Population health profile of the Townsville Division of General Practice

Population Profile Series: No. 78

PHIDU

November 2005

Copyright

National Library of Australia Cataloguing in Publication entry

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

Population health profile
of the *Townsville Division of General Practice*

Introduction

This profile has been designed to provide a description of the population of the Townsville 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). Specific topics covered include:

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

- GP workforce data (page 7);

- immunisation rates (page 7);

- rates of premature death (page 8); and

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

Key indicators

Location:	Queensland	
Division number:	412	
Population‡:	**No.**	**%**
Indigenous:	**7,983**	
<25	4,721	59.1%
65+	180	2.3%
Non-Indigenous:	**133,116**	
<25	50,422	37.9%
65+	11,677	8.8%

Disadvantage score[1]: 993

GP services per head of population:

Division‡	4.0
Australia	4.7

Population per FTE GP:

Division‡	1,683
Australia	1,403

Premature death rate[2]:

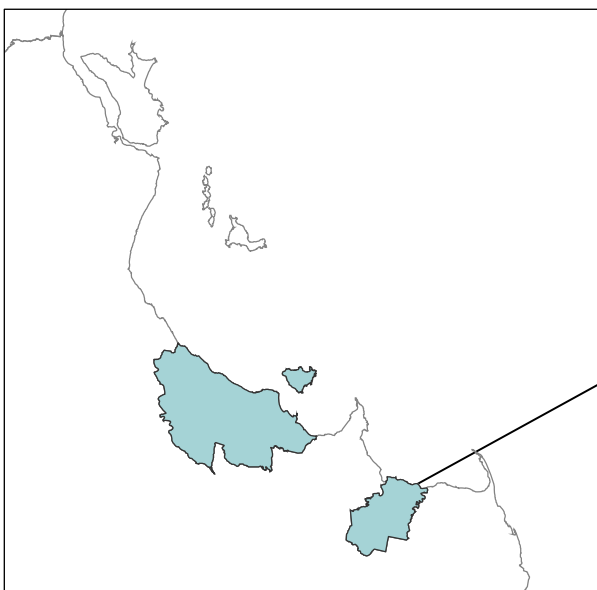|	
Division‡	309.1
Australia	290.4

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

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

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

Townsville Division of General Practice

Queensland Divisions of General Practice
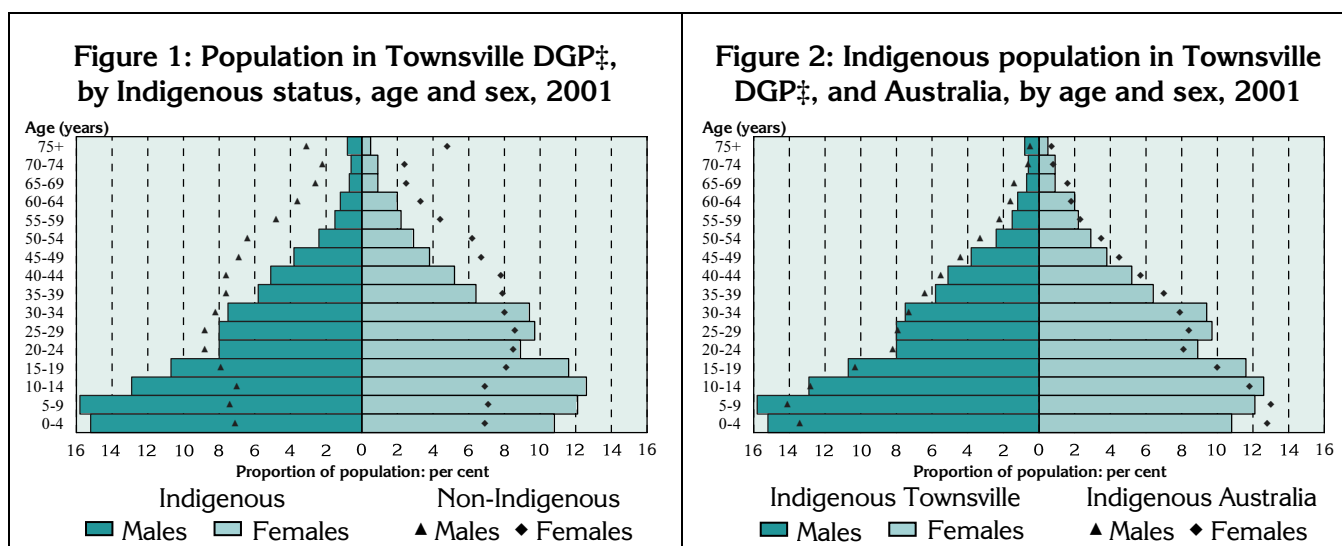
Townsville DGP by SLA/ SLA group

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 Townsville DGP had an Estimated Resident Population of 144,099 at 30 June 2001. Aboriginal and Torres Strait Islander people comprised a relatively high proportion (5.7%) 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 years 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 after 5 to 9 years suggests extremely high death rates (and, possibly, out-migration) are occurring from that age group through to 24 years of age, after which the rate of decline in the population slows. The relatively higher proportion of young Indigenous boys (compared with girls) is in part a result of the smaller proportions of males (than of females) at older ages.

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 the 10 to 19 years of age, possible out-migration for schooling and further education. There are smaller reductions in the population from age 40 through to the 65 to 69 year 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 Townsville DGP‡, by Indigenous status, age and sex, 2001

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

The profile of the Division's Indigenous population is similar to that for Indigenous people across Australia (Figure 2). The major differences are that the Division had higher proportions of male children aged 0 to 9 years, and young females aged 10 to 19 years. There were lower proportions of females aged 0 to 9 years, and higher proportions of females in the 20 to 34 years age groups. Table 1 provides the data on which the charts in Figures 1 and 2 are based. The data highlight the differences in the age distribution of the Indigenous and non-Indigenous populations in Townsville DGP and Australia.

Table 1: Population by Indigenous status and age[*], Townsville DGP‡ and Australia, 2001

| Age group (years) | Townsville DGP‡ | | | | Australia | | | |
| | Indigenous | | Non-Indigenous | | Indigenous | | Non-Indigenous | |
	No.	%	No.	%	No.	%	No.	%
0-14	3,154	39.5	28,259	21.2	178,622	39.0	3,807,808	20.1
15-24	1,567	19.6	22,163	16.6	83,942	18.3	2,570,934	13.6
25-44	2,287	28.7	42,944	32.3	128,474	28.0	5,715,858	30.2
45-64	794	10.0	28,072	21.1	54,206	11.8	4,435,376	23.4
65-74	129	1.6	6,490	4.9	10,249	2.2	1,310,587	6.9
75+	51	0.6	5,187	3.9	2,768	0.6	1,111,844	5.9
Total	**7,983**	**100.0**	**133,116**	**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 over one third (an estimated 2,834 people, 35.5%) of the Indigenous population in Townsville DGP lived in Thuringowa (Part A) Statistical Local Area (SLA – see page 18), a marginally higher proportion than for the non-Indigenous population (32.1%) (Table 2). A further one-quarter (2,132 people, 26.7%) of the Division's Indigenous population lived in Murray/Mt Louisa SLA, with 13.0% (1,039 people) in Townsville Coastal/Magnetic Island SLA, and 12.8% (1,023 people) in Gulliver/Hermit Park.

Table 2: Population by Indigenous status[*], SLA/SLA groups in Townsville DGP‡, 2001

Statistical Local Area	Indigenous		Non-Indigenous		Total	
	No.	%	No.	%	No.	%
Thuringowa - Part A	2,834	35.5	42,747	32.1	45,581	32.3
Murray/Mt Louisa[#]	2,132	26.7	36,631	27.5	38,763	27.5
Townsville Coastal/Magnetic Island[#]	1,039	13.0	20,622	15.5	21,661	15.4
Gulliver/Hermit Park[#]	1,023	12.8	18,821	14.1	19,844	14.1
Townsville South East	722	9.0	7,502	5.6	8,224	5.8
Thuringowa - Part B	184	2.3	5,815	4.4	5,999	4.3
Burdekin	48	0.6	979	0.7	1,027	0.7
Total	**7,983**	**100.0**	**133,116**	**100.0**	**141099**	**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**
# **SLA group: see Table 12 for codes for the individual SLAs in this group**

At 30 June 2004, the Estimated Resident Population of the Division was 151,785.

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, 5.7% of the population of the Townsville DGP was estimated to be of Aboriginal or Torres Strait Islander origin, more than twice the Australian average of 2.4% (Figure 3 and Table 3).

The rate for Indigenous single parent families in the Division (31.7%) was higher than the Indigenous rate for country Queensland[1] (26.6%), and over two and a half times that of the non-Indigenous population (11.9%).

A relatively high proportion (75.2%) of Indigenous 16 year olds living in the Division were involved in full-time secondary school education, which was notably higher than that for country Queensland as a whole (56.8%) ,and slightly less than of the non-Indigenous population in the Division(81.9%).

Dwellings rented from the State housing authority by the Indigenous population in the Division (30.8%) was almost double the Indigenous rate in country Queensland (16.0%), and six times the rate of the non-Indigenous population (5.0%).

The proportion of the Indigenous population reporting using a computer at home (17.6%) was slightly higher than the Indigenous rate in country Queensland (14.5%), but notably lower than for the non-Indigenous population in the Division (44.8%).

The rate of Internet use at home by the Indigenous population in the Division (7.8%),was slightly higher than the use by the Indigenous population in country Queensland (6.1%), and was just over one quarter that of the non-Indigenous population (29.1%).

---

[1]References to 'country Queensland' relate to Queensland excluding the Brisbane Statistical Division

Figure 3: Socio-demographic indicators by Indigenous status, Townsville DGP‡, country Queensland and Australia, 2001

Note the different scales

Total population — Per cent. Bar chart comparing Indigenous and Non-Indigenous populations across Townsville DGP, Country Queensland and Australia.

Single parent families — Per cent. Bar chart comparing Indigenous and Non-Indigenous across Townsville DGP, Country Queensland and Australia.

Education participation at age 16 — Per cent. Bar chart comparing Indigenous and Non-Indigenous.

Unemployment rate — Per cent. Bar chart comparing Indigenous and Non-Indigenous.

Labour force participation — Per cent. Bar chart comparing Indigenous and Non-Indigenous.

Dwellings rented from the State housing authority — Per cent. Bar chart comparing Indigenous and Non-Indigenous.

Computer use at home — Per cent. Bar chart comparing Indigenous and Non-Indigenous.

Internet use at home — Per cent. Bar chart comparing Indigenous and Non-Indigenous.

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

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

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

Indicator	Townsville DGP		Country Queensland		Australia	
	No.	%	No.	%	No.	%
Population						
- Indigenous	7,983	5.7	96,267	4.9	458,261	2.4
- Non-Indigenous	133,116	94.3	1,882,257	95.1	18,952,407	97.6
Single parent families						
- Indigenous	512	31.7	5,495	26.6	26,487	25.8
- Non-Indigenous	3,981	11.9	54,430	11.2	503,382	10.4
Full-time secondary school education at age 16						
- Indigenous	144	75.2	1,041	56.8	5,997	50.5
- Non-Indigenous	1,437	81.9	20,143	78.3	327,055	80.3
Dwellings rented from State housing authority						
- Indigenous	582	30.8	3,642	16.0	23,974	20.8
- Non-Indigenous	2,145	5.0	17,056	2.7	284,502	4.5
People who used a computer at home						
- Indigenous	1,293	17.6	12,423	14.5	73,636	18.0
- Non-Indigenous	57,127	44.8	724,438	40.1	7,761,390	44.1
People who used the Internet at home						
- Indigenous	571	7.8	5,261	6.1	35,384	8.6
- Non-Indigenous	37,145	29.1	453,756	25.1	5,135,445	29.2
Households receiving rent assistance	8,921	18.8	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 population in Townsville DGP had an unemployment rate of 26.4%, higher than the rate for country Queensland's Indigenous population (19.6%), and more than three times that of the non-Indigenous population in the Division (8.0%) (Table 4).

The Indigenous labour force participation rate (48.6%) was lower than the Indigenous rate for country Queensland (55.4%), and two thirds that of the non-Indigenous population in the Division (75.5%). The Indigenous female labour force participation rate (44.7%) was similar to the female Indigenous rate for country Queensland (48.8%), and two thirds that for the Division's non-Indigenous population (72.5%).

Table 4: Unemployment and labour force participation, Townsville DGP‡, country Queensland and Australia, 2001

Labour force indicators	Townsville DGP‡		Country Queensland		Australia	
	No.	%	No.	%	No.	%
Unemployment rate						
- Indigenous	544	26.4	5,335	19.6	24,930	20.0
- Non-Indigenous	5,350	8.0	71,885	8.4	624,337	7.3
Labour force participation[*]						
- Indigenous	2,059	48.6	27,155	55.4	124,517	52.4
- Non-Indigenous	66,980	75.5	854,115	71.8	8,609,525	72.9
Female labour force participation[*]						
- Indigenous	955	44.7	11,395	48.8	52,981	46.6
- Non-Indigenous	28,043	72.5	345,139	69.2	3,564,409	69.8

[*]Includes people paid through Community Development Employment Projects

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

Summary of the socioeconomic ranking of the Townsville DGP

Following the 2001Census, the Australian Bureau of Statistics (ABS) produced four socioeconomic indexes for areas (SEIFA) which describe various aspects of the socioeconomic make-up of populations in areas. The scores for each Statistical Local Area (SLA) or groups of SLAs in Townsville DGP are shown in the supporting information, Table 9, page 17: SLAs are described on page 18.

The Townsville DGP area's SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) score is 993, just (0.7%) below the average for Australia (1000), but above that for country Queensland (978); this highlights the relatively average socioeconomic status of the Townsville 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/SLA group, Townsville DGP, 2001
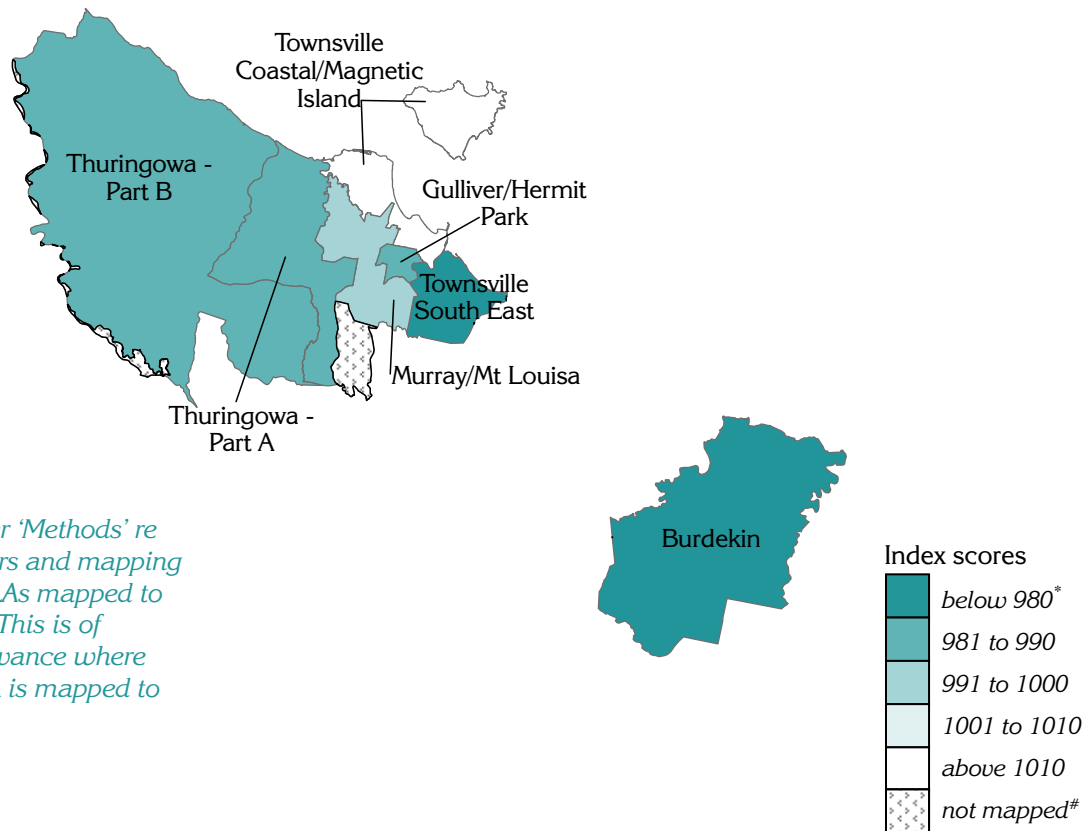
See note under 'Methods' re Data converters and mapping concerning SLAs mapped to the Division. This is of particular relevance where part of an SLA is mapped to the Division.

Index scores

below 980*
981 to 990
991 to 1000
1001 to 1010
above 1010
not mapped#

* most disadvantaged
# data were not mapped:
   see note under 'Methods'
   re Data converters and
   mapping.

General medical practitioner (GP) supply

A total of 89.0 full-time equivalent (FTE) GPs, and 106.7 full-time workload equivalent (FWE[2]) GPs worked in the Townsville DGP in 2003/04 (Table 5). Of the FWE GPs, 29.9% were female, and 20.5% 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 1,683 people per GP (calculated on the average Estimated Residential Population (ERP) as at 30 June 2003 and 2004), to a low of 1,617 people per GP (calculated on the 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 1,349 (calculated on the URP) to 1,405 (calculated on the ERP). When calculated on the estimated day-time population, the rates were 5.6% below those calculated on the URP.

Based on the ERP, the rates of population per GP in Townsville DGP were higher than the rates for Queensland and Australia, indicating a lower level of provision of GP services in the Division.

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

Population measure	Population	GPs		Population per GP	
		FTE	FWE	FTE	FWE
Townsville DGP					
Census count (adjusted)[*]	148,045	89.0	106.7	1,663	1,388
Usual Resident Population (URP) (adjusted)[*]	143,884	..	..	1,617	1,349
Estimated Resident Population (ERP)	149,825	..	..	1,683	1,405
Day-time population (estimated on URP)[*‡]	135,893	..	..	1,527	1,274
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 95.2% 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 Table 6. The proportion of children in the Division who were immunised by a general practitioner was 58.9%, compared to 70.0% for Australia, with 30.4% were immunised at a community health centre or by a community health worker.

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

Provider	Townsville DGP	Australia
	%	%
General practitioner	58.9	70.0
Local government council	0.0	16.6
Community health centre/ worker	30.4	9.8
Public hospital	2.7	2.1
Aboriginal health service/ worker	7.9	0.9
Other[*]	0.2	0.6
Total: Per cent	**100.0**	**100.0**
Number	**34,805**	**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 (309.1 deaths per 100,000 population) is 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 country Queensland and Australia as a whole, are cancer and diseases of the circulatory system (Figure 4). With the exception of injuries and poisonings and motor vehicle accidents, death rates in the Division for all the major conditions and selected causes were higher than, or similar to, those for country Queensland and Australia.

The data on which the following chart is based are in Table 11.

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

Indirectly age standardised rate per 100,000 population

| ■ Townsville DGP | ☐ Country Qld | ■ Australia |
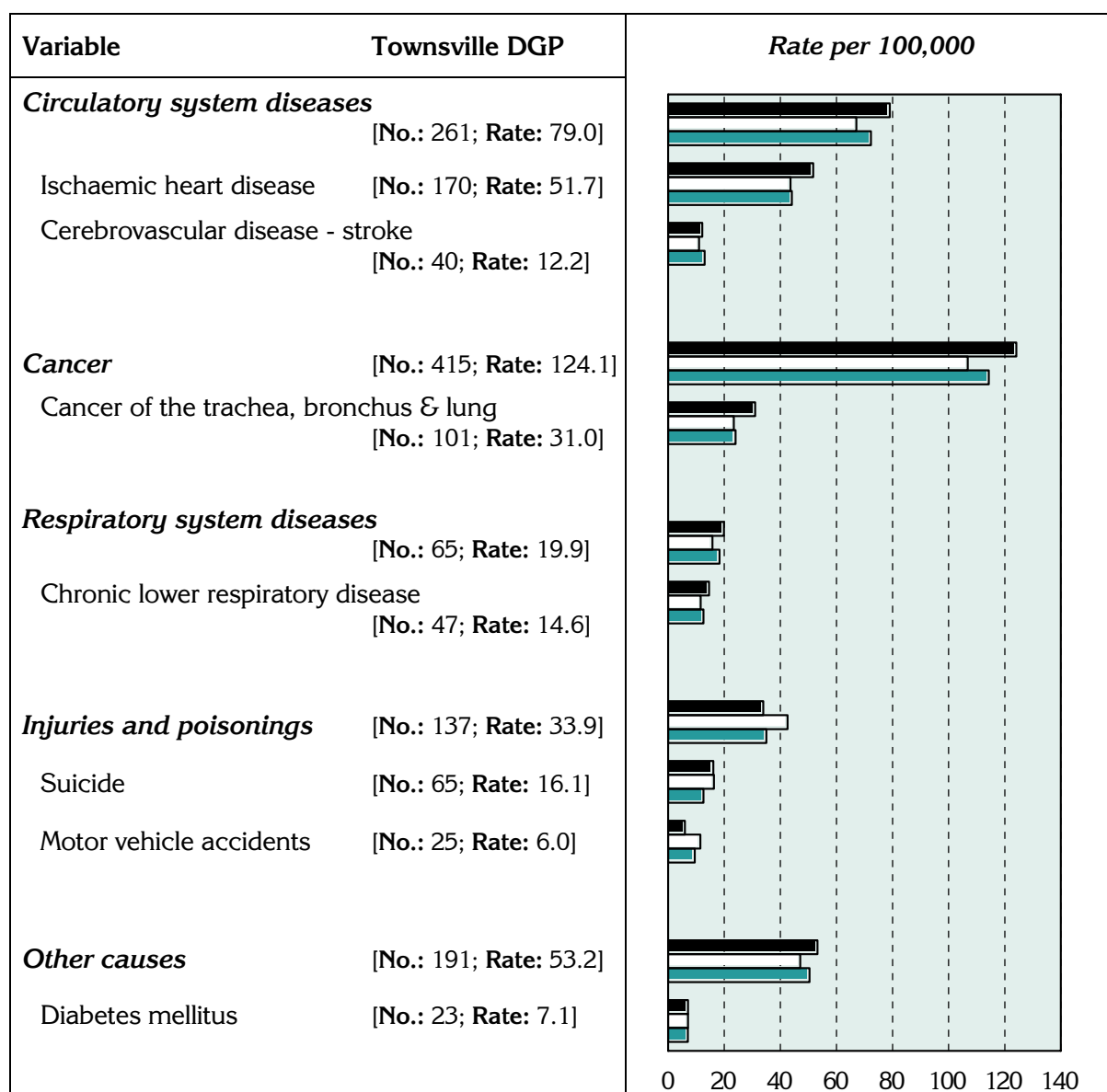
Variable	Townsville DGP	Rate per 100,000
Circulatory system diseases	[**No.:** 261; **Rate:** 79.0]	
Ischaemic heart disease	[**No.:** 170; **Rate:** 51.7]	
Cerebrovascular disease - stroke	[**No.:** 40; **Rate:** 12.2]	
Cancer	[**No.:** 415; **Rate:** 124.1]	
Cancer of the trachea, bronchus & lung	[**No.:** 101; **Rate:** 31.0]	
Respiratory system diseases	[**No.:** 65; **Rate:** 19.9]	
Chronic lower respiratory disease	[**No.:** 47; **Rate:** 14.6]	
Injuries and poisonings	[**No.:** 137; **Rate:** 33.9]	
Suicide	[**No.:** 65; **Rate:** 16.1]	
Motor vehicle accidents	[**No.:** 25; **Rate:** 6.0]	
Other causes	[**No.:** 191; **Rate:** 53.2]	
Diabetes mellitus	[**No.:** 23; **Rate:** 7.1]	

* '**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 12.

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 Townsville 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 marginally fewer people with very high psychological distress levels as measured by the K–10 compared to Australia as a whole (Figure 6). The proportion of the population aged 15 years and over estimated to have reported their health as 'fair' or 'poor' is consistent with the national average.

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

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

Indirectly age standardised rate per 1,000 population

| | Townsville DGP | | Country Qld | | Australia |

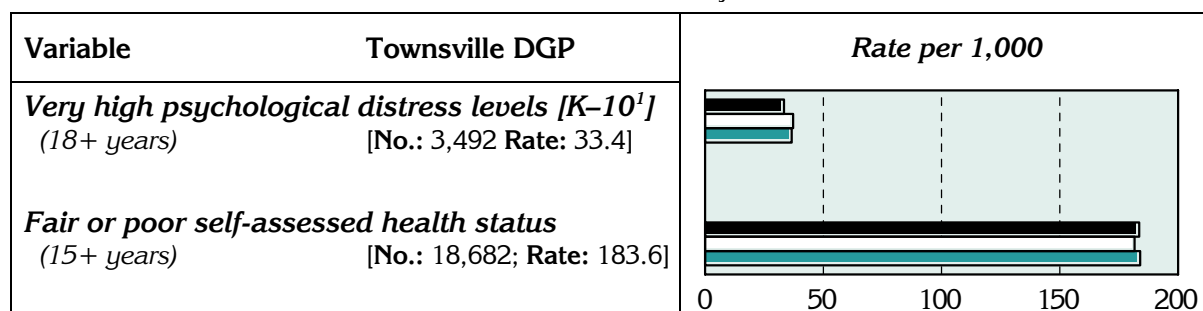| Variable	Townsville DGP	Rate per 1,000
Respiratory system diseases [**No.:** 43,238; **Rate:** 308.2]		
Asthma [**No.:** 16,734; **Rate:** 116.2]		
Circulatory system diseases [**No.:** 21,124; **Rate:** 174.4]		
Diabetes type 2 [**No.:** 2,800; **Rate:** 24.0]		
Injury event [**No.:** 17,975; **Rate:** 122.4]		
Mental & behavioural disorders [**No.:** 11,184; **Rate:** 79.3]		
Musculoskeletal system diseases [**No.:** 44,548; **Rate:** 341.0]		
Arthritis [**No.:** 16,447; **Rate:** 137.2]		
- osteoarthritis [**No.:** 7,475; **Rate:** 63.9]		
- rheumatoid arthritis [**No.:** 2,878; **Rate:** 23.6]		
Osteoporosis (females) [**No.:** 1,242; **Rate:** 22.4]		
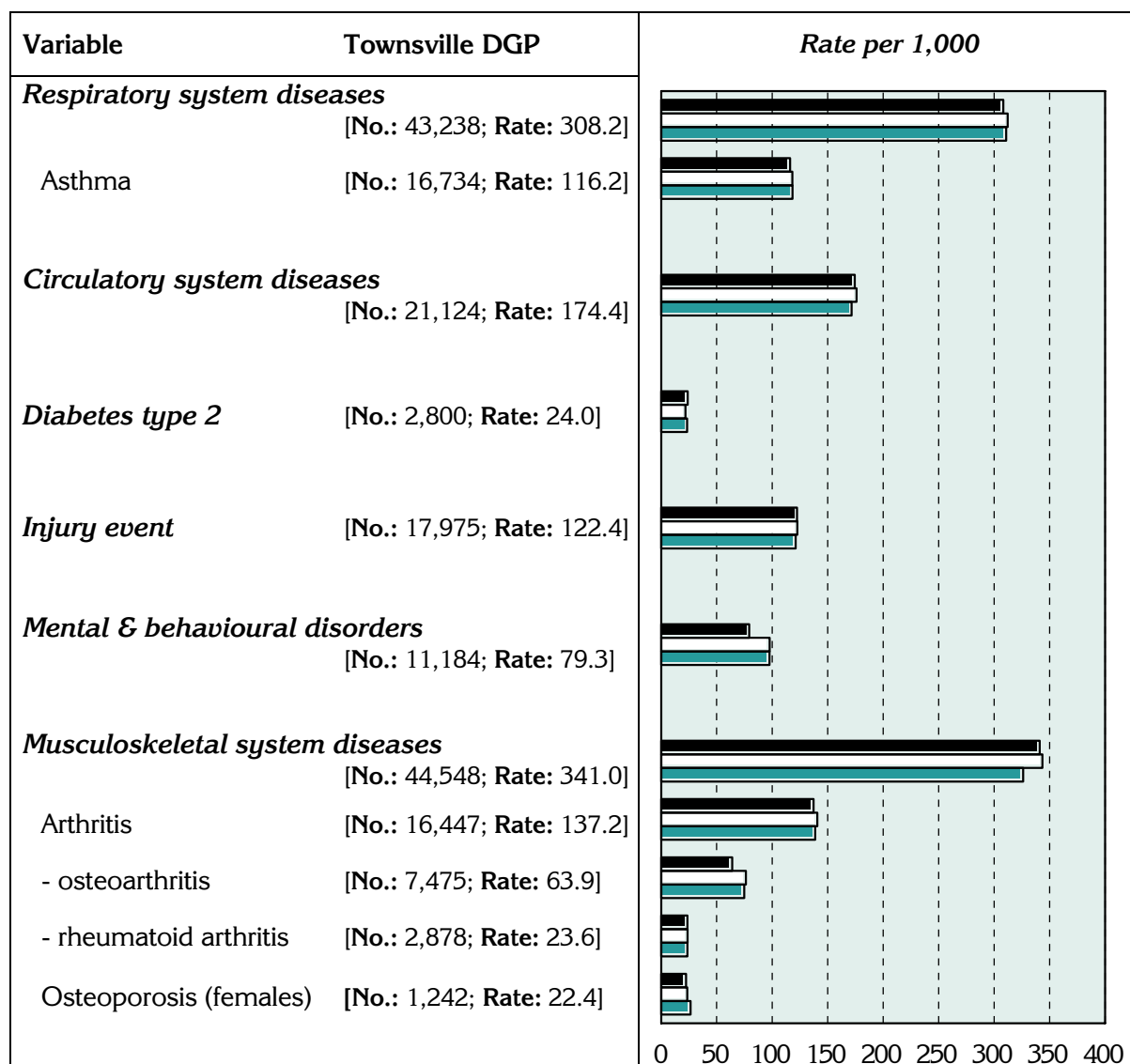
* 'No.' is a weighted estimate of the number of people in Townsville DGP reporting each chronic condition and is derived from synthetic predictions from the 2001 NHS

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

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

Indirectly age standardised rate per 1,000 population

| | Townsville DGP | | Country Qld | | Australia |

Variable	Townsville DGP	Rate per 1,000
Very high psychological distress levels [K–10[1]] (18+ years)	[**No.:** 3,492 **Rate:** 33.4]	
Fair or poor self-assessed health status (15+ years)	[**No.:** 18,682; **Rate:** 183.6]	

* 'No.' is a weighted estimate of the number of people in Townsville DGP reporting under these measures and is derived from synthetic predictions from the 2001 NHS
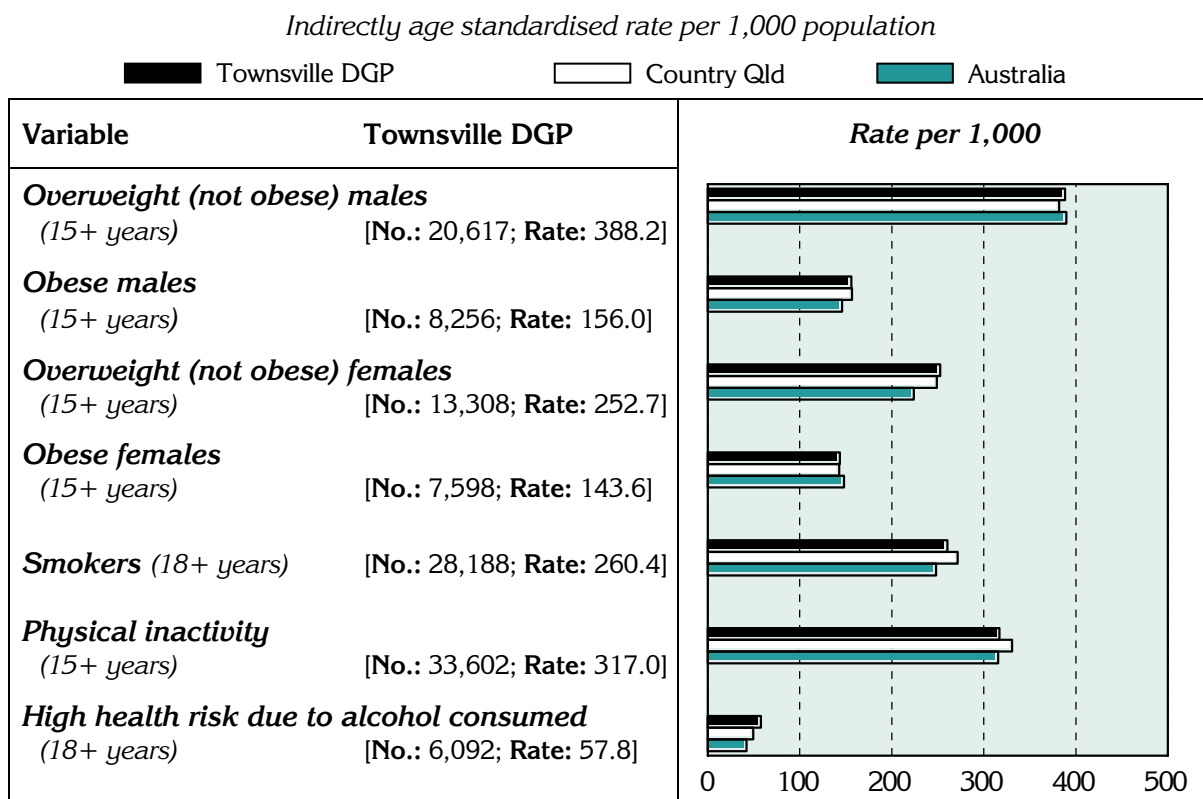
[1] Kessler 10

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

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

Prevalence estimates: risk factors‡

The Townsville DGP reported similar or slightly higher rates (when compared to the Australian population) for all of the selected risk factors (Figure 7).

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

Indirectly age standardised rate per 1,000 population

| | ■ Townsville DGP | ▢ Country Qld | ▮ Australia |

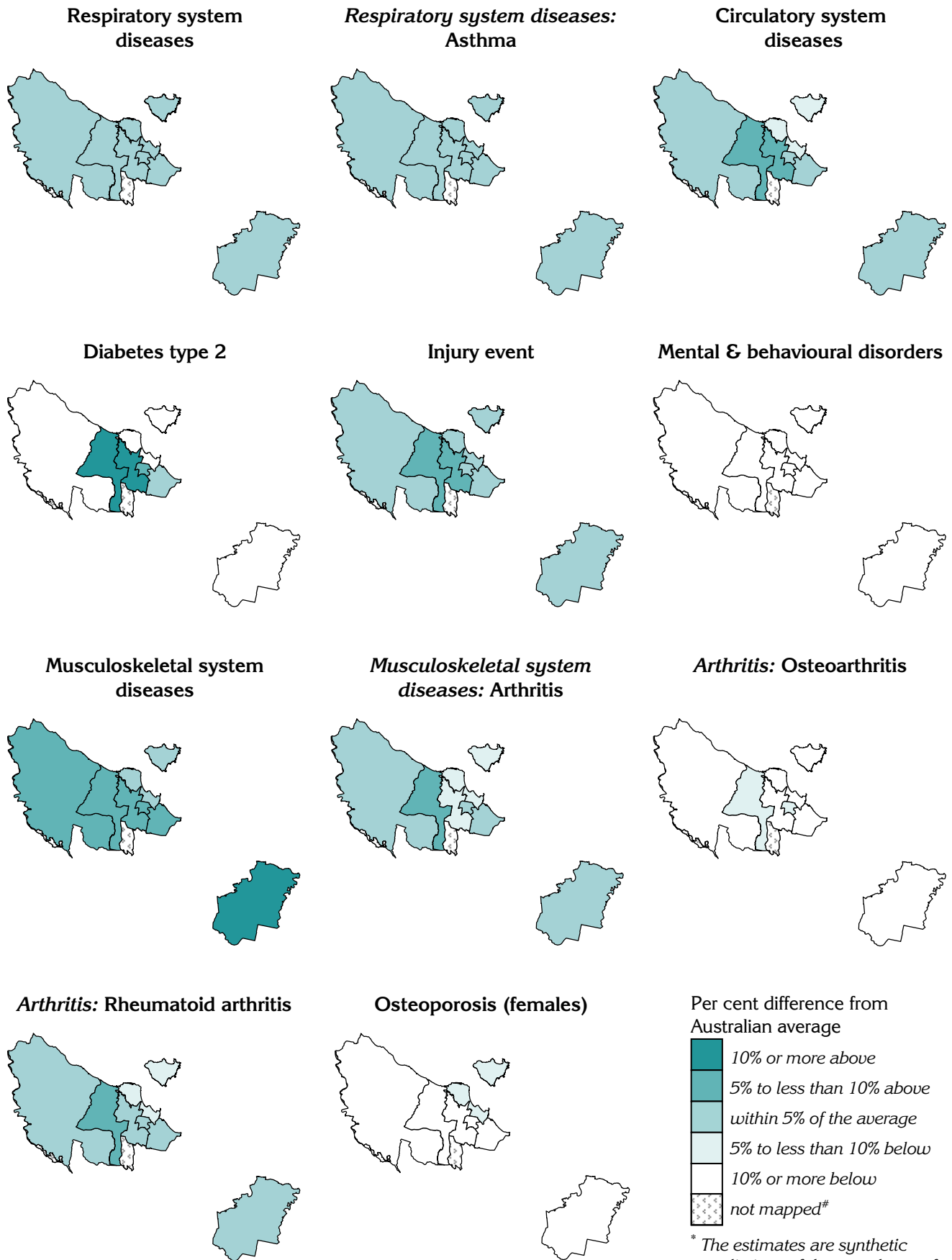| Variable	Townsville DGP	Rate per 1,000
Overweight (not obese) males (15+ years)	[**No.:** 20,617; **Rate:** 388.2]	
Obese males (15+ years)	[**No.:** 8,256; **Rate:** 156.0]	
Overweight (not obese) females (15+ years)	[**No.:** 13,308; **Rate:** 252.7]	
Obese females (15+ years)	[**No.:** 7,598; **Rate:** 143.6]	
Smokers (18+ years)	[**No.:** 28,188; **Rate:** 260.4]	
Physical inactivity (15+ years)	[**No.:** 33,602; **Rate:** 317.0]	
High health risk due to alcohol consumed (18+ years)	[**No.:** 6,092; **Rate:** 57.8]	

* '**No.' is a weighted estimate of the number of people in Townsville 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 10, page 18, 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.
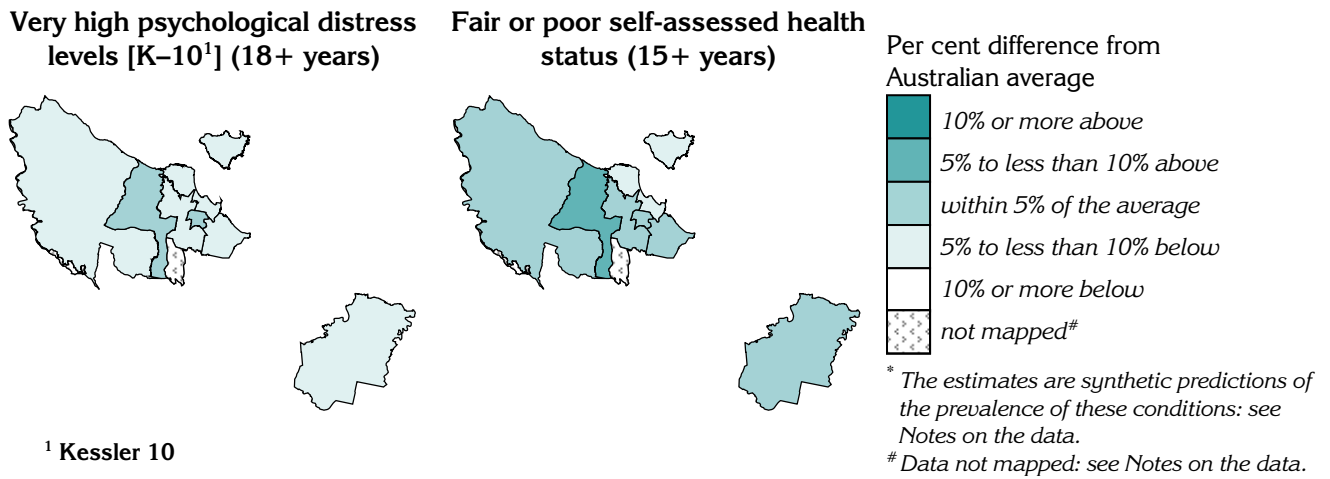
Map 2: Estimates* of chronic disease and injury by SLA/SLA group, Townsville DGP, 2001

Respiratory system diseases

Respiratory system diseases: Asthma

Circulatory system diseases

Diabetes type 2

Injury event

Mental & behavioural disorders

Musculoskeletal system diseases

Musculoskeletal system diseases: Arthritis

Arthritis: Osteoarthritis

Arthritis: Rheumatoid arthritis

Osteoporosis (females)

Per cent difference from Australian average

- 10% or more above
- 5% to less than 10% above
- within 5% of the average
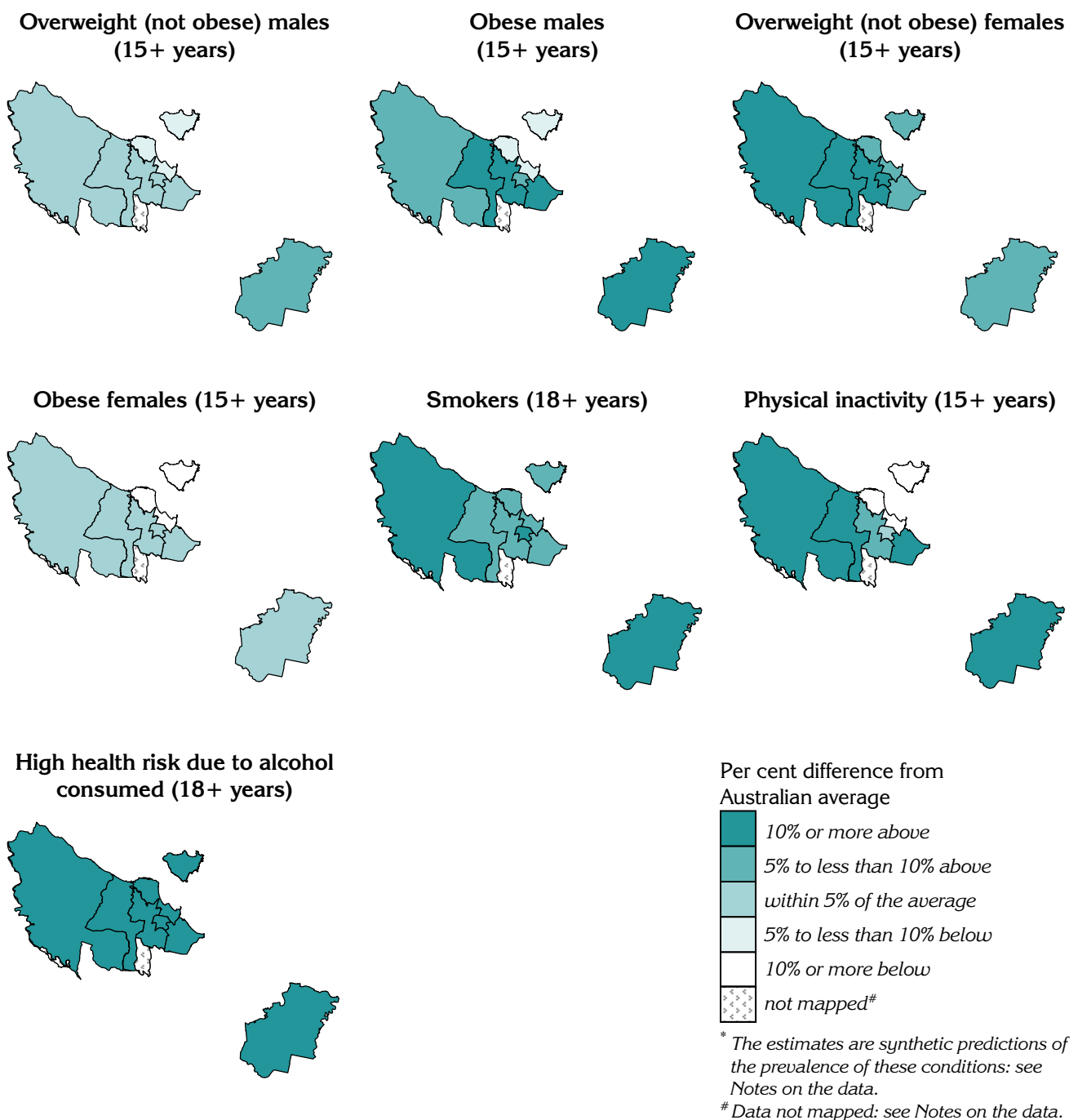- 5% to less than 10% below
- 10% or more below
- not mapped#

* 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/SLA group, Townsville DGP, 2001

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

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

Per cent difference from Australian average

- 10% or more above
- 5% to less than 10% above
- within 5% of the average
- 5% to less than 10% below
- 10% or more below
- not mapped[#]

[*] 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/SLA group, Townsville DGP, 2001

Overweight (not obese) males (15+ years)

Obese males (15+ years)

Overweight (not obese) females (15+ years)

Obese females (15+ years)

Smokers (18+ years)

Physical inactivity (15+ years)

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

Per cent difference from Australian average

- 10% or more above
- 5% to less than 10% above
- within 5% of the average
- 5% to less than 10% below
- 10% or more below
- not mapped[#]

[*] 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 the 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 and 2; Table 1	Estimated Resident Population, ABS, 30 June for the periods shown
Tables 2, 3 and 4; Figure 3	Data were extracted by postal area from the ABS Population Census 2001[1], except for the following indicators: - *Indigenous* – Experimental estimates of Aboriginal and Torres Strait Islander people, ABS 2001 (unpublished) - *Full-time secondary education participation at age 16* – Census 2001 (unpublished) - *Households receiving rent assistance* – Centrelink, December Quarter 2001 (unpublished) - *Unemployment rate / Labour force participation* – extracted from *Small Area Labour Markets Australia*, June Quarter 2003, Department of Employment and Workplace Relations
Map 1; Table 9	ABS SEIFA package, Census 2001
General medical practitioner (GP) supply	
Table 5	GP data supplied by Department of Health and Ageing, 2003/04
	Population estimates used in calculating the population per GP rates are the: - Census count[2], ABS Population Census 2001, scaled to 2003/04 - Usual Resident Population[3], ABS Population Census 2001, scaled to 2003/04 - Day-time population: calculated from journey to work data, ABS Population Census (URP) 2001 (unpublished); and 2001 Census URP, scaled to 2003/04 - Estimated Resident Population, ABS, June 2003/2004
Immunisation	
Text comment: 1 year olds	National Centre for Immunisation Research and Surveillance, 2002
Table 6	Australian Childhood Immunisation Register, Health Insurance Commission, 2003/04 (unpublished)
Premature mortality	
Figure 4; Table 11	ABS Deaths, 2000 to 2002
Chronic diseases and associated risk factors (see Notes Table 8)	
Figures 5, 6 and 7; Maps 2, 3 and 4; Table 12	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**

Chronic diseases and associated risk factors

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

The data for chronic conditions and risk factors are self-reported data, reported to interviewers in the 2001 NHS. Table 8 includes notes relevant to this data.

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

Indicator	Notes on the data
Estimates of chronic disease and injury (Figure 6 and Map 2)	
Long term conditions	- Respondents were asked whether they had been diagnosed with any long term health condition (a condition which has lasted or is expected to last for 6 months or more), and were also asked whether they had been told by a doctor or nurse that they had asthma, cancer, heart and circulatory conditions, and/or diabetes
Injury event	- Injuries which occurred in the four weeks prior to interview
Estimates of measures of self-reported health (Figure 7 and Map 3)	
Very high psychological distress levels (K10)	- Derived from the Kessler Psychological Distress Scale-10 items (K-10), which is a scale of non-specific psychological distress based on 10 questions about negative emotional states in the 4 weeks prior to interview. 'Very high' distress is the highest level of distress category (of a total of four categories)
Fair or poor self-assessed health status	- Respondent's general assessment of their own health, against a five point scale from excellent through to poor – 'fair' or 'poor' being the two lowest in the scale
Estimates of selected risk factors (Figure 8 and Map 4)	
Overweight (not obese)	- Based on self-reported height and weight; BMI calculated and grouped into categories (to allow reporting against both WHO and NHMRC guidelines) - overweight: 25.0 to less than 30.0
Obese	- Based on self-reported height and weight; BMI calculated and grouped into categories (to allow reporting against both WHO and NHMRC guidelines) – obese: 30.0 and greater
Smokers	- Respondent's undertaking regular (or daily) smoking at the time of interview
Physical inactivity	- Did not exercise in the two weeks prior to interview through sport, recreation or fitness (including walking) – excludes incidental exercise undertaken for other reasons, such as for work or while engaged in domestic duties
High health risk due to alcohol consumed	- Respondent's estimated average daily alcohol consumption in the seven days prior to interview (based on number of days and quantity consumed). Alcohol risk levels were grouped according to NHMRC risk levels for harm in the long term, with 'high risk' defined as a daily consumption of more than 75 ml for males and 50 ml for females

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

Methods

Synthetic estimates

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

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

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

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

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

Premature deaths

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

Data converters and mapping

Conversion to Division of data available by postcode

The allocation of postcodes to Divisions was undertaken using information from the Department of Health and Ageing's web site, which shows the proportion of a postcode in a Division (see page 18).

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 10.

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.

16

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 defined[1] as:

"The prevention of illness, injury and disability, reduction in the burden of illness and rehabilitation of those with a chronic disease. This recognises the social, cultural and political determinants of health. This is achieved through the organised and systematic responses to improve, protect and restore the health of populations and individuals. This includes both opportunistic and planned interventions in the general practice setting."

The key determinants of health are social support networks, employment and working conditions, social environments, physical environments, geographical isolation, personal health practices, healthy child development, ageing and disability, biology and genetic endowment, health services, gender and culture.

In the Aboriginal and Torres Strait Islander context this means that a population health approach to health services will assist in ensuring "that Aboriginal and Torres Strait Islander people enjoy a healthy life equal to that of the general population, that is enshrined by a strong living culture, dignity and justice".[2] This recognises the importance of achieving improvements to Aboriginal and Torres Strait Islander health and respects the particular health issues facing Indigenous people.

[1] **"The role of general practice in population health – A Joint Consensus Statement of the General Practice Partnership Advisory Council and the National Public Health Partnership Group" (Joint Advisory Group on General Practice and Population Health 2001)**
[2] **As defined in the Strategic Framework for Aboriginal and Torres Strait Islander Health**

SEIFA scores

Following the 2001 Census, the Australian Bureau of Statistics (ABS) produced four socioeconomic indexes for areas (SEIFA). The indexes describe various aspects of the socioeconomic make-up of populations in areas, using data collected in the 2001 Census.

The Index of Relative Socio-Economic Disadvantage (labelled 'Disadvantage' in Table 9) includes all variables that either reflect or measure disadvantage. The Index of Advantage/Disadvantage is used to rank areas in terms of both advantage and disadvantage: any information on advantaged persons in an area will offset information on disadvantaged persons in the area. The Index of Economic Resources and the Index of Education and Occupation were targeted towards specific aspects of advantage/disadvantage.

For further information on the composition and calculation of these indexes see the ABS Information Paper ABS Cat No. 2039.0 available on the ABS web site www.abs.gov.au. The scores for these indexes for each Statistical Local Area (SLA) or part SLA in Townsville 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/SLA group, Townsville DGP, 2001

| SLA/ SLA group name | | Index score | | | |
(& per cent of SLA/ SLA group in the Division)		Disadvantage	Advantage	Economic Resources	Education & Occupation
Townsville Coastal/Magnetic Island#	(100.0)	1021	1040	1024	1055
Townsville South East	(100.0)	974	954	976	939
Gulliver/Hermit Park#	(100.0)	981	983	976	991
Murray/Mt Louisa#	(100.0)	996	1006	1016	994
Thuringowa - Part A	(100.0)	985	981	1012	952
Burdekin	(5.5)	977	931	948	910
Thuringowa - Part B	(84.1)	985	946	967	926

* **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**
# **SLA group: see** Table 10 **for codes for the individual SLAs in this group**

Statistical geography of the Townsville DGP

The Townsville DGP covers 2,166 square kilometres, based on 2001 SLA data.

The postcodes in the Division (all 100%) are: 4809, 4810, 4811, 4812, 4813, 4814, 4815, 4817, 4818, and 4819[3].

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, most SLAs are also suburbs. As many of these have very small populations, they have been grouped to form areas of larger population: the groupings are those used in HealthWIZ. The SLA group name does not in all cases include the names of all the SLAs in the group: all relevant SLA codes are shown in Table 10.

Table 10: SLAs/SLA groups in Townsville DGP by 2001 boundaries

SLA code	SLA/ SLA group name	Per cent of SLA/ SLA group's population in the Division[*]	Estimate of the SLA/ SLA group's 2004 population in the Division
31900	Burdekin	5.5	1,035
36801, 36804, 36807	Thuringowa - Part A	100.0	50,008
36831	Thuringowa - Part B	84.1	6,332
37001, 37007, 37014, 37015, 37023, 37033, 37038, 37071	Murray/Mt Louisa	100.0	41,867
37003, 37031, 37041, 37047, 37054, 37062, 37065, 37074	Townsville Coastal / Magnetic Island	100.0	23,000
37012, 37018, 37026, 37027, 37034, 37051, 37058	Gulliver/Hermit Park	100.0	20,211
37044, 37068, 37078	Townsville South East	100.0	9,331

[*] **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 4 to illustrate the rates of premature mortality in the Division are shown below in Table 11.

Table 11: Deaths before 75 years of age by major condition group and selected cause, Townsville DGP‡, country Queensland and Australia, 2000-02[*]

Indirectly age standardised rate per 100,000 population

Variable	Townsville DGP‡		Country Qld		Australia	
	No.	Rate	No.	Rate	No.	Rate
Circulatory system diseases	261	79.0	4,146	67.1	38,357	72.3
Ischaemic heart disease	170	51.7	2,705	43.6	23,364	44.1
Cerebrovascular disease – stroke	40	12.2	681	11.0	6,920	13.0
Cancer	415	124.1	6,591	106.8	60,603	114.3
Cancer of the trachea, bronchus & lung	101	31.0	1,460	23.4	12,715	24.0
Respiratory system diseases	65	19.9	984	15.8	9,726	18.3
Chronic lower respiratory disease	47	14.6	725	11.6	6,657	12.6
Injuries and poisonings	137	33.9	2,377	42.6	18,573	35.0
Suicide	65	16.1	907	16.3	6,706	12.6
Motor vehicle accidents	25	6.0	635	11.5	5,014	9.5
Other causes	191	53.2	2,829	47.1	26,735	50.4
Diabetes mellitus	23	7.1	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**

---

[3] **As per the Department of Health and Ageing web site (accessed online version as at February 2005):**
http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pcd-programs-divisions-divspc.htm

The data used to illustrate the prevalence estimates of chronic disease (Figure 5), measures of self-reported health (Figure 6), and selected risk factors (Figure 7), are shown in Table 12 below.

Table 12: Estimates of chronic disease and associated risk factors, Townsville DGP‡, country Queensland and Australia, 2001

Indirectly age standardised rate per 1,000 population

Variable	Townsville DGP‡	Country Qld	Australia
Chronic disease and injury (Figure 5)			
Respiratory system diseases	308.2	312.2	310.8
Asthma	116.2	118.2	118.3
Circulatory system diseases	174.4	176.1	171.5
Diabetes type 2	24.0	21.9	23.4
Injury event	122.4	122.7	121.2
Mental & behavioural disorders	79.3	97.7	97.6
Musculoskeletal system diseases	341.0	343.5	326.2
Arthritis	137.2	140.7	138.8
- Osteoarthritis	63.9	76.3	74.9
- Rheumatoid arthritis	23.6	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)	33.4	37.2	36.6
Fair or poor self-assessed health status (15+ years)	183.6	181.6	184.0
Risk factors (Figure 7)			
Overweight (not obese) males (15+ years)	388.2	381.8	389.7
Obese males (15+ years)	156.0	156.8	145.9
Overweight (not obese) females (15+ years)	252.7	248.9	223.9
Obese females (15+ years)	143.6	142.8	148.0
Smokers (18+ years)	260.4	271.7	248.0
Physical inactivity (15+ years)	317.0	330.7	315.5
High health risk due to alcohol consumed (18+ years)	57.8	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

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