

Population health profile of the Cairns

Division of General Practice

Population Profile Series: No. 79

PHIDU

November 2005



© Commonwealth of Australia 2005

This work may be reproduced and used subject to acknowledgement of the source of any material so reproduced.

National Library of Australia Cataloguing in Publication entry

Population health profile of the Cairns Division of General Practice.

Bibliography.

ISBN 0 7308 9487 8.

1. Public health - Queensland - Cairns - Statistics. 2. Health status indicators - Queensland - Cairns - Statistics. 3. Health service areas - Queensland - Cairns. 4. Cairns (Qld.) - Statistics, Medical. I. Public Health Information Development Unit (Australia). II. Australia. Dept. of Health and Ageing. III. Australian Institute of Health and Welfare. (Series : Population profile series, 1833-0452 ; no. 79).

362.1099436

ISSN 1833-0452 Population Profile Series

Public Health Information Development Unit, The University of Adelaide *A Collaborating Unit of the Australian Institute of Health and Welfare*

This profile was produced by PHIDU, the Public Health Information Development Unit at The University of Adelaide, South Australia. The work was funded under a grant from the Australian Government Department of Health and Ageing. The views expressed in this profile are solely those of the authors and should not be attributed to the Department of Health and Ageing or the Minister for Health and Ageing.

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.

Suggested citation:

PHIDU. (2005) *Population health profile of the Cairns Division of General Practice*. Population Profile Series: No. 79. Public Health Information Development Unit (PHIDU), Adelaide.

Enquiries about or comments on this publication should be addressed to:

PHIDU, The University of Adelaide, South Australia 5005
Phone: 08-8303 6237 or e-mail: PHIDU@publichealth.gov.au

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

Published by Public Health Information Development Unit, The University of Adelaide

Contributors: Anthea Page, Sarah Ambrose, Liz Fisher, Kristin Leahy and John Glover

Population health profile of the Cairns Division of General Practice

Introduction

This profile has been designed to provide a description of the population of the Cairns 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 Queensland and Australia) and Aboriginal and Torres Strait Islanders elsewhere in Australia. Specific topics covered for the Cairns Division 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:	Queensland	
Division number:	413	
Population‡:	No.	%
Indigenous:	11,950	
<25	6,889	57.6%
65+	355	3.0%
Non-Indigenous:	107,239	
<25	36,262	33.8%
65+	9,327	8.7%
Disadvantage score¹:	990	
GP services per head of population:		
Division‡	4.9	
Australia	4.7	
Population per FTE GP:		
Division‡	1,389	
Australia	1,403	
Premature death rate²:		
Division‡	293.4	
Australia	290.1	

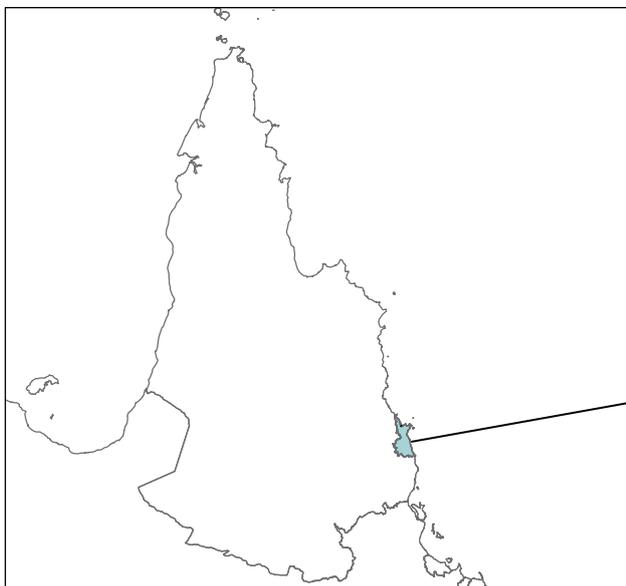
¹ Numbers below 1000 (the index score for Australia) indicate the Division is relatively disadvantaged

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

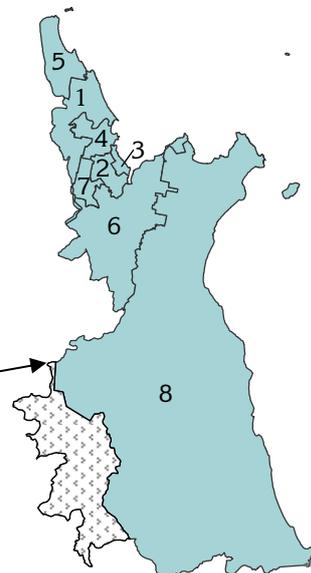
‡ See note "Data converters and mapping" re calculation of Division Total

Cairns Division of General Practice

Queensland Divisions of General Practice



Cairns DGP by SLA



Map legend: see page 6

Socio-demographic profile

Population

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

The Cairns DGP had a population of 119,189 at the 2001 Census. Aboriginal and Torres Strait Islander people comprised one-tenth (9.3%) of the population of the Division, and had a markedly younger age structure than the non-Indigenous population. The bars in the chart for the 0 to 4 and 5 to 9 age groups clearly show the effect of high Indigenous birth rates in the Division; this gives the chart a much broader base compared to the non-Indigenous population of the Division (Figure 1). The very marked drop in the proportion of the Indigenous population between each age group from 5 to 9 years suggests extremely high death rates (and, possibly, out-migration) are occurring from that group through to 24 years of age, after which the rate of decline in the population slows.

The profile for the non-Indigenous population (shown by the shapes) is quite different and shows the impact of a lower birth rate and, from 10 to 24 years of age, possible out-migration for schooling and further education. There were smaller reductions in the population from age 35 through to the 70 to 74 years age group: the marked increase at the oldest ages (in particular for females) is suggestive of the non-Indigenous population moving into the Division from other areas to retire.

Figure 1: Population in Cairns DGP‡, by Indigenous status, age and sex, 2001

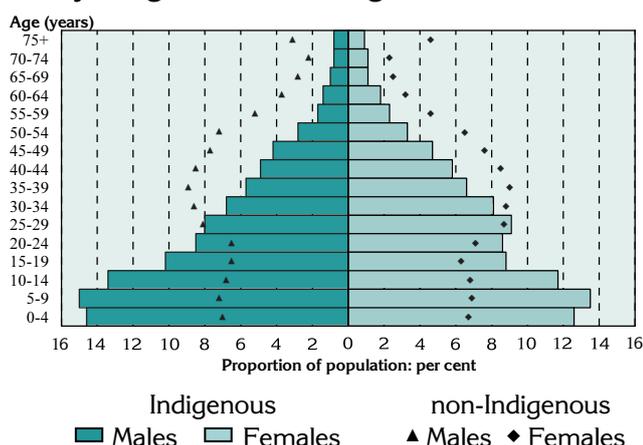
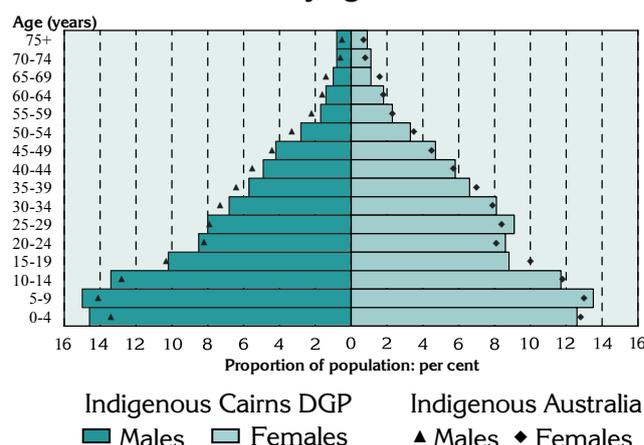


Figure 2: Indigenous population in Cairns DGP‡ and Australia, by age and sex, 2001



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

The profile of the Indigenous population in the Division is similar to that for Indigenous people across Australia (Figure 2). The major differences are that the Division had higher proportions of males aged 0 to 14 years; females aged 5 to 9 years and 25 to 34 years; and slightly lower proportions of males aged 30 to 69 years. Table 1 provides the data on which the charts in Figures 1 and 2 are based, highlighting differences in the age distribution of the Indigenous and non-Indigenous populations in the Cairns DGP and Australia.

Table 1: Population by Indigenous status and age*, Cairns DGP‡ and Australia, 2001

Age group (years)	Cairns DGP‡				Australia			
	Indigenous		Non-Indigenous		Indigenous		Non-Indigenous	
	No.	%	No.	%	No.	%	No.	%
0-14	4,737	39.6	22,162	20.7	178,622	39.0	3,807,808	20.1
15-24	2,152	18.0	14,099	13.1	83,942	18.3	2,570,934	13.6
25-44	3,341	28.0	37,087	34.6	128,474	28.0	5,715,858	30.2
45-64	1,365	11.4	24,563	22.9	54,206	11.8	4,435,376	23.4
65-74	246	2.1	5,208	4.9	10,249	2.2	1,310,587	6.9
75+	109	0.9	4,118	3.8	2,768	0.6	1,111,844	5.9
Total	11,950	100.0	107,239	100.0	458,261	100.0	18,952,407	100.0

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

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

Just less than one third of the Indigenous population in Cairns DGP (an estimated 3,568 people, 29.9%) lived in Cairns - Central Suburbs Statistical Local Area (SLA – see page 19), higher than the proportion for the non-Indigenous population (16.6%) (Table 2). Almost one quarter (2,725 people, 22.8%) of the Division's Indigenous population lived in Cairns - Trinity SLA, with one tenth (1,275 people, 10.7%) in Cairns - Part B.

Table 2: Population by Indigenous status*, SLAs in Cairns DGP‡, 2001

Statistical Local Area	Indigenous		Non-Indigenous		Total	
	No.	%	No.	%	No.	%
Cairns - Central Suburbs	3,568	29.9	17,846	16.6	21,414	18.0
Cairns – Trinity	2,725	22.8	26,694	24.9	29,419	24.7
Cairns - Part B	1,275	10.7	2,205	2.1	3,479	2.9
Cairns – Barron	972	8.1	16,769	15.6	17,741	14.9
Cairns – City	685	5.7	6,339	5.9	7,024	5.9
Cairns - Western Suburbs	634	5.3	10,858	10.1	11,492	9.6
Cairns - Mt Whitfield	529	4.4	10,926	10.2	11,455	9.6
Cook (excluding Weipa)	425	3.6	492	0.5	916	0.8
Cairns - Northern Suburbs	390	3.3	13,233	12.3	13,623	11.4
Carpentaria	196	1.6	108	0.1	304	0.3
Other	551	4.6	1,770	1.7	2,321	1.9
Total	11,950	100.0	107,239	100.0	119,189	100.0

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

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

At 30 June 2004 the Estimated Resident population was 126,932.

Socioeconomic status and Indigenous status

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

At the 2001 Census, one-tenth (9.3%) of the population of the Cairns DGP was estimated to be of Aboriginal or Torres Strait Islander origin, four times the Australian average of 2.4% (Table 3) (Figure 3).

The proportion of Indigenous single parent families in the Division (34.1%) was higher than the Indigenous rate for country Queensland¹ (26.6%), and two and a half times that of non-Indigenous families (13.3%).

Over half (61.0%) of Indigenous 16 year olds living in the Division were involved in full-time secondary school education, which was lower than the Indigenous rate for country Queensland (56.8%), and notably fewer than the proportion for the non-Indigenous population (77.9%).

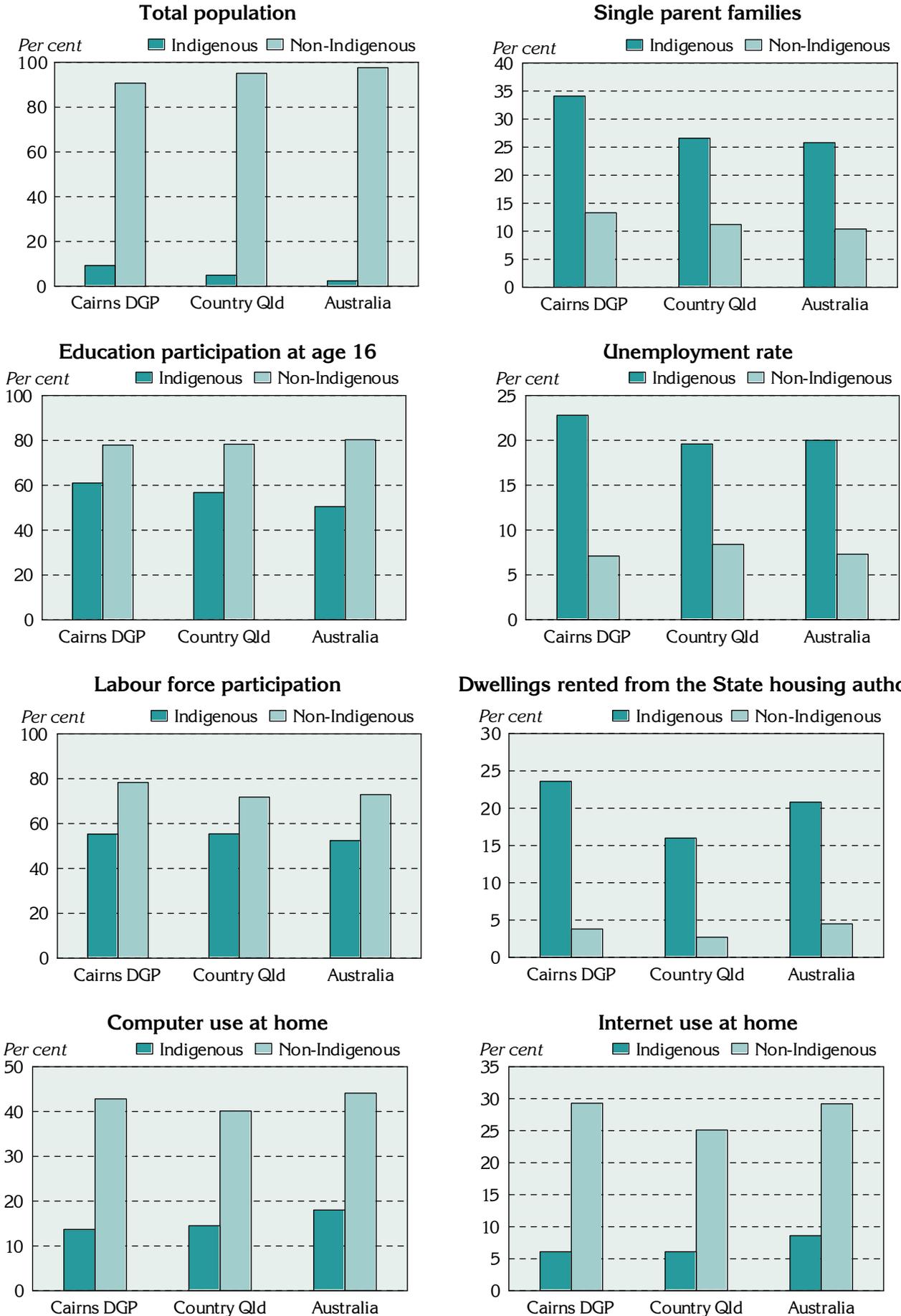
The proportion of the Indigenous population in the Division lived in dwellings rented from the State housing authority (23.6%), was higher compared to the Indigenous in country Queensland (16.0%), and much higher than the non-Indigenous population (3.8%). The proportion of the population (Indigenous and non-Indigenous combined) in the Division receiving rent assistance from Centrelink (22.8%) was slightly higher than that for country Queensland (21.3%).

One eighth (13.7%) of the Indigenous population in Cairns DGP reported using a computer at home, slightly lower than the Indigenous rate for country Queensland (14.5%) and notably below the rate for the non-Indigenous population in the Division (42.8%). Similarly, the rate of Internet use at home by the Indigenous population in the Division (6.1%) was slightly less than that of the Indigenous population in country Queensland (6.1%), and was one fifth that of the non-Indigenous population (29.3%),.

¹References to 'country New South Wales' relate to New South Wales excluding the Sydney Statistical Division

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

Note the different scales



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

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

Table 3: Socio-demographic indicators, Cairns DGP‡, country Queensland and Australia, 2001*

Indicator	Cairns DGP		Country Qld		Australia	
	No.	%	No.	%	No.	%
Population						
- Indigenous	11,950	9.3	96,267	4.9	458,261	2.4
- Non-Indigenous	107,239	90.7	1,882,257	95.1	18,952,407	97.6
Indigenous with poor proficiency in English	46	0.5	753	0.9	12,208	3.0
Single parent families						
- Indigenous	788	34.1	5,495	26.6	26,487	25.8
- Non-Indigenous	3,488	13.3	54,430	11.2	503,382	10.4
Full-time secondary school education at age 16						
- Indigenous	125	61.0	1,041	56.8	5,997	50.5
- Non-Indigenous	991	77.9	20,143	78.3	327,055	80.3
Dwellings rented from State housing authority						
- Indigenous	608	23.6	3,642	16.0	23,974	20.8
- Non-Indigenous	1,374	3.8	17,056	2.7	284,502	4.5
People who used a computer at home						
- Indigenous	1,359	13.7	12,423	14.5	73,636	18.0
- Non-Indigenous	43,427	42.8	724,438	40.1	7,761,390	44.1
People who used the Internet at home						
- Indigenous	601	6.1	5,261	6.1	35,384	8.6
- Non-Indigenous	29,755	29.3	453,756	25.1	5,135,445	29.2
Households receiving rent assistance	9,534	22.8	145,862	21.3	1,006,599	15.0

¹ Calculated on Indigenous persons who reported speaking an Aboriginal or Torres Strait Islander language and speaking English 'not well' or 'not at all'

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

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

The Indigenous unemployment rate in Cairns DGP of 22.8%, were marginally above the country Queensland Indigenous average (19.6%), and almost three times the rate of the non-Indigenous population (7.1%) (Table 4). However, when taking into account the Indigenous population receiving payments as part of the Community Development Employment Projects (CDEP) scheme (effectively an Aboriginal work-for-the-dole scheme), the 'real' Indigenous unemployment rate is 33.3%. This is slightly higher than the 'real' Indigenous unemployment rate of 37.4% in country Queensland and 34.2% for Australia as a whole.

Table 4: Unemployment and labour force participation, Cairns DGP‡, country Queensland and Australia, 2003

Labour force indicators	Cairns DGP‡		Country Qld		Australia	
	No.	%	No.	%	No.	%
Unemployment rate						
- Indigenous	721	22.8	5,335	19.6	24,930	20.0
- Non-Indigenous	3,967	7.1	71,885	8.4	624,337	7.3
Labour force participation (incl. CDEP as employed)						
- Indigenous	3,155	55.3	27,155	55.4	124,517	52.4
- Non-Indigenous	55,679	78.3	854,115	71.8	8,609,525	72.9
Female labour force participation (incl. CDEP as employed)						
- Indigenous	1,455	49.9	11,395	48.8	52,981	46.6
- Non-Indigenous	23,978	77.2	345,139	69.2	3,564,409	69.8
Indigenous unemployment rate (incl. CDEP)						
- excluding CDEP	721	22.8	5,335	19.6	24,930	20.0
- CDEP	329	10.4	4,822	17.8	17,662	14.2
- Total (including CDEP)	1,050	33.3	10,157	37.4	42,592	34.2

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

Labour force participation in the Division for the Indigenous population (in this case with those under the CDEP counted as employed) was notably lower than that of the non-Indigenous population (56.7%, compared to 78.2%), and similar to the Indigenous rate for country Queensland (55.4%, Table 4). The Indigenous female labour force participation rate was also notably lower (50.9%), compared to the non-Indigenous population (77.1%), but marginally above the Indigenous rate for country Queensland (48.8%).

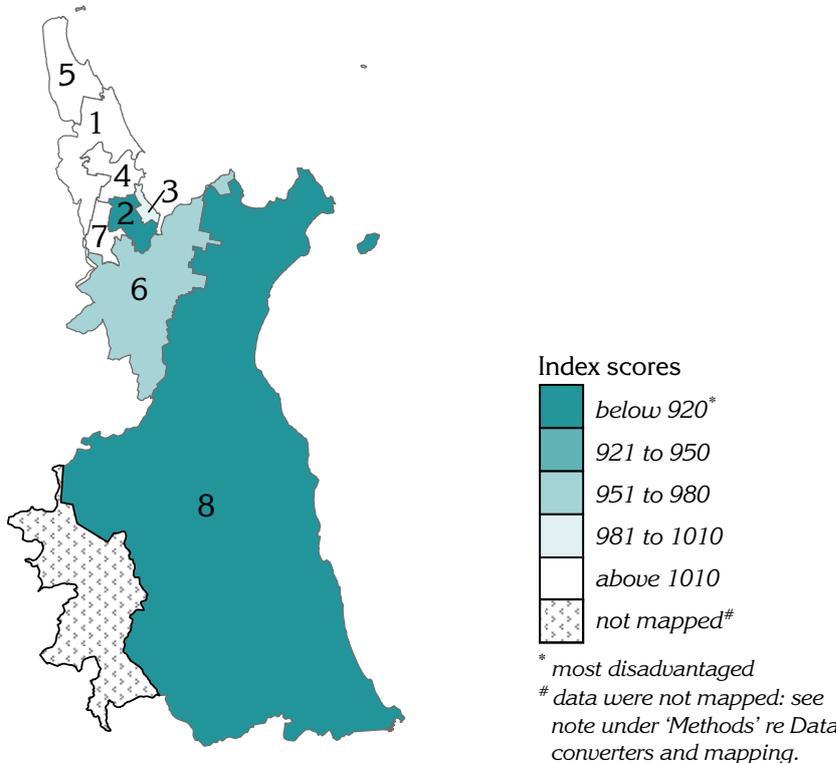
Summary of the socioeconomic ranking of the Cairns DGP

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 Cairns DGP are shown in the supporting information, Table 9, page 17: SLAs are described on page 19.

The Cairns DGP area’s SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) score is 990, marginally (1.0%) below the average score for Australia (1000) and below that for country Queensland (978); this highlights the near-average socioeconomic status profile of the Cairns DGP population. Variations in the IRSD within the Division are shown at the SLA level in Map 1.

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

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



Alphabetical key to Statistical Local Areas, Cairns DGP, 2001			
Cairns - Barron	1	Cairns - Northern Suburbs	5
Cairns - Central Suburbs	2	Cairns - Trinity	6
Cairns - City	3	Cairns - Western Suburbs	7
Cairns - Mt Whitfield	4	Cairns - Part B	8

General medical practitioner (GP) supply

A total of 90.2 full-time equivalent (FTE) GPs and 114.8 full-workload equivalent (FWE²) GPs worked in the Division in 2003/04 (Table 5). Of the FWE GPs, 21.2% were female, and 21.1% 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 1,416 people per GP (calculated on the 1 August Census count – all people counted in the Division on Census night including visitors from Australia and overseas), to a low of 1,325 people per GP (calculated on the 1 August 2001 Usual Resident Population (URP) – usual residents of the Division counted on Census night). The rates of population per FWE GP were lower, ranging from 1,042 (calculated on the URP) to 1,113 (calculated on the Census count). When calculated on the estimated day-time population, the rates of population in the Division were 4.0% below those calculated on the URP.

Based on the ERP, the rate of population per FTE GP in Cairns DGP differed little from the rate for Queensland and Australia, indicating a similar level of provision of GP services in the Division. The rate of population per FWE GP was marginally lower than the rates for Queensland and Australia.

Table 5: Population per GP in Cairns DGP, Queensland and Australia, 2003/04

Population measure	Population	GPs		Population per GP	
		FTE	FWE	FTE	FWE
Cairns DGP					
Census count (adjusted)*	127,738	90.2	114.8	1,416	1,113
Usual Resident Population (URP) (adjusted)*	119,595	..	..	1,325	1,042
Estimated Resident Population (ERP)	125,381	..	..	1,389	1,093
Day-time population (estimated on URP)* ‡	114,768	..	..	1,272	1,000
Queensland (ERP)	3,841,538	2,739	3,256	1,403	1,180
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 93.4% of children in the Division in 2002 were fully immunised at age one, consistent with 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 73.7%, compared to 70.0% for Australia, with 17.1% immunised at a community health centre, or by a community health worker and 7.1% at a public hospital.

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

Provider	Cairns DGP	Australia
	%	%
General practitioners	73.7	70.0
Local government council	0.0	16.6
Community health centre /worker	17.1	9.8
Public hospital	7.1	2.1
Aboriginal health service /worker	0.0	0.9
Other*	2.1	0.6
Total: Per cent	100.0	100.0
Number	34,029	3,843,610

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

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 (293.4 deaths per 100,000 population) is substantially higher than for country Queensland (278.5) and for Australia (290.4); the rates have been age standardised to allow for comparisons between areas, regardless of differences in age profiles between the Division and Australia.

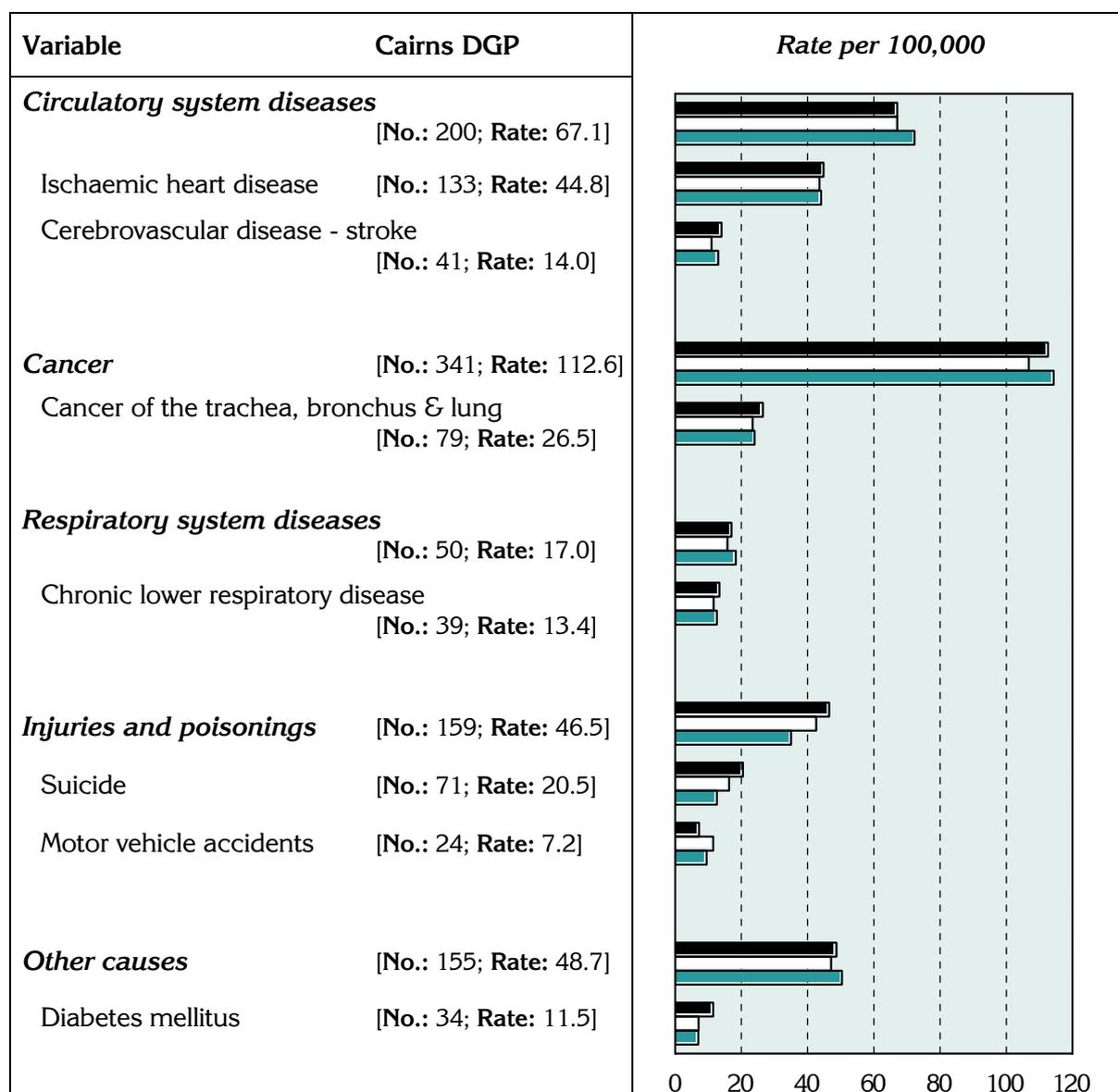
The major causes of premature mortality in the Division, as for county Queensland and Australia as a whole, are cancer and diseases of the circulatory system (Figure 4). With the exception of circulatory disease, cancer, respiratory disease and motor vehicle accidents, death rates in the Division for the conditions and causes shown were higher than those for Australia; and, with the exception of motor vehicle accidents, higher than the rates for country Queensland.

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

Figure 4: Deaths before 75 years of age, by major condition group and selected cause, Cairns DGP‡, country Queensland and Australia, 2000-02*

Indirectly age standardised rate per 100,000 population

■ Cairns 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 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 similar or smaller proportions, of the population in Cairns DGP reported having any of the selected chronic conditions than in Australia as a whole (Figure 5): 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.

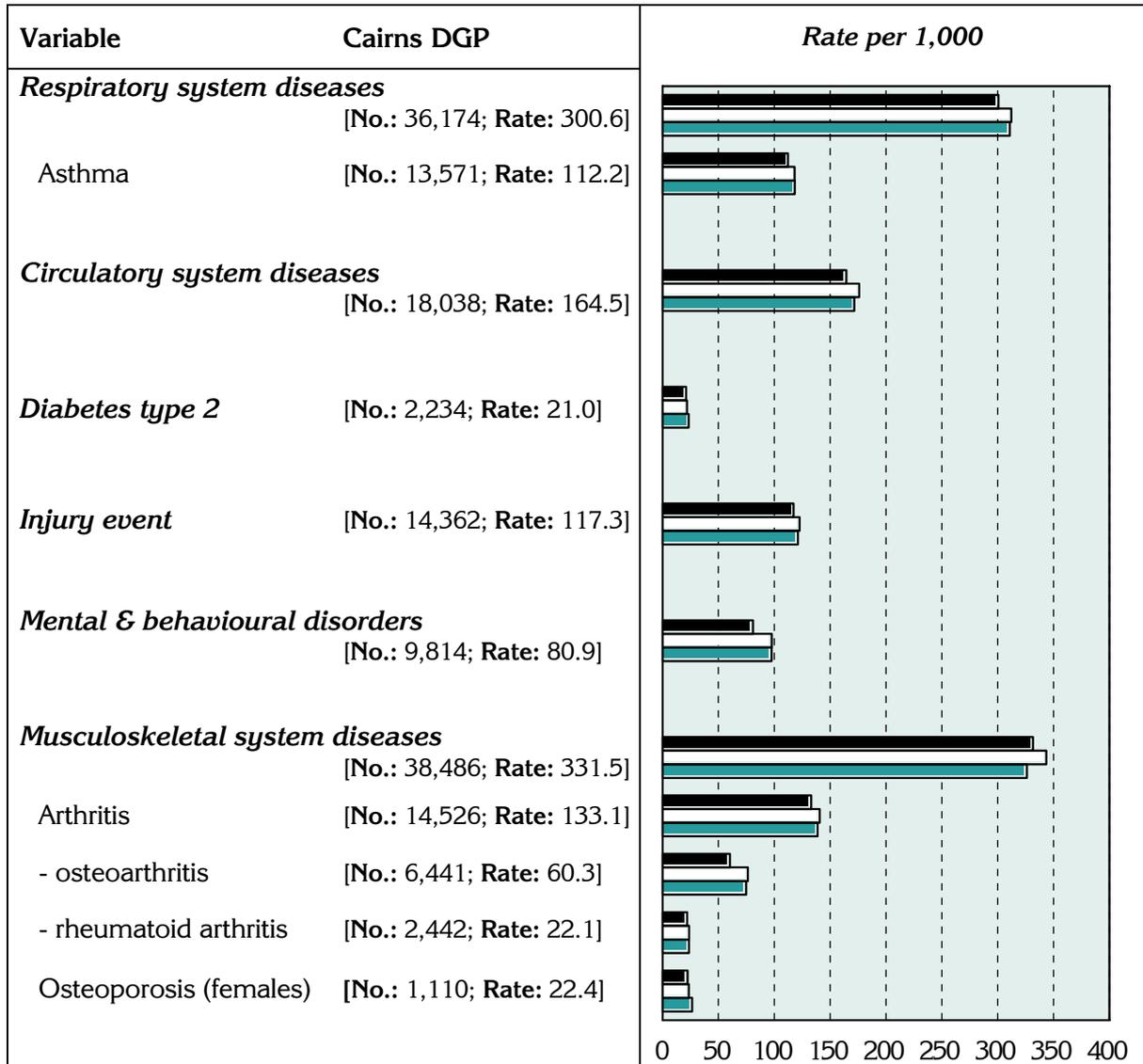
The population of the Division aged 18 years and over is estimated to have a similar proportion with very high psychological distress levels as measured by the K–10 (Figure 6) compared to Australia as a whole. The proportion of the population aged 15 years and over estimated to have reported their health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

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

Figure 5: Estimates* of chronic disease and injury, Cairns DGP‡, country Queensland, and Australia, 2001

Indirectly age standardised rate per 1,000 population

■ Cairns DGP □ Country Qld ■ Australia



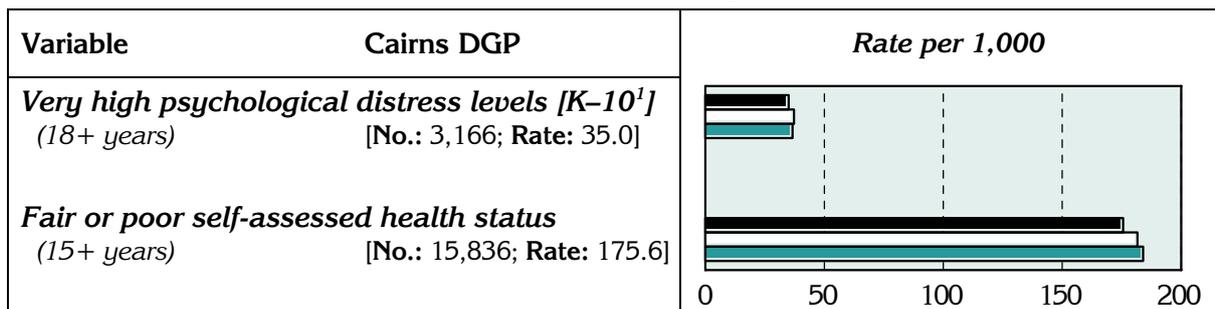
* 'No.' is a weighted estimate of the number of people in Cairns DGP reporting each chronic condition and is derived from synthetic predictions from the 2001 NHS

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

Figure 6: Estimates* of measures of self-reported health, Cairns DGP‡, country Queensland and Australia, 2001

Indirectly age standardised rate per 1,000 population

■ Cairns DGP □ Country Qld ■ Australia



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

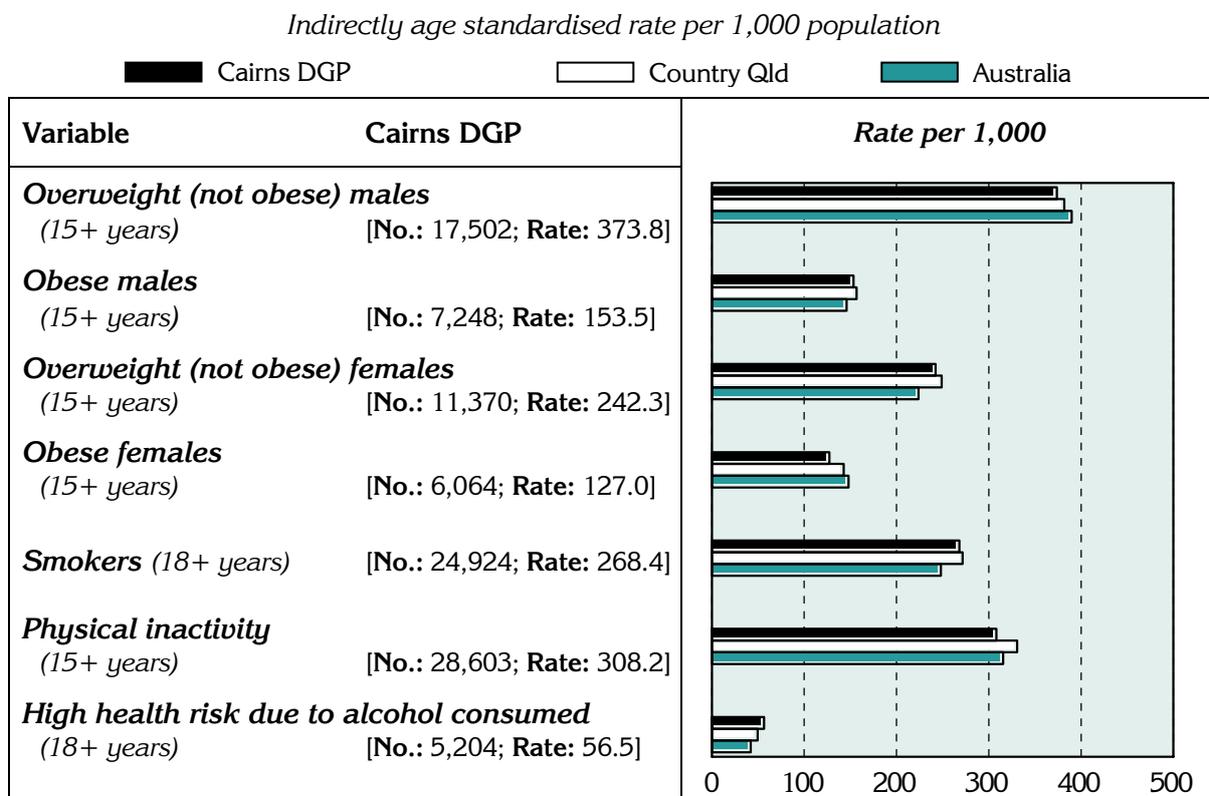
¹ Kessler 10

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

Prevalence estimates: risk factors‡

The reported rates for obesity in males, overweight in females, smoking and high-risk alcohol consumption were higher compared to the Australian population (Figure 7).

Figure 7: Estimates* of selected risk factors, Cairns DGP‡, country Queensland, and Australia, 2001



* 'No.' is a weighted estimate of the number of people in Cairns 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, Cairns DGP, 2001

Respiratory system diseases



Respiratory system diseases: Asthma



Circulatory system diseases



Diabetes type 2



Injury event



Mental & behavioural disorders



Musculoskeletal system diseases



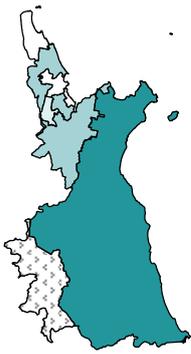
Musculoskeletal system diseases: Arthritis



Arthritis: Osteoarthritis



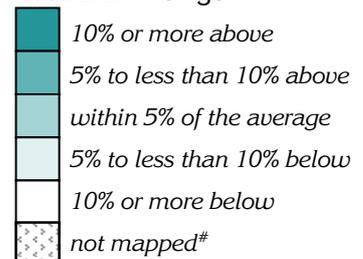
Arthritis: Rheumatoid arthritis



Osteoporosis (females)



Per cent difference from Australian average



* The estimates are synthetic predictions of the prevalence of these conditions: see Notes on the data.

Data not mapped: see Notes on the data.

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

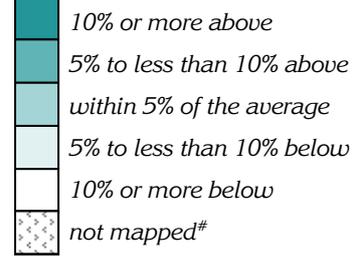
Very high psychological distress levels [K-10¹] (18+ years)



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



Per cent difference from Australian average



* The estimates are synthetic predictions of the prevalence of these conditions: see Notes on the data.

Data not mapped: see Notes on the data.

¹ Kessler 10

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

Overweight (not obese) males (15+ years)



Obese males (15+ years)



Overweight (not obese) females (15+ years)



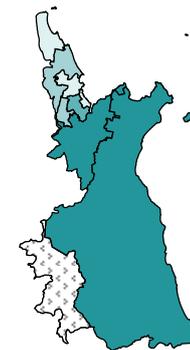
Obese females (15+ years)



Smokers (18+ years)



Physical inactivity (15+ years)



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



Per cent difference from Australian average



* The estimates are synthetic predictions of the prevalence of these conditions: see Notes on the data.

Data not mapped: see Notes on the data.

Notes on the data

Data sources and limitations

General

References to 'country Queensland relate to Queensland, excluding Brisbane 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, 2 and 3; Tables 1 and 2	Experimental estimates of Aboriginal and Torres Strait Islander people, ABS 2001 (unpublished)
Figure 3, Tables 3 and 4	Data were extracted by postal area from the ABS Population Census 2001 ¹ , except for the following indicators: - <i>Total population</i> – Experimental estimates, ABS 2001 (unpublished) - <i>Full-time secondary education participation at age 16</i> – Census 2001 (unpublished) - <i>Households receiving rent assistance</i> – Centrelink, December Quarter 2001 (unpublished)
Map 1; Table 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 4; Table 12	ABS Deaths, 2000 to 2002
Chronic diseases and associated risk factors⁴	
Figures 5, 6 and 7; 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 Seen notes below

Chronic diseases and associated risk factors

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

The data for chronic conditions and risk factors are self-reported data, reported to interviewers in the 2001 NHS. Table 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 5 and Map 2)	
Long term conditions	- Respondents were asked whether they had been diagnosed with any long term health condition (a condition which has lasted or is expected to last for 6 months or more), and were also asked whether they had been told by a doctor or nurse that they had asthma, cancer, heart and circulatory conditions, and/or diabetes
Injury event	- Injuries which occurred in the four weeks prior to interview
Estimates of measures of self-reported health (Figure 6 and Map 3)	
Very high psychological distress levels (K10)	- Derived from the Kessler Psychological Distress Scale-10 items (K-10), which is a scale of non-specific psychological distress based on 10 questions about negative emotional states in the 4 weeks prior to interview. 'Very high' distress is the highest level of distress category (of a total of four categories)
Fair or poor self-assessed health status	- Respondent's general assessment of their own health, against a five point scale from excellent through to poor – 'fair' or 'poor' being the two lowest in the scale
Estimates of selected risk factors (Figure 7 and Map 4)	
Overweight (not obese)	- Based on self-reported height and weight; BMI calculated and grouped into categories (to allow reporting against both WHO and NHMRC guidelines) - overweight: 25.0 to less than 30.0
Obese	- Based on self-reported height and weight; BMI calculated and grouped into categories (to allow reporting against both WHO and NHMRC guidelines) – obese: 30.0 and greater
Smokers	- Respondent's undertaking regular (or daily) smoking at the time of interview
Physical inactivity	- Did not exercise in the two weeks prior to interview through sport, recreation or fitness (including walking) – excludes incidental exercise undertaken for other reasons, such as for work or while engaged in domestic duties
High health risk due to alcohol consumed	- Respondents estimated average daily alcohol consumption in the seven days prior to interview (based on number of days and quantity consumed). Alcohol risk levels were grouped according to NHMRC risk levels for harm in the long term, with 'high risk' defined as a daily consumption of more than 75 ml for males and 50 ml for females

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

Methods

Synthetic estimates

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

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

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

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

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

Premature deaths

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

Data converters and mapping

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

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

This and other information is also available at www.publichealth.gov.au.

A definition of population health

Population health, in the context of general practice, has been defined¹ 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 Cairns 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, Cairns DGP, 2001

SLA code	SLA name (% per cent of SLA in the Division)	Index score			
		Disadvantage	Advantage	Economic Resources	Education & Occupation
32062	Cairns - Barron (100.0)	1028	1031	1031	1025
32065	Cairns - Central Suburbs (1000)	909	942	948	958
32066	Cairns - City (1000)	995	1015	998	1041
32068	Cairns - Mt Whitfield (1000)	1042	1060	1056	1060
32072	Cairns - Northern Suburbs (99.7)	1043	1042	1041	1043
32074	Cairns - Trinity (97.6)	976	963	986	948
32076	Cairns - Western Suburbs (100.0)	1029	1029	1043	1009
32078	Cairns - Part B (49.9)	872	892	911	885
32250	<i>Carpentaria (7.7)</i>	882	928	956	919
32501	<i>Cook (excluding Weipa) (14.0)</i>	867	908	900	931
32800	<i>Douglas (7.3)</i>	1036	1016	1005	1029
33100	<i>Etheridge (18.0)</i>	979	933	924	924
34150	<i>Johnstone (2.8)</i>	944	916	927	915
34850	<i>Mareeba (2.0)</i>	950	926	911	946
35250	<i>Mornington (18.0)</i>	595	851	882	857

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

Note: Scores are not shown for SLAs in the Division with estimated populations of less than 100 or with less than 1% of the SLA's total population (refer to Table 11)

Statistical geography of the Cairns Division of General Practice

The Cairns DGP covers 38,081 square kilometres, based on 2001 SLA data.

Table 10: Postcodes in Cairns DGP, 2004

Postcode	Per cent of postcode population in the Division*	Postcode	Per cent of postcode population in the Division*
4861	100	4870	100
4865	100	4871	18
4868	100	4878	100
4869	100	4879	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, Cairns Local Government Area (LGA) has been split into eight SLAs, six of which are wholly in the Division - Barron, Central Suburbs, City, Mt Whitfield, Northern Suburbs, and Western Suburbs - and two of which have a majority in the Division - Trinity and Part B. These SLAs, listed in Table 11, comprise the Division.

Table 11: SLAs in Cairns 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
30250	<i>Aurukun</i>	18.0	210
32062	Cairns - Barron	100.0	19,121
32065	Cairns - Central Suburbs	100.0	21,792
32066	Cairns - City	100.0	7,853
32068	Cairns - Mt Whitfield	100.0	12,096
32072	Cairns - Northern Suburbs	99.7	14,965
32074	Cairns - Trinity	97.6	31,604
32076	Cairns - Western Suburbs	100.0	12,230
32078	Cairns - Part B	49.9	3,574
32250	<i>Carpentaria</i>	7.7	317
32501	<i>Cook (excl. Weipa)</i>	14.0	973
32600	<i>Croydon</i>	18.0	#
32800	<i>Douglas</i>	7.3	856
33100	<i>Etheridge</i>	18.0	182
34150	<i>Johnstone</i>	2.8	553
34850	<i>Mareeba</i>	2.0	366
35250	<i>Mornington</i>	18.0	188

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

Not shown as the total population is less than 100

Supporting data

The numbers and rates of premature mortality used in Figure 4 are shown in Table 12 below.

Table 12: Deaths before 75 years of age by major condition and selected cause, Cairns DGP‡, country Queensland and Australia, 2000-02*

Indirectly age standardised rate per 100,000 population

Variable	Cairns DGP‡		Country Qld		Australia	
	No.	Rate	No.	Rate	No.	Rate
Circulatory system diseases	200	67.1	4,146	67.1	38,357	72.3
Ischaemic heart disease	133	44.8	2,705	43.6	23,364	44.1
Cerebrovascular disease – stroke	41	14.0	681	11.0	6,920	13.0
Cancer	341	112.6	6,519	106.8	60,603	114.3
Cancer of the trachea, bronchus & lung	79	26.5	1,460	23.4	12,715	24.0
Respiratory system diseases	50	17.0	984	15.8	9,726	18.3
Chronic lower respiratory disease	39	13.4	725	11.6	6,657	12.6
Injuries and poisonings	159	46.5	2,377	42.6	18,573	35.0
Suicide	71	20.5	907	16.3	6,706	12.6
Motor vehicle accidents	24	7.2	635	11.5	5,014	9.5
Other causes	155	48.7	2,829	47.1	26,735	50.4
Diabetes mellitus	34	11.5	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 rates used to illustrate the prevalence estimates of chronic disease (Figure 5), measures of self-reported health (Figure 6), and selected risk factors (Figure 7), and are shown in Table 13 below.

Table 13: Estimates of chronic disease and associated risk factors, Cairns DGP‡, country Queensland and Australia, 2001

Indirectly age standardised rate per 1,000 population

Variable	Cairns DGP‡	Country Qld	Australia
Chronic disease and injury (Figure 5)			
Respiratory system diseases	300.6	312.2	310.8
Asthma	112.2	118.2	118.3
Circulatory system diseases	164.5	176.1	171.5
Diabetes type 2	21.0	21.9	23.4
Injury event	117.3	122.7	121.2
Mental & behavioural disorders	80.9	97.7	97.6
Musculoskeletal system diseases	331.5	343.5	326.2
Arthritis	133.1	140.7	138.8
- Osteoarthritis	60.3	76.3	74.9
- Rheumatoid arthritis	22.1	23.8	23.6
Osteoporosis (females)	22.4	23.5	26.4
Measures of self-reported health (Figure 6)			
Very high psychological distress levels (18+ years)	35.0	37.2	36.6
Fair or poor self-assessed health status (15+ years)	175.6	181.6	184.0
Risk factors (Figure 7)			
Overweight (not obese) males (15+ years)	373.8	381.8	389.7
Obese males (15+ years)	153.5	156.8	145.9
Overweight (not obese) females (15+ years)	242.3	248.9	223.9
Obese females (15+ years)	127.0	142.8	148.0
Smokers (18+ years)	268.4	271.7	248.0
Physical inactivity (15+ years)	308.2	330.7	315.5
High health risk due to alcohol consumed (18+ years)	56.5	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.

National Public Health Partnership (NPHP) (2001). *Preventing Chronic Disease: A Strategic Framework*. Melbourne, Victoria.

Thacker S, Stroup D & Rothenberg R (1995). Public health surveillance for chronic conditions: a scientific basis for decisions. *Statistics in Medicine* 14: 629-641.

World Health Organization (2002). *The World Health Report 2002: Reducing Risks, Promoting Healthy Life*. Geneva: World Health Organization.

Acknowledgements

Funding for these profiles was provided by the Population Health Division of the Department of Health and Ageing (DoHA). Assistance, by way of comment on the profiles and assistance in obtaining some datasets, has also been received from the Primary Care Division of the DoHA, the ABS and the ACIR.

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:

Phone: 08-8303 6236 or e-mail: PHIDU@publichealth.gov.au