

# Population health profile of the Mackay

## Division of General Practice

Population Profile Series: No. 77

PHIDU

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***A Collaborating Unit of the Australian Institute of Health and Welfare***

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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 Mackay Division of General Practice

## Introduction

This profile has been designed to provide a description of the population of the Mackay 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 23.

## 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 Queensland 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>	Queensland	
<b>Division number:</b>	411	
<b>Population‡:</b>	<b>No.</b>	<b>%</b>
Total	118,275	
65+	11,771	10.0%
<25	41,957	35.5%
Indigenous	4,051	3.6%
<b>Disadvantage score<sup>1</sup>:</b>	980	
<b>GP services per head of population:</b>		
Division‡	4.3	
Australia	4.7	
<b>Population per FTE GP:</b>		
Division‡	1,427	
Australia	1,403	
<b>Premature death rate<sup>2</sup>:</b>		
Division‡	268.7	
Australia	290.4	

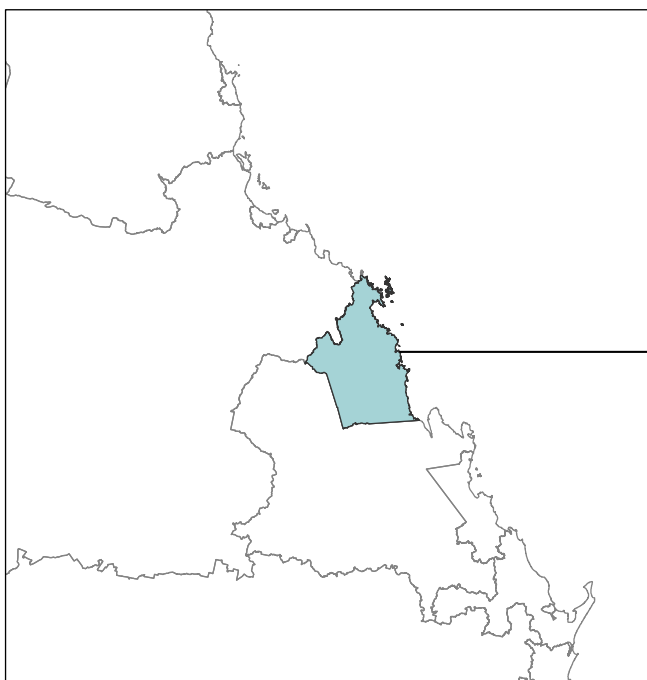
<sup>1</sup> Numbers below 1000 (the index score for Australia) indicate the Division is relatively disadvantaged

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

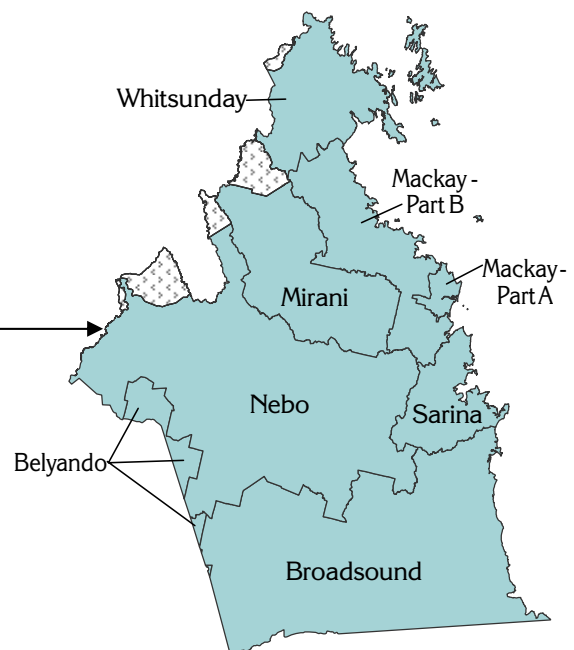
‡ See note "Data converters and mapping" re calculation of Division Total

## Mackay Division of General Practice

*Queensland Divisions of General Practice*



*Mackay DGP by SLA*

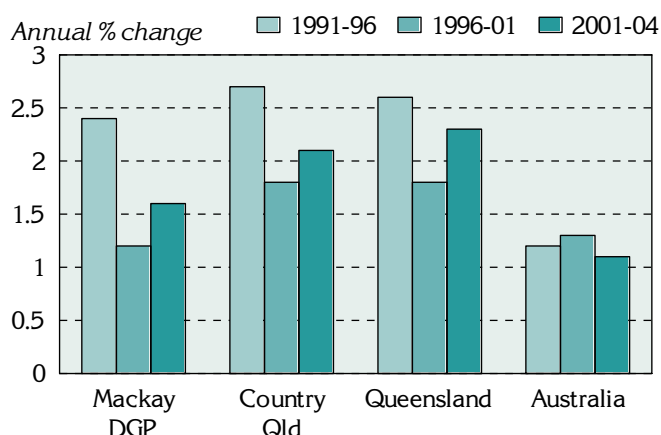


# Socio-demographic profile

## Population

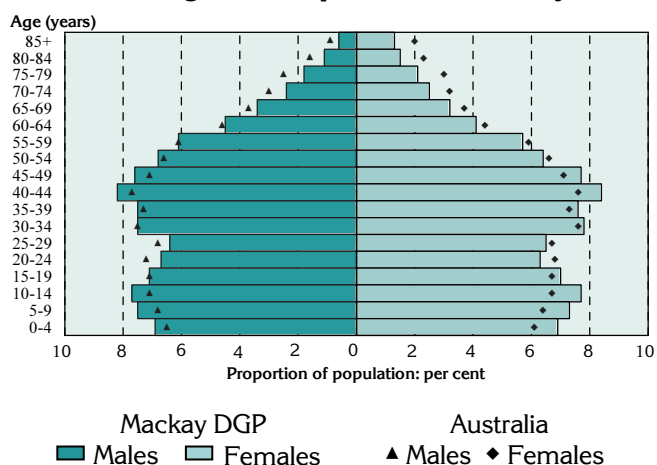
The Mackay Division had an Estimated Resident Population of 118,275 at 30 June 2004.

**Figure 1: Annual population change, Mackay DGP‡, country Queensland<sup>1</sup>, Queensland and Australia, 1991 to 1996, 1996 to 2001 and 2001 to 2004**



Over the five years from 1991 to 1996, the Division's population increased by 2.4% on average each year, lower than in country Queensland (2.7%) and Queensland (2.6%). From 1996 to 2001, the annual percentage growth rate in the Division fell to 1.2%, again lower than in country Queensland and Queensland (1.8%). The growth rate of 1.6% per year from 2001 to 2004 was still lower than the annual increases of 2.1% for country Queensland (2.1%) and Queensland (2.3%).

**Figure 2: Population in Mackay 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 – higher proportions of children aged 0 to 14 years;
- from 20 to 29 years – a lower proportion of males and of females to 24 years;
- from 35 to 49 years – higher proportions of both males and females; and
- at older ages – lower proportions of both males and, in particular, females aged 60 years and over.

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

Age group (years)	Mackay DGP		Australia	
	No.	%	No.	%
0-14	26,039	22.0	3,978,751	19.8
15-24	15,918	13.5	2,762,769	13.8
25-44	35,542	30.0	5,881,048	29.3
45-64	29,006	24.5	4,864,037	24.2
65-74	6,800	5.7	1,374,792	6.8
75-84	3,833	3.2	934,505	4.7
85+	1,137	1.0	295,602	1.5
<b>Total</b>	<b>118,275</b>	<b>100.0</b>	<b>20,091,504</b>	<b>100.0</b>

As shown in the age-sex pyramid above, Mackay DGP had a higher proportion of 0 to 14 year olds than Australia as a whole, with 22.0% compared to 19.8% (Table 1). Conversely, the proportions of the Division's population aged 65 years and over were lower than those for Australia.

The Mackay DGP comprised 2.9% of people born in predominantly non-English speaking countries and resident in Australia for five years or more (Table 2), compared to 4.3% in country Queensland as a whole. Recent arrivals (those resident in Australia for less than five years) from non-English speaking countries comprised 0.4% of the Division's population (less than the 0.9% in country Queensland).

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

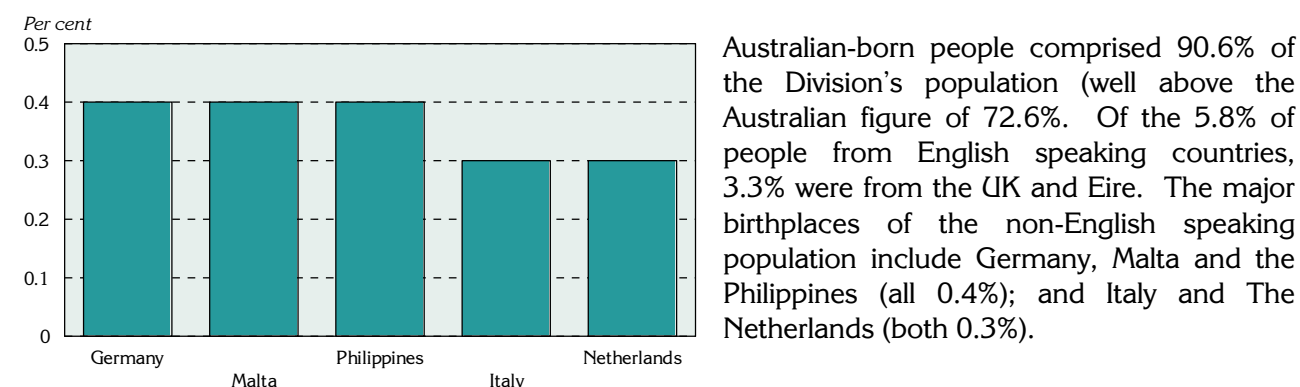
Of these residents, 0.2% had poor proficiency in English (determined when people aged five years and over born overseas in predominantly non-English speaking countries reported in the Census speaking another language and speaking English 'not well' or 'not at all'), compared to higher proportions in country Queensland (0.5%), Queensland (0.9%) and Australia (2.4%).

**Table 2: Non-English speaking born, Mackay DGP, country Queensland, Queensland and Australia, 2001**

People born in predominantly non-English speaking countries	Mackay DGP		Country Queensland		Queensland		Australia	
	No.	%	No.	%	No.	%	No.	%
Resident in Australia for five years or more	3,173	2.9	81,800	4.3	204,783	5.8	2,019,410	10.8
Resident in Australia for less than five years	435	0.4	16,565	0.9	49,081	1.4	408,074	2.2
Poor proficiency in English <sup>1</sup>	186	0.2	8,683	0.5	30,109	0.9	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, Mackay 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 Mackay DGP had lower proportions of single parent families (10.7%) and Aboriginal and Torres Strait Islanders (3.6%) compared to country Queensland as a whole (with 11.8% and 4.9%, respectively) (Figure 4, Table 3).

Full-time secondary school education participation of 16 year olds living in the Division (76.5%) was slightly higher than that for country Queensland (74.6%).

A slightly lower proportion of the Division's households received rent assistance from Centrelink (19.2%) compared to country Queensland (21.3%), and the rate of dwellings rented from the State housing authority (3.1%) was slightly above that for country Queensland (2.8%). The proportion of dwellings with no access to a motor vehicle (8.1%) was similar to that for country Queensland (8.8%), and slightly lower than the rate for Queensland (9.3%).

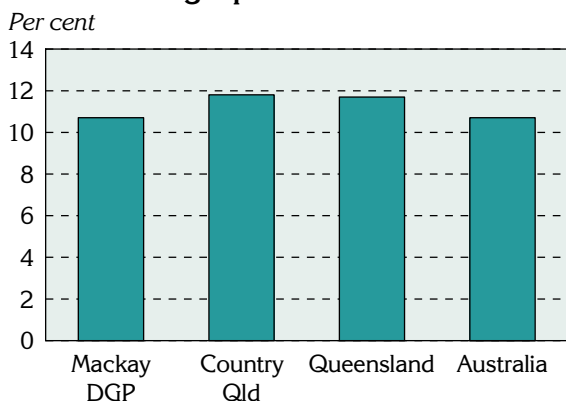
The Division had the same proportion of the population who reported using, at home, a computer (37.5%) as in country Queensland, and a similar rate of home Internet usage (23.3%, compared to 23.7%).

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

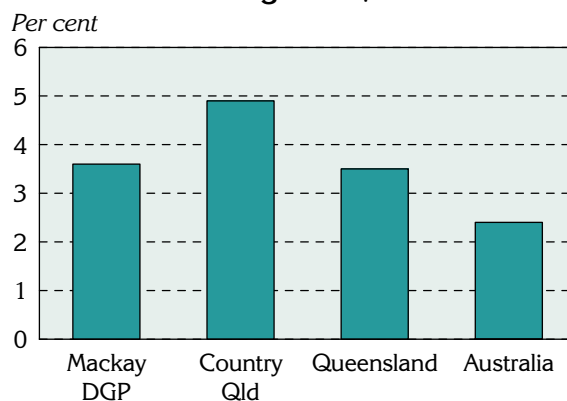
**Figure 4: Socio-demographic indicators, Mackay DGP, country Queensland, Queensland and Australia, 2001**

*Note the different scales*

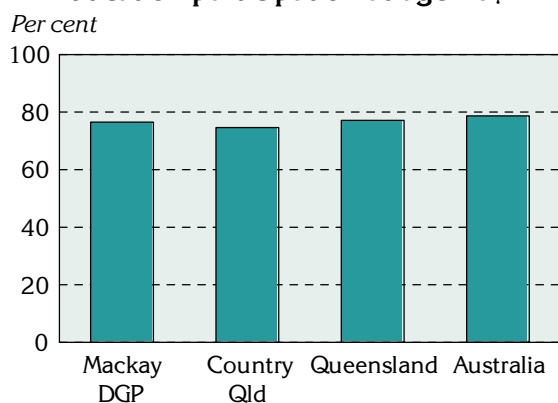
**Single parent families**



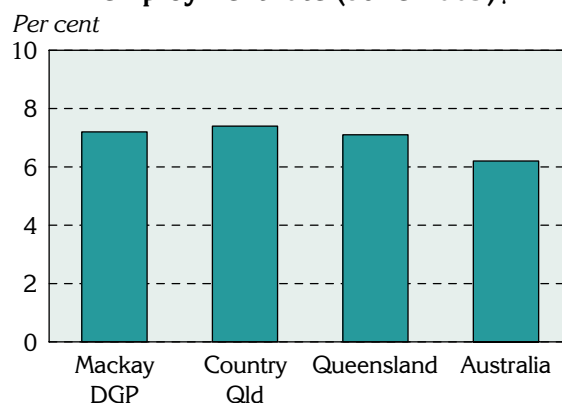
**Indigenous‡**



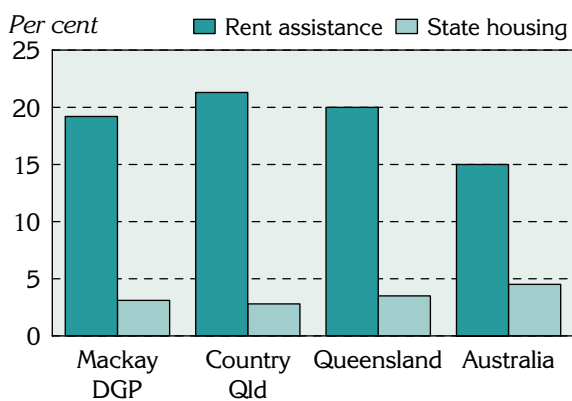
**Education participation at age 16‡**



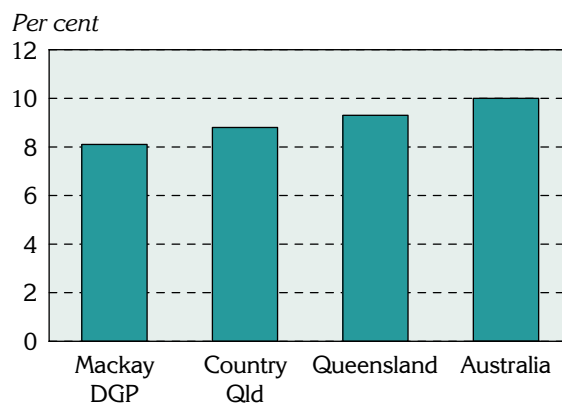
**Unemployment rate (June 2003)‡**



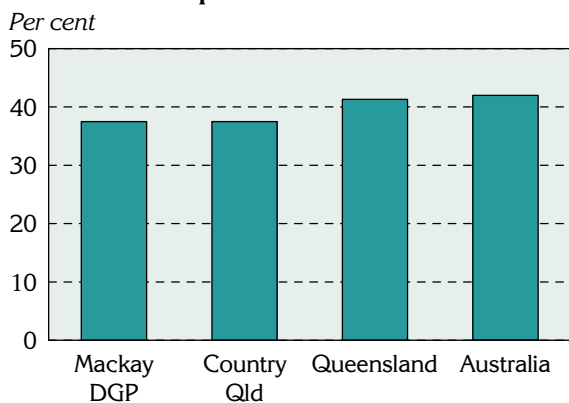
**Households receiving rent assistance & Dwellings rented from State housing authority**



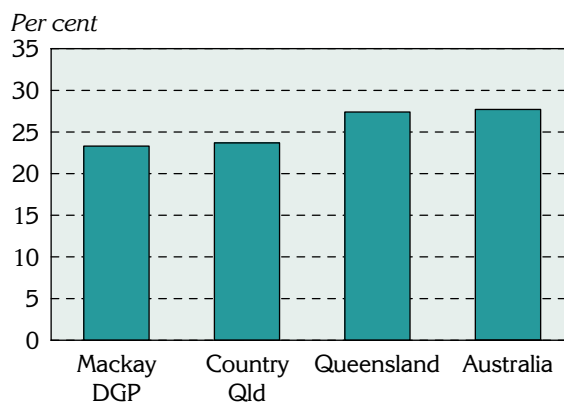
**Dwellings with no motor vehicle**



**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, Mackay DGP, country Queensland, Queensland and Australia, 2001**

Indicator	Mackay DGP		Country Qld		Queensland		Australia	
	No.	%	No.	%	No.	%	No.	%
Single parent families	3,082	10.7	59,925	11.8	109,687	11.7	529,969	10.7
Indigenous‡	4,051	3.6	96,267	4.9	125,908	3.5	458,261	2.4
Full-time secondary school education at age 16‡	1,300	76.5	21,378	74.6	40,051	77.1	130,198	78.7
Households: rent assistance	7,315	19.2	145,862	21.3	253,773	20.0	1,006,599	15.0
Dwellings rented from the State housing authority	1,298	3.1	21,243	2.8	47,286	3.5	317,171	4.5
Dwellings: no motor vehicle	3,386	8.1	66,439	8.8	125,606	9.3	708,073	10.0
Computer use at home	42,779	37.5	741,419	37.5	1,481,238	41.3	7,881,983	42.0
Internet use at home	25,291	23.3	453,438	23.7	964,143	27.4	5,199,286	27.7

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

The unemployment rate of 7.2% in Mackay DGP was similar to that in country Queensland (7.4%) and Queensland (7.1%) (Figure 4, Table 4). The labour force participation rate (77.8%) was slightly above that for country Queensland (74.9%) and for Queensland (75.4%), while the female labour force participation rate (66.6%) was lower than the rates for country Queensland and Queensland (67.8% and 69.5%).

**Table 4: Unemployment and labour force participation, Mackay DGP, country Queensland, Queensland and Australia, 2003**

Labour force indicators	Mackay DGP		Country Qld		Queensland		Australia	
	No.	%	No.	%	No.	%	No.	%
Unemployment rate‡	4,399	7.2	77,047	7.4	136,589	7.1	623,791	6.2
Labour force participation‡	61,117	77.7	1,036,722	74.9	1,926,589	75.4	10,038,147	75.2
Female labour force participation (2001)	18,036	66.6	315,746	67.8	618,570	69.5	3,306,521	69.7

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

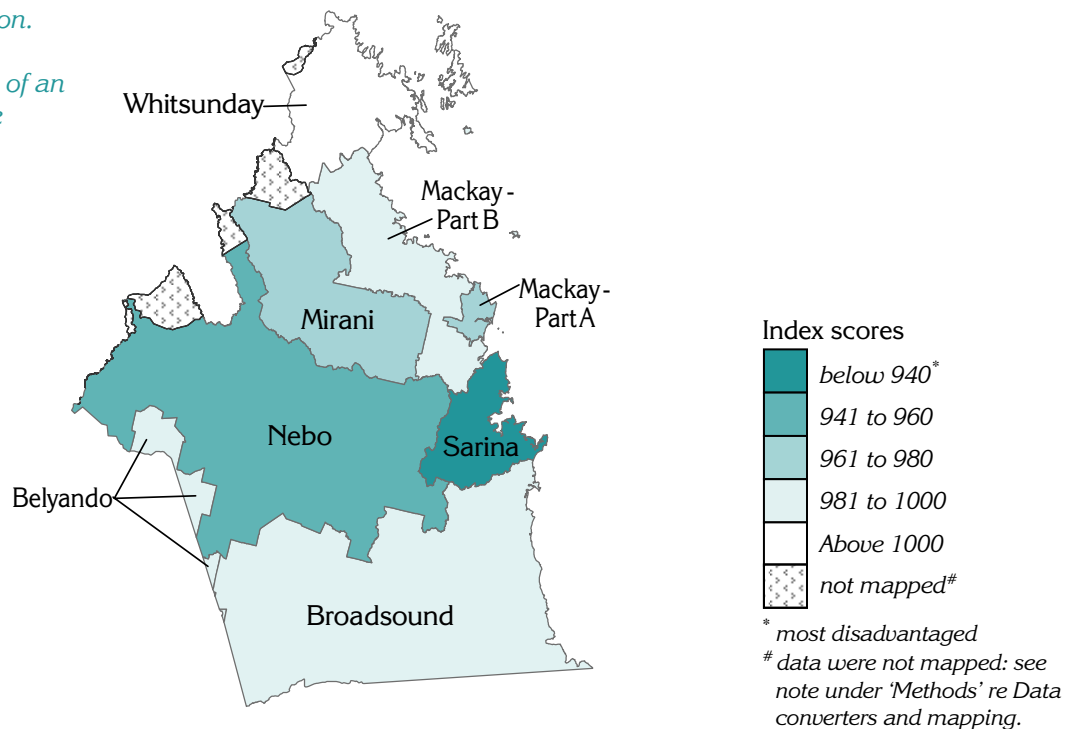
## Summary of the socioeconomic ranking of the Mackay DGP

Following the 2001 Census, the Australian Bureau of Statistics (ABS) produced four socioeconomic indexes for areas (SEIFA) which describe various aspects of the socioeconomic profile of populations in areas. The scores for these indexes for each Statistical Local Area (SLA) or part SLA in Mackay DGP are shown in the supporting information, Table 16, page 23: SLAs are described on page 24.

The Mackay DGP area's SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) score from the 2001 Census is 980, marginally (2.0%) below the average for Australia (1000), and similar to that for country Queensland (978); this highlights the marginally 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), although they cover a relatively narrow range of index scores.

**Map 1: Index of Relative Socio-Economic Disadvantage by SLA, Mackay 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, 3.6% of the population of the Mackay DGP were estimated to be of Aboriginal or Torres Strait Islander origin, below the proportion for country Queensland as a whole (3.5%).

The largest Indigenous populations were in Mackay (Part A) SLA (an estimated 2,842 people, 70.2% of the Indigenous population in the Division), Sarina (435 people, 10.7%) and Whitsunday (302 people, 7.5%).

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

Statistical Local Area	Indigenous		Non-Indigenous		Total	
	No.	%	No.	%	No.	%
Mackay - Part A	2,842	70.2	61,925	57.1	64,767	57.5
Sarina	435	10.7	9,373	8.6	9,808	8.7
Whitsunday	302	7.5	15,220	14.0	15,522	13.8
Mackay - Part B	194	4.8	11,032	10.2	11,226	10.0
Mirani	136	3.4	5,147	4.7	5,283	4.7
Nebo	50	1.2	2,044	1.9	2,094	1.9
Belyando	48	1.2	1,972	1.8	2,020	1.8
Broadsound	44	1.1	1,788	1.6	1,833	1.6
<b>Total</b>	<b>4,051</b>	<b>100.0</b>	<b>108,501</b>	<b>100.0</b>	<b>112,552</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 (21.4%) was below that for the Indigenous population in country Queensland (26.6%), but twice that of the Division's non-Indigenous population (10.4%) (Table 6).

Two thirds (65.7%) of Indigenous 16 year olds living in the Division were involved in full-time secondary school education, higher than in country Queensland (56.8%), but lower than the participation rate of the Division's non-Indigenous 16 year olds (79.2%).

A marginally higher proportion of the Indigenous population (18.2%) lived in dwellings rented from the State housing authority compared to the Indigenous rate for country Queensland (16.0%), but the rate was six times that of the Division's non-indigenous population (3.0%).

**Table 6: Socio-demographic indicators, Mackay DGP‡, country Queensland and Australia, 2001**

Indicator	Mackay DGP‡		Country Queensland		Australia	
	No.	%	No.	%	No.	%
Population						
- Indigenous	4,051	3.6	96,267	4.9	458,261	2.4
- Non-Indigenous	108,501	96.4	1,882,257	95.1	18,952,407	97.6
Single parent families						
- Indigenous	215	21.4	5,495	26.6	26,587	25.8
- Non-Indigenous	2,880	10.4	54,430	11.2	503,382	10.4
Full-time secondary school education at age 16						
- Indigenous	69	65.7	1,041	56.8	5,997	50.5
- Non-Indigenous	1,225	79.2	20,143	78.3	327,055	80.3
Dwellings rented from State housing authority						
- Indigenous	210	18.2	3,642	16.0	23,974	20.8
- Non-Indigenous	1,051	3.0	17,056	2.7	284,502	4.5
People who used a computer at home						
- Indigenous	721	19.5	12,423	14.5	73,636	18.0
- Non-Indigenous	41,795	39.7	724,438	40.1	7,761,390	44.1
People who used the Internet at home						
- Indigenous	297	8.0	5,261	6.1	35,384	8.6
- Non-Indigenous	25,659	24.4	453,756	25.1	5,135,445	29.2

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

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

A higher proportion of the Indigenous population in Mackay DGP reported using a computer at home (19.5%) compared to the Indigenous population in country Queensland (14.5%), but the rate was half that of the Division's non-Indigenous population (39.7%) (Table 6).

The rate of Internet use at home by the Indigenous population in the Division (8.0%) was above that for country Queensland's Indigenous population (6.1%), but just one third of that for the Division's non-Indigenous population (24.4%).

The Indigenous population in Mackay DGP had an unemployment rate of 23.6%, higher than the Indigenous rate for country Queensland (19.6%), and three times the rate of the Division's non-Indigenous population (7.5%) (Table 7). However, taking into account the Indigenous population receiving payments as part of the Community Development Employment Projects (CDEP) scheme (effectively an Aboriginal work-for-the-dole scheme), the 'real' Indigenous unemployment rate of 26.0% was notably lower than the 'real' Indigenous unemployment rate of 37.4% in country Queensland.

The Division's Indigenous labour force participation rate (58.4%) was marginally higher than that for country Queensland (55.4%), but notably lower than the rate for the non-Indigenous population (73.1%). The Indigenous female labour force participation rate (48.7%) was consistent with the rate for country Queensland (48.8%), but notably lower than the rate for the non-Indigenous females in the Division (68.2%).

**Table 7: Unemployment and labour force participation, Mackay DGP‡, country Queensland and Australia, 2003**

Labour force indicators	Mackay DGP‡		Country Qld		Australia	
	No.	%	No.	%	No.	%
Unemployment rate						
- Indigenous	277	23.6	5,335	19.6	24,930	20.0
- Non-Indigenous	3,930	7.5	71,885	8.4	624,337	7.3
Labour force participation*						
- Indigenous	1,175	58.4	27,155	55.4	124,517	52.4
- Non-Indigenous	52,157	73.1	854,115	71.8	8,609,525	72.9
Female labour force participation*						
- Indigenous	479	48.7	11,395	48.8	52,981	46.6
- Non-Indigenous	20,533	68.2	345,139	69.2	3,564,409	69.8
Indigenous unemployment rate						
- excluding CDEP	277	23.6	5,335	19.6	24,930	20.0
- CDEP	28	2.4	4,822	17.8	17,662	14.2
- Total (including CDEP)	305	26.0	10,157	37.4	42,592	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 82.1 full-time equivalent (FTE) GPs, and 100.4 full-time workload equivalent (FWE<sup>2</sup>) GPs worked in the Mackay DGP in 2003/04 (Table 8). Of the FWE GPs, 31.4% were female, and 15.9% were over 55 years of age (compared to 26.7% and 25.2%, respectively, for Queensland).

Apart from the day-time population, the rates of population per FTE GP varied, depending on the population measure used, from a high of 1,446 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), to a low of 1,374 people per GP (calculated on the 1 August 2001 Usual Resident Population (URP) – usual residents of the Division counted in Australia on Census night). The rates of population per FWE GP were lower, ranging from 1,123 (calculated on the URP) to 1,182 (calculated on the Census count). When calculated on the estimated day-time population, the rates of population in the Division were 3.2% below those calculated on the URP.

Based on the average Estimated Resident Population (ERP) as at 30 June 2003 and 30 June 2004, the rates of population per GP in Mackay DGP differed little from the rates for Queensland and Australia, indicating a similar level of provision of GP services in the Division.

**Table 8: Population per GP in Mackay DGP, Queensland and Australia, 2003/04**

Population measure	Population	GPs		Population per GP	
		FTE	FWE	FTE	FWE
<b>Mackay DGP</b>					
Census count (adjusted)*	118,742	82.1	100.4	1,446	1,182
Usual Resident Population (URP) (adjusted)*	112,817	..	..	1,374	1,123
Estimated Resident Population (ERP)	117,143	..	..	1,427	1,166
Day-time population (estimated on URP)* ‡	109,181	..	..	1,330	1,087
<b>Queensland (ERP)</b>	<b>3,841,538</b>	<b>2,739</b>	<b>3,256</b>	<b>1,403</b>	<b>1,180</b>
<b>Australia (ERP)</b>	<b>19,989,303</b>	<b>14,246</b>	<b>16,872</b>	<b>1,403</b>	<b>1,185</b>

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

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

## Immunisation

Data from the Australian Childhood Immunisation Register show that 95.3% of children in the Division in 2002 were fully immunised at age one, marginally above the Australian proportion of 94.2%. Immunisation by provider type for children between the ages of 0 to 6 is shown in Table 9. The proportion of children in the Division who were immunised by a general practitioner was 88.8% compared to 70.0% for Australia, with 4.1% immunised at an Aboriginal health service or by an Aboriginal health worker, and 3.4% at a local government council.

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

Provider	Mackay DGP	Australia
	%	%
General practitioner	88.8	70.0
Local government council	3.4	16.6
Community health centre/ worker	2.9	9.8
Public hospital	0.7	2.1
Aboriginal health service/ worker	4.1	0.9
Other*	0.0	0.6
<b>Total: Per cent</b>	<b>100.0</b>	<b>100.0</b>
<b>Number</b>	<b>24,610</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.

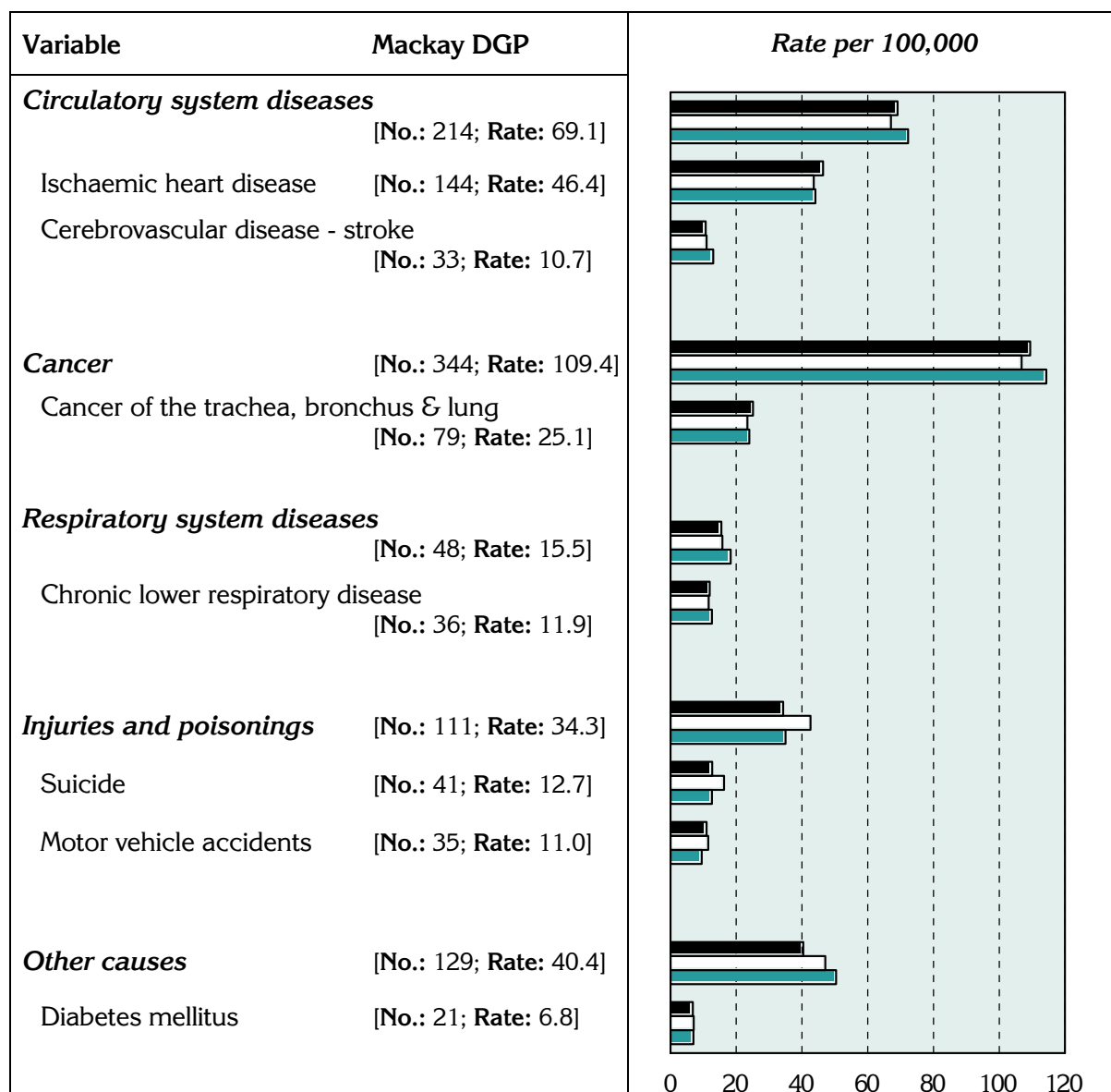
The 'all causes' death rate in the Division at ages 0 to 74 years (268.7 deaths per 100,000 population) is lower than that for country Queensland (278.5) and Australia (290.4): the rates have been age standardised to allow for comparisons between areas, regardless of differences in age profiles between the Division and Australia.

The major causes of premature mortality in the Division, as for country Queensland and Australia as a whole, are cancer and diseases of the circulatory system (Figure 5). With the exception of ischaemic heart disease, cancer of the trachea, bronchus and lung, and suicide and motor vehicle accidents, death rates in the Division for the major conditions and selected causes were lower than those for Australia. Apart from cancer, circulatory system diseases and ischaemic heart disease, the Division's death rates were generally lower than, or similar to, those for country Queensland. The data on which the following chart is based are in Table 19.

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

*Indirectly age standardised rate per 100,000 population*

■ Mackay DGP      □ Country Qld      ■ Australia



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

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

## Chronic diseases and risk factors

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

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

### Background

In this section, estimates of the prevalence of selected chronic diseases and risk factors, and two summary measures of health, are shown for the Division‡ and for non-remote SLAs within the Division. These estimates are only available for some SLAs in this Division – generally the ‘non-remote’ areas – as remote areas were not included in the 2001 National Health Survey. Note that the estimates have been predicted from self-reported data, and are not based on clinical records or physical measures. The chronic diseases and risk factors are those for which sufficiently reliable estimates can be made 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 21-22. The data on which the following charts are based are in Table 20.

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 exception of musculoskeletal system diseases, similar, or smaller proportions of the population in Mackay 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 similar or lower.

### Prevalence estimates: self-reported health‡

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

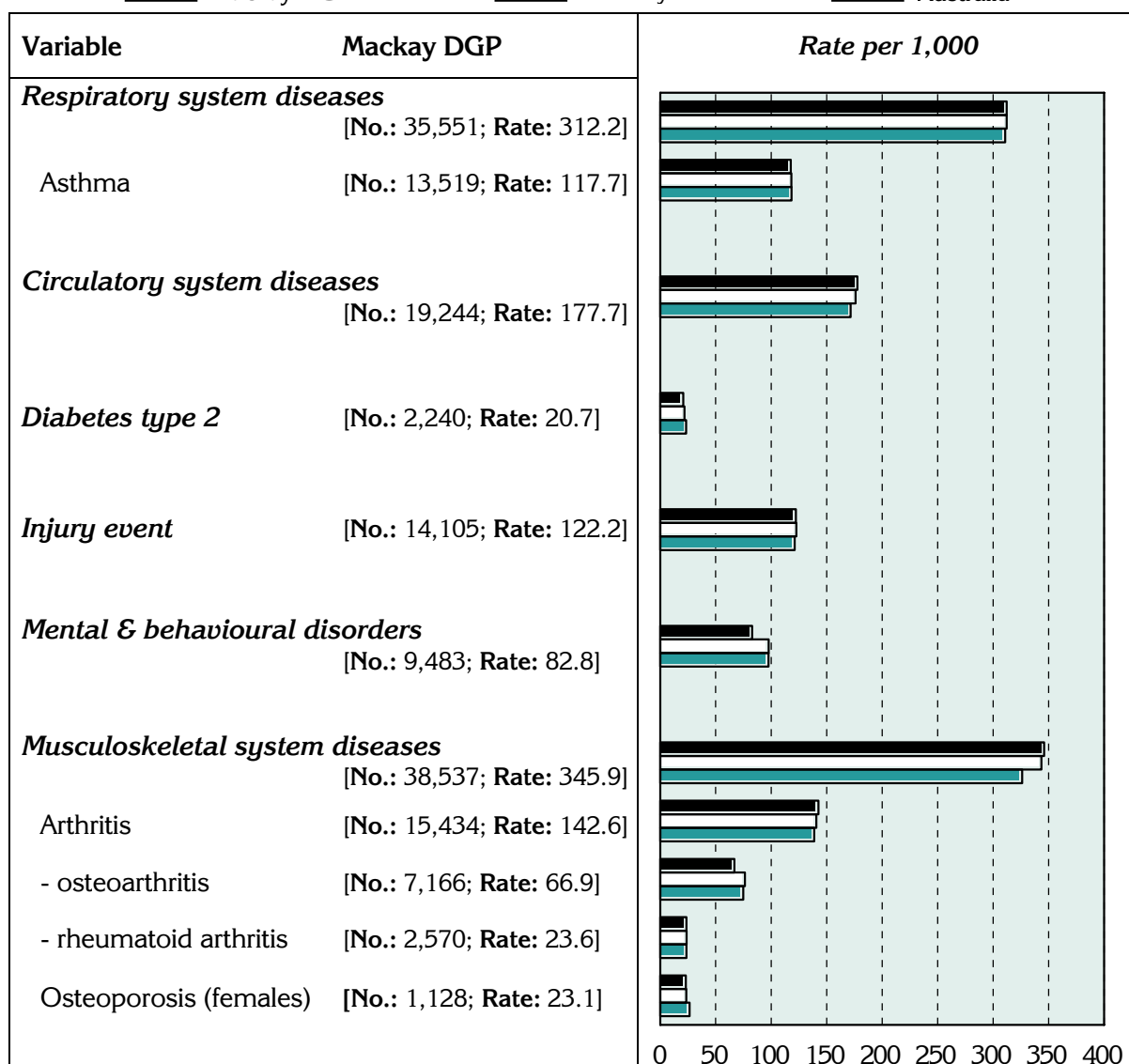
The population of the Division aged 18 years and over is estimated to have a similar proportion with very high psychological distress levels as measured by the K–10 compared to Australia as a whole (Figure 7). The proportion of the population aged 15 years and over estimated to have reported their health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

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

**Figure 6: Estimates\* of chronic disease and injury, Mackay DGP‡, country Queensland and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

■ Mackay DGP      □ Country Qld      ■ Australia



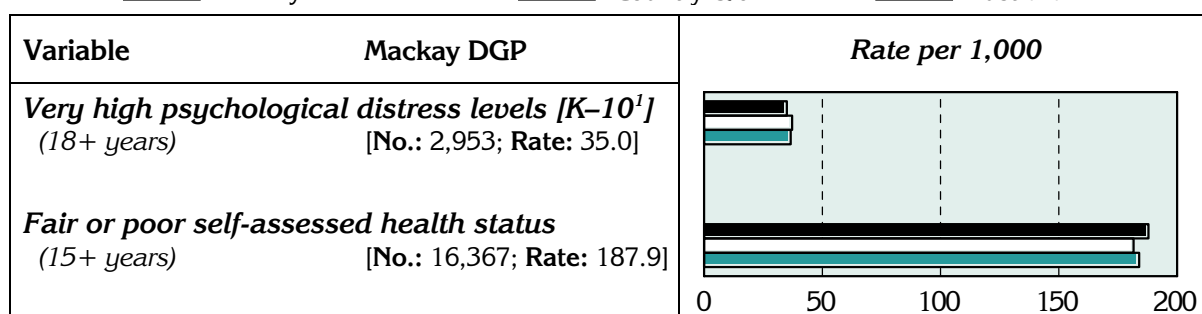
\* 'No.' is a weighted estimate of the number of people in Mackay DGP reporting each chronic condition and is derived from synthetic predictions from the 2001 NHS

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

**Figure 7: Estimates\* of measures of self-reported health, Mackay DGP‡, country Queensland and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

■ Mackay DGP      □ Country Qld      ■ Australia



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

<sup>1</sup> Kessler 10

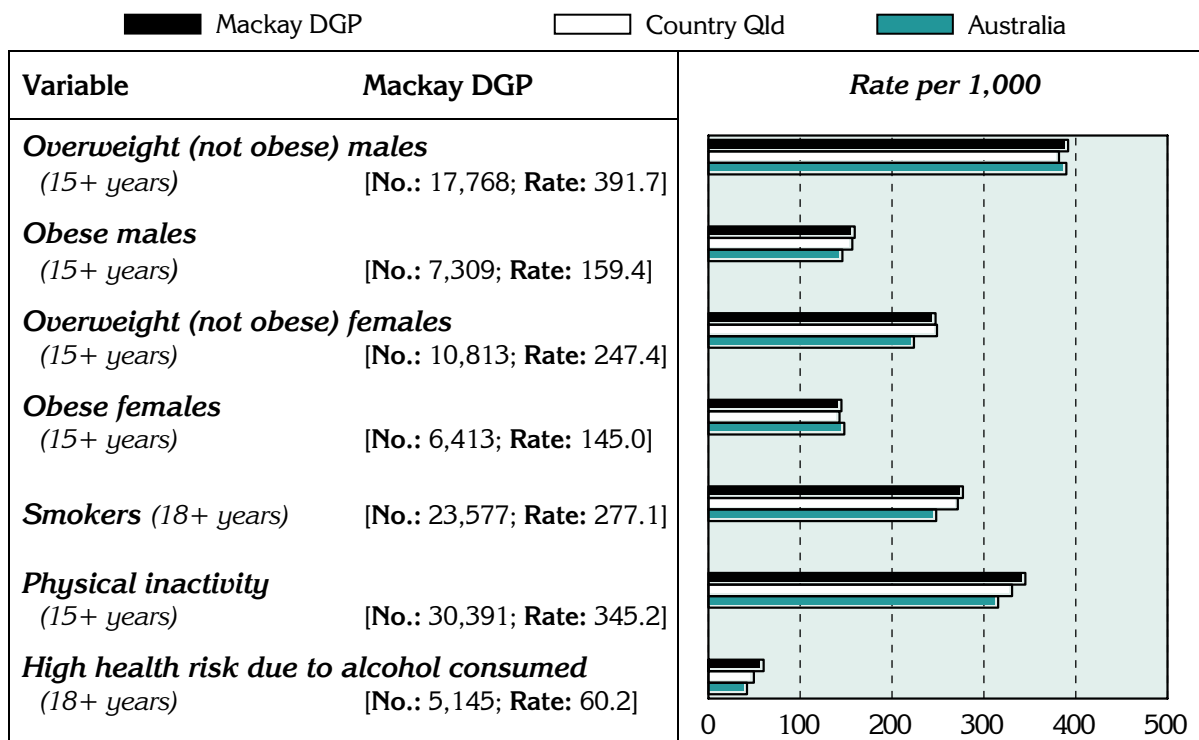
‡ See note under 'Data converters and mapping' re calculation of Division totals

## Prevalence estimates: risk factors‡

The generally higher rates (when compared with the Australian population) for all of the selected risk factors, except obesity in females (Figure 8), are consistent with the socioeconomic status profile of the area.

**Figure 8: Estimates\* of selected risk factors, Mackay DGP‡, country Queensland and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*



\* 'No.' is a weighted estimate of the number of people in Mackay 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

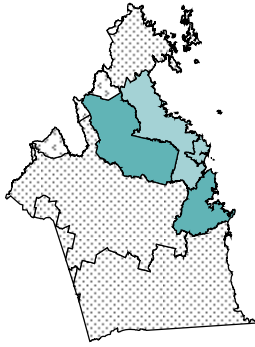
The following maps provide details of the geographic distribution, at the SLA level, of the estimated prevalence of chronic disease (Map 2), self-reported health (Map 3) and risk factors associated with chronic disease (Map 4).

In the following maps, users should note that the estimates shown for part SLAs in the Division (see Table 18, page 24, 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.

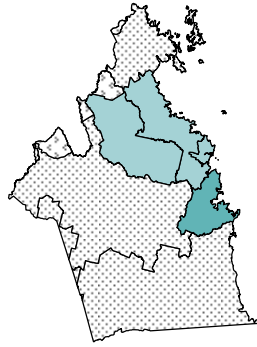


Map 2: Estimates\* of chronic disease and injury by SLA, Mackay DGP, 2001

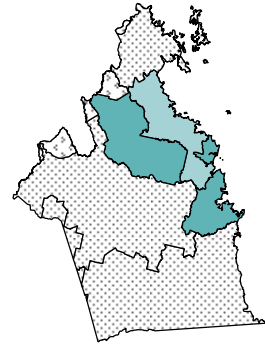
Respiratory system diseases



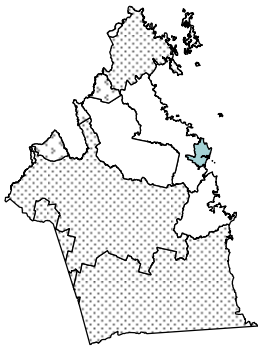
Respiratory system diseases: Asthma



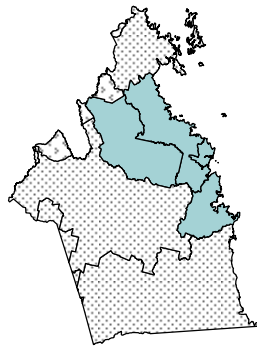
Circulatory system diseases



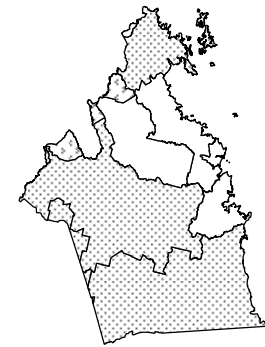
Diabetes type 2



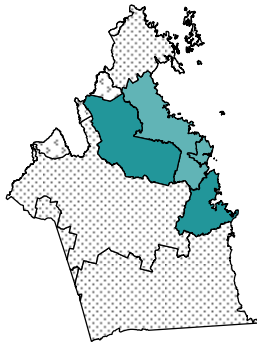
Injury event



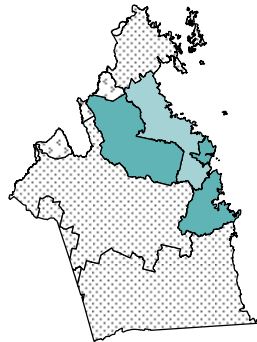
Mental & behavioural disorders



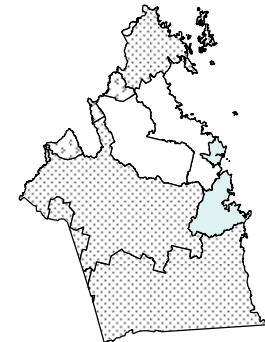
Musculoskeletal system diseases



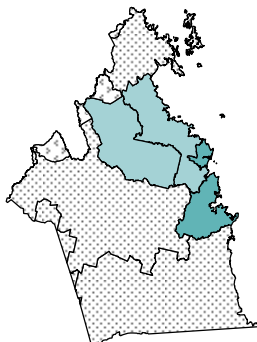
Musculoskeletal system diseases: Arthritis



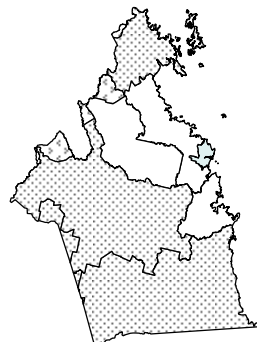
Arthritis: Osteoarthritis



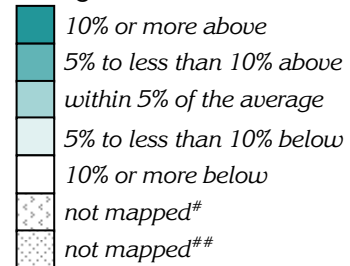
Arthritis: Rheumatoid arthritis



Osteoporosis (females)



Per cent difference from Australian average



\* See Notes on the data re these estimates.

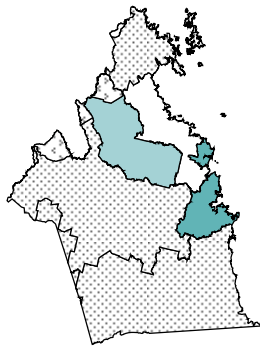
# Data not mapped: see 'Data converters and mapping' section under Notes on the data.

## Estimates not available for remote areas

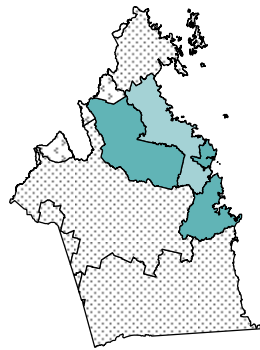


**Map 3: Estimates\* of measures of self-reported health by SLA, Mackay DGP, 2001**

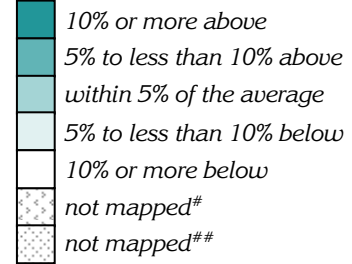
**Very high psychological distress levels [K-10<sup>1</sup>] (18+ years)**



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



Per cent difference from Australian average

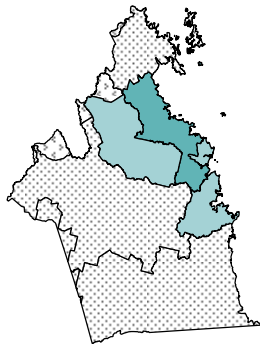


\* See Notes on the data re these estimates.  
# Data not mapped: see 'Data converters and mapping' section under Notes on the data.  
## Estimates not available for remote areas

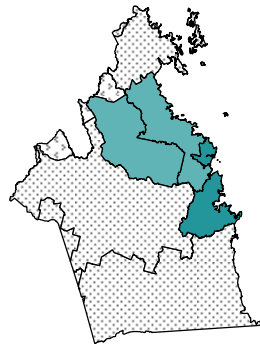
<sup>1</sup> Kessler 10

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

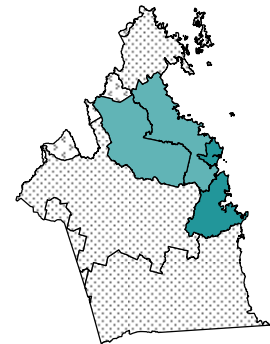
**Overweight (not obese) males (15+ years)**



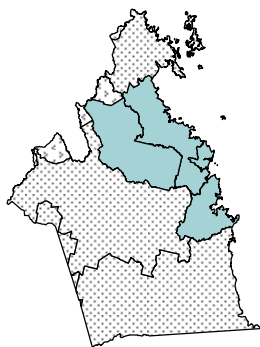
**Obese males (15+ years)**



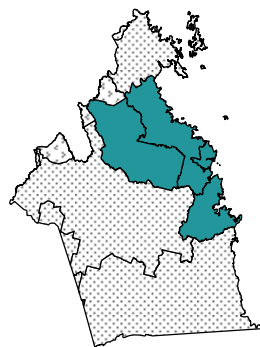
**Overweight (not obese) females (15+ years)**



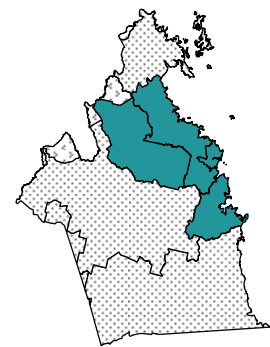
**Obese females (15+ years)**



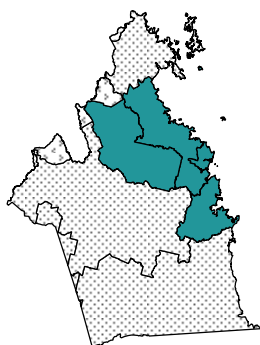
**Smokers (18+ years)**



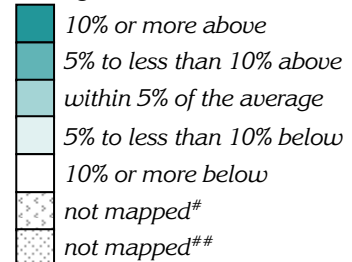
**Physical inactivity (15+ years)**



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



Per cent difference from Australian average



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

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

## Background

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

Remote areas in this context cover 86.4% of Australia's land mass; and, while they comprise just 3.0% of the total population, a large proportion (28.0%) of the Indigenous population lives in these areas. The Mackay Division is classed as partly Remote under the ARIA+ remoteness classification (see *Notes on the data*, page 21); under this classification approximately 13.0% of the Division's population lives in areas classed as Remote, with some representation in Very Remote – the majority of the population (approximately 87.0%) lives in areas classed as Moderately Accessible or Accessible.

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

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

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

Just over half (54.2%) of the Indigenous population in the remote areas of Australia reported speaking an Indigenous language. Those in the lowest income group were almost two and a half times more likely (than those in the three highest income groups) to do so: for ease of reading, these income groups are referred to in the text below as 'low' and 'high'. The difference in this characteristic between people in remote and non-remote areas is over six times (6.3). Note that almost one quarter (23.6%) of Aboriginal and Torres Strait Islander people in the remote areas did not have an income defined, so were not included in the comparisons by income group. For almost all of the characteristics in Table 10, the outcome for those where an income was not defined showed poorer health, or greater disadvantage, than those for whom income was available. For example, Indigenous people living in remote areas and for whom an income was not available were 37.0% more likely (than those reporting an income) to speak an Indigenous language (a rate ratio of 1.37).

*The information in Table 12 has been restricted to show the rate (proportion) for the remote areas only, and the rate ratios between income groups and the remote and non-remote areas: the data from which the rate ratios have been calculated are available on the PHIDU web site.*

**Table 10: Summary characteristics of Aboriginal and Torres Strait Islander people, by remoteness and income group, Australia, 2002**

Characteristic	Remote areas	Low income cf. with high income (RR*)		Remote cf. with non-remote (RR**)
	Per cent	Remote	Non-remote	
<b>Family and culture</b>				
Able to get support in time of crisis from outside household	86.9	0.99	0.93	0.95
At least one stressor experienced in last 12 months	85.5	1.09	1.03	1.06
Speaks an Indigenous language	54.2	2.45	1.69	6.30
<b>Health and disability</b>				
Self-assessed health status				
Excellent/very good	44.2	0.94	0.66	1.00
Fair/poor	20.0	1.25	2.34	0.82
Disability or long term health condition	35.4	1.30	1.64	0.96
Risk behaviour/characteristic				
Current daily smoker	50.4	1.16	1.66	1.05
Risky/high risk alcohol consumption in last 12 months	16.8	0.81	0.97	1.16
<b>Educational attainment</b>				
Has a post -school qualification	18.1	0.36	0.47	0.57
Does not have a post -school qualification				
Completed Year 12	9.0	0.72	0.31	0.83
Completed Year 10 or Year 11	27.8	0.97	1.34	1.01
Completed Year 9 or below, or did not attend	45.1	2.06	3.01	1.51
Total with no post -school qualification	81.9	1.35	1.44	1.20
<b>Employment</b>				
Employed: CDEP				
Non-CDEP	19.2	0.11	0.12	0.48
Total employed	51.7	0.39	0.17	1.17
Unemployed	5.9	4.52	3.38	0.35
Not in the labour force	42.5	3.91	4.99	1.09
<b>Financial stress</b>				
Unable to raise \$2,000 in a week for something important	73.0	2.02	3.55	1.54
<b>Law and justice</b>				
Victim of physical, threatened violence in last 12 months	22.7	0.89	1.82	0.91
<b>Transport access</b>				
Can easily get to the places needed	65.6	0.74	0.71	0.91
Cannot, or often has difficulty, getting to places needed	16.6	3.96	3.31	1.69
<b>Mobility</b>				
Moved dwellings in last 12 months	27.2	0.80	1.26	0.84
<b>Information technology</b>				
Used computer in last 12 months	34.4	0.45	0.63	0.54
Accessed the Internet in last 12 months	21.6	0.37	0.50	0.45

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

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

Source: ABS 2002 NATSIS, 2002 (unpublished data)

The relevance of the measure of self-reported health for Aboriginal and Torres Strait Islander people has been questioned. For example, while 20.0% of Aboriginal and Torres Strait Islander people in the remote areas reported their health to be fair or poor, this was 18.0% fewer than in the non-remote areas, a finding that would not appear to be supported by other data.

Despite this result, there is a variation within the remote areas, with low income Aboriginal and Torres Strait Islander people 25% more likely than those with a high income to report their health as fair, or poor (a rate ratio of 1.25).

In the remote areas, disability and smoking (reported by 35.4% and 50.4%, respectively) show a relationship with disadvantage (higher rates in low, compared with high, income groups), but risky/high risk levels of alcohol consumption over the previous 12 months do not. However, reported rates of alcohol consumption at high risk levels (reported by 16.8%) are 16.0% higher in remote than in non-remote areas.

Similarly, there is a clear association for Aboriginal and Torres Strait Islander people between high levels of educational attainment and income. For example, Aboriginal and Torres Strait Islander people in the low income group were more likely to report having no post-school qualifications (ie. no qualification beyond secondary school) (35.0% higher for low income than high income groups); and those in remote areas 20.0% higher compared with those in non-remote areas.

Not surprisingly, the employment rate (including CDEP) is extremely strongly related to income levels, with 61% fewer in the low income group having employment (a rate ratio of 39.0%) in remote areas: conversely, four and a half times the number in the low income group are unemployed, compared with the high income group. Similarly striking differentials apply in the non-remote areas.

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

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

**Table 11: Summary health characteristics, by Indigenous status and remoteness, Australia, 2001**  
*Age standardised rates (as per cent)*

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

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

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

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

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

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

Details of the immunisation status of adult Australians are not available from administrative sources (as are children's immunisations) so self-reported data again provide the only picture of the characteristics of the population groups who are immunised against various conditions (Table 12).

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

**Table 12: Immunisation status of people aged 50 years and over, by Indigenous status and remoteness, Australia, 2001**

*Per cent*

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

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

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

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

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

The limited range of health information available for Aboriginal and Torres Strait Islander women living in remote areas shows that they are more likely (than Indigenous women in non-remote areas) to have breastfed their child (77% and 59%, respectively) (and also more likely than the non-Indigenous population (53%)). Lower proportions also reported not having children (Table 13).

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

**Table 13: Summary women's health characteristics, by Indigenous status and remoteness, Australia, 2001**

*Age standardised rates (as per cent)*

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

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

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

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

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

# Notes on the data

## Data sources and limitations

### General

References to 'country Queensland' relate to Queensland excluding the Brisbane Statistical Division.

### Data sources

Table 14 details the data sources for the material presented in this profile.

**Table 14: 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 Tables 2, 3 and 4; Figures 3 and 4	Estimated Resident Population, ABS, 30 June for the periods shown 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 16 Tables 5, 6 and 7	ABS SEIFA package, Census 2001 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 Table 9	National Centre for Immunisation Research and Surveillance, 2002 Australian Childhood Immunisation Register, Health Insurance Commission, 2003/04 (unpublished)
<b>Premature mortality</b>	
Figure 5; Table 19	ABS Deaths, 2000 to 2002
<b>Chronic diseases and associated risk factors</b> (see Notes Table 15)	
Figures 6, 7 and 8; Maps 2, 3 and 4; Table 20	Estimated from 2001 National Health Survey (NHS), ABS (unpublished)
<b>National Aboriginal and Torres Strait Islander Social Survey and Health Survey</b>	
Table 10	ABS 2002 NATSIS, 2002 (unpublished)
Tables 11,12 and 13	ABS 2001 NHS Cat. No. 4714.0 – Tables 1, 19 and 22

<sup>1</sup> All data extracted from Usual Residents Profile, except 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

## Remote areas

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

## Chronic diseases and associated risk factors

The data for chronic conditions and risk factors 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 15 includes notes relevant to this data.

**Table 15: 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 (Table 17).

#### [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 18.

#### [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 16) 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 Mackay DGP are shown in Table 16.

**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 16: SEIFA scores by SLA, Mackay DGP, 2001**

SLA code	SLA name (% per cent of SLA in the Division)	Index score			
		Disadvantage	Advantage	Economic Resources	Education & Occupation
30600	Belyando (20.3)	994	1013	1084	917
31700	Broadsound (28.3)	997	1003	1072	903
34762	Mackay - Part A (100.0)	978	965	981	952
34765	Mackay - Part B (100.0)	985	934	935	919
35050	Mirani (100.0)	968	911	904	910
35700	Nebo (100.0)	958	984	1077	877
36550	Sarina (100.0)	937	910	937	891
37330	Whitsunday (100.0)	1011	976	979	977

\* 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 Mackay DGP

The Mackay DGP covers 31,727 square kilometres, based on 2001 SLA data.

The postcodes in the Division (as per the Department of Health and Ageing web site) are shown below (Table 17).

**Table 17: Postcodes in Mackay 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*
4707	50	4744	30	4757	100
4737	100	4745	25	4798	100
4738	100	4750	100	4799	100
4739	100	4751	100	4800	100
4740	100	4753	100	4801	100
4741	100	4754	100	4802	100
4742	100	4756	100	4803	100
4743	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, some Local Government Areas (LGAs) have been split into SLAs. For example, the LGA of Mackay is comprised of two SLAs, Part A and Part B. All of these SLAs, and all or parts of the other SLAs listed in Table 18 comprise the Division.

**Table 18: SLAs in Mackay 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
30600	Belyando	20.3	2,140
31700	Broadsound	28.3	1,838
34762	Mackay - Part A	100.0	68,488
34765	Mackay - Part B	100.0	11,461
35050	Mirani	100.0	5,307
35700	Nebo	100.0	2,147
36550	Sarina	100.0	9,995
37330	Whitsunday	100.0	16,900

\* 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 19.

**Table 19: Deaths before 75 years of age by major condition group and selected cause, Mackay DGP‡, country Queensland and Australia, 2000-02\***

*Indirectly age standardised rate per 100,000 population*

Variable	Mackay DGP‡		Country Qld		Australia	
	No.	Rate	No.	Rate	No.	Rate
<b>Circulatory system diseases</b>	214	69.1	4,146	67.1	38,357	72.3
Ischaemic heart disease	144	46.4	2,705	43.6	23,364	44.1
Cerebrovascular disease – stroke	33	10.7	681	11.0	6,920	13.0
<b>Cancer</b>	344	109.4	6,591	106.8	60,603	114.3
Cancer of the trachea, bronchus & lung	79	25.1	1,460	23.4	12,715	24.0
<b>Respiratory system diseases</b>	48	15.5	984	15.8	9,726	18.3
Chronic lower respiratory disease	36	11.9	725	11.6	6,657	12.6
<b>Injuries and poisonings</b>	111	34.3	2,377	42.6	18,573	35.0
Suicide	41	12.7	907	16.3	6,706	12.6
Motor vehicle accidents	35	11.0	635	11.5	5,014	9.5
<b>Other causes</b>	129	40.4	2,829	47.1	26,735	50.4
Diabetes mellitus	21	6.8	442	7.1	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 data used to illustrate the prevalence estimates of chronic disease (Figure 6), measures of self-reported health (Figure 7), and selected risk factors (Figure 8), are shown in Table 20 below.

**Table 20: Estimates of chronic disease and associated risk factors, Mackay DGP‡, country Queensland and Australia, 2001**

*Indirectly age standardised rate per 1,000 population*

Variable	Mackay DGP‡	Country Qld	Australia
<b>Chronic disease and injury (Figure 6)</b>			
Respiratory system diseases	312.2	312.2	310.8
Asthma	117.7	118.2	118.3
Circulatory system diseases	177.7	176.1	171.5
Diabetes type 2	20.7	21.9	23.4
Injury event	122.2	122.7	121.2
Mental & behavioural disorders	82.8	97.7	97.6
Musculoskeletal system diseases	345.9	343.5	326.2
Arthritis	142.6	140.7	138.8
- Osteoarthritis	66.9	76.3	74.9
- Rheumatoid arthritis	23.6	23.8	23.6
Osteoporosis (females)	23.1	23.5	26.4
<b>Measures of self-reported health (Figure 7)</b>			
Very high psychological distress levels (18+ years)	35.0	37.2	36.6
Fair or poor self-assessed health status (15+ years)	187.9	181.6	184.0
<b>Risk factors (Figure 8)</b>			
Overweight (not obese) males (15+ years)	391.7	381.8	389.7
Obese males (15+ years)	159.4	156.8	145.9
Overweight (not obese) females (15+ years)	247.4	248.9	223.9
Obese females (15+ years)	145.0	142.8	148.0
Smokers (18+ years)	277.1	271.7	248.0
Physical inactivity (15+ years)	345.2	330.7	315.5
High health risk due to alcohol consumed (18+ years)	60.2	49.5	42.1

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

## References

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

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## Further developments and updates

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

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

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

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

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

## PHIDU contact details

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

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