbidgee DGP, New South Wales and Australia, 2003/04**

Population measure	Population	GPs		Population per GP	
		FTE	FWE	FTE	FWE
<b>Murrumbidgee DGP</b>					
Census count (adjusted)*	60,633	35.2	41.3	1,723	1,467
Usual Resident Population (URP) (adjusted)*	60,777	..	..	1,728	1,471
Estimated Resident Population (ERP)	63,296	..	..	1,799	1,532
Day-time Population (estimated on the URP) ‡	59,271	..	..	1,685	1,434
<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 2003/2004, 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 95.4% of children in the Division in 2002 were fully immunised at age one, marginally above the Australian proportion of 94.2%.

Immunisation by provider type for children between the ages of 0 to 6 is shown in Table 9. More than half of children in the Division were immunised by a general practitioner (57.4%), compared to 70.0% for Australia, with 32.5% immunised at a community health centre, or by a community health worker, and 7.7% at a local government council.

**Table 9: Childhood immunisation at ages 0 to 6 by provider type, Murrumbidgee DGP and Australia, 2003/04**

Provider	Murrumbidgee DGP	Australia
	%	%
General practitioners	57.4	70.0
Local government council	7.7	16.6
Community health centre/ worker	32.5	9.8
Public hospital	2.3	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>12,170</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 (306.2 deaths per 100,000 population) is lower than for country New South Wales (318.3), but higher than 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.

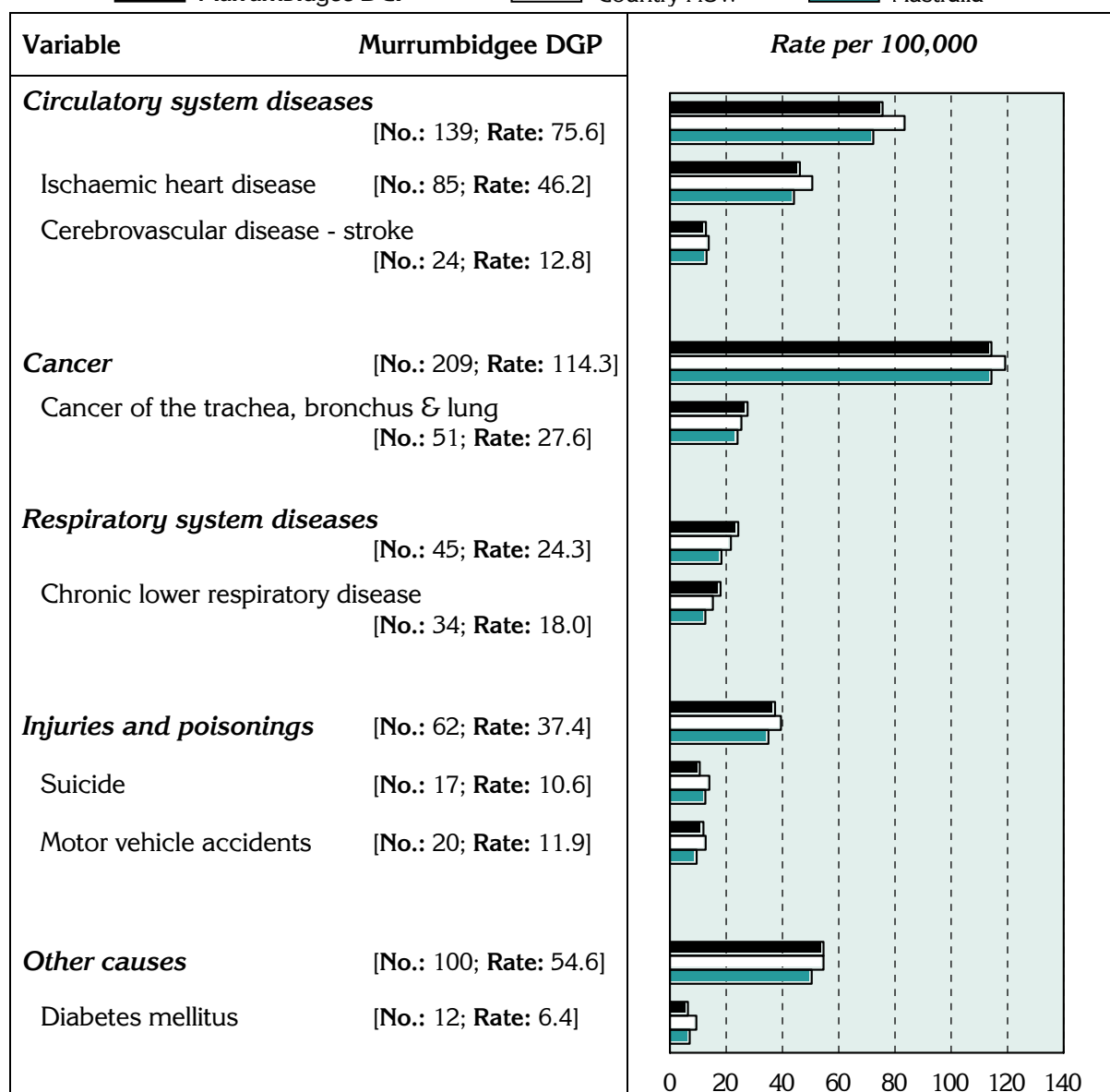
The major causes of premature mortality in the Division, as for country NSW and Australia as a whole are cancer and diseases of the circulatory system (Figure 5). For all of the major condition groups, death rates in the Division were higher than or similar to Australia. Conversely, with the exception of respiratory diseases, the Division's death rates for the major conditions were lower than for those of country New South Wales.

The data on which the following chart is based are in Table 15.

**Figure 5: Deaths before 75 years of age by major condition group and selected cause, Murrumbidgee DGP‡, country New South Wales and Australia, 2000-02\***

*Indirectly age standardised rate per 100,000 population*

■ Murrumbidgee 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 17-18. The data on which the following charts are based are in Table 16.

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 the Division had lower rates, when compared with the population in Australia, for respiratory system diseases, diabetes type 2, mental and behavioural disorders, osteoarthritis and osteoporosis (females) (Figure 6); that is, the prevalence rates per 1,000 population were lower.

### Prevalence estimates: self-reported health‡

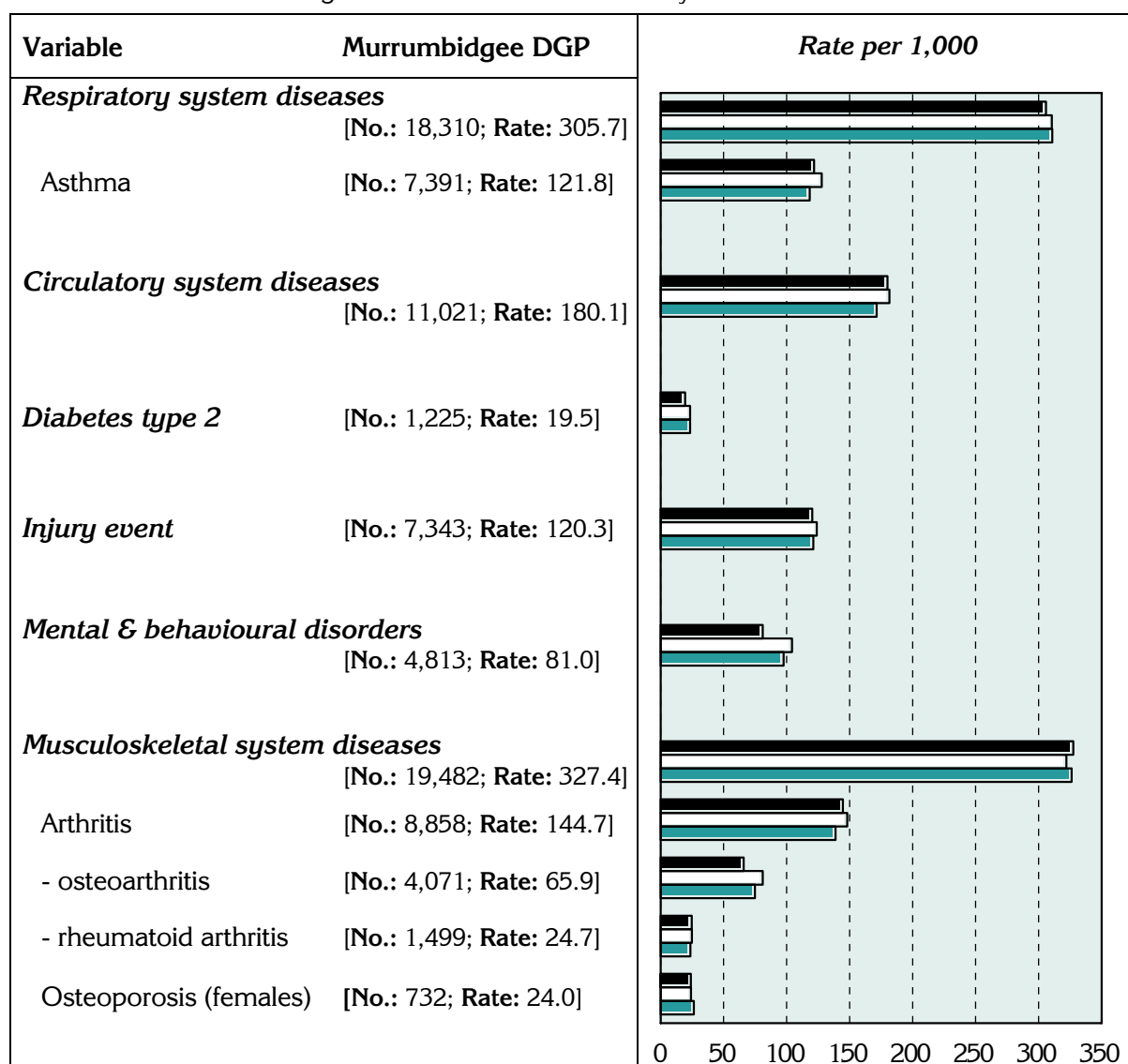
The NHS includes two measures of self-reported health. One is the Kessler Psychological Distress Scale-10 items (K-10). This is a scale of non-specific psychological distress based on 10 questions about negative emotional states in the four weeks prior to interview, asked of respondents 18 years and 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 relatively fewer people with very high psychological distress levels as measured by the K-10 (Figure 7) compared to Australia. The proportion of the population aged 15 years and over estimated to have reported their health as ‘fair’ or ‘poor’ was higher than the rate for Australia.

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

**Figure 6: Estimates\* of chronic disease and injury, Murrumbidgee DGP‡, country New South Wales and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

■ Murrumbidgee DGP    □ Country NSW    ■ Australia



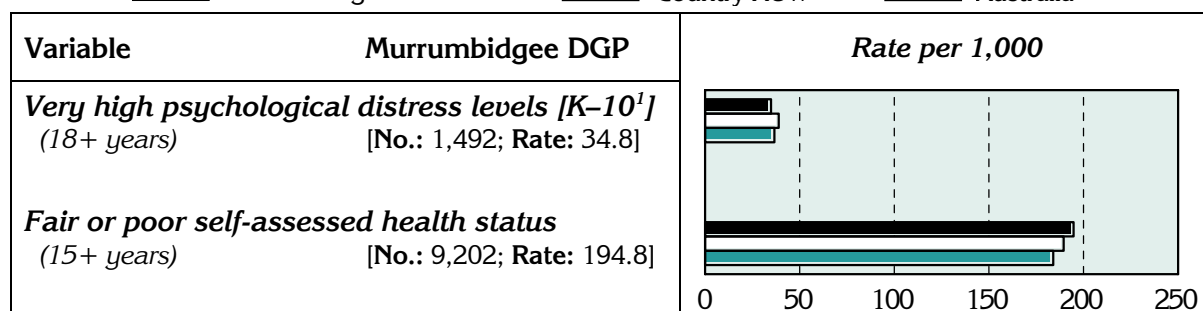
\* 'No.' is a weighted estimate of the number of people in Murrumbidgee DGP reporting each chronic condition and is derived from synthetic predictions from the 2001 NHS

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

**Figure 7: Estimates\* of measures of self-reported health, Murrumbidgee DGP‡, country New South Wales and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

■ Murrumbidgee DGP    □ Country NSW    ■ Australia



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

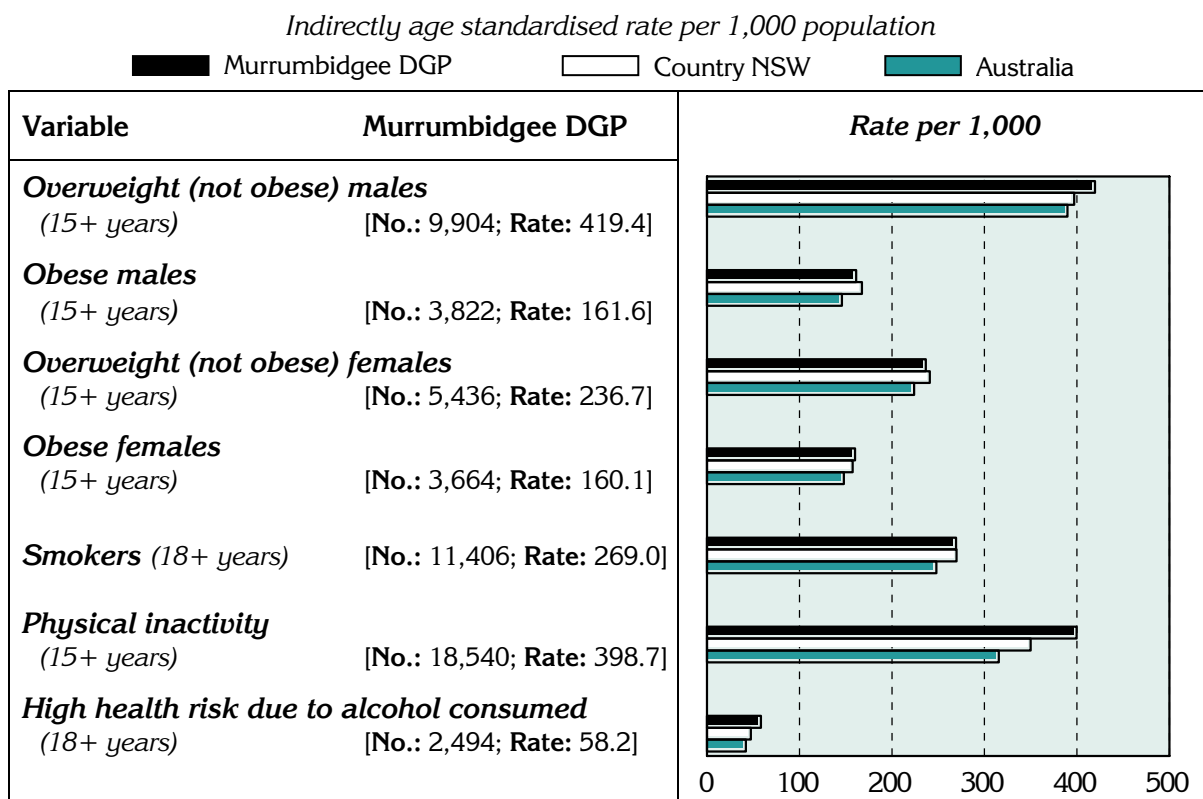
<sup>1</sup> Kessler 10

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

## Prevalence estimates: risk factors‡

The higher rates (when compared with the Australian population) for all of the selected risk factors (Figure 8) are consistent with the socioeconomic profile of the population of the Division.

**Figure 8: Estimates\* of selected risk factors, Murrumbidgee DGP‡, country New South Wales and Australia, 2001**



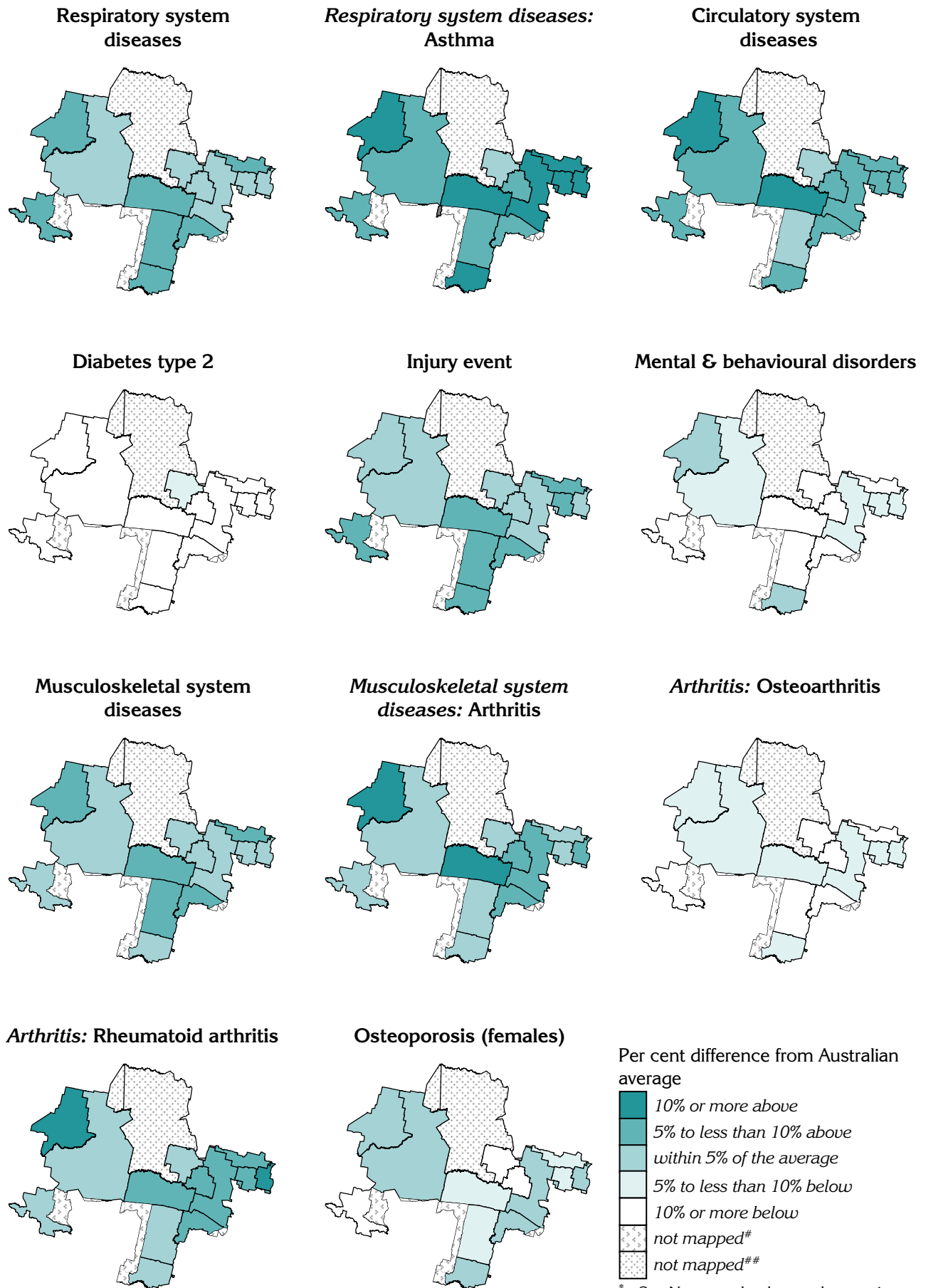
\* 'No.' is a weighted estimate of the number of people in Murrumbidgee DGP with these risk factors and has been predicted using data from the 2001 NHS and known data for the Division

‡ 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 14, page 21, 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, Murrumbidgee DGP, 2001

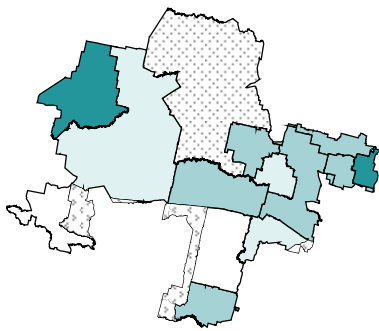


\* See Notes on the data re these estimates.  
 # Data not mapped: see 'Data converters and mapping' section under Notes on the data.  
 \*\* Estimates not available for remote areas

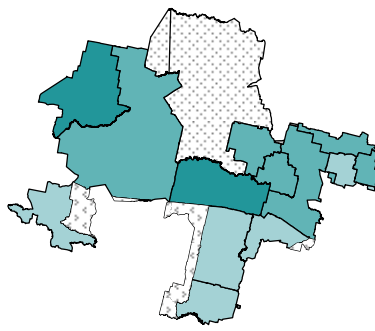


**Map 3: Estimates\* of measures of self-reported health by SLA, Murrumbidgee DGP, 2001**

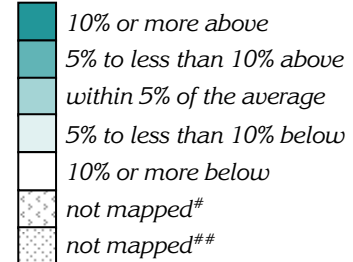
**Very high psychological distress levels [K-10<sup>1</sup>] (18+ years)**



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



Per cent difference from Australian average

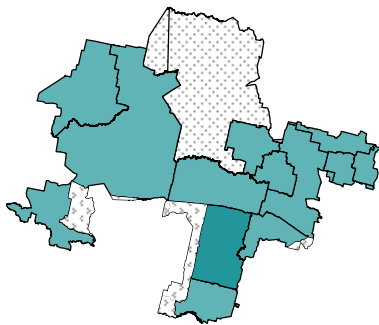


\* See Notes on the data re these estimates.  
 # Data not mapped: see 'Data converters and mapping' section under Notes on the data.  
 ## Estimates not available for remote areas

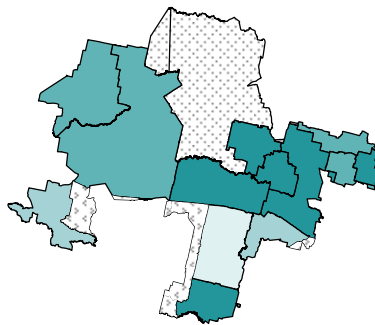
<sup>1</sup> Kessler 10

**Map 4: Estimates\* of selected risk factors by SLA, Murrumbidgee DGP, 2001**

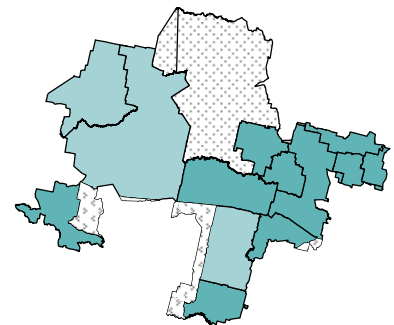
**Overweight (not obese) males (15+ years)**



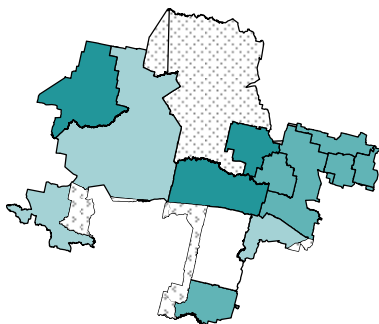
**Obese males (15+ years)**



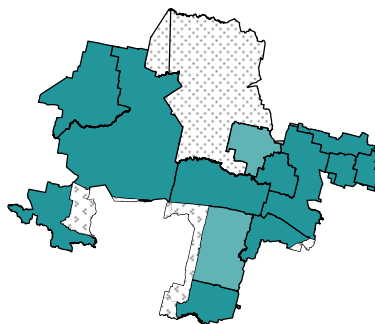
**Overweight (not obese) females (15+ years)**



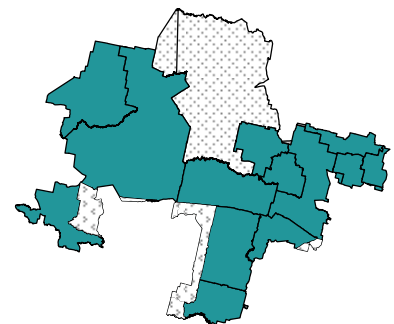
**Obese females (15+ years)**



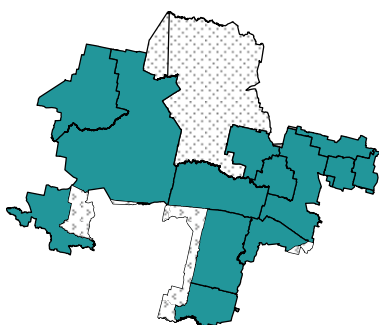
**Smokers (18+ years)**



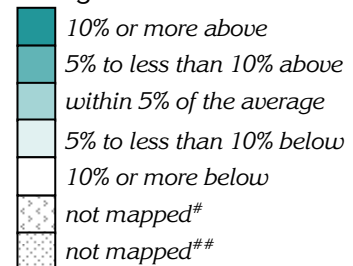
**Physical inactivity (15+ years)**



**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

# 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 10 details the data sources for the material presented in this profile.

**Table 10: 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 and 2; Table 1	Estimated Resident Population, ABS, 30 June for the periods shown
Tables 2, 3 and 4; Figures 3 and 4	Data were extracted by postal area from the ABS Population Census 2001 <sup>1</sup> , except for the following indicators: - <i>Indigenous</i> – Experimental estimates of Aboriginal and Torres Strait Islander people, 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) - <i>Unemployment rate / Labour force participation</i> – extracted from <i>Small Area Labour Markets Australia</i> , June Quarter 2003, Department of Employment and Workplace Relations
Map 1; Table 12	ABS SEIFA package, Census 2001
Tables 5, 6 and 7	For all indicators, data were from the ABS Population Census 2001 (unpublished), except for the data in <i>Table 5</i> and the <i>Total population</i> figures which were based on the Experimental estimates of Aboriginal and Torres Strait Islander people, ABS 2001 (unpublished)
<b>General medical practitioner (GP): supply</b>	
Table 8	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>2</sup> , ABS Population Census 2001, scaled to 2003/04 - Usual Resident Population <sup>3</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 9	Australian Childhood Immunisation Register, Health Insurance Commission, 2003/04 (unpublished)
<b>Premature mortality</b>	
Figure 5; Table 15	ABS Deaths, 2000 to 2002
<b>Chronic diseases and associated risk factors<sup>4</sup></b>	
Figures 6, 7 and 8; Maps 2, 3 and 4; Table 16	Estimated from 2001 National Health Survey (NHS), ABS (unpublished)

<sup>1</sup> All data extracted from Usual Residents Profile, except for data variables only released in the Basic Community Profile

<sup>2</sup> *Census count* - those counted in the Division on Census night, including tourists, business people and other visitors

<sup>3</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>4</sup> See notes below

## Chronic diseases and associated risk factors

The data for chronic conditions and risk factors for SLAs 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 11 includes notes relevant to this data.

**Table 11: Notes on estimates of chronic diseases and associated risk factors**

Indicator	Notes on the data
<b>Estimates of chronic disease and injury</b> (Figure 6 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 7 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 8 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 13).

#### [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 14.

#### [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 12) 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 Murrumbidgee DGP are shown in Table 12.

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 12: SEIFA scores by SLA, Murrumbidgee DGP, 2001

SLA code	SLA name (% per cent of SLA in the Division)	Index score			
		Disadvantage	Advantage	Economic Resources	Education & Occupation
10300	Balranald (4.2)	964	923	935	916
10650	Berrigan (78.3)	1002	945	935	943
10800	Bland (8.4)	1010	935	912	942
11600	Carrathool (70.3)	986	936	951	907
12000	Coolamon (19.0)	1003	935	914	937
13450	Griffith (100.0)	972	952	981	931
13850	Hay (100.0)	967	929	923	931
14250	Jerilderie (100)	1029	969	969	944
14750	Leeton (100.0)	977	949	969	929
15550	Murrumbidgee (100.0)	964	937	976	902
15800	Narrandera (95.6)	965	931	943	922
17350	Temora (9.3)	982	921	899	934
17700	Urana (9.3)	983	922	911	913
<b>17754</b>	<b>Wagga Wagga - Part B (2.4)</b>	<b>1061</b>	<b>1002</b>	<b>979</b>	<b>1003</b>
17800	Wakool (18.3)	1012	942	928	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. 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)

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 14)

### Statistical geography of the Murrumbidgee DGP

The Murrumbidgee DGP covers 44,108 square kilometres based on 2001 SLA data.

The postcodes in the Division (as per the Department of Health and Ageing web site) are shown below (Table 13).

Table 13: Postcodes in Murrumbidgee 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*
2652	6	2703	100	2712	100
2665	100	2705	100	2713	100
2675	100	2706	100	2714	100
2680	100	2707	100	2716	100
2681	100	2711	100	2733	100
2700	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 equivalent to Local Government Areas. The SLAs, and the proportion of their population estimated to be in Murrumbidgee Division (based on their 2001 Census Population), are shown in Table 14.

**Table 14: SLAs in Murrumbidgee DGP by 2001 boundaries**

SLA code	SLA name	Per cent of the SLA's population in the Division*	Estimate of the SLA's 2004 population in the Division
10300	Balranald	4.2	114
10650	Berrigan	78.3	6,405
10800	Bland	8.4	550
11600	Carrathool	70.3	2,323
12000	Coolamon	19.0	781
13450	Griffith	100.0	24,870
13850	Hay	100.0	3,543
<b>13900</b>	<b>Holbrook</b>	<b>0.4</b>	<b>#</b>
14250	Jerilderie	100.0	1,880
<b>14300</b>	<b>Junee</b>	<b>1.1</b>	<b>67</b>
14750	Leeton	100.0	12,019
15550	Murrumbidgee	100.0	2,632
15800	Narrandera	95.6	6,295
17350	Temora	9.3	587
<b>17450</b>	<b>Tumbarumba</b>	<b>0.6</b>	<b>#</b>
17700	Urana	9.3	130
<b>17751</b>	<b>Wagga Wagga – Part A</b>	<b>0.1</b>	<b>#</b>
<b>17754</b>	<b>Wagga Wagga – Part B</b>	<b>2.4</b>	<b>110</b>
17800	Wakool	18.3	885

\* 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 data used in Figure 5 to illustrate the rates of premature mortality in the Division are shown below in Table 15.

**Table 15: Rates of premature mortality, Murrumbidgee DGP‡, country New South Wales, and Australia, 2000-02\***

*Indirectly age standardised rate per 100,000 population*

Variable	Murrumbidgee DGP‡		Country NSW		Australia	
	No.	Rate	No.	Rate	No.	Rate
<b>Circulatory system diseases</b>	139	75.6	6,468	83.4	38,357	72.3
Ischaemic heart disease	85	46.2	3,929	50.6	23,364	44.1
Cerebrovascular disease – stroke	24	12.8	1,080	13.8	6,920	13.0
<b>Cancer</b>	209	114.3	9,113	119.2	60,603	114.3
Cancer of the trachea, bronchus & lung	51	27.6	1,980	25.4	12,715	24.0
<b>Respiratory system diseases</b>	45	24.3	1,700	21.7	9,726	18.3
Chronic lower respiratory disease	34	18.0	1,209	15.3	6,657	12.6
<b>Injuries and poisonings</b>	62	37.4	2,541	39.5	18,573	35.0
Suicide	17	10.6	888	14.0	6,706	12.6
Motor vehicle accidents	20	11.9	809	12.7	5,014	9.5
<b>Other causes</b>	100	54.6	3,998	54.6	26,735	50.4
Diabetes mellitus	12	6.4	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 6), measures of self-reported health (Figure 7), and selected risk factors (Figure 8), are shown in Table 16 below.

**Table 16: Estimates of chronic disease and associated risk factors, Murrumbidgee DGP‡, country New South Wales and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

Variable	Murrumbidgee DGP‡	Country NSW	Australia
<b>Chronic disease and injury (Figure 6)</b>			
Respiratory system diseases	305.7	310.4	310.8
Asthma	121.8	127.9	118.3
Circulatory system diseases	180.1	181.6	171.5
Diabetes type 2	19.5	23.4	23.4
Injury event	120.3	124.0	121.2
Mental & behavioural disorders	81.0	104.3	97.6
Musculoskeletal system diseases	327.5	322.0	326.2
Arthritis	144.7	148.1	138.8
- Osteoarthritis	65.9	81.1	74.9
- Rheumatoid arthritis	24.7	24.8	23.6
Osteoporosis (females)	24.0	24.1	26.4
<b>Measures of self-reported health (Figure 7)</b>			
Very high psychological distress levels (18+ years)	34.8	38.9	36.6
Fair or poor self-assessed health status (15+ years)	194.8	189.5	184.0
<b>Risk factors (Figure 8)</b>			
Overweight (not obese) males (15+ years)	419.4	397.0	389.7
Obese males (15+ years)	161.6	167.5	145.9
Overweight (not obese) females (15+ years)	236.7	240.9	223.9
Obese females (15+ years)	160.1	157.5	148.0
Smokers (18+ years)	269.0	269.8	248.0
Physical inactivity (15+ years)	398.7	349.9	315.5
High health risk due to alcohol consumed (18+ years)	58.2	47.4	42.1

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



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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

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