

# Population health profile of the Murray Mallee

## Division of General Practice

Population Profile Series: No. 98

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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 Murray Mallee Division of General Practice

## Introduction

This profile has been designed to provide a description of the population of the Murray Mallee 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. country SA 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

<b>Location:</b>	South Australia	
<b>Division number:</b>	513	
<b>Population‡:</b>	<b>No.</b>	<b>%</b>
Total	31,201	
65+	4,978	16.0%
<25	9,959	31.9%
Indigenous	1,172	3.8%

**Disadvantage score<sup>1</sup>:** 945

### GP services per head of population:

Division‡	5.0
Australia	4.7

### Population per FTE GP:

Division‡	1,206
Australia	1,403

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

Division‡	339.1
Australia	290.1

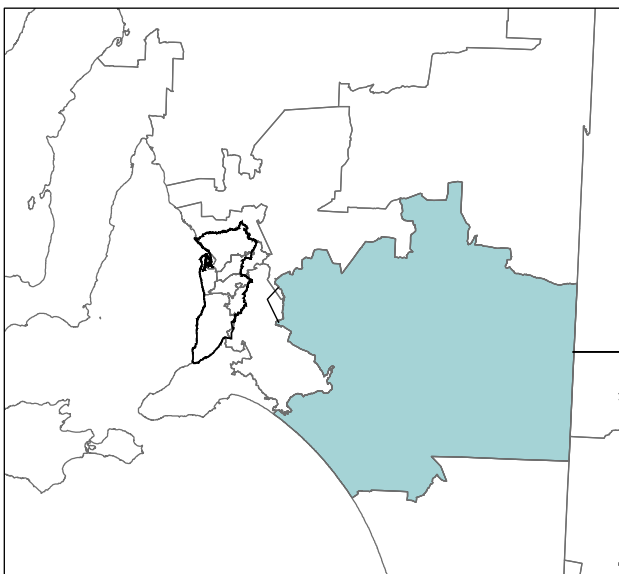
<sup>1</sup> Numbers above 1000 (the index score for Australia) indicate the Division is relatively advantaged

<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

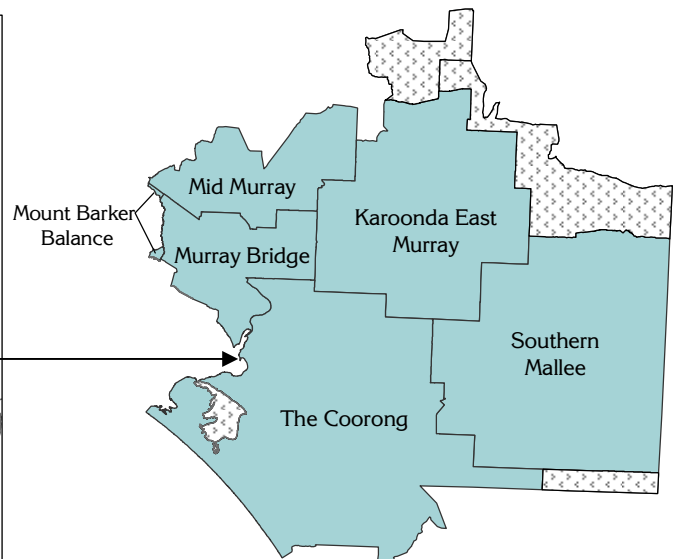
## Murray Mallee Division of General Practice

*SA Divisions of General Practice*



— SA Divisions of General Practice  
 — Adelaide Statistical Division

*Murray Mallee DGP by SLA*

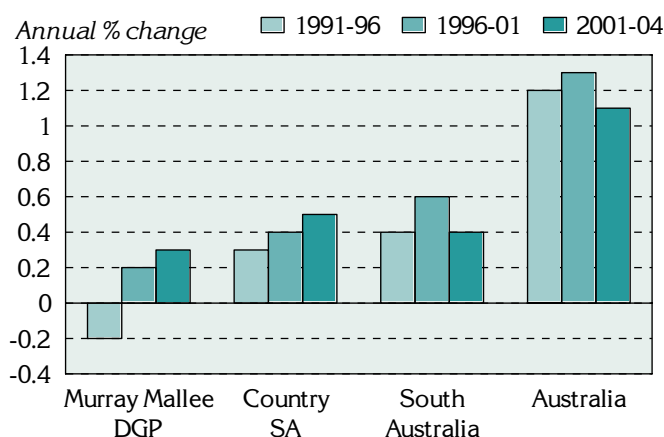


# Socio-demographic profile

## Population

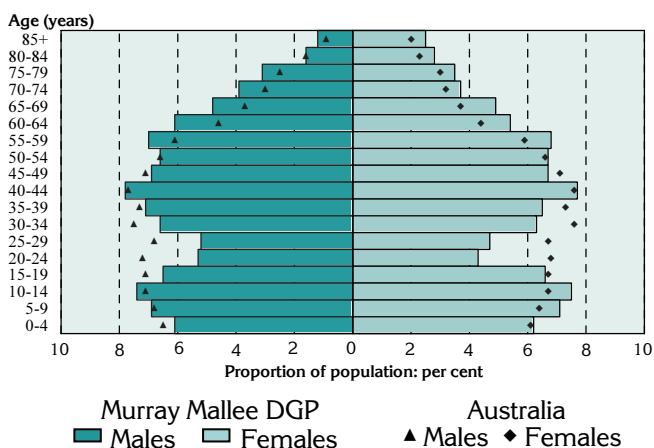
The Murray Mallee Division had an Estimated Resident Population of 31,201 at 30 June 2004.

**Figure 1: Annual population change, Murray Mallee DGP‡, country SA<sup>1</sup>, South Australia, and Australia, 1991 to 1996, 1996 to 2001 and 2001 to 2004**



Over the five years from 1991 to 1996, the Division's population decreased by 0.2% on average each year, compared to increases in country South Australia (0.3%), South Australia (0.4%). From 1996 to 2001, the annual increase in the Division was 0.2%, lower than for country South Australia and South Australia (0.4%). The Division's population increase of 0.3% from 2001 to 2004 was slightly lower than the annual increases in country South Australia (0.5%) and South Australia (0.4%).

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



The most notable differences in the age distribution of the Division's population (when compared to Australia overall) are:

- at younger ages – a lower proportion of male children aged 0 to 4 years, and higher proportions of female children aged 5 to 14 years;
- from 15 to 39 years – lower proportions of males (to 34 years) and females (from 20 years); and
- from 55 years – higher proportions of both males (except at ages 80 to 84 years) and females.

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

Age group (years)	Murray Mallee DGP		Australia	
	No.	%	No.	%
0-14	6,441	20.6	3,978,751	19.8
15-24	3,518	11.3	2,762,769	13.8
25-44	8,112	26.0	5,881,048	29.3
45-64	8,152	26.1	4,864,037	24.2
65-74	2,699	8.6	1,374,792	6.8
75-84	1,716	5.5	934,505	4.7
85+	563	1.8	295,602	1.5
<b>Total</b>	<b>31,201</b>	<b>100.0</b>	<b>20,091,504</b>	<b>100.0</b>

As shown in the age-sex pyramid above, the Murray Mallee DGP had fewer young people aged 15 to 24 years (11.3%) and people in the 25 to 44 years age groups (26.0%) compared to Australia as a whole (with 13.8% and 29.3%) (Table 1). Conversely, the proportions of the Division's population aged 45 years and over were higher than those for Australia.

The Murray Mallee DGP comprised 3.0% of people born in predominately non-English speaking countries and resident in Australia for five years or more (Table 2), below the proportion in country South Australia (3.6%) and notably lower than that for South Australia (8.8%). Recent arrivals (those resident in Australia for less than five years) from predominately non-English speaking countries comprised 0.3% of the Division's population, the same as country South Australia.

<sup>1</sup>References to 'country South Australia' relate to South Australia excluding the Adelaide Statistical Division  
 ‡ See note under 'Data converters and mapping' re calculation of Division totals on this page

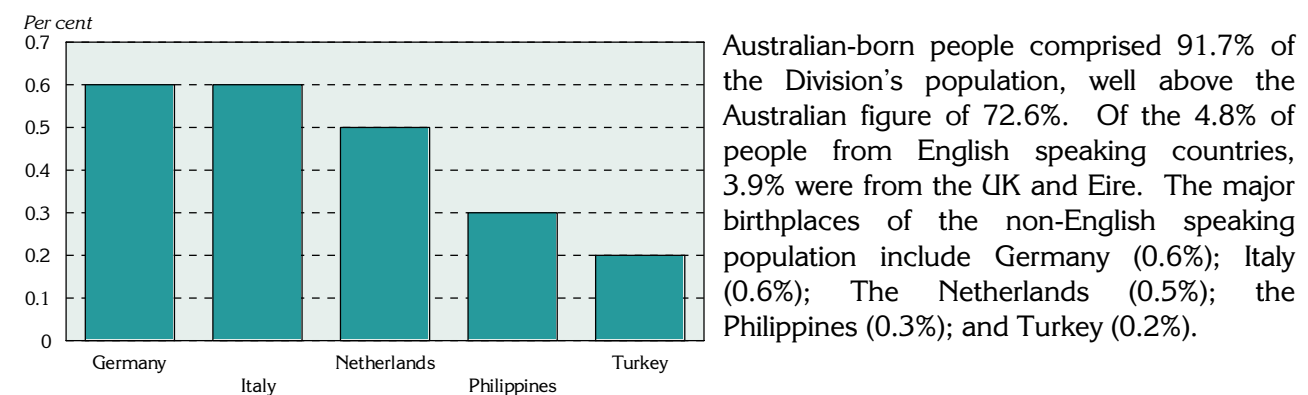
Of these residents, 0.3% had poor proficiency in English (determined when people aged five years and over born overseas in predominately non-English speaking countries reported in the Census speaking another language and speaking English 'not well' or 'not at all'), a smaller proportion than country South Australia (0.4%), South Australia (1.8% ) and Australia (2.4%).

**Table 2: Non-English speaking born, Murray Mallee DGP, country South Australia, South Australia and Australia, 2001**

People born in predominately non-English speaking countries	Murray Mallee DGP		Country SA		South Australia		Australia	
	No.	%	No.	%	No.	%	No.	%
Resident in Australia for five years or more	912	3.0	14,103	3.6	129,414	8.8	2,019,410	10.8
Resident in Australia for less than five years	80	0.3	1,124	0.3	17,145	1.2	408,074	2.2
Poor proficiency in English <sup>1</sup>	95	0.3	1,397	0.4	24,927	1.8	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, Murray Mallee DGP, 2001**



## 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 Murray Mallee DGP had slightly higher proportions of single parent families (10.4%) and Aboriginal and Torres Strait Islanders (3.8%) compared to country South Australia as a whole (with 9.7% and 3.5%, respectively), (Figure 4, Table 3).

Full-time secondary school education participation of 16 year olds living in the Division (74.9%) was marginally lower than that for country South Australia (78.3%).

A slightly higher proportion of households received rent assistance from Centrelink (11.3%) than in country South Australia (10.5%), and there were more notably dwellings rented from the State housing authority (7.9%, compared to 6.7%). The proportion of dwellings with no access to a motor vehicle (8.1%) was higher than that for country South Australia (7.4%), but lower than for South Australia (9.9%).

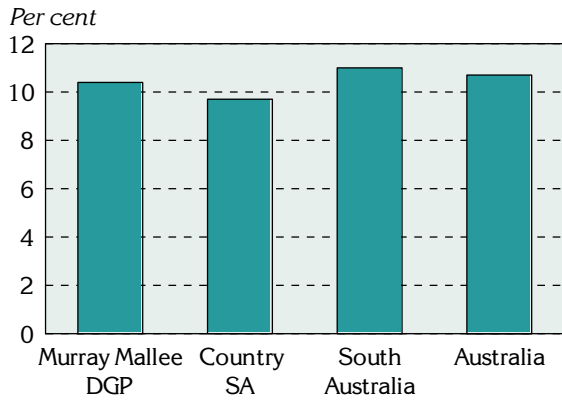
The Division had slightly lower proportions of people who reported using, at home, a computer (33.4%) and the Internet (17.0%), compared to country South Australia (36.3% and 19.9%).

These socioeconomic indicators show the Division to comprise a population of below average socioeconomic status: see also the note on page 5 (Summary of socioeconomic ranking).

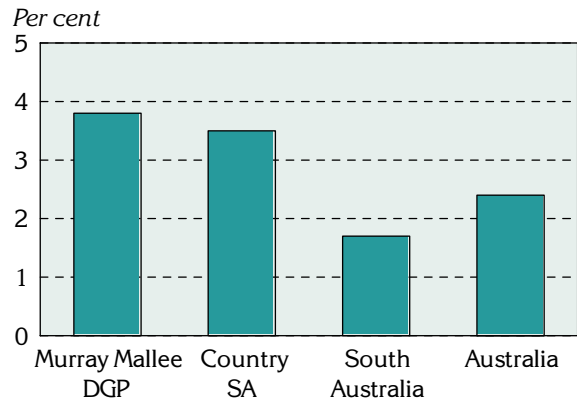
**Figure 4: Socio-demographic indicators, Murray Mallee DGP, country South Australia, South Australia and Australia, 2001**

*Note the different scales*

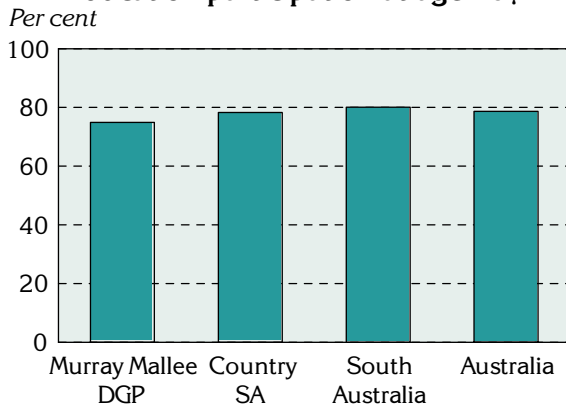
**Single parent families**



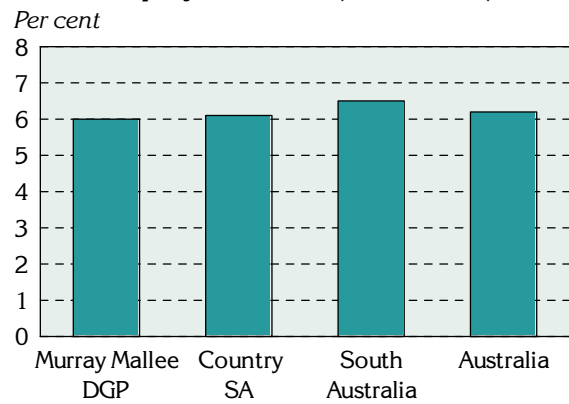
**Indigenous‡**



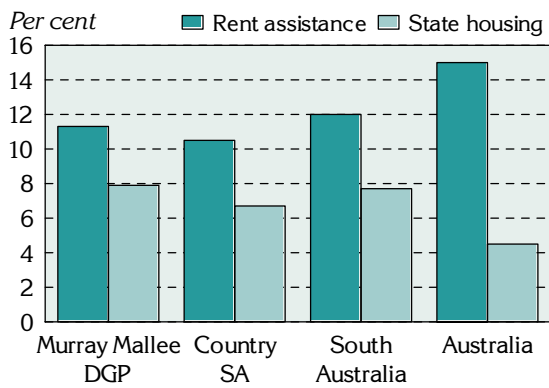
**Education participation at age 16‡**



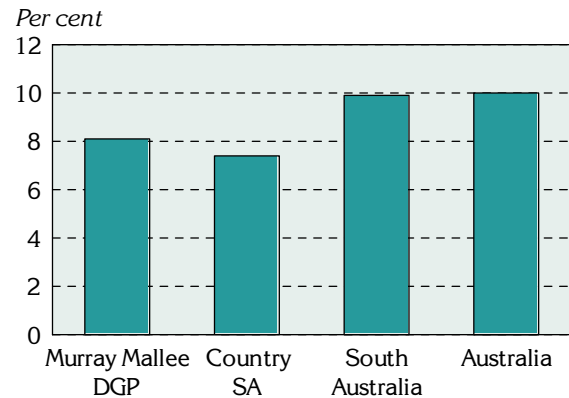
**Unemployment rate (June 2003)‡**



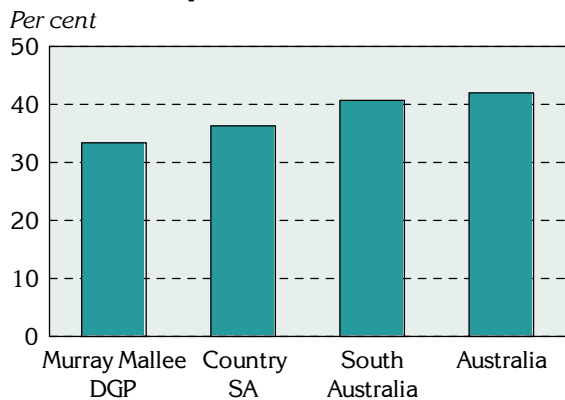
**Households receiving rent assistance & Dwellings rented from State housing authority**



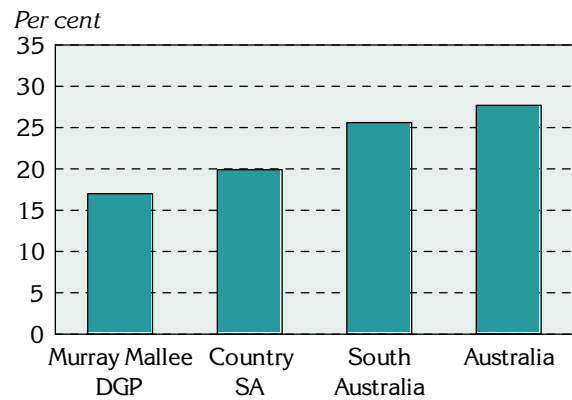
**Dwellings with no motor vehicle**



**Computer use at home**



**Internet use at home**



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

**Table 3: Socio-demographic indicators, Murray Mallee DGP, country South Australia, South Australia and Australia, 2001**

Indicator	Murray Mallee DGP		Country South Australia		South Australia		Australia	
	No.	%	No.	%	No.	%	No.	%
Single parent families	839	10.4	10,351	9.7	43,741	11.0	529,969	10.7
Indigenous‡	1,172	3.8	13,602	3.5	25,542	1.7	458,261	2.4
Full-time secondary school education at age 16‡	307	74.9	4,410	78.3	16,341	80.1	130,198	78.7
Households: rent assistance	1,305	11.3	15,170	10.5	68,260	12.0	1,006,599	15.0
Dwellings: rented from the State housing authority	944	7.9	10,290	6.7	44,684	7.7	317,171	4.5
Dwellings: no motor vehicle	963	8.1	11,317	7.4	58,065	9.9	708,073	10.0
Computer use at home	10,012	33.4	142,671	36.3	594,355	40.7	7,881,983	42.0
Internet use at home	5,146	17.0	78,739	19.9	375,604	25.6	2,019,410	27.7

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

The unemployment rate of 6.0% in Murray Mallee DGP was similar to that for country South Australia (6.1%), and slightly lower than for South Australia (6.5%) (Figure 4, Table 4). The labour force participation rate (76.2%) was marginally higher than the rates for country South Australia and South Australia (75.2%, and 75.3%), while the female labour force participation rate (67.9%) was slightly lower than the rates for country South Australia (69.1%) and South Australia (70.4%).

**Table 4: Unemployment and labour force participation, Murray Mallee DGP, country South Australia, South Australia and Australia**

Labour force indicators	Murray Mallee DGP		Country South Australia		South Australia		Australia	
	No.	%	No.	%	No.	%	No.	%
Unemployment rate‡	900	6.0	11,828	6.1	49,292	6.5	623,791	6.2
Labour force participation‡	15,091	76.2	192,901	75.2	761,964	75.3	10,038,147	75.2
Female labour force participation (2001)	4,487	67.9	62,392	69.1	254,312	70.4	3,306,521	69.7

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

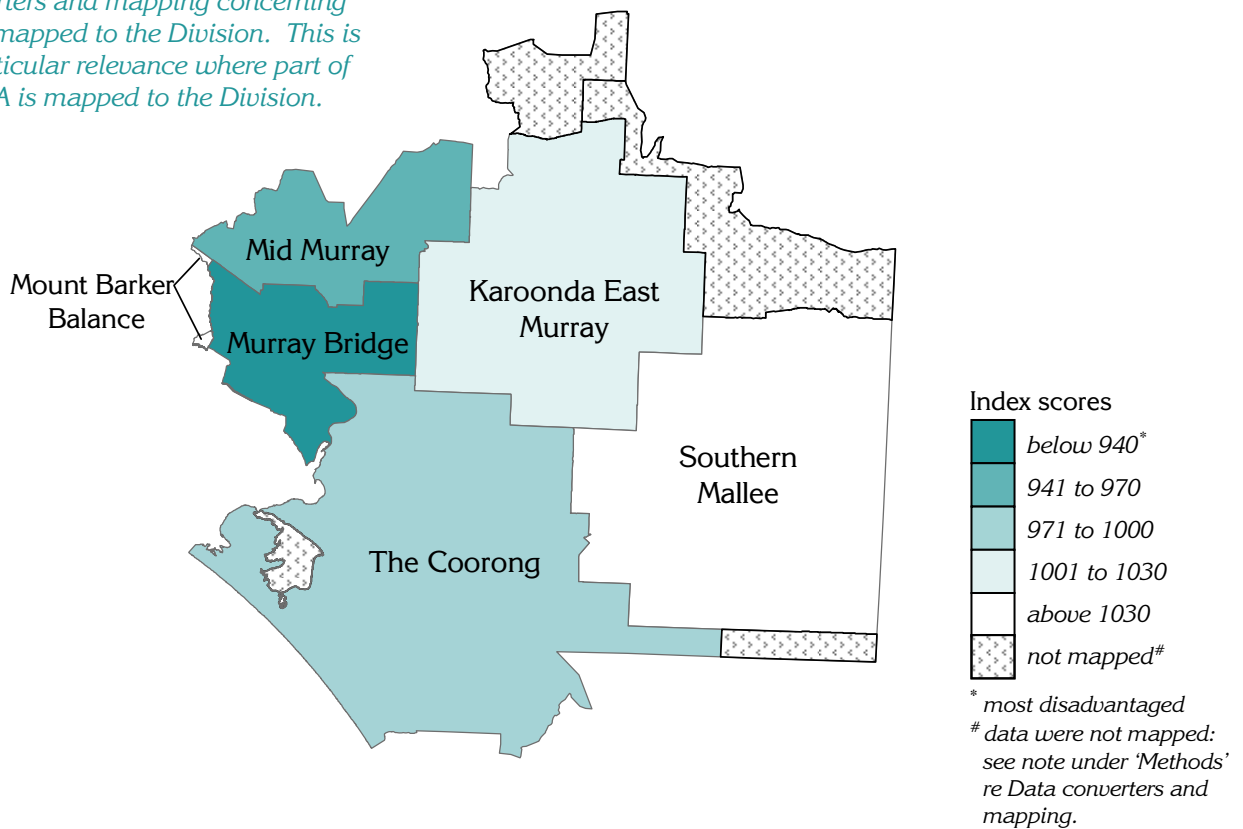
## Summary of the socioeconomic ranking of the Murray Mallee DGP

Following the 2001 Census, the Australian Bureau of Statistics (ABS) produced four socio-economic 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 Murray Mallee DGP are shown in the supporting information, Table 12, page 19: SLAs are described on page 20.

The Murray Mallee DGP area's SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) score is 945, well below (5.5%) the average score for Australia (1000), and below that for country South Australia (981); this highlights the relatively lower socioeconomic status profile of the Division's population. There are notable variations in the IRSD within the Division at the SLA level (Map 1), with Murray Bridge having the largest population and the lowest index score.

**Map 1: Index of Relative Socio-Economic Disadvantage by SLA, Murray Mallee 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, 3.8% of the population of the Murray Mallee DGP was estimated to be of Aboriginal or Torres Strait Islander origin, slightly higher than the proportion for South Australia as a whole (3.5%). The largest Indigenous populations were in Murray Bridge SLA (an estimated 770 people, 65.7% of the Indigenous population in the Division), and The Coorong SLA (314 people, 26.8%).

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

Statistical Local Area	Indigenous		Non-Indigenous		Total	
	No.	%	No.	%	No.	%
Murray Bridge	770	65.7	16,324	54.8	17,094	55.2
The Coorong	314	26.8	5,603	18.8	5,917	19.1
Mid Murray	63	5.4	4,091	13.7	4,154	13.4
Other	25	2.1	3,759	12.6	3,784	12.2
<b>Total</b>	<b>1,172</b>	<b>100.0</b>	<b>29,777</b>	<b>100.0</b>	<b>30,949</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 (29.4%) was marginally above the Indigenous rate in country South Australia (26.6%), and three times the rate of the Division's non-Indigenous population (9.9%) (Table 6).

Just over half of Indigenous 16 year olds living in the Division (53.2%) were involved in full-time secondary school education, marginally above the proportion for the Indigenous population in country South Australia (47.2%), and notably lower than the participation rate for the Division's non-Indigenous population (79.8%).

The proportion of the Division's Indigenous population who lived in dwellings rented from the State housing authority (35.1%) was higher than the Indigenous population in country South Australia (28.8%), and five times the rate for the Division's non-Indigenous population (7.0%).

A higher proportion of the Indigenous population in Murray Mallee DGP reported using a computer at home (13.6%) than for the Indigenous population in country South Australia (11.2%), but substantially lower than for the Division's non-Indigenous (35.7%).

**Table 6: Socio-demographic indicators, Murray Mallee DGP‡, country South Australia and Australia, 2001**

Indicator	Murray Mallee‡		Country SA		Australia	
	No.	%	No.	%	No.	%
Population						
- Indigenous	1,172	3.8	13,602	3.5	458,261	2.4
- Non-Indigenous	29,777	96.2	379,638	96.5	18,952,407	97.6
Single parent families						
- Indigenous	69	29.4	777	26.6	26,587	25.8
- Non-Indigenous	775	9.9	9,574	9.2	503,382	10.4
Full-time secondary school education at age 16						
- Indigenous	12	53.2	135	47.2	5,997	50.5
- Non-Indigenous	290	79.8	4,231	81.6	327,055	80.3
Dwellings rented from State housing authority						
- Indigenous	99	35.1	924	28.8	23,974	20.8
- Non-Indigenous	763	7.0	9,127	6.5	284,502	4.5
People who used a computer at home						
- Indigenous	143	13.6	1,383	11.2	73,636	18.0
- Non-Indigenous	9,973	35.7	140,541	38.3	7,761,390	44.1
People who used the Internet at home						
- Indigenous	43	4.0	505	4.1	35,384	8.6
- Non-Indigenous	5,140	18.4	78,042	21.3	5,135,445	29.2

Note: The 'Total population' data is 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 proportion of the Indigenous population in the Division who used the Internet at home (4.0%) was consistent with the Indigenous rate for country South Australia (4.1%), but was less than one quarter the rate for the Division's non-Indigenous population (18.4%) (Table 6).

The Murray Mallee DGP's Indigenous population had an unemployment rate of 14.8%, slightly below that for the Indigenous population in country South Australian (16.6%), but markedly higher than the rate for the Division's non-Indigenous population (8.0%) (Table 7). Taking into account the Indigenous people 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 was a much higher 41.8%, lower than the 'real' Indigenous unemployment rate in country South Australia (47.9%), but higher than the rate for Australia (34.2%).

The Indigenous labour force participation rate (52.8%) was similar to the Indigenous rate for country South Australia (50.1%), but was substantially lower than the rate for the Division's non-Indigenous population (71.2%). The Indigenous female labour force participation rate (50.5%) was higher than that for country South Australia (45.7%), but was just two thirds that of the Division's non-Indigenous female population (68.0%).

**Table 7: Unemployment and labour force participation, Murray Mallee DGP‡, country South Australia and Australia, 2003**

Labour force indicators	Murray Mallee DGP‡		Country South Australia		Australia	
	No.	%	No.	%	No.	%
Unemployment rate						
- Indigenous	47	14.8	609	16.6	24,930	20.0
- Non-Indigenous	1,016	8.0	11,576	6.8	624,337	7.3
Labour force participation*						
- Indigenous	318	52.8	3,665	50.1	124,517	52.4
- Non-Indigenous	12,728	71.2	171,285	72.3	8,609,525	72.9
Female labour force participation*						
- Indigenous	140	50.5	1,558	45.7	52,981	46.6
- Non-Indigenous	4,756	68.0	65,956	68.9	3,564,409	69.8
Indigenous unemployment rate						
- excluding CDEP	47	14.8	609	16.6	24,930	20.0
- CDEP	86	27.0	1,148	31.3	17,662	14.2
- Total (including CDEP)	133	41.8	1,757	47.9	45,592	34.2

\* Includes people paid through Community Development Employment Projects

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

## General medical practitioner (GP) supply

A total of 25.8 full-time equivalent (FTE) GPs and 29.9 full-workload equivalent (FWE<sup>2</sup>) GPs worked in the Murray Mallee DGP in 2003/04 (Table 8). Of the FWE GPs, 28.2% were female, and 15.0% were over 55 years of age (compared to 23.4% and 30.5%, respectively, for South Australia).

There was minimal variation in the rates of population per FTE and FWE GP for the population measures shown, other than for the estimated day-time population, for which rates were 2.1% below those calculated on the Usual Resident Population (usual residents of the Division counted in Australia on Census night). The rates of population per FWE GP were lower than the FTE rates.

Based on the Estimated Resident Population as at 30 June 2003 and 2004, the rates of population per GP in Murray Mallee DGP were lower than the rates for South Australia and Australia, indicating a higher level of provision of GP services in the Division.

**Table 8: Population per GP in Murray Mallee DGP, South Australia and Australia, 2003/04**

Population measure	Population	GPs		Population per GP	
		FTE	FWE	FTE	FWE
<b>Murray Mallee DGP</b>					
Census count (URP) (adjusted)*	30,044	25.8	29.9	1,164	1,005
Usual Resident Population (adjusted)*	30,239	..	..	1,171	1,012
Estimated Resident Population (ERP)	31,129	..	..	1,206	1,041
Day-time population (estimated on URP)* ‡	29,597	..	..	1,146	990
<b>South Australia (ERP)</b>	1,530,276	1,181	1,354	1,296	1,130
<b>Australia (ERP)</b>	19,989,303	14,246	16,872	1,403	1,185

\* 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 94.7% of children in the Division in 2002 were fully immunised at age one, just 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. The proportion of children in the Division who were immunised by a general practitioner was 80.2% compared to 70.0% for Australia, with 16.8% immunised at a community health centre or by a community health worker.

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

Provider	Murray Mallee DGP	Australia
	%	%
General practitioner	80.2	70.0
Local government council	3.0	16.6
Community health centre / worker	16.8	9.8
Public hospital	0.0	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>5,800</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.

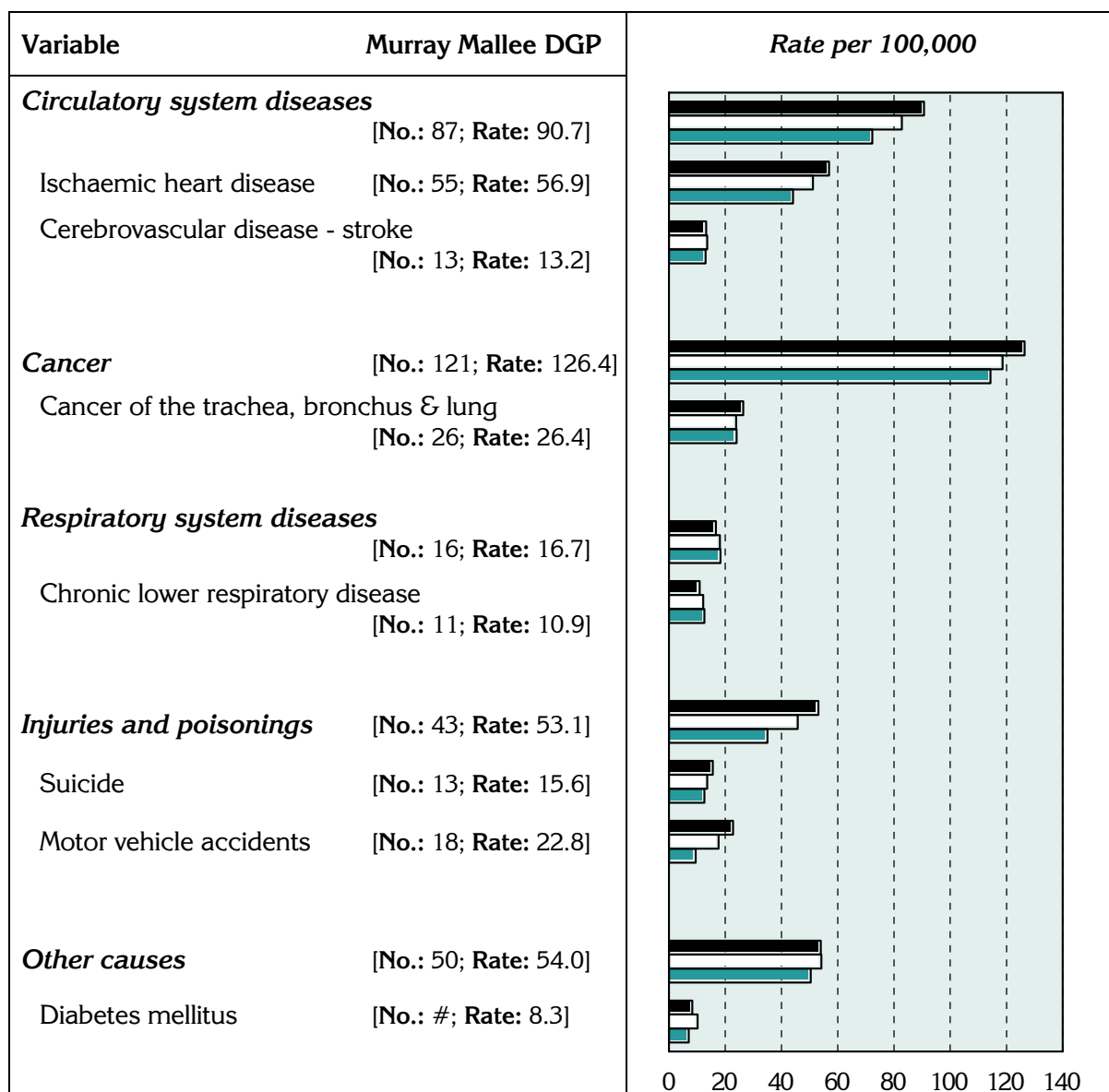
The 'all causes' death rate in the Division at ages 0 to 74 years (339.1 deaths per 100,000 population) is higher than the rates in country South Australia (318.6) and Australia (290.4): the rates have been age standardised to allow for comparisons between areas, regardless of differences in age profiles between the Division and Australia.

The major causes of premature mortality in the Division, as for country South Australia and Australia as a whole, are cancer and diseases of the circulatory system (Figure 5). With the exception of respiratory system diseases (including chronic lower respiratory disease), death rates in the Division were higher for all of the major conditions and selected causes than for Australia. The Division's death rates were also higher than those for country South Australia, apart from respiratory diseases and the 'other causes' group, including diabetes mellitus. The data on which the following chart is based are in Table 14.

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

*Indirectly age standardised rate per 100,000 population*

■ Murray Mallee DGP      □ Country SA      ■ Australia



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

# not shown, as there are less than 10 cases over the period

‡ 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 15.

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) and 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 asthma, diabetes type 2 and osteoporosis (females), relatively more people in Murray Mallee DGP reported having any of the selected chronic conditions than in Australia as a whole (Figure 6): that is, the prevalence rates per 1,000 population were higher. The generally higher rates are consistent with the socioeconomic profile of the population of the Division.

### 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.

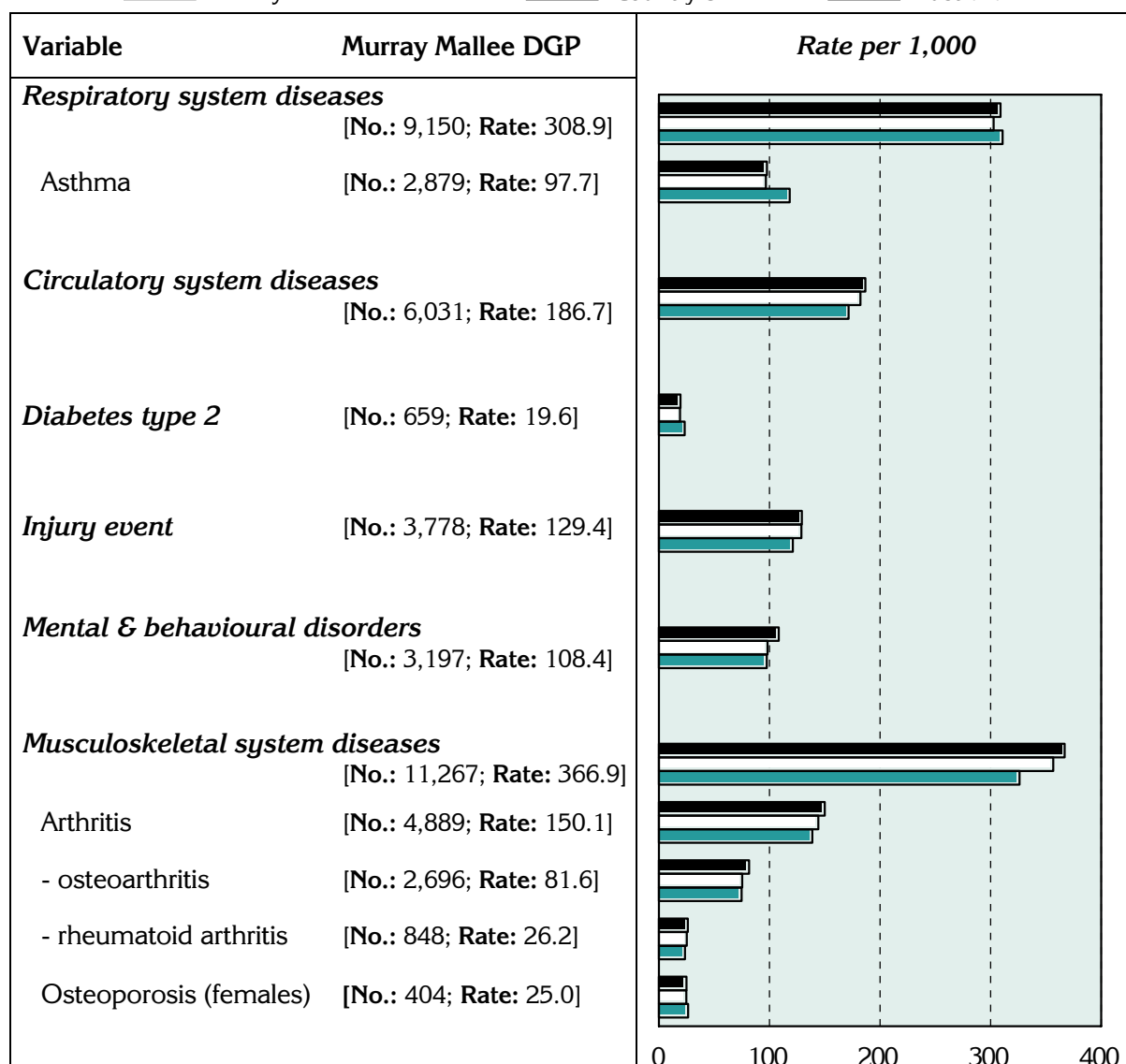
The population of the Division aged 18 years and over is estimated to have more people with very high psychological distress levels as measured by the K-10 compared to Australia as a whole (Figure 7). The proportion of the population aged 15 years and over estimated to have reported their health as ‘fair’ or ‘poor’ is markedly above the national average.

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

**Figure 6: Estimates\* of chronic disease and injury, Murray Mallee DGP‡, country South Australia and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

■ Murray Mallee DGP    □ Country SA    ■ Australia



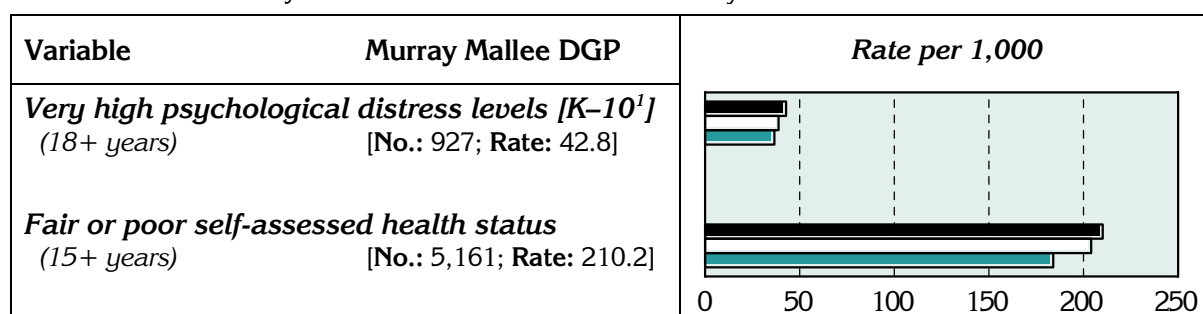
\* 'No.' is a weighted estimate of the number of people in Murray Mallee DGP reporting each chronic condition and is derived from synthetic predictions from the 2001 NHS

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

**Figure 7: Estimates\* of measures of self-reported health by SLA, Murray Mallee DGP‡, country South Australia and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

■ Murray Mallee DGP    □ Country SA    ■ Australia



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

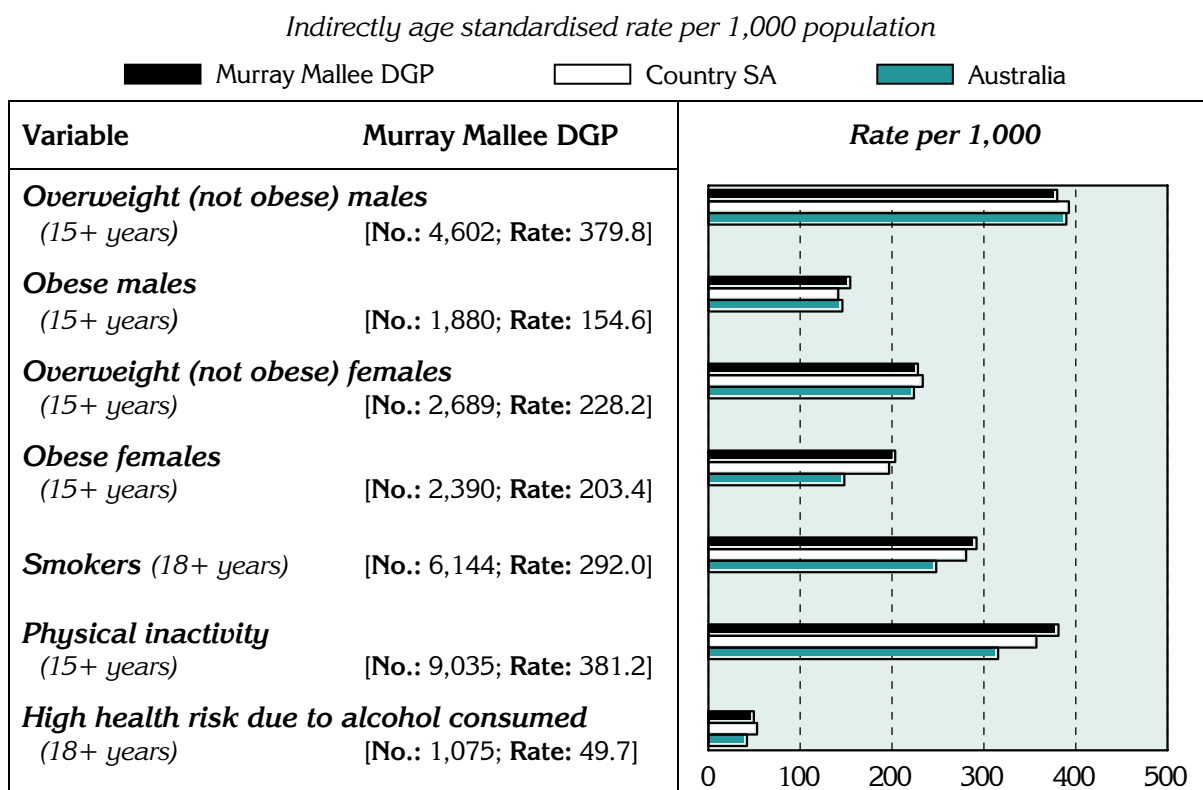
<sup>1</sup> Kessler 10

‡ 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, except for overweight in males (Figure 8), are consistent with the relatively lower socioeconomic status profile of the area.

**Figure 8: Estimates\* of selected risk factors, Murray Mallee DGP‡, country South Australia and Australia, 2001**



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

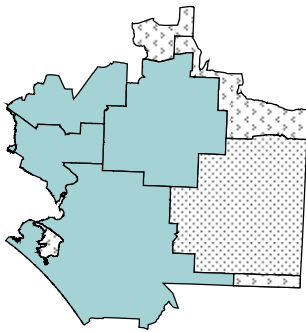
‡ See note under 'Data converters and mapping' re calculation of Division totals

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).

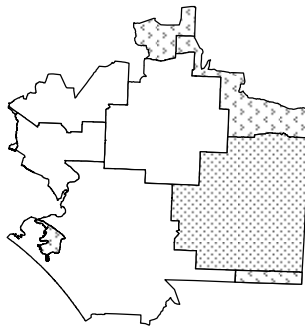
In the following maps, users should note that the estimates shown for part SLAs in the Division (see Table 13, page 20, for per cent of SLA population in the Division) represent the estimates for the whole SLA, and not just the part shown. However, SLAs with only a small proportion of their population 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, Murray Mallee DGP, 2001

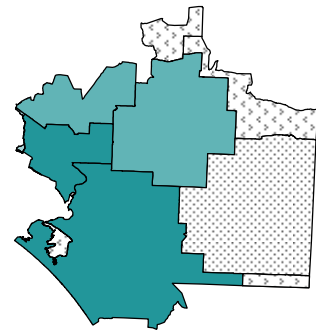
Respiratory system diseases



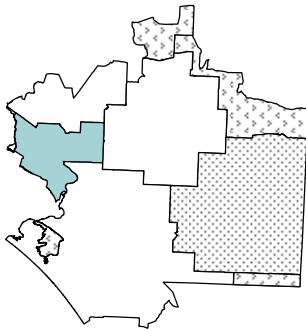
Respiratory system diseases: Asthma



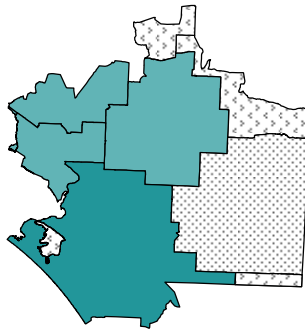
Circulatory system diseases



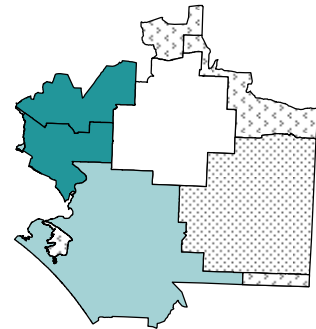
Diabetes type 2



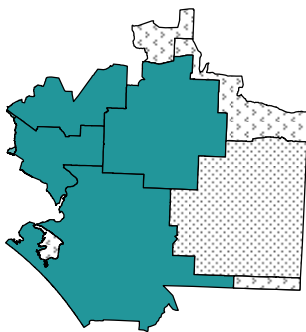
Injury event



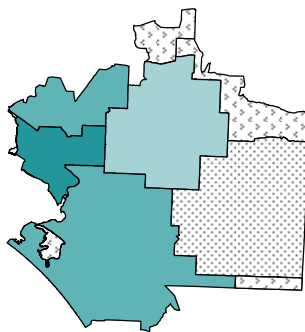
Mental & behavioural disorders



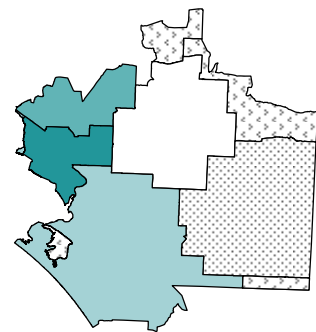
Musculoskeletal system diseases



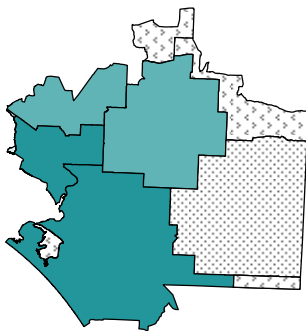
Musculoskeletal system diseases: Arthritis



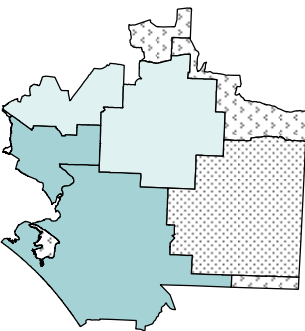
Arthritis: Osteoarthritis



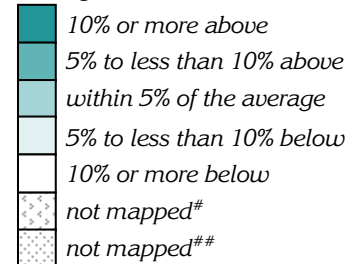
Arthritis: Rheumatoid arthritis



Osteoporosis (females)



Per cent difference from Australian average



\* See Notes on the data re these estimates.

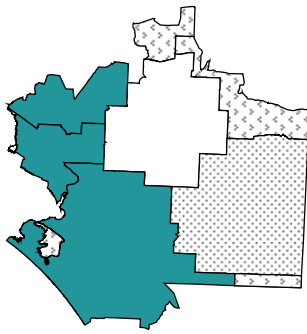
# Data not mapped: see 'Data converters and mapping' section under Notes on the data.

## Estimates not available for remote areas

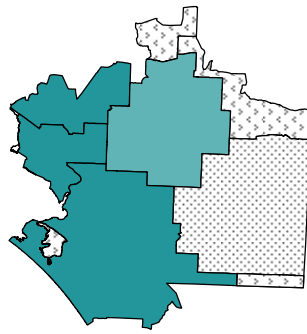


**Map 3: Estimates\* of measures of self-reported health by SLA, Murray Mallee DGP, 2001**

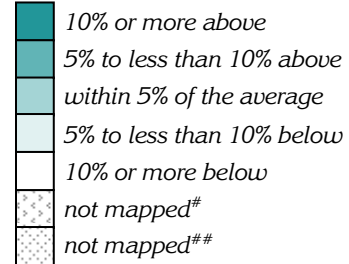
**Very high psychological distress levels [K-10<sup>1</sup>] (18+ years)**



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



Per cent difference from Australian average

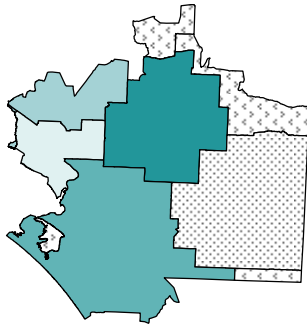


\* See Notes on the data re these estimates.  
 # Data not mapped: see 'Data converters and mapping' section under Notes on the data.  
 ## Estimates not available for remote areas

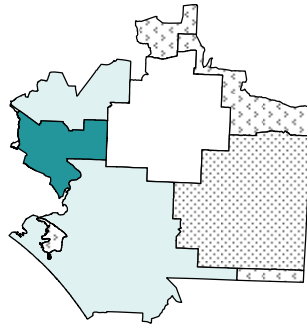
<sup>1</sup> Kessler 10

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

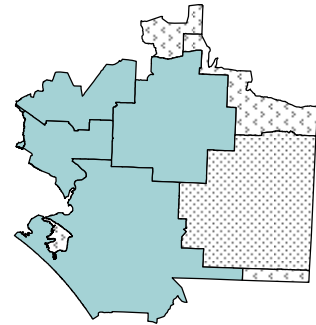
**Overweight (not obese) males (15+ years)**



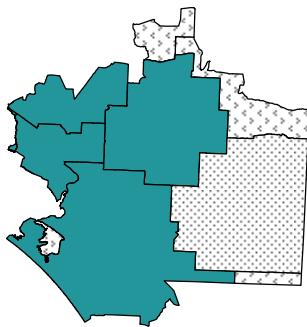
**Obese males (15+ years)**



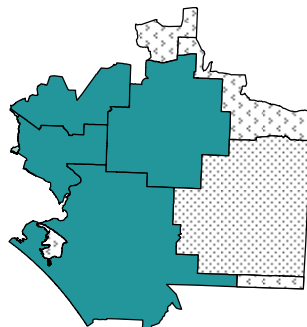
**Overweight (not obese) females (15+ years)**



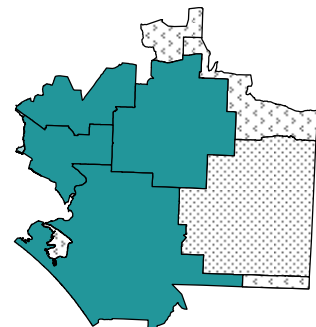
**Obese females (15+ years)**



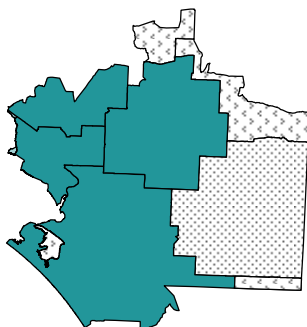
**Smokers (18+ years)**



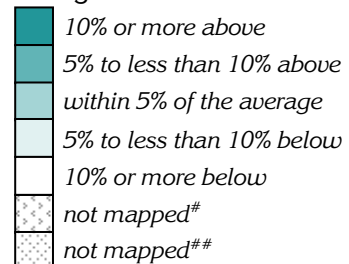
**Physical inactivity (15+ years)**



**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 South Australia' relate to South Australia excluding the Adelaide 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
Table 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 14	ABS Deaths, 2000 to 2002
<b>Chronic diseases and associated risk factors (see Notes Table 11)</b>	
Figures 6, 7 and 8; Maps 2, 3 and 4; Table 15	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

## 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	- Respondent's 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 (see page 20).

#### [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 13.

#### [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 Murray Mallee 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, Murray Mallee DGP, 2001

SLA code	SLA name (% per cent of SLA in the Division)	Index score			
		Disadvantage	Advantage	Economic Resources	Education & Occupation
43080	Karoonda East Murray (100.0)	1005	919	888	926
44210	Mid Murray (49.4)	957	887	876	901
44554	Mount Barker - Balance (2.3)	1052	1004	978	1011
45040	Murray Bridge (100.0)	917	880	898	881
47290	Southern Mallee (100.0)	1035	948	927	939
47800	The Coorong (100.0)	976	904	894	910

\* 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

## Statistical geography of the Murray Mallee DGP

The Murray Mallee DGP covers 24,072 square kilometres, based on 2001 SLA data.

The postcodes in the Division (all 100%) are: 5237-5238, 5253-5254, 5259-5261, 5264-5266, 5301, 5303-5304, and 5306-5310<sup>3</sup>.

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, Loxton Waikerie local government area (LGA) is split into two SLAs, Loxton Waikerie - East and Loxton Waikerie - West. Small parts of these SLAs and all or parts of the SLAs listed in Table 13 comprise the Division.

**Table 13: SLAs in Murray Mallee DGP, 2001**

SLA code	SLA name	Per cent of the SLA's population in the Division*	Estimate of the SLA's 2003 population in the Division
43080	Karoonda East Murray	100.0	1,198
44210	Mid Murray	49.4	4,166
44554	Mount Barker - Balance	2.3	196
45040	Murray Bridge	100.0	17,636
47290	Southern Mallee	100.0	2,206
47800	The Coorong	100.0	5,798

\* 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

## Supporting data

The data used in Figure 5 to illustrate the rates of premature mortality in the Division are shown below in Table 14.

**Table 14: Deaths before 75 years of age by major condition group and selected cause, Murray Mallee DGP‡, country South Australia, and Australia, 2000-02\***

*Indirectly age standardised rate per 100,000 population*

Variable	Murray Mallee DGP		Country South Australia		Australia	
	No.	Rate	No.	Rate	No.	Rate
<b>Circulatory system diseases</b>	87	90.7	1,018	82.8	38,357	72.3
Ischaemic heart disease	55	56.9	631	51.2	23,364	44.1
Cerebrovascular disease – stroke	13	13.2	168	13.6	6,920	13.0
<b>Cancer</b>	121	126.4	1,453	118.6	60,603	114.3
Cancer of the trachea, bronchus & lung	26	26.4	296	23.9	12,715	24.0
<b>Respiratory system diseases</b>	16	16.7	223	18.1	9,726	18.3
Chronic lower respiratory disease	11	10.9	151	12.2	6,657	12.6
<b>Injuries and poisonings</b>	43	53.1	488	45.8	18,573	35.0
Suicide	13	15.6	145	13.6	6,706	12.6
Motor vehicle accidents	18	22.8	183	17.6	5,014	9.5
<b>Other causes</b>	50	54.0	637	54.2	26,735	50.4
Diabetes mellitus	#	8.3	126	10.2	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

# not shown, as there are less than 10 cases over the period

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

<sup>3</sup> As per the 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>

The rates used to illustrate the prevalence estimates of chronic disease and injury (Figure 6), measures of self-reported health (Figure 7), and selected risk factors (Figure 8), are shown in Table 15 below.

**Table 15: Estimates of chronic disease and associated risk factors, Murray Mallee DGP‡, country South Australia and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

Variable	Murray Mallee DGP	Country SA	Australia
<b>Chronic disease and injury (Figure 6)</b>			
Respiratory system diseases	308.9	302.7	310.8
Asthma	97.7	96.8	118.3
Circulatory system diseases	186.7	182.2	171.5
Diabetes type 2	19.6	19.2	23.4
Injury event	129.4	128.9	121.2
Mental & behavioural disorders	108.4	98.3	97.6
Musculoskeletal system diseases	366.9	356.6	326.2
Arthritis	150.1	144.2	138.8
- Osteoarthritis	81.6	75.3	74.9
- Rheumatoid arthritis	26.2	25.3	23.6
Osteoporosis (females)	25.0	24.8	26.4
<b>Measures of self-reported health (Figure 7)</b>			
Very high psychological distress levels (18+ years)	42.8	38.8	36.6
Fair or poor self-assessed health status (15+ years)	210.2	204.1	184.0
<b>Risk factors (Figure 8)</b>			
Overweight (not obese) males (15+ years)	379.8	392.6	389.7
Obese males (15+ years)	154.6	141.4	145.9
Overweight (not obese) females (15+ years)	228.2	233.4	223.9
Obese females (15+ years)	203.4	196.8	148.0
Smokers (18+ years)	292.0	280.6	248.0
Physical inactivity (15+ years)	381.2	357.1	315.5
High health risk due to alcohol consumed (18+ years)	49.7	53.0	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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