Population health profile of the

Mid North Rural

Division of General Practice

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Population health profile
of the *Mid North Rural Division of General Practice*

Introduction

This profile has been designed to provide a description of the population of the Mid North Rural 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 17.

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 South Australia and Australia). Specific topics covered include:

- a socio-demographic profile (pages 2-6);

- GP workforce data (page 7);

- immunisation rates (page 7);

- rates of premature death (page 8); and

- estimates of the prevalence of chronic disease and selected risk factors (pages 9-13).

Key indicators

Location:	South Australia	
Division number:	508	
Population‡:	**No.**	**%**
Total	45,856	
65+	7,895	17.2%
<25	14,316	31.2%
Indigenous	744	1.6%

Disadvantage score[1]:   971

GP services per head of population:

Division‡	4.0
Australia	4.7

Population per FTE GP:

Division‡	1,430
Australia	1,403

Premature death rate[2]:

|	
Division‡	344.0
Australia	290.4

[1] **Numbers below 1000 (the index score for Australia) indicate the Division is relatively disadvantaged**

[2] **Deaths at ages 0 to 74 years per 100,000 population**

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

Mid North Rural Division of General Practice

SA Divisions of General Practice
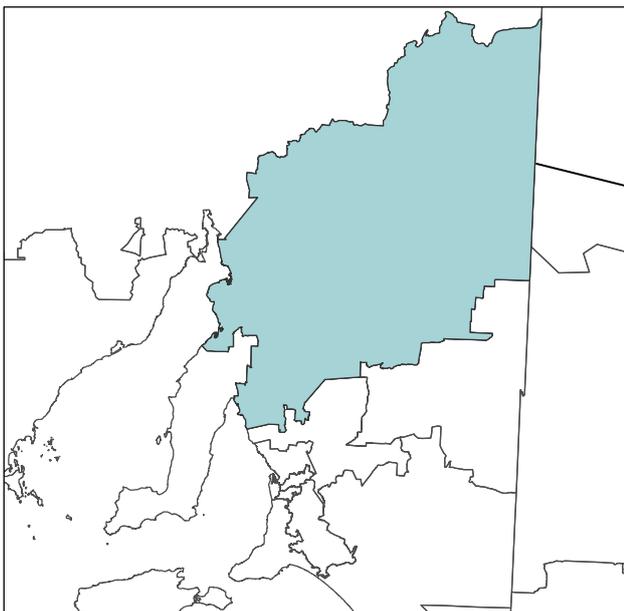
Mid North Rural DGP by SLA
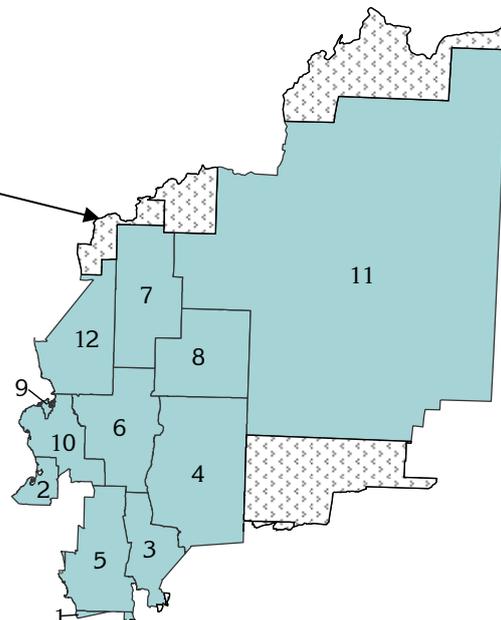
Map Legend: see page 6

Socio-demographic profile

Population

The Mid North Rural Division had an Estimated Resident Population of 45,856 at 30 June 2004.

Figure 1: Annual population change, Mid North Rural DGP‡, country South Australia[1], South Australia and Australia, 1991 to 1996, 1996 to 2001 and 2001 to 2004
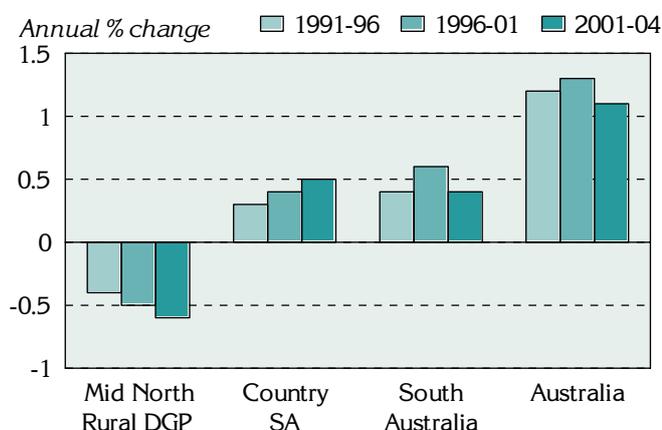
Over the five years from 1991 to 1996, the Division's population decreased by 0.4% on average each year, compared to increases in country South Australia (0.3%) and South Australia (0.4%). From 1996 to 2001, the Division's population again decreased (0.5%), compared to increases in country South Australia (0.4%), and South Australia (0.6%). There was a further decline (0.6% per year) from 2001 to 2004, compared to annual increases for country South Australia (0.5%) and South Australia (0.4%).

Figure 2: Population in Mid North Rural DGP‡ and Australia, by age and sex, 2004
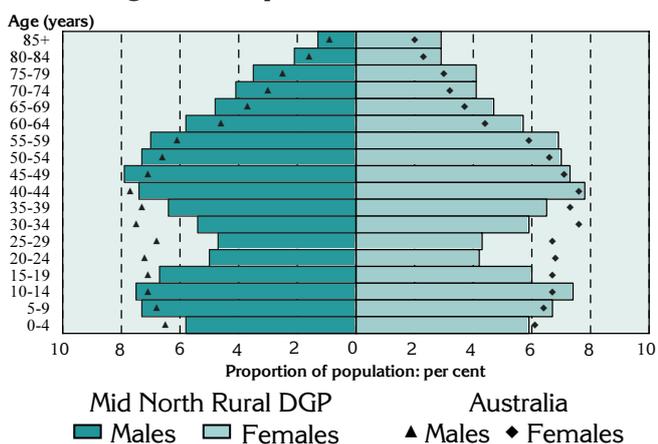
The most notable differences in the age distribution of the Division's population (when compared to Australia overall) are:

- at younger ages – a lower proportion of males aged 0 to 4 years, and higher proportions of children aged 5 to 14 years;
- from 15 to 39 years – lower proportions (most notably at ages 20 to 34 years) of both males and females; and
- from 45 years of age – higher proportions of both males and females.

Table 1: Population by age, Mid North Rural DGP‡ and Australia, 2004

Age group (years)	Mid North Rural DGP		Australia	
	No.	%	No.	%
0-14	9,334	20.4	3,978,751	19.8
15-24	4,982	10.9	2,762,769	13.8
25-44	11,086	24.2	5,881,048	29.3
45-64	12,559	27.4	4,864,037	24.2
65-74	4,058	8.8	1,374,792	6.8
75-84	2,889	6.3	934,505	4.7
85+	949	2.1	295,602	1.5
Total	**45,856**	**100.0**	**20,091,504**	**100.0**

As shown in the age-sex pyramid above, the Mid North Rural DGP had lower proportions of young people aged 15 to 24 years (10.9%) and people aged 25 to 44 years (24.2%) 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 Mid North Rural DGP comprised 2.6% of people born in predominantly non-English speaking countries and resident in Australia for five years or more (Table 2), less than in country South Australia (3.6%) or Australia (10.8%). Recent arrivals (those resident in Australia for less than five years) from non-English speaking countries comprised 0.2% of the Division's population, slightly less than for country South Australia (0.3%).

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[1]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**

**Data Sources: see 'Data sources and limitations' at end of report**

Of these residents, 0.2% had poor proficiency in English (determined when people aged five years and over 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 lower proportion than in country SA (0.4%), South Australia (1.8%) or Australia (2.4%).

Table 2: Non-English speaking born, Mid North Rural DGP, country South Australia, South Australia and Australia, 2001

People born in predominantly non-English speaking countries	Mid North Rural DGP		Country SA		South Australia		Australia	
	No.	%	No.	%	No.	%	No.	%
Resident in Australia for five years or more	1,165	2.6	14,103	3.6	129,414	8.8	2,019,410	10.8
Resident in Australia for less than five years	93	0.2	1,124	0.3	17,145	1.2	408,074	2.2
Poor proficiency in English[1]	91	0.2	1,397	0.4	24,927	1.8	425,399	2.4

[1] **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, Mid North Rural DGP, 2001

Australian-born people comprised 92.0% of the Division's population, well above the Australian figure of 72.6%. Of the 5.1% of people from English speaking countries, 4.4% were from the UK and Eire. The major birthplaces of the non-English speaking population include Germany and Italy (both 0.5%); The Netherlands (0.4%); Greece and the Philippines (both 0.2%); and India and Yugoslavia (both 0.1%).
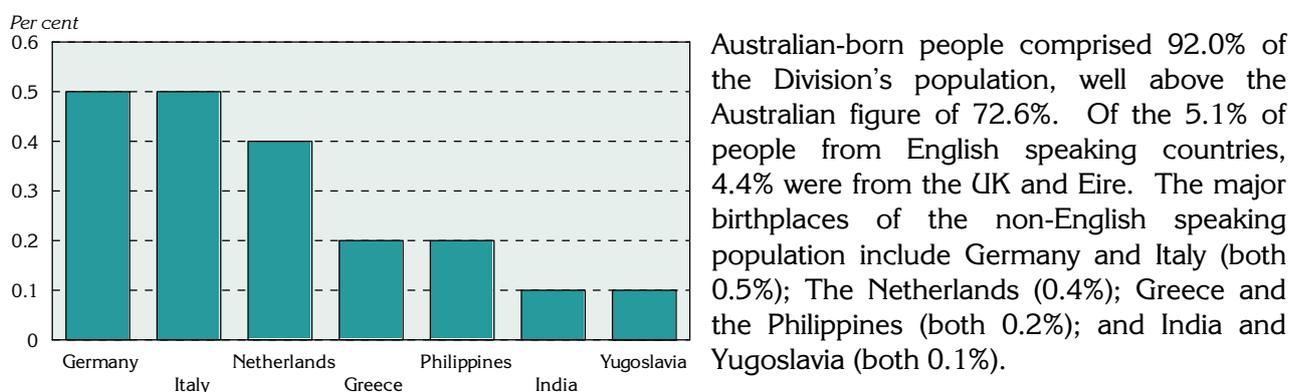
Socioeconomic status

The indicators presented in this section describe geographic variations in the distribution of the population for a number of key socioeconomic influences, which impact on the health and wellbeing of populations.

The Mid North Rural DGP had an equal proportion of single parent families (9.7%) and a substantially lower proportion of Aboriginal and Torres Strait Islanders (1.6%), compared to country South Australia as a whole (with 3.5%) (Figure 4, Table 3).

Full-time secondary school education participation of 16 year olds living in the Division (80.5%) was slightly above that for country South Australia (78.3%).

A notably lower proportion of the Division's households received rent assistance from Centrelink (8.6%) compared to country South Australia (10.5%) and South Australia (12.0%), and there was a comparable proportion of dwellings rented from the State housing authority (6.5% compared to 6.7%). The proportion of dwellings with no access to motor vehicle (8.3%) was slightly above that in country South Australia (7.4%), but lower than the rate for South Australia (9.9%)

The Division had lower proportions of the population who reported using, at home, a computer (34.7%), and the Internet (18.2%) 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, Mid North Rural DGP, country South Australia, South Australia and Australia, 2001

Note the different scales

Single parent families

Per cent

Indigenous‡

Per cent

Education participation at age 16‡

Per cent
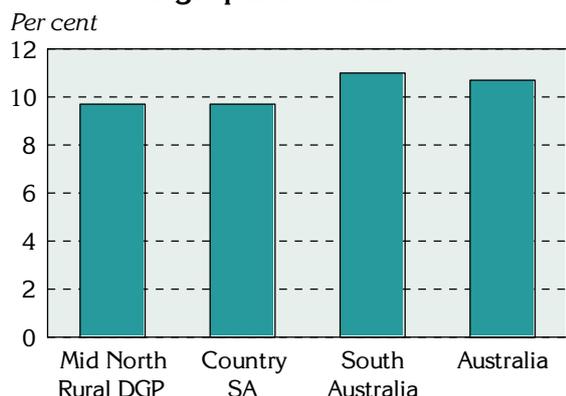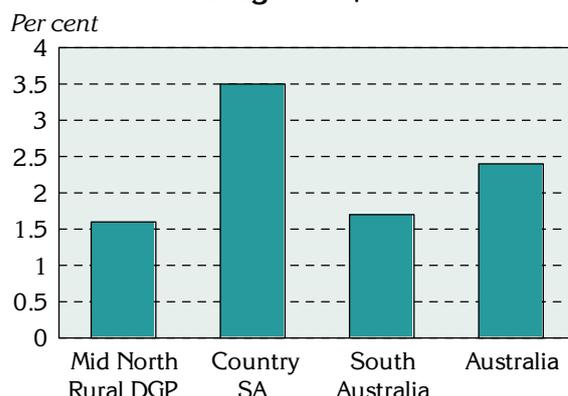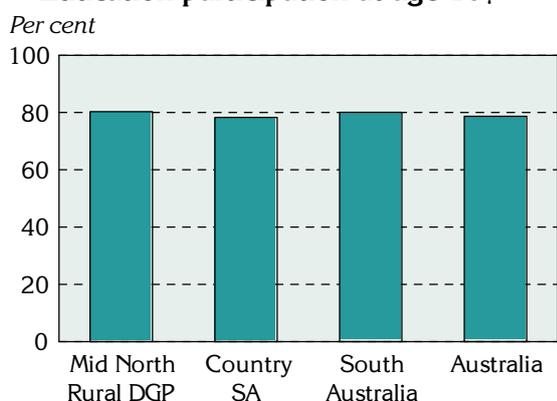
Unemployment rate (June 2003)‡

Per cent
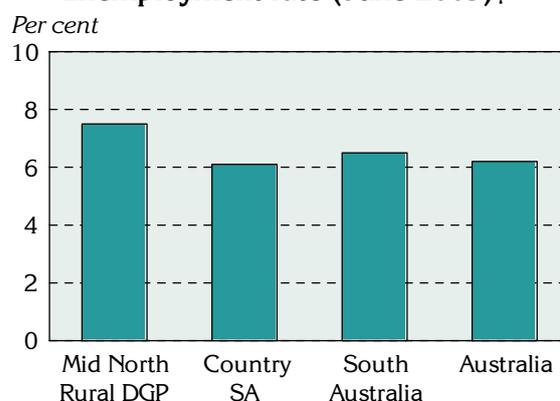
Households receiving rent assistance & Dwellings rented from State housing authority

Per cent

■ Rent assistance ▨ State housing
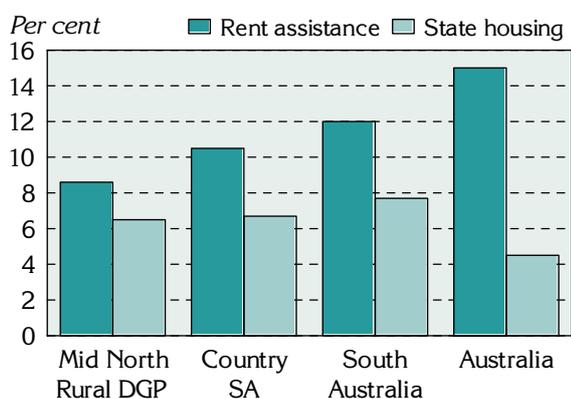
Dwellings with no motor vehicle
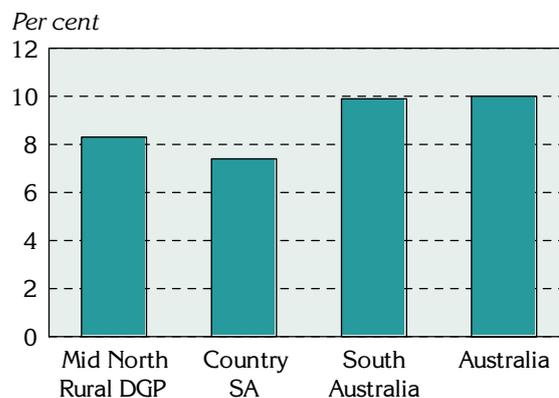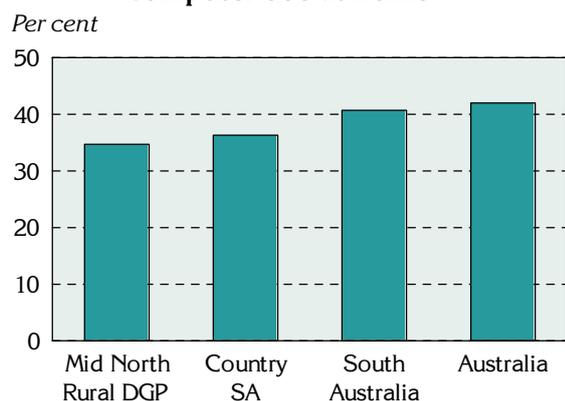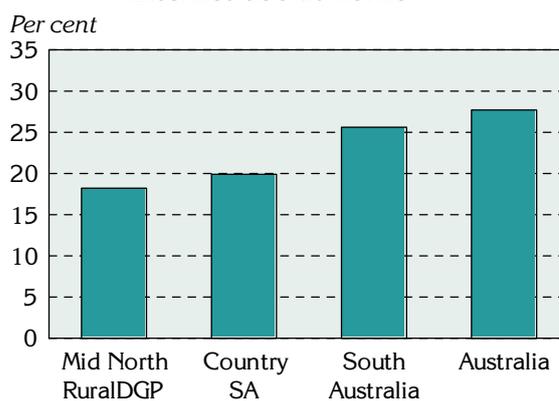
Per cent

Computer use at home

Per cent

Internet use at home

Per cent

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

Data Sources: see 'Data sources and limitations' at end of report

Table 3: Socio-demographic indicators, Mid North Rural DGP, country South Australia, South Australia and Australia, 2001

| Indicator	Mid North Rural DGP		Country SA		South Australia		Australia	
	No.	%	No.	%	No.	%	No.	%
Single parent families	1,214	9.7	10,351	9.7	43,741	11.0	529,969	10.7
Indigenous‡	744	1.6	13,602	3.5	25,542	1.7	458,261	2.4
Full-time secondary school education at age 16‡	551	80.5	4,410	78.3	16,341	80.1	130,198	78.7
Households: rent assistance	1,509	8.6	15,170	10.5	68,260	12.0	1,006,599	15.0
Dwellings: rented from the State housing authority	1,173	6.5	10,290	6.7	44,684	7.7	317,171	4.5
Dwellings: no motor vehicle	1,516	8.3	11,317	7.4	58,065	9.9	708,073	10.0
Computer use at home	15,616	34.7	142,671	36.3	594,355	40.7	7,881,983	42.0
Internet use at home	8,281	18.2	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 7.5% in Mid North Rural DGP was higher than the rates for country South Australia (6.1%) and South Australia (6.5%) (Figure 4, Table 4). The labour force participation rate (75.0%) was consistent with country South Australia (75.2%) and South Australia (75.3%), while the female labour force participation rate (66.1%) was lower than country South Australia and South Australia (69.1% and 70.4%).

Table 4: Unemployment and labour force participation, Mid North Rural DGP, country South Australia, South Australia and Australia, 2003

Labour force indicators	Mid North Rural		Country SA		South Australia		Australia	
	No.	%	No.	%	No.	%	No.	%
Unemployment rate‡	1,621	7.5	11,828	6.1	49,292	6.5	623,791	6.2
Labour force participation‡	21,610	75.0	192,901	75.2	761,964	75.3	10,038,147	75.2
Female labour force participation (2001)	6,589	66.1	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 Mid North Rural DGP

Following the 2001 Census, the Australian Bureau of Statistics (ABS) produced four socio-economic indexes for areas (SEIFA) which describe aspects of the socioeconomic profile of populations in areas. The scores for these indexes for each Statistical Local Area (SLA) or part SLA in Mid North Rural DGP are shown in the supporting information, Table 9, page 18: SLAs are described on page 19.

The Mid North Rural DGP area's Index of Relative Socio-Economic Disadvantage (IRSD) score is 971, 2.9% below the average score for Australia (1000) and below the score for country South Australia (981); this highlights the relatively lower socioeconomic status profile of the Mid North Rural DGP population. However, these are variations in the IRSD within the Division in at the SLA level Map 1.

Map 1: Index of Relative Socio-Economic Disadvantage by SLA, Mid North Rural 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.

Index scores

Below 960[*]

961 to 975

976 to 990

991 to 1005

above 1005

not mapped[#]

[*] *most disadvantaged*
[#] *data were not mapped: see note under 'Methods' re Data converters and mapping.*
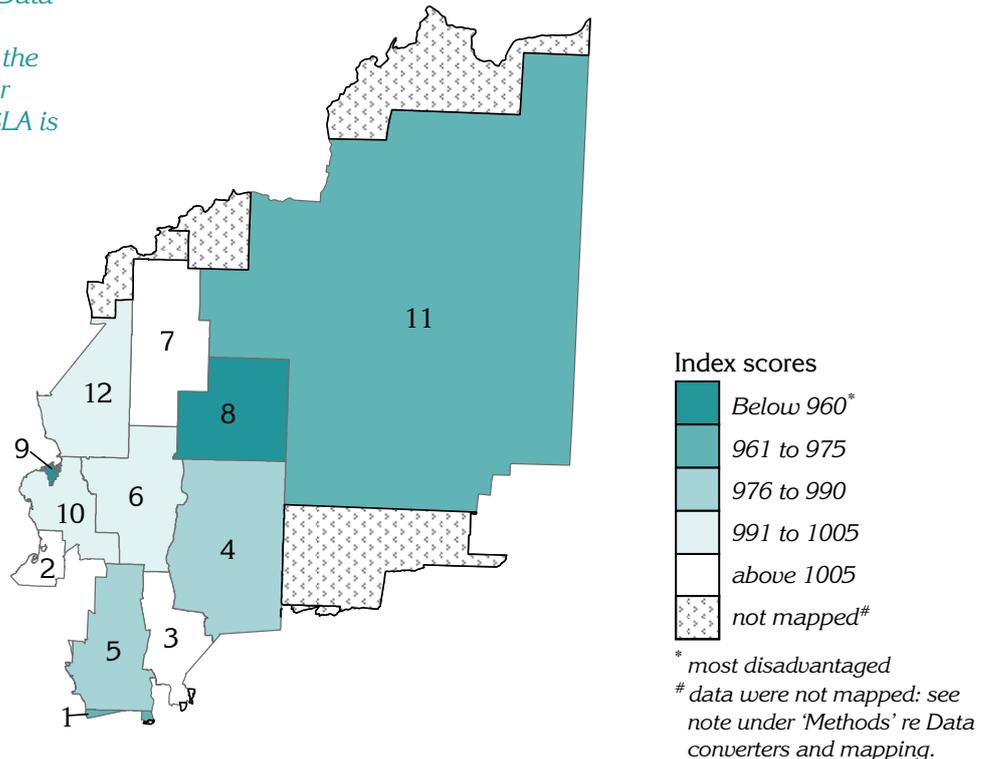
Alphabetical key to Statistical Local Areas, Mid North Rural DGP, 2001			
Barunga West	2	Ororoo/Carrieton	7
Clare and Gilbert Valleys	3	Peterborough	8
Goyder	4	Port Pirie City and Districts - City	9
Mallala	1	Port Pirie City and Districts Balance	10
Mount Remarkable	12	Unincorp. Pirie	11
Northern Areas	6	Wakefield	5

General medical practitioner (GP) supply

A total of 32.2 full-time equivalent (FTE) GPs and 35.6 full-workload equivalent (FWE[2]) GPs worked in the Division in 2003/04 (Table 5). Of the FWE GPs, 14.9% were female, and 20.9% were over 55 years of age (compared to 23.4% and 30.5%, respectively, for South Australia).

Apart from the day-time population, the rate of population per FTE GP varied, depending on the population measure used, from a high of 1,430 people per GP (calculated on the average Estimated Resident Population (ERP) as at 30 June 2003 and 2004), to a low of 1,376 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 1,244 (calculated on the Census count) to 1,293 (calculated on the ERP). When calculated on the estimated day-time population, the rates of population in the Division were 4.1% 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 Mid North Rural DGP were higher than for South Australia and Australia, indicating a lower level of provision of GP services in the Division.

Table 5: Population per GP in Mid North Rural DGP, South Australia and Australia, 2003/04

Population measure	Population	GPs		Population per GP	
		FTE	FWE	FTE	FWE
Mid North Rural DGP					
Census count (adjusted)[*]	44,253	32.2	35.6	1,376	1,244
Usual Resident Population (URP) (adjusted)[*]	44,824	..	..	1,394	1,260
Estimated Resident Population (ERP)	46,005	..	..	1,430	1,293
Day-time population (estimated on URP)[*][‡]	42,966	..	..	1,336	1,208
South Australia (ERP)	1,530,276	1,181	1,354	1,296	1,130
Australia (ERP)	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 96.2% of children in the Division in 2002 were fully immunised at age one, above the Australian proportion of 94.2%.

Immunisation by provider type for children between the ages of 0 to 6 is shown in Table 6. The proportion of children in the Division who were immunised by a general practitioner was 91.6%, compared to 70.0% for Australia, with 4.3% provided at the local government council.

Table 6: Childhood immunisation at ages 0 to 6 by provider type, Mid North Rural DGP and Australia, 2003/04

Provider	Mid North Rural DGP	Australia
	%	%
General practitioner	91.6	70.0
Local government council	4.3	16.6
Community health centre/ worker	4.0	9.8
Public hospital	0.0	2.1
Aboriginal health service/ worker	0.0	0.9
Other[*]	0.0	0.6
Total: Per cent	**100.0**	**100.0**
Number	**8,297**	**3,843,610**

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

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[2]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 (344.0 deaths per 100,000 population) is notably higher than for country South Australia (318.6) and markedly above that 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 are cancer and diseases of the circulatory system (Figure 5). With the exception of stroke and suicide (both with a lower rate) and chronic lower respiratory disease (a similar rate), the rates of premature mortality for the major conditions and selected causes listed are higher than the rates for Australia as a whole (and also generally higher than for country South Australia).

The data on which the following chart is based are in Table 12.

Figure 5: Deaths before 75 years of age by major condition group and selected cause, Mid North Rural DGP‡, country South Australia and Australia, 2000-02[*]

Indirectly age standardised rate per 100,000 population

■ Mid North Rural DGP   ☐ Country SA   ■ Australia
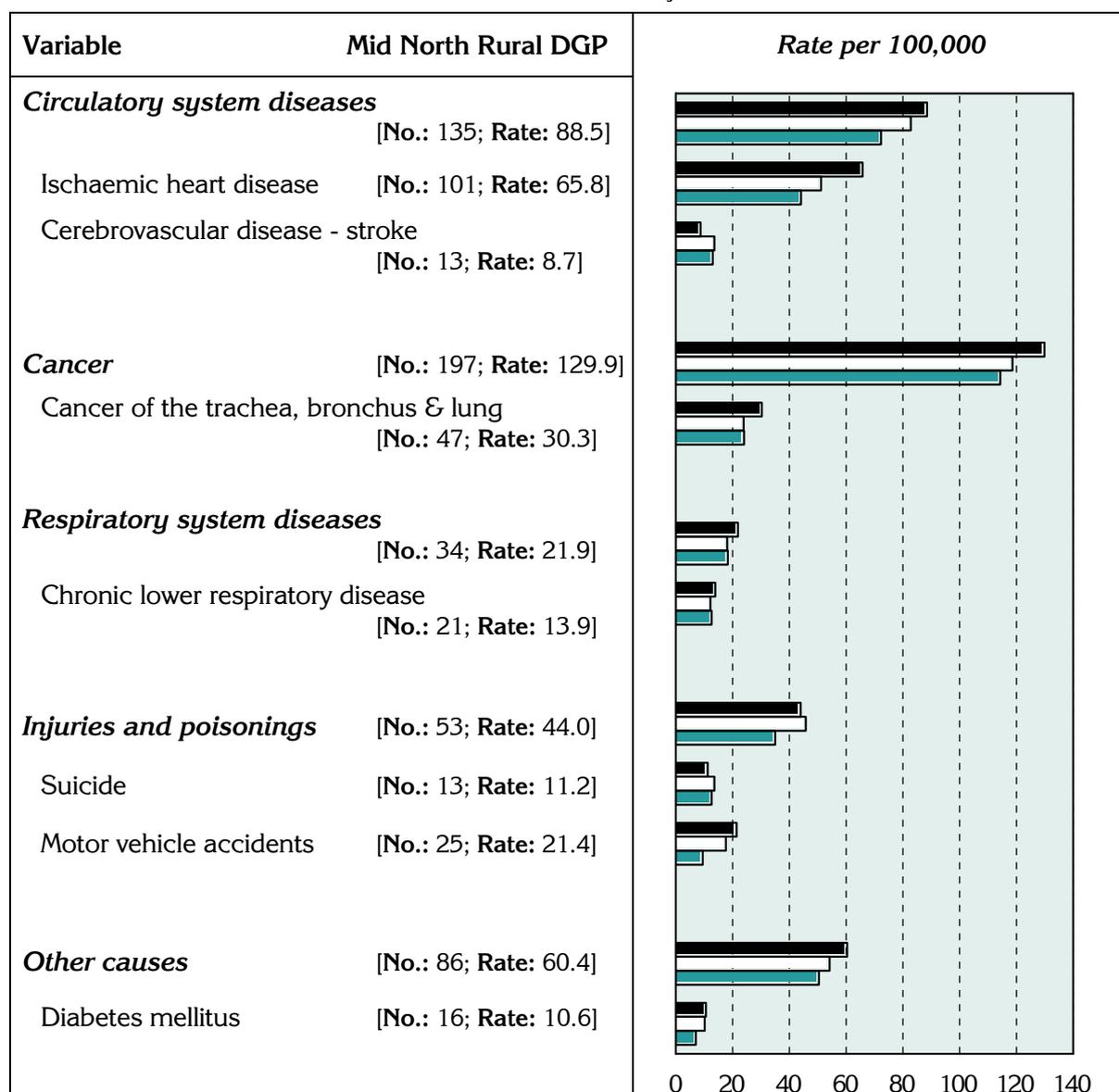
Variable	Mid North Rural DGP	Rate per 100,000
Circulatory system diseases	[**No.:** 135; **Rate:** 88.5]	
Ischaemic heart disease	[**No.:** 101; **Rate:** 65.8]	
Cerebrovascular disease - stroke	[**No.:** 13; **Rate:** 8.7]	
Cancer	[**No.:** 197; **Rate:** 129.9]	
Cancer of the trachea, bronchus & lung	[**No.:** 47; **Rate:** 30.3]	
Respiratory system diseases	[**No.:** 34; **Rate:** 21.9]	
Chronic lower respiratory disease	[**No.:** 21; **Rate:** 13.9]	
Injuries and poisonings	[**No.:** 53; **Rate:** 44.0]	
Suicide	[**No.:** 13; **Rate:** 11.2]	
Motor vehicle accidents	[**No.:** 25; **Rate:** 21.4]	
Other causes	[**No.:** 86; **Rate:** 60.4]	
Diabetes mellitus	[**No.:** 16; **Rate:** 10.6]	

[*] **'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**

Data Sources: see 'Data sources and limitations' at end of report

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: 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 15-16. The data on which the following charts are based are in Table 13.

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

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

Prevalence estimates: chronic disease‡

It is estimated that, with the exceptions of asthma, diabetes type 2 and osteoarthritis, more people in Mid North Rural DGP reported having any of the listed conditions compared to Australia as a whole (Figure 6). The generally higher rates are consistent with the socioeconomic status profile 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 overall (Figure 7). The proportion of the population aged 15 years and over estimated to have reported their health as 'fair' or 'poor' is notably above the national average.

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

Figure 6: Estimates* of chronic disease and injury, Min North Rural DGP‡, country South Australia and Australia, 2001

Indirectly age standardised rate per 1,000 population

■ Mid North Rural DGP   ☐ Country SA   ■ Australia

| Variable	Mid North Rural DGP	Rate per 1,000
Respiratory system diseases	[**No.:** 13,501; **Rate:** 306.7]	
Asthma	[**No.:** 4,280; **Rate:** 98.6]	
Circulatory system diseases	[**No.:** 9,545; **Rate:** 187.3]	
Diabetes type 2	[**No.:** 1,054; **Rate:** 19.7]	
Injury event	[**No.:** 5,499; **Rate:** 129.1]	
Mental & behavioural disorders	[**No.:** 4,150; **Rate:** 95.1]	
Musculoskeletal system diseases	[**No.:** 17,003; **Rate:** 362.1]	
Arthritis	[**No.:** 7,602; **Rate:** 147.8]	
- osteoarthritis	[**No.:** 3,734; **Rate:** 70.9]	
- rheumatoid arthritis	[**No.:** 1,329; **Rate:** 26.3]	
Osteoporosis (females)	[**No.:** 681; **Rate:** 25.6]	
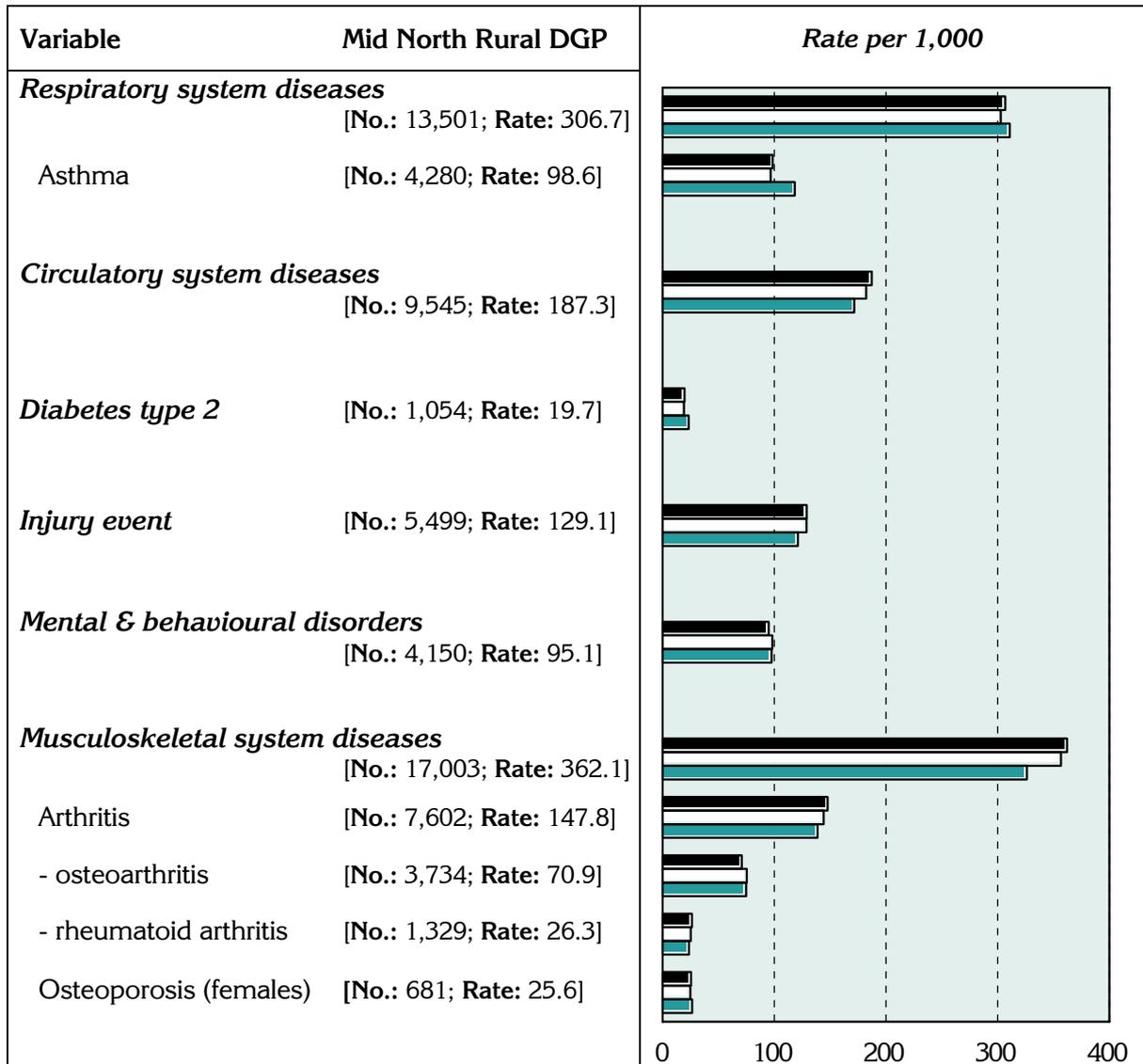
* 'No.' is a weighted estimate of the number of people in **Mid North Rural DGP** reporting each chronic condition and is derived from synthetic predictions from the 2001 NHS

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

Figure 7: Estimates* of measures of self-reported health by SLA, Mid North Rural DGP‡, country South Australia and Australia, 2001

Indirectly age standardised rate per 1,000 population

■ Mid North Rural DGP   ☐ Country SA   ■ Australia

Variable	Mid North Rural DGP	Rate per 1,000
Very high psychological distress levels [K–10[1]] *(18+ years)*	[**No.:** 1,389; **Rate:** 43.0]	
Fair or poor self-assessed health status *(15+ years)*	[**No.:** 8,200; **Rate:** 216.6]	
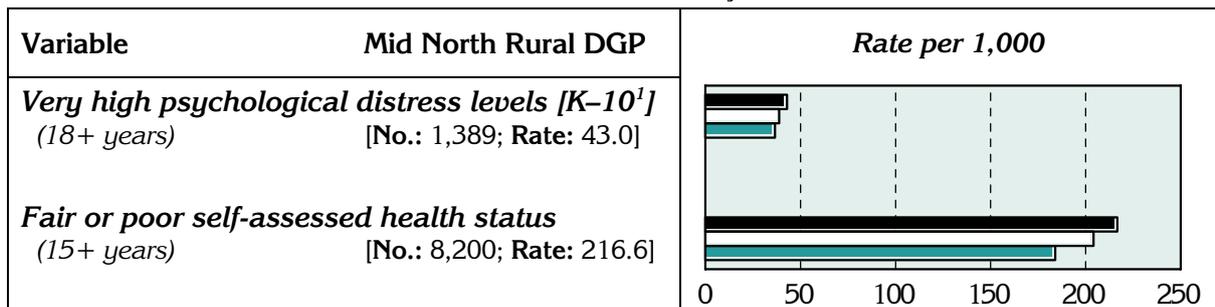
* 'No.' is a weighted estimate of the number of people in **Mid North Rural DGP** reporting under these measures and is derived from synthetic predictions from the 2001 NHS.

[1] Kessler 10

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

Data Sources: see 'Data sources and limitations' at end of report

Prevalence estimates: risk factors‡

The Mid North Rural DGP had higher rates (when compared with the Australian population) for all of the selected risk factors except for overweight males (Figure 8). The generally higher rates are consistent with the socioeconomic status profile of the Division.

Figure 8: Estimates* of selected risk factors, Mid North Rural DGP‡, country South Australia and Australia, 2001

Indirectly age standardised rate per 1,000 population
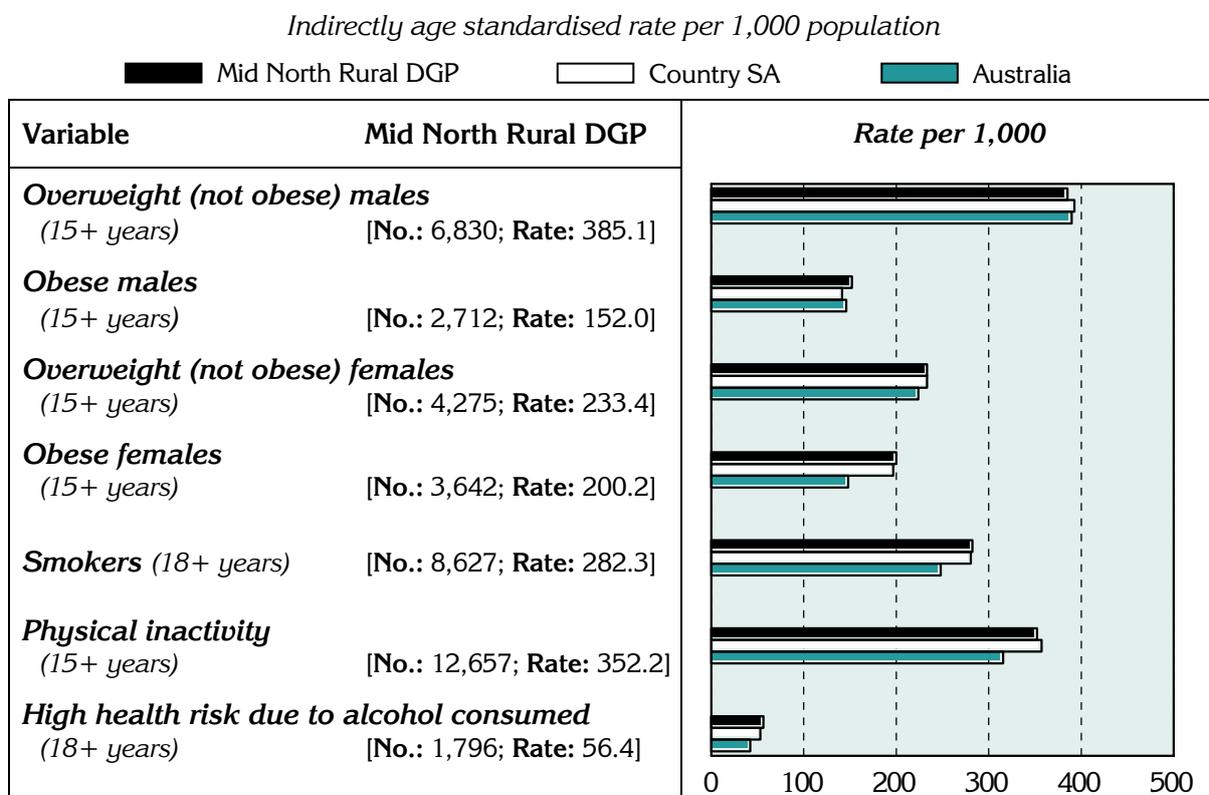
'No.' is a weighted estimate of the number of people in Mid North Rural DGP with these risk factors and has been predicted using data from the 2001 NHS and known data for the Division
‡ See note under 'Data converters and mapping' re calculation of Division totals

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 11, page 19, 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, Mid North Rural DGP, 2001

Respiratory system diseases
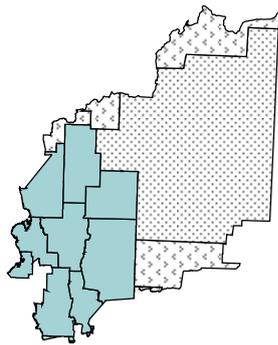

Respiratory system diseases: Asthma
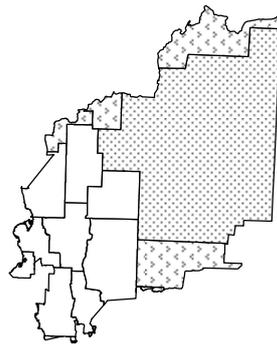

### Circulatory system diseases
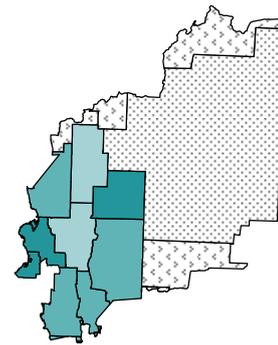

Diabetes type 2
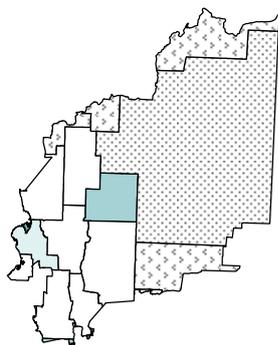
Injury event
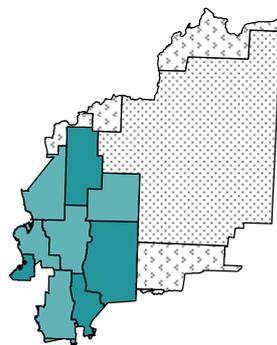
Mental & behavioural disorders
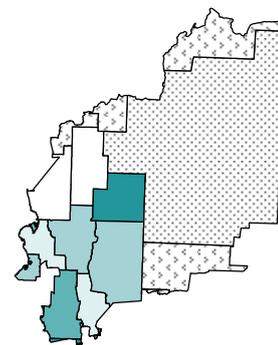
Musculoskeletal system diseases
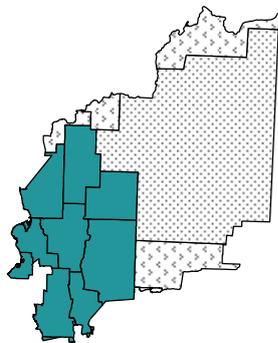
Musculoskeletal system diseases: Arthritis
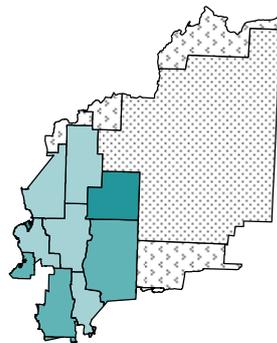
Arthritis: Osteoarthritis
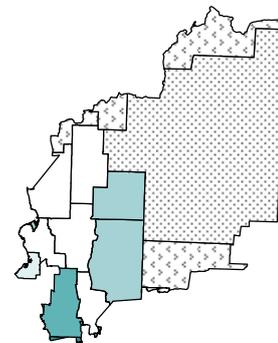
Arthritis: Rheumatoid arthritis
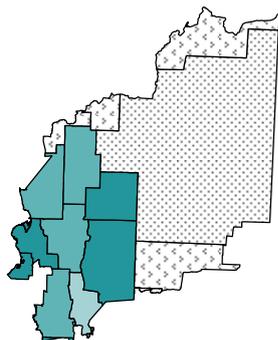
Osteoporosis (females)
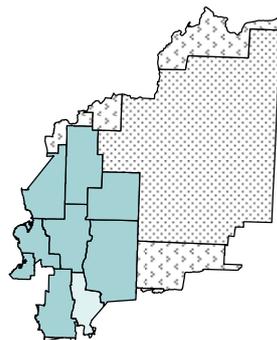
Per cent difference from Australian average
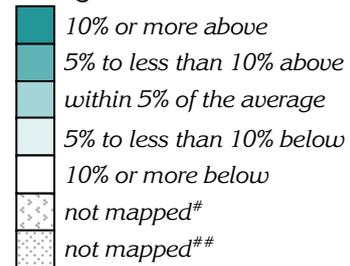
- *10% or more above*
- *5% to less than 10% above*
- *within 5% of the average*
- *5% to less than 10% below*
- *10% or more below*
- *not mapped#*
- *not mapped##*

* *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*

Data Sources: see 'Data sources and limitations' at end of report

Map 3: Estimates[*] of measures of self-reported health by SLA, Mid North Rural DGP, 2001

Very high psychological distress levels [K–10[1]] (18+ years)

[1] Kessler 10

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

Per cent difference from Australian average

- *10% or more above*
- *5% to less than 10% above*
- *within 5% of the average*
- *5% to less than 10% below*
- *10% or more below*
- *not mapped[#]*
- *not mapped[##]*
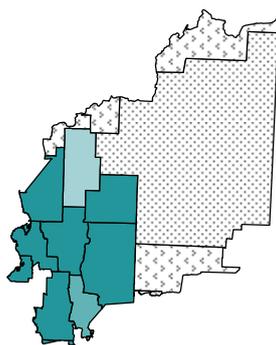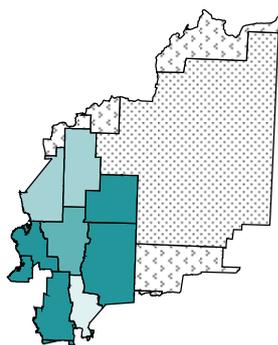
[*] *See Notes on the data re these estimates.*

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

[##] *Estimates not available for remote areas*

Map 4: Estimates[*] of selected risk factors by SLA, Mid North Rural DGP, 2001

Overweight (not obese) males (15+ years)

Obese males (15+ years)

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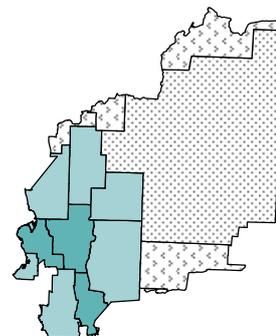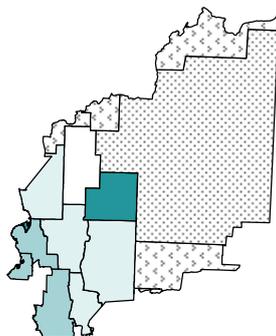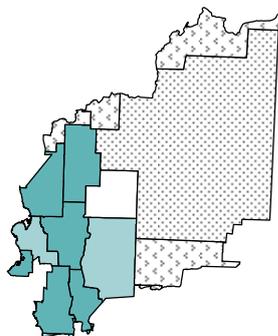
Obese females (15+ years)

Smokers (18+ years)

Physical inactivity (15+ years)
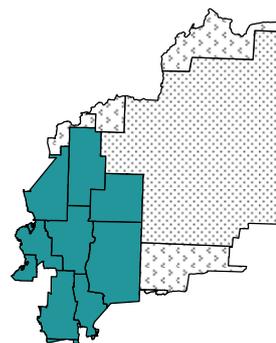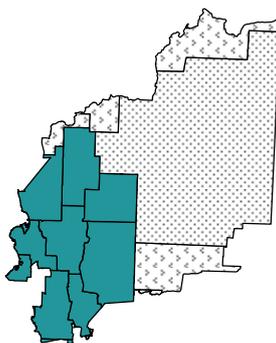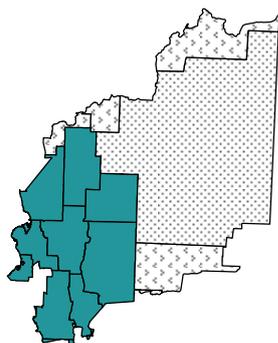
High health risk due to alcohol consumed (18+ years)
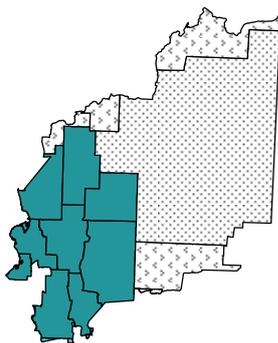
Per cent difference from Australian average
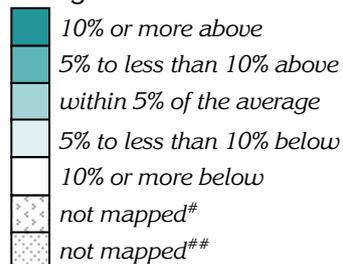
- *10% or more above*
- *5% to less than 10% above*
- *within 5% of the average*
- *5% to less than 10% below*
- *10% or more below*
- *not mapped[#]*
- *not mapped[##]*

[*] *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 7 details the data sources for the material presented in this profile.

Table 7: Data sources

Section	Source
Key indicators	
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
Socio-demographic profile	
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[1], except for the following indicators: - *Indigenous* – Experimental estimates of Aboriginal and Torres Strait Islander people, ABS 2001 (unpublished) - *Full-time secondary education participation at age 16* – Census 2001 (unpublished) - *Households receiving rent assistance* – Centrelink, December Quarter 2001 (unpublished) - *Unemployment rate / Labour force participation* – extracted from *Small Area Labour Markets Australia*, June Quarter 2003, Department of Employment and Workplace Relations
Map 1; Table 9	ABS SEIFA package, Census 2001
General medical practitioner (GP) supply	
Table 5	GP data supplied by Department of Health and Ageing, 2003/04
	Population estimates used in calculating the population per GP rates are the: - Census count[2], ABS Population Census 2001, scaled to 2003/04 - Usual Resident Population[3], 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
Immunisation	
Text comment 1 year olds	National Centre for Immunisation Research and Surveillance, 2002
Table 6	Australian Childhood Immunisation Register, Health Insurance Commission, 2003/04 (unpublished)
Premature mortality	
Figure 5; Table 12	ABS Deaths, 2000 to 2002
Chronic diseases and associated risk factors[4]	
Figures 6, 7 and 8; Maps 2, 3 and 4; Table 13	Estimated from 2001 National Health Survey (NHS), ABS (unpublished)

[1] All data extracted from Usual Residents Profile, except for data variables only released in the Basic Community Profile

[2] *Census count* - those counted in the Division on Census night, including tourists, business people and other visitors

[3] *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

[4] 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 8 includes notes relevant to this data.

Table 8: Notes on estimates of chronic diseases and associated risk factors

Indicator	Notes on the data
Estimates of chronic disease and injury (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
Estimates of measures of self-reported health (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
Estimates of selected risk factors (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 (Table 10).

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 11.

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

A definition of population health

Population health, in the context of general practice, has been defined[1] 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".[2] This recognises the importance of achieving improvements to Aboriginal and Torres Strait Islander health and respects the particular health issues facing Indigenous people.

[1] **"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)**
[2] **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 9) 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. The scores for these indexes for each Statistical Local Area (SLA) or part SLA in Mid North Rural DGP are shown in Table 9.

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 9: SEIFA scores by SLA, Mid North Rural DGP, 2001

SLA code	SLA name (& per cent of SLA in the Division)		Index score			
			Disadvantage	Advantage	Economic Resources	Education & Occupation
40430	Barunga West	(58.4)	1007	917	885	931
41140	Clare and Gilbert Valleys	(87.5)	1019	960	949	961
42110	Goyder	(62.2)	984	908	885	922
43920	Mallala	(20.4)	975	913	940	887
44830	Mount Remarkable	(89.3)	1004	927	890	942
45120	Northern Areas	(100.0)	1005	926	886	947
45400	Ororoo/Carrieton	(100.0)	1031	933	877	955
45540	Peterborough	(100.0)	891	850	831	890
46451	Port Pirie City & Districts - City	(100.0)	921	886	896	889
46454	Port Pirie City & Districts Balance	(100.0)	1000	920	900	930
48130	Wakefield	(78.7)	976	905	898	908
49459	Unincorp. Pirie	(100.0)	974	950	945	932

[*] 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 Mid North Rural DGP

The Mid North Rural DGP covers 62,133 square kilometres, based on 2001 SLA data.

The postcodes in the Division (as per the Department of Health and Ageing website) are shown below (Table 10).

Table 10: Postcodes in Mid North Rural 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[*]
5381	50	5451	100	5482	100
5411	100	5452	100	5483	100
5412	67	5453	100	5485	50
5413	67	5454	100	5486	100
5414	100	5455	100	5490	100
5415	100	5460	100	5491	100
5416	100	5461	100	5493	100
5417	100	5462	100	5495	100
5418	100	5463	100	5501	25
5419	100	5464	100	5510	25
5420	100	5470	100	5520	25
5421	100	5471	100	5521	100
5422	100	5472	100	5522	100
5430	100	5473	100	5523	100
5431	100	5480	100	5540	100
5432	100	5481	100	5550	100
5440	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, the Municipality of Port Pirie City and Districts has been split into two SLAs, City (all of which is in the Division), and Balance (the majority of which is in the Division); and parts of the State not incorporated into local government areas have been allocated SLA codes – three of these unincorporated SLAs are (wholly or partly) in this Division. These SLAs and all or parts of the SLAs listed in Table 11 comprise the Division.

Table 11: SLAs in Mid North Rural 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
40430	Barunga West	58.4	1,521
41140	Clare and Gilbert Valleys	87.5	7,258
42110	Goyder	62.2	2,591
43920	Mallala	20.4	1,579
44830	Mount Remarkable	89.3	2,545
45120	Northern Areas	100.0	4,647
45400	Orroroo/Carrieton	100.0	979
45540	Peterborough	100.0	1,915
46451	Port Pirie City and Districts - City	100.0	13,934
46454	Port Pirie City and Districts Balance	100.0	3,485
48130	Wakefield	78.7	5,150
49459	Unincorp. Pirie	100.0	252

* **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 12.

Table 12: Deaths before 75 years of age by major condition group and selected cause, Mid North Rural DGP‡, country South Australia, and Australia, 2000-02*

Indirectly age standardised rate per 100,000 population

Variable	Mid North Rural DGP‡		Country SA		Australia	
	No.	Rate	No.	Rate	No.	Rate
Circulatory system diseases	135	88.5	1,018	82.8	38,357	72.3
Ischaemic heart disease	101	65.8	631	51.2	23,364	44.1
Cerebrovascular disease – stroke	13	8.7	168	13.6	6,920	13.0
Cancer	197	129.9	1,453	118.6	60,603	114.3
Cancer of the trachea, bronchus & lung	47	30.3	296	23.9	12,715	24.0
Respiratory system diseases	34	21.9	223	18.1	9,726	18.3
Chronic lower respiratory disease	21	13.9	151	12.2	6,657	12.6
Injuries and poisonings	53	44.0	488	45.8	18,573	35
Suicide	13	11.2	145	13.6	6,706	12.6
Motor vehicle accidents	25	21.4	183	17.6	5,014	9.5
Other causes	86	60.4	637	54.2	26,735	50.4
Diabetes mellitus	16	10.6	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**
‡ **See note under 'Data converters and mapping' re calculation of Division totals**

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 13 below.

Table 13: Estimates of chronic disease and associated risk factors, Mid North Rural DGP‡, country South Australia and Australia, 2001

Indirectly age standardised rate per 1,000 population

Variable	Mid North Rural DGP‡	Country SA	Australia
Chronic disease and injury (Figure 6)			
Respiratory system diseases	306.7	302.7	310.8
Asthma	98.6	96.8	118.3
Circulatory system diseases	187.3	182.2	171.5
Diabetes type 2	19.7	19.2	23.4
Injury event	129.1	128.9	121.2
Mental & behavioural disorders	95.1	98.3	97.6
Musculoskeletal system diseases	362.1	356.6	326.2
Arthritis	147.8	144.2	138.8
- Osteoarthritis	70.9	75.3	74.9
- Rheumatoid arthritis	26.3	25.3	23.6
Osteoporosis (females)	25.6	24.8	26.4
Measures of self-reported health (Figure 7)			
Very high psychological distress levels (18+ years)	43.0	38.8	36.6
Fair or poor self-assessed health status (15+ years)	216.6	204.1	184.0
Risk factors (Figure 8)			
Overweight (not obese) males (15+ years)	385.1	392.6	389.7
Obese males (15+ years)	152.0	141.4	145.9
Overweight (not obese) females (15+ years)	233.4	233.4	223.9
Obese females (15+ years)	200.2	196.8	148.0
Smokers (18+ years)	282.3	280.6	248.0
Physical inactivity (15+ years)	352.2	357.1	315.5
High health risk due to alcohol consumed (18+ years)	56.4	53.0	42.1

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

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

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Acknowledgements

Further developments and updates

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

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

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

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

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

PHIDU contact details

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

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