Population health profile of the North East Victorian Division of General Practice

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Population health profile
of the *North East Victorian Division of General Practice*

Introduction

This profile has been designed to provide a description of the population of the North East Victorian 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 Victoria 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: Victoria

Division number: 319

Population‡:	**No.**	**%**
Total	105,949	
65+	18,548	17.5%
<25	32,342	30.5%
Indigenous	681	0.7

Disadvantage score[1]: 1013

GP services per head of population:

Division‡	3.9
Australia	4.7

Population per FTE GP:

Division‡	1,305
Australia	1,403

Premature death rate[2]:

Division‡	279.4
Australia	290.4

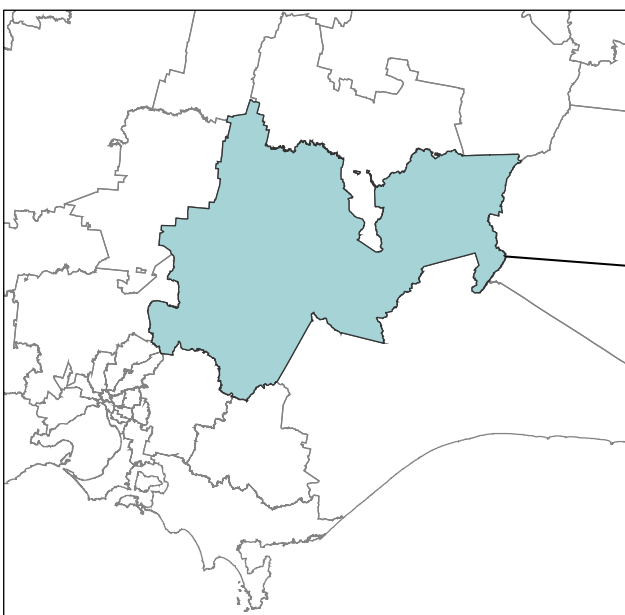[1] **Numbers above 1000 (the index score for Australia) indicate the Division is relatively advantaged**

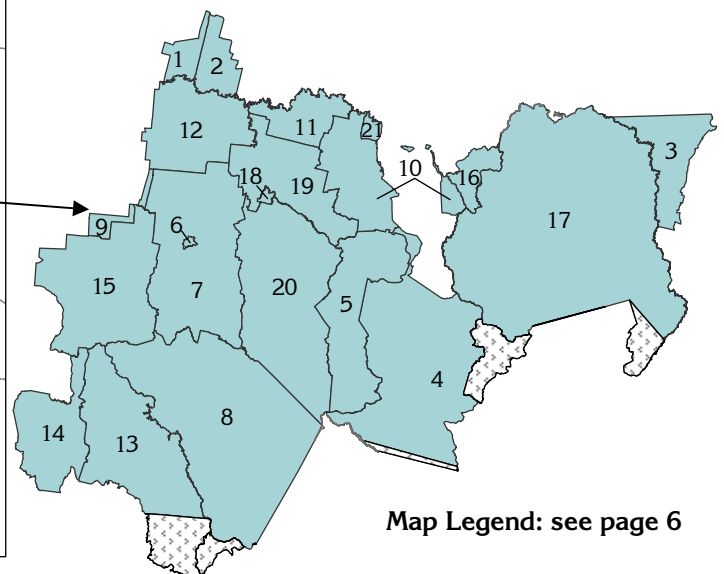[2] **Deaths at ages 0 to 74 years per 100,000 population**

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

North East Victorian Division of General Practice

Victorian Divisions of General Practice
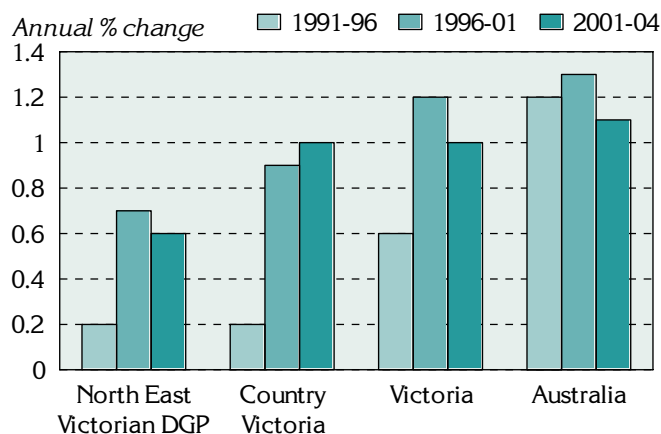
North East Victorian DGP by SLA

Map Legend: see page 6

Socio-demographic profile

Population

The North East Victorian DGP had an Estimated Resident Population of 105,949 at 30 June 2004.

Figure 1: Annual population change, North East Victorian DGP‡, country Victoria[1], Victoria and Australia, 1991 to 1996, 1996 to 2001 and 2001 to 2004

Over the five years from 1991 to 1996, the Division's population increased by 0.2% on average each year, the same as for country Victoria (0.2%), but lower than for Victoria (0.6%) and Australia as a whole (1.2%). From 1996 to 2001, the annual percentage increase (0.7%) the lower than for country Victoria (0.9%) and Victoria (1.2%). The growth rate of 0.8% per year on average from 2001 to 2004 was slightly less than the annual increases for country Victoria and Victoria (1.0%) and Australia (1.1%).

Figure 2: Population in North East Victorian DGP‡ and Australia, by age and sex, 2004
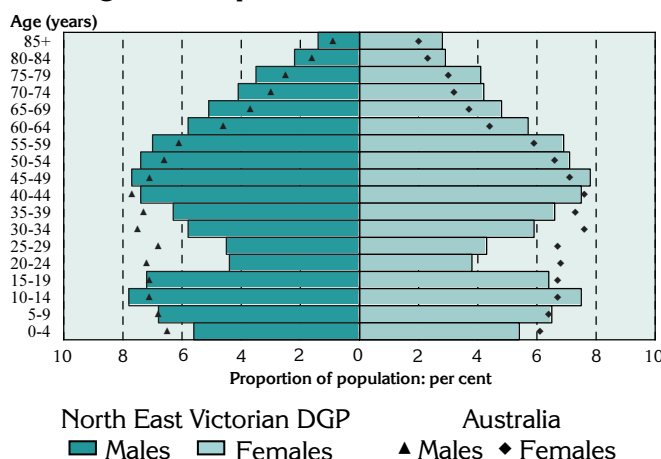
The most notable differences in the age distribution of the Division's population (when compared to Australia overall) are:
- at younger ages – a lower proportion of children aged 0 to 4 years, and a higher proportion at ages 10 to 14 years;
- from 20 to 39 years – notably lower proportions of both males and females; and,
- at 45 years and over– higher proportions of both males and females.

Table 1: Population by age, North East Victorian DGP‡ and Australia, 2004

Age group (years)	North East Victorian DGP		Australia	
	No.	%	No.	%
0-14	20,975	19.8	3,978,751	19.8
15-24	11,367	10.7	2,762,769	13.8
25-44	25,657	24.2	5,881,048	29.3
45-64	29,403	27.8	4,864,037	24.2
65-74	9,671	9.1	1,374,792	6.8
75-84	6,712	6.3	934,505	4.7
85+	2,166	2.0	295,602	1.5
Total	**105,949**	**100.0**	**20,091,504**	**100.0**

As shown in the age-sex pyramid above, the North East Victorian DGP had relatively fewer people aged 15 to 24 (10.7%) and 25 to 44 years (24.2%) than Australia as a whole (with 13.8% and 29.3%) (Table 1). Conversely, there were higher proportions of the population in the Division aged 45 years and over compared to Australia.

The North East Victorian DGP comprised 4.0% of people born in predominantly non-English speaking countries and resident in Australia for five years or more (Table 2), similar to the proportion in country Victoria (4.4%). Recent arrivals (those resident in Australia for less than five years) from non-English speaking countries comprised 0.2% of the Division's population (compared to 0.4% in country Victoria).

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[1]References to 'country Victoria' relate to Victoria excluding the Melbourne Statistical Division
‡ See note under 'Data converters and mapping' re calculation of Division totals on this page

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

Of these residents, 0.4% had poor proficiency in English (determined when people aged five years and over born overseas in predominantly non-English speaking countries reported in the Census speaking another language and speaking English 'not well' or 'not at all'), lower than country Victoria (0.6%), Victoria (3.4%) and Australia (2.4%).

Table 2: Non-English speaking born, North East Victorian DGP, country Victoria and Australia, 2001

People born in predominantly non-English speaking countries	North East Victorian DGP		Country Victoria		Victoria		Australia	
	No.	%	No.	%	No.	%	No.	%
Resident in Australia for five years or more	4,056	4.0	56,852	4.4	644,806	13.8	2,019,410	10.8
Resident in Australia for less than five years	214	0.2	5,810	0.4	110,557	2.4	408,074	2.2
Poor proficiency in English[1]	399	0.4	7,285	0.6	147,394	3.4	425,399	2.4

[1] **Calculated on persons aged 5 years and over who reported speaking another language and speaking English 'not well' or 'not at all'**

Major non-English speaking birthplaces, North East Victorian DGP, 2001

Australian-born people comprised 91% of the Division's population, notably higher than the Australian figure of 72.6%. Of the 4.6% of people from English speaking countries, 3.5% were from the UK and Eire. The major birthplaces of the non-English speaking population include Italy (1.1%), Germany (0.8%) and The Netherlands (0.5%); all other birthplaces of non-English speaking populations represented 0.1% or less of the Division's population.

Socioeconomic status

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

The North East Victorian DGP had lower proportions of single parent families (9.5%) compared to country Victoria as a whole (10.7%) and of Aboriginal and Torres Strait Islanders (0.7%, compared to 1.1% for country Victoria) (Figure 3, Table 3).

Full-time secondary school education participation of 16 year olds living in the Division (83.9%) was slightly above that for country Victoria (81.2%).

A slightly lower proportion of the Division's households received rent assistance from Centrelink (11.7%) compared to country Victoria and Victoria (both 12.9%), and there were fewer dwellings rented from the State housing authority (3.3%, compared to 3.9% and 3.2%). The proportion of dwellings with no access to a motor vehicle (7.2%) was similar to that for country Victoria (7.7%), but lower than the rate for Victoria (9.0%).

The Division had a similar proportion of the population who reported using a computer at home (40.2%) compared to country Victoria (39.7%), but lower Internet usage (20.5%, compared to 22.4%).

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

Figure 3: Socio-demographic indicators, North East Victorian DGP, country Victoria, Victoria and Australia, 2001

Note the different scales

Single parent families

Per cent

Indigenous‡

Per cent

Education participation at age 16‡

Per cent
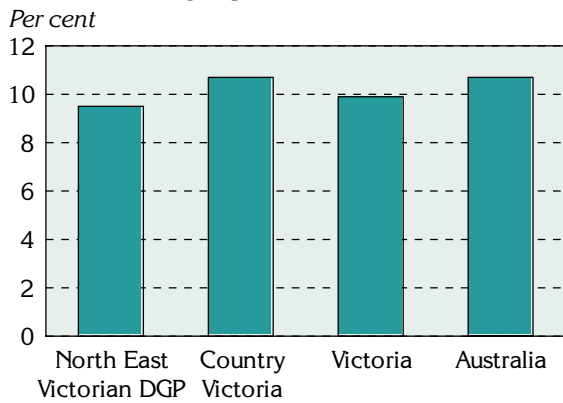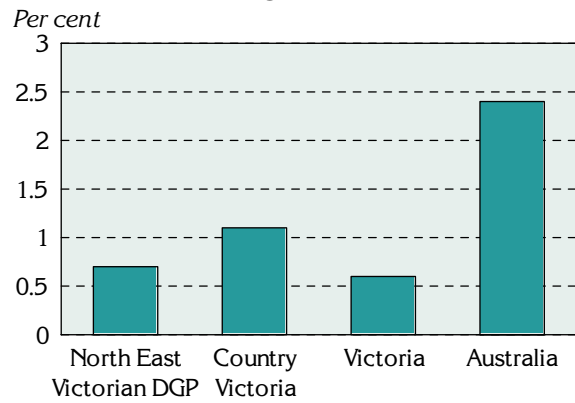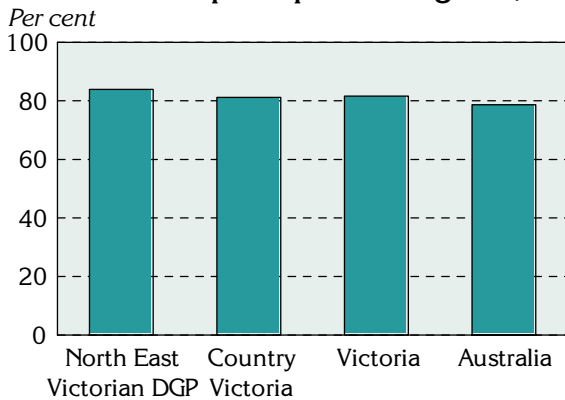
Unemployment rate (June 2003)‡

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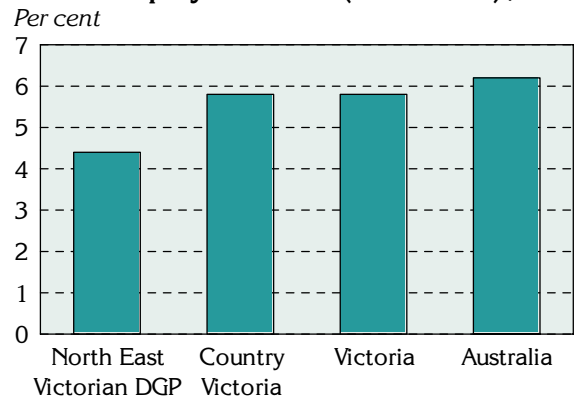
Households receiving rent assistance & Dwellings rented from State housing authority

Per cent

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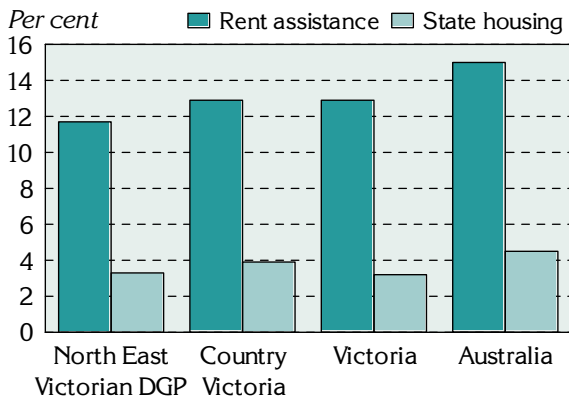
Dwellings with no motor vehicle
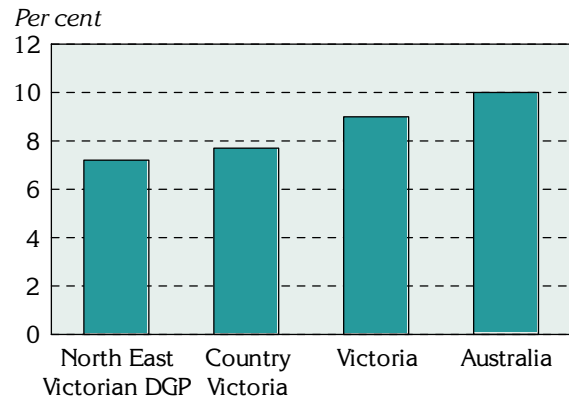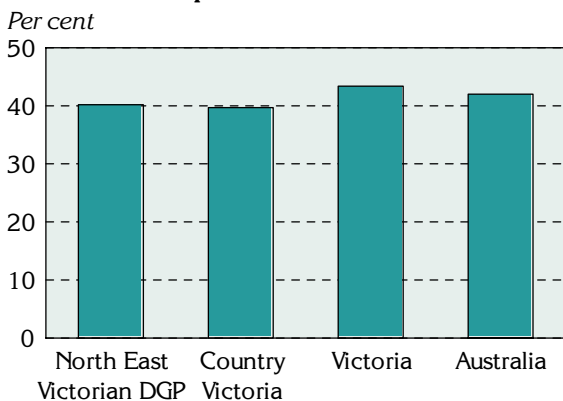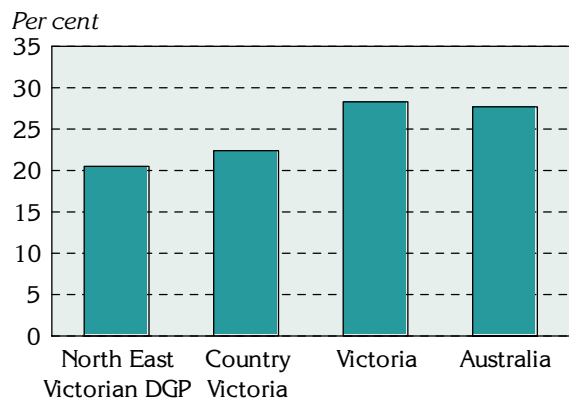
Per cent

Computer use at home

Per cent

Internet use at home

Per cent

(X-axis labels for all charts: North East Victorian DGP, Country Victoria, Victoria, Australia)

‡ 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, North East Victorian DGP, country Victoria, Victoria and Australia, 2001

Indicator	North East Victorian DGP		Country Victoria		Victoria		Australia	
	No.	%	No.	%	No.	%	No.	%
Single parent families	2,568	9.5	36,341	10.7	120,824	9.9	529,969	10.7
Indigenous‡	681	0.7	15,130	1.1	27,846	0.6	458,261	2.4
Full-time secondary school education at age 16‡	1,285	83.9	16,154	81.2	54,494	81.6	130,198	78.7
Households: rent assistance	4,368	11.7	62,105	12.9	212,587	12.9	1,006,599	15.0
Dwellings rented from the State housing authority	1,300	3.3	18,852	3.9	54,805	3.2	317,171	4.5
Dwellings: no motor vehicle	2,868	7.2	37,538	7.7	155,728	9.0	708,073	10.0
Computer use at home	42,905	40.2	505,663	39.7	2,001,169	43.4	7,881,983	42.0
Internet use at home	20,750	20.5	290,350	22.4	644,806	28.3	2,019,410	27.7

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

The unemployment rate of 4.4% in North East Victorian DGP was lower than the rates for country Victoria and Victoria (both 5.8%) (Figure 3, Table 4). The labour force participation rate (79.1%) was higher than the rates for country Victoria and Victoria (both 75.3%), and the female labour force participation rate (72.5%) was also higher than for country Victoria (69.0%) and Victoria (70.6%).

Table 4: Unemployment and labour force participation, North East Victorian DGP, country Victoria, Victoria and Australia, 2003

Labour force indicators	North East Victorian DGP		Country Victoria		Victoria		Australia	
	No.	%	No.	%	No.	%	No.	%
Unemployment rate ‡	2,318	4.4	41,083	5.8	144,584	5.8	623,791	6.2
Labour force participation‡	52,147	79.1	705,081	75.3	2,492,980	75.3	10,038,147	75.2
Female labour force participation (2001)	16,173	72.5	207,271	69.0	840,995	70.6	3,306,521	69.7

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

Summary of the socioeconomic ranking of the North East Victorian DGP

Following the 2001 Census, the Australian Bureau of Statistics (ABS) produced four socio-economic indexes for areas (SEIFA) which describe various aspects of the socioeconomic profile of populations in areas. Scores for these indexes for each Statistical Local Area (SLA) or part SLA in North East Victorian DGP are shown in the supporting information Table 9, page 17: SLAs are described on page 20.

The North East Victorian DGP area's SEIFA Index of Relative Socio-Economic Disadvantage (IRSD) score is 1013, just (1.3%) above the average score for Australia (1000), and above country Victoria (999); this highlights the marginally higher socioeconomic status profile of the North East Victorian DGP population. There are notable variations in the IRSD within the Division at the SLA level (Map 1).

Map 1: Index of Relative Socio-Economic Disadvantage by SLA, North East Victorian 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 970*
971 to 995
996 to 1020
1021 to 1045
above 1045
not mapped#

* *most disadvantaged*
# *data were not mapped: see note under 'Methods' re Data converters and mapping.*
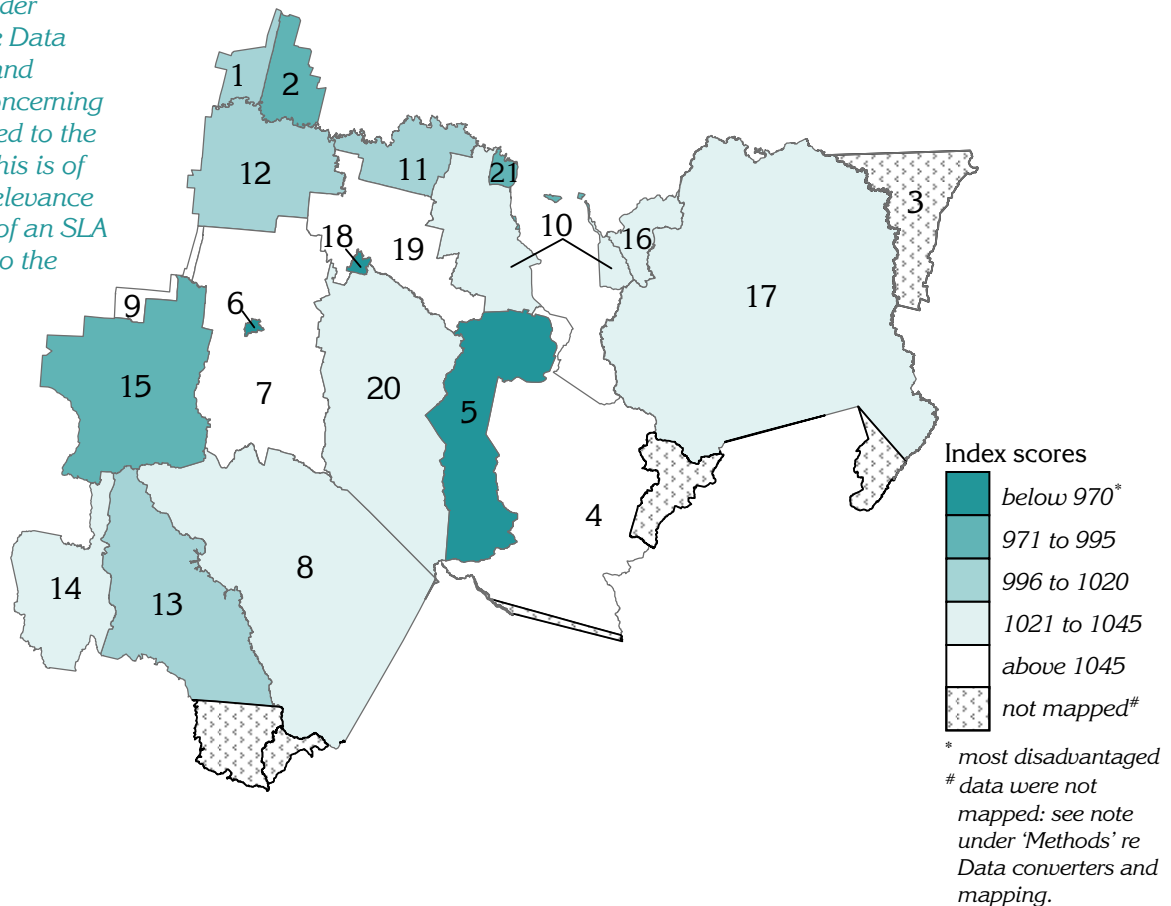
Alphabetical key to Statistical Local Areas, North East Victorian DGP, 2001			
Alpine - East	4	Murrindindi - East	13
Alpine - West	5	Murrindindi - West	14
Berrigan	1	Strathbogie	15
Corowa	2	Towong - Part A	16
Delatite - Benalla	6	Towong - Part B	17
Delatite - North	7	Tumbarumba	3
Delatite - South	8	Wangaratta - Central	18
Greater Shepparton - Part B East	9	Wangaratta - North	19
Indigo - Part A	10	Wangaratta - South	20
Indigo - Part B	11	Wodonga	21
Moira - East	12		

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

General medical practitioner (GP) supply

A total of 81.0 full-time equivalent (FTE) GPs, and 83.0 full-time workload equivalent (FWE[2]) GPs worked in the North East Victorian DGP in 2003/04 (Table 5). Of the FWE GPs, 25.5% were female, and 14.9% were over 55 years of age (compared to 25.6% and 28.3%, respectively, for Victoria).

Apart from the estimated day-time population, the rates of population per FTE GP varied, depending on the population measure used, from a high of 1,326 people per GP (calculated on the 1 August 2001 Census count – all people counted in the Division on Census night, including visitors from Australia and overseas), to a low of 1,265 people per GP (calculated on the 1 August 2001 Usual Resident Population (URP) – usual residents of the Division counted in Australia on Census night). The rates of population per FWE GP were lower, ranging from 1,234 (calculated on the URP) to 1,294 (calculated on the Census count). When calculated on the estimated day-time population, the rates of population in the Division were 5.4% below those calculated on the URP.

Based on the ERP, the rate of population per FTE GP in North East Victorian DGP was lower than the rates for Victoria and Australia, indicating a higher level of provision of GP services in the Division. The rate of population per FWE GP was higher than the rates for Victoria and Australia.

Table 5: Population per GP in North East Victorian DGP, Victoria and Australia, 2003/04

Population measure	Population	GPs		Population per GP	
		FTE	FWE	FTE	FWE
North East Victorian DGP					
Census count (adjusted)*	107,428	81.0	83.0	1,326	1,294
Usual Resident Population (URP) (adjusted)*	102,437	..	..	1,265	1,234
Estimated Resident Population (ERP)	105,703	..	..	1,305	1,273
Day-time population (estimated on the URP)* ‡	96,880	..	..	1,196	1,167
Victoria (ERP)	4,942,102	3,575	4,157	1,382	1,189
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 2003/2004, as measured by the ERP**

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

Immunisation

Data from the Australian Childhood Immunisation Register show that 94.3% 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 64.1%, compared to 70.0% for Australia, with 35.7% immunised at a local government council.

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

Provider	North East Victorian DGP	Australia
	%	%
General practitioner	64.1	70.0
Local government council	35.7	16.6
Community health centre/ worker	0.0	9.8
Public hospital	0.2	2.1
Aboriginal health service/ worker	0.0	0.9
Other*	0.0	0.6
Total: Per cent	**100.0**	**100.0**
Number	**16,128**	**3,843,610**

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

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[2]The FWE value is calculated for each GP location by dividing the GP's total Medicare billing (Schedule fee value of services provided during the reference period) by the mean billing of full-time doctors in that derived major speciality for the reference period. Thus, a GP earning 20% more than the mean billing of full-time doctors is shown as 1.2 FWE: this differs from full-time equivalent (FTE) counts, where the FTE value of any GP cannot exceed 1.0

Premature mortality

Deaths at ages below 75 years are used as an indicator of health status, as they largely reflect premature deaths, given the current levels of life expectancy in Australia.

The 'all causes' death rate in the Division at ages 0 to 74 years (279.4 deaths per 100,000 population) was lower than for country Victoria (316.8) and Australia (290.4): the rates have been age standardised to allow for comparisons between areas, regardless of differences in age profiles between the Division and Australia.

The major causes of premature mortality in the Division, as for country Victoria and Australia as a whole, are cancer and diseases of the circulatory system (Figure 4). With the exception of the major causes of respiratory system diseases, injuries and poisonings, and motor vehicle accidents, death rates in the Division were lower than, or similar to, those for country Victoria and Australia. Death rates were notably lower than country Victoria for circulatory diseases and cancer.

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, North East Victorian DGP‡, country Victoria and Australia, 2000-02*

Indirectly age standardised rate per 100,000 population

■ North East Victorian DGP   □ Country Victoria   ▨ Australia
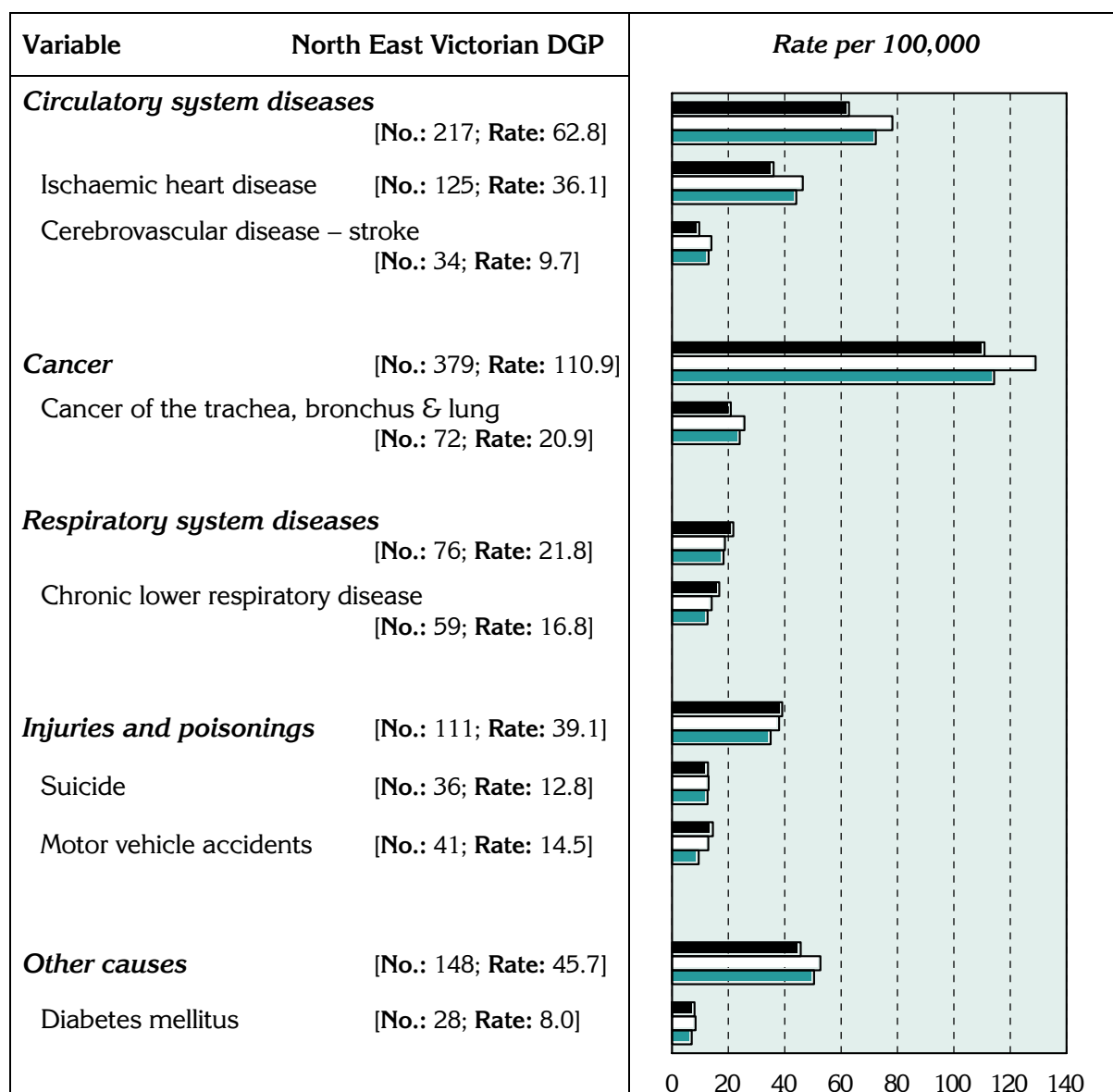
Variable	North East Victorian DGP	Rate per 100,000
Circulatory system diseases	[**No.:** 217; **Rate:** 62.8]	
Ischaemic heart disease	[**No.:** 125; **Rate:** 36.1]	
Cerebrovascular disease – stroke	[**No.:** 34; **Rate:** 9.7]	
Cancer	[**No.:** 379; **Rate:** 110.9]	
Cancer of the trachea, bronchus & lung	[**No.:** 72; **Rate:** 20.9]	
Respiratory system diseases	[**No.:** 76; **Rate:** 21.8]	
Chronic lower respiratory disease	[**No.:** 59; **Rate:** 16.8]	
Injuries and poisonings	[**No.:** 111; **Rate:** 39.1]	
Suicide	[**No.:** 36; **Rate:** 12.8]	
Motor vehicle accidents	[**No.:** 41; **Rate:** 14.5]	
Other causes	[**No.:** 148; **Rate:** 45.7]	
Diabetes mellitus	[**No.:** 28; **Rate:** 8.0]	

0   20   40   60   80   100   120   140

* 'No.' is the total number of deaths for the 2000-02 period; 'Rate' is an annual rate, based on the 3 year average
‡ See note under 'Data converters and mapping' re calculation of Division totals

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

Chronic diseases and risk factors

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

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

Background

In this section, estimates of the prevalence of selected chronic diseases and risk factors, and two summary measures of health, are shown for the Division‡, and for SLAs within the Division: note that the estimates have been predicted from self-reported data, and are not based on clinical records or physical measures. The chronic diseases and risk factors are those for which sufficiently reliable estimates can be made for the Division from national survey data. The process by which the estimates have been made, and details of their limitations, are described in the Notes section, pages 15-16. The data on which the following charts are based are in Table 13.

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

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

Prevalence estimates: chronic disease‡

It is estimated that, with the exceptions of asthma, injury events and musculoskeletal system diseases, similar, or smaller proportions of the population in North East Victorian 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 consistent with, or lower than the national rates.

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 relatively 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 notably below the national average.

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

Figure 5: Estimates[*] of chronic disease and injury, North East Victorian DGP‡, country Victoria and Australia, 2001

Indirectly age standardised rate per 1,000 population

■ North East Victorian DGP   ☐ Country Victoria   ■ Australia

Variable North East Victorian DGP	Rate per 1,000
Respiratory system diseases [**No.:** 30,332; **Rate:** 288.0]	
Asthma [**No.:** 13,268; **Rate:** 126.8]	
Circulatory system diseases [**No.:** 20,721; **Rate:** 177.1]	
Diabetes type 2 [**No.:** 2,256; **Rate:** 18.6]	
Injury event [**No.:** 12,988; **Rate:** 126.5]	
Mental & behavioural disorders [**No.:** 10,176; **Rate:** 97.0]	
Musculoskeletal system diseases [**No.:** 38,148; **Rate:** 347.1]	
Arthritis [**No.:** 16,615; **Rate:** 141.1]	
- osteoarthritis [**No.:** 9,228; **Rate:** 76.9]	
- rheumatoid arthritis [**No.:** 2,762; **Rate:** 23.8]	
Osteoporosis (females) [**No.:** 1,063; **Rate:** 17.4]	

(Rate per 1,000 axis: 0, 100, 200, 300, 400)
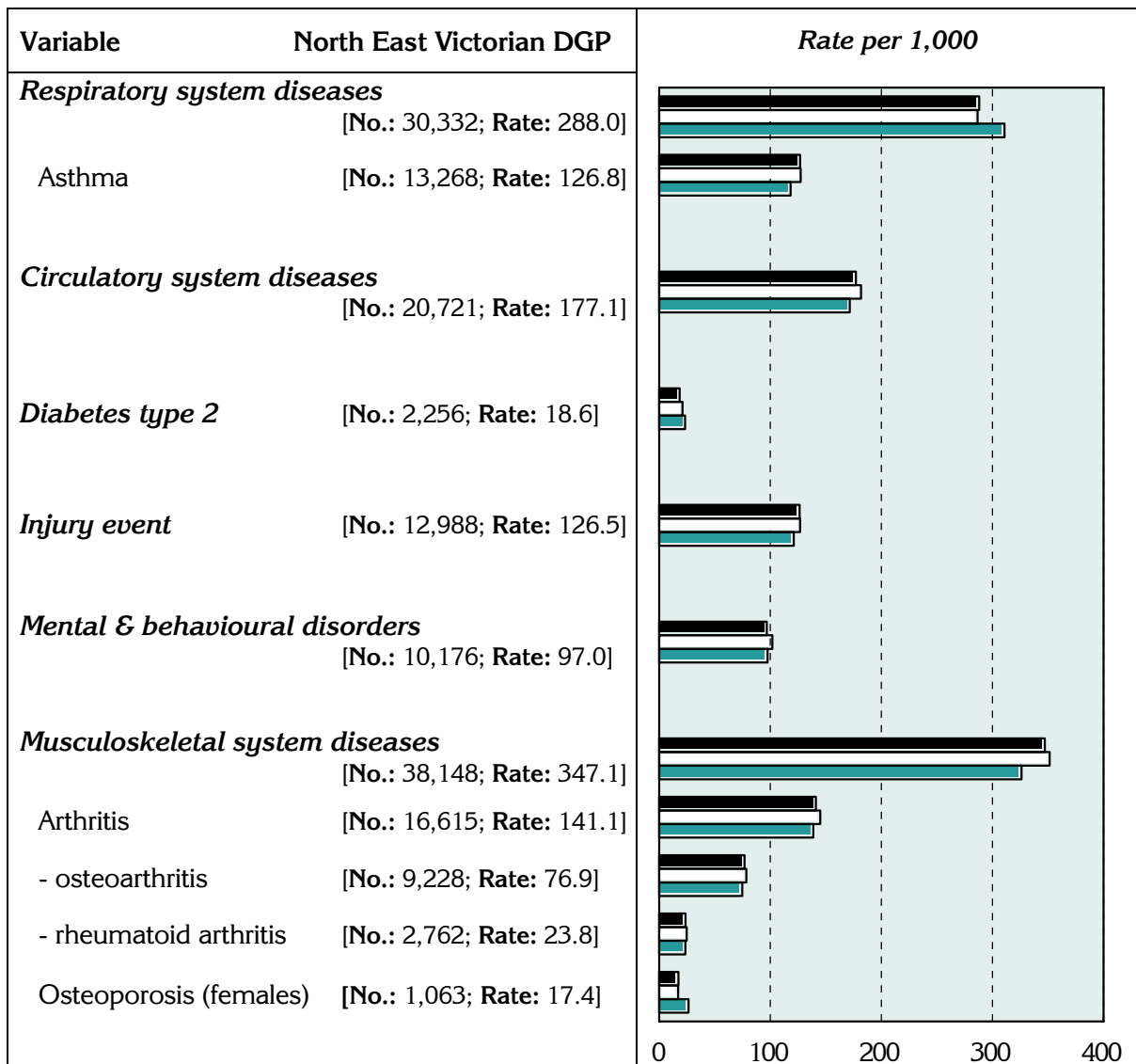
* 'No.' is a weighted estimate of the number of people in North East Victorian DGP reporting each chronic condition and is derived from synthetic predictions from the 2001 NHS

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

Figure 6: Estimates[*] of measures of self-reported health, North East Victorian DGP‡, country Victoria and Australia, 2001

Indirectly age standardised rate per 1,000 population

■ North East Victorian DGP   ☐ Country Victoria   ■ Australia

Variable North East Victorian DGP	Rate per 1,000
Very high psychological distress levels [K–10[1]] (18+ years) [**No.:** 2,539; **Rate:** 33.2]	
Fair or poor self-assessed health status (15+ years) [**No.:** 14,788; **Rate:** 167.8]	

(Rate per 1,000 axis: 0, 50, 100, 150, 200)

* 'No.' is a weighted estimate of the number of people in North East Victorian 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 North East Victorian DGP reported relatively lower rates (when compared with the Australian population) for obesity in males, overweight in females, and lack of exercise (Figure 7). The rates in the Division for overweight in males, smoking and high-risk alcohol consumption were higher than the national rates.

Figure 7: Estimates* of selected risk factors, North East Victorian DGP‡, country Victoria and Australia, 2001

Indirectly age standardised rate per 1,000 population

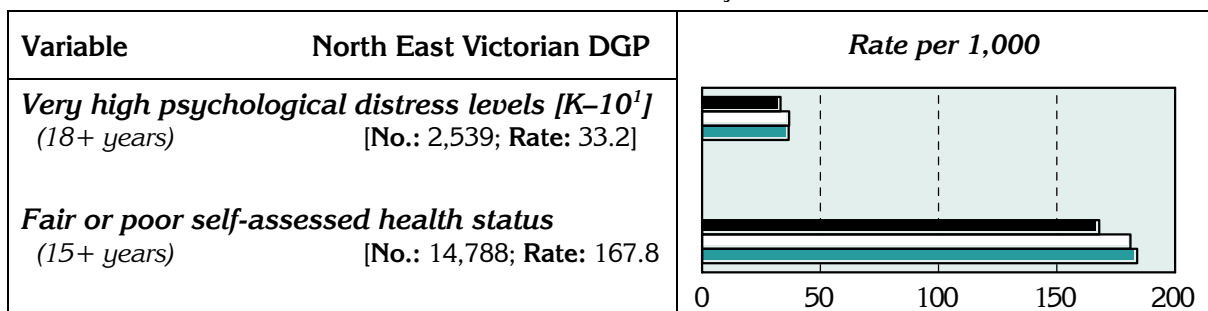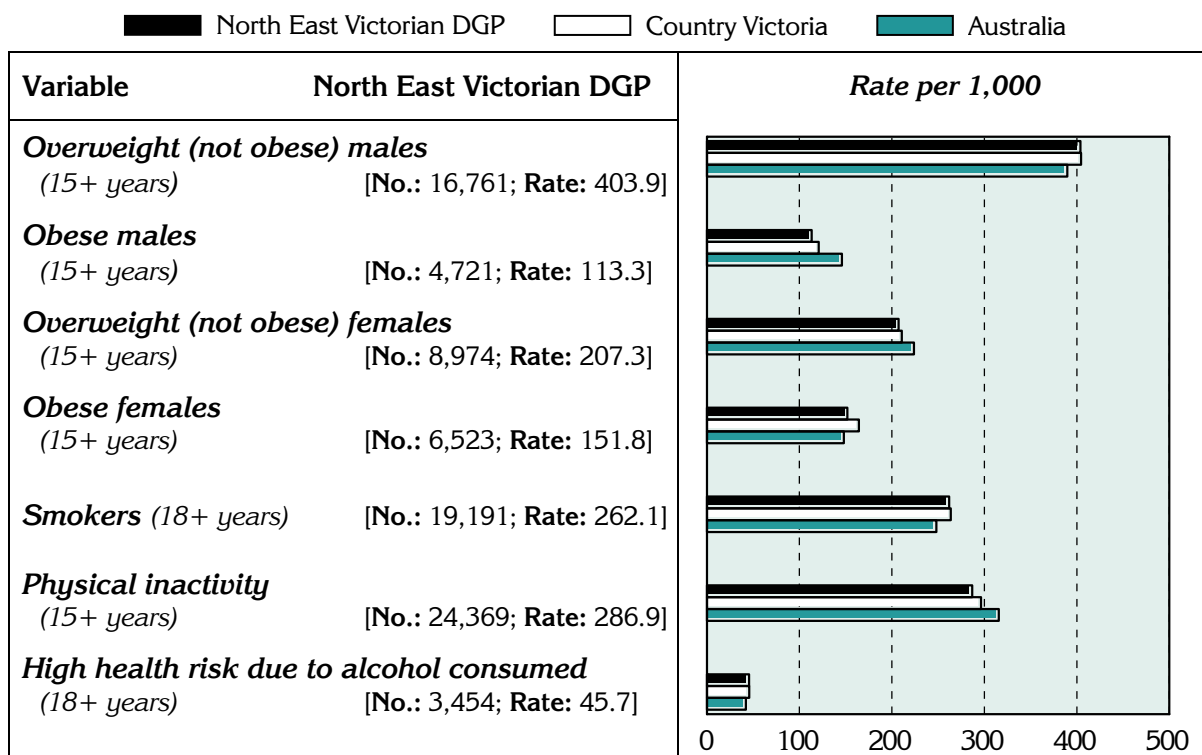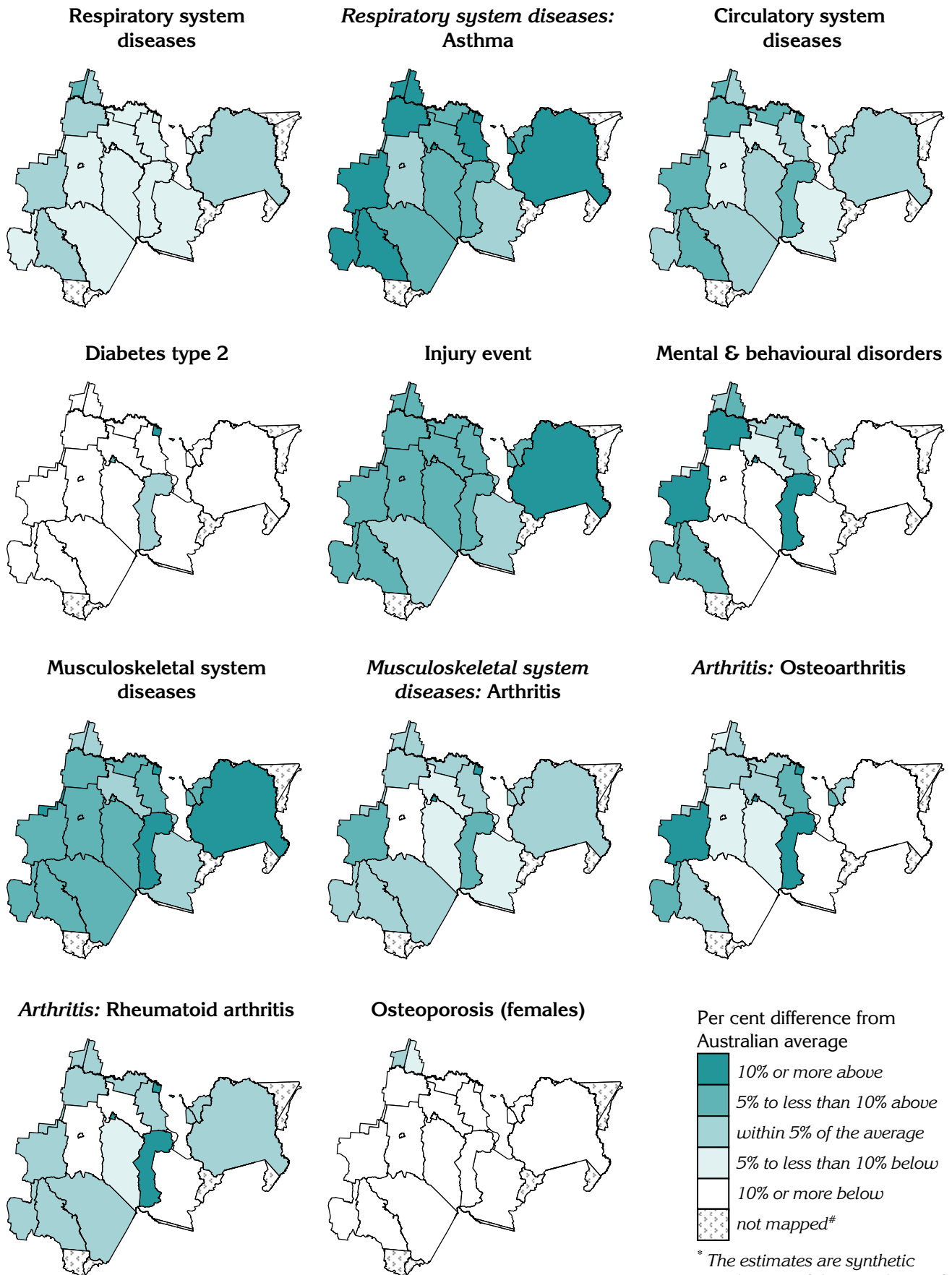| ■ North East Victorian DGP | ☐ Country Victoria | ■ Australia |

Variable	North East Victorian DGP	Rate per 1,000
Overweight (not obese) males *(15+ years)*	[**No.:** 16,761; **Rate:** 403.9]	
Obese males *(15+ years)*	[**No.:** 4,721; **Rate:** 113.3]	
Overweight (not obese) females *(15+ years)*	[**No.:** 8,974; **Rate:** 207.3]	
Obese females *(15+ years)*	[**No.:** 6,523; **Rate:** 151.8]	
Smokers *(18+ years)*	[**No.:** 19,191; **Rate:** 262.1]	
Physical inactivity *(15+ years)*	[**No.:** 24,369; **Rate:** 286.9]	
High health risk due to alcohol consumed *(18+ years)*	[**No.:** 3,454; **Rate:** 45.7]	

* '**No.' is a weighted estimate of the number of people in North East Victorian 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 20, for per cent of SLA population in the Division) represent the estimates for the whole SLA, and not just the part shown. However, SLAs with only a small proportion of their population in the Division are likely to have little influence on the total estimates for the Division, which have been based on the percentage of the SLA population in the Division.

Map 2: Estimates* of chronic disease and injury by SLA, North East Victorian 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#

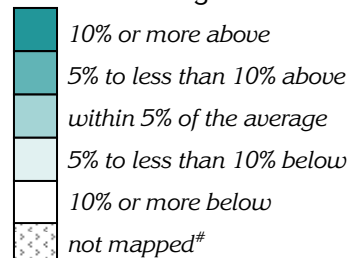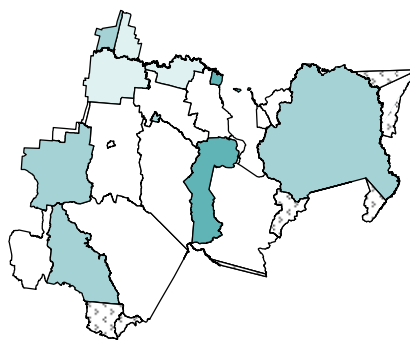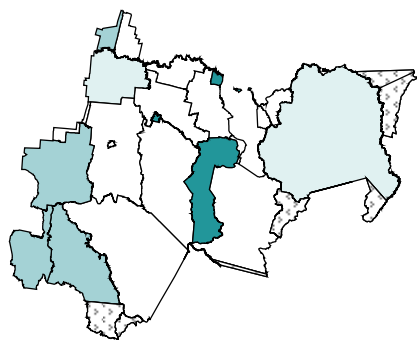* The estimates are synthetic predictions of the prevalence of these conditions: see Notes on the data.

Data not mapped: see Notes on the data.

Map 3: Estimates* of measures of self-reported health by SLA, North East Victorian 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.*
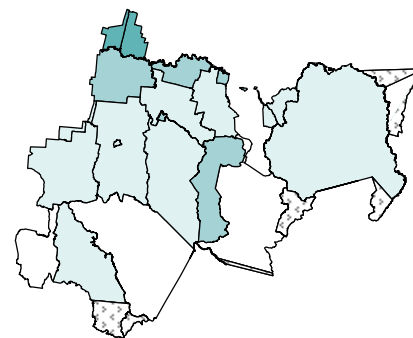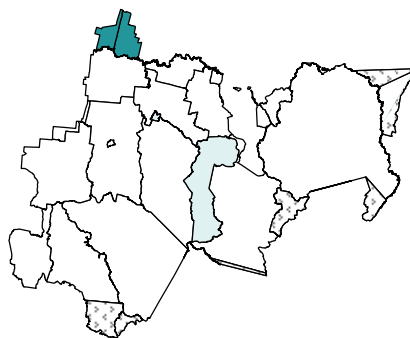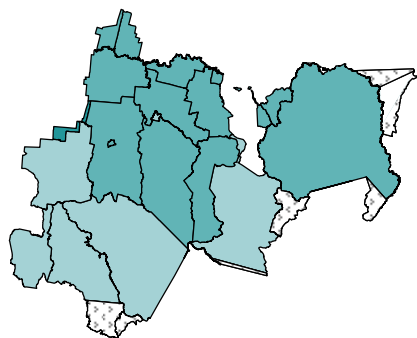[#] *Data not mapped: see Notes on the data.*

[1] **Kessler 10**

Map 4: Estimates* of selected risk factors by SLA, North East Victorian DGP, 2001

Overweight (obese) males (15+ years)

Obese males (15+ years)

Overweight (obese) females (15+ years)

Obese females (15+ years)

Smokers (18+ years)

Physical inactivity (15+ years)
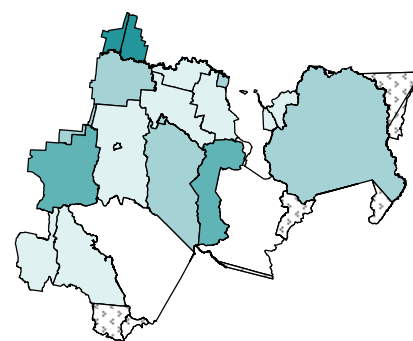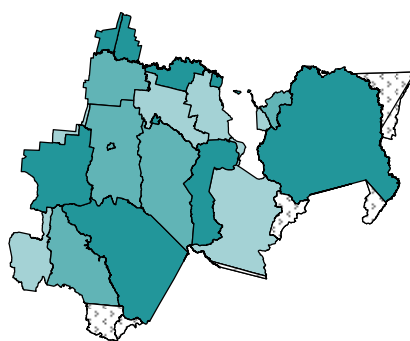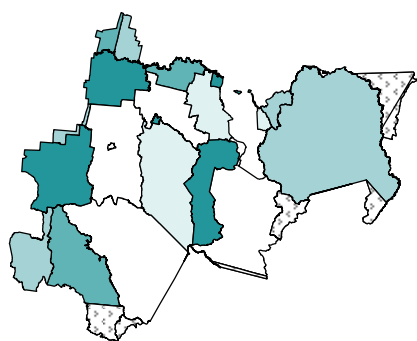
High health risk due to alcohol consumed (18+ years)

Per cent difference from Australian average
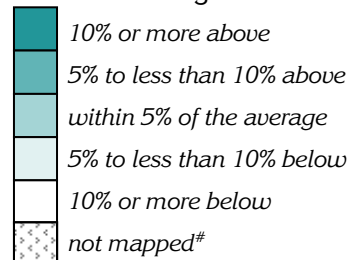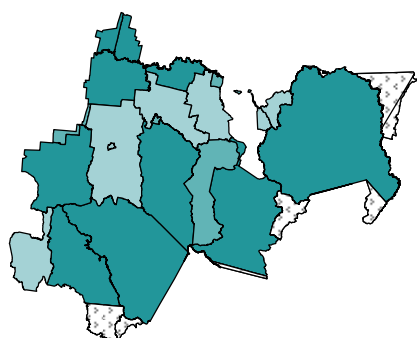
	10% or more above
	5% to less than 10% above
	within 5% of the average
	5% to less than 10% below
	10% or more below
	not mapped[#]

* *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 Victoria' relate to Victoria excluding the Melbourne 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 12	ABS Deaths, 2000 to 2002
Chronic diseases and associated risk factors[4]	
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] **See notes below**

Chronic diseases and associated risk factors

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

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

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

Indicator	Notes on the data
Estimates of chronic disease and injury (Figure 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	- Respondent's estimated average daily alcohol consumption in the seven days prior to interview (based on number of days and quantity consumed). Alcohol risk levels were grouped according to NHMRC risk levels for harm in the long term, with 'high risk' defined as a daily consumption of more than 75 ml for males and 50 ml for females

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

Methods

Synthetic estimates

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

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

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

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

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

Premature deaths

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

Data converters and mapping

Conversion to Division of data available by postcode

The allocation of postcodes to Divisions was undertaken using information from the Department of Health and Ageing's web site, which shows the proportion of a postcode in a Division (Table 10).

Conversion to Division of data available by SLA
(marked in this profile as ‡ **See note under 'Data converters and mapping' re calculation of Division total**)

Where the data presented in these profiles were only available by SLA they have been converted to Division of General Practice areas using a concordance based on data at the 2001 Census. A copy of the concordance is included in the Population data: A Guide for Divisions of General Practice: it is also available from the Divisions' data area on PHIDU web site.

In brief, the concordance splits the data (eg number of deaths) for each SLA across one or more Divisions. The proportion of an SLA's data that is allocated to each Division was calculated from (a) CD level Census 2001 data that splits SLAs across approximations to postcodes (referred to as postal areas) and (b) data on the DoHA website that splits postcodes across Divisions. This concordance can be adjusted to meet any new configuration of Division boundaries based on the 2001 Collection Districts, or combinations thereof.

The estimated population of each SLA in this Division is shown in Table 11.

Mapping

In some Divisions the maps may include a very small part of an SLA which has not been allocated any population, or either has a population of less than 100 or has less than 1% of the SLA's total population: these areas are mapped with a pattern.

Supporting information

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 North East Victorian 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, North East Victorian DGP, 2001

SLA code	SLA name (& per cent of SLA in the Division)	Index score			
		Disadvantage	Advantage	Economic Resources	Education & Occupation
10650	Berrigan (2.4)	1002	945	935	943
12300	Corowa (22.2)	994	939	950	927
14050	*Hume (3.6)*	*1039*	*992*	*979*	*982*
20111	Alpine - East (93.5)	1066	1032	987	1066
20112	Alpine - West (100.0)	968	913	915	908
21951	Delatite - Benalla (100.0)	945	918	918	927
21954	Delatite - North (100.0)	1047	987	949	1001
21955	Delatite - South (100.0)	1034	999	964	1015
22834	Gtr Shepparton - Part B East (3.5)	1056	990	979	980
23351	Indigo - Part A (86.2)	1034	995	960	1014
23352	Indigo - Part B (100.0)	1006	961	965	954
24901	Moira - East (91.3)	1007	942	935	943
25621	Murrindindi - East (83.7)	1008	954	916	976
25622	Murrindindi - West (29.4)	1023	979	959	984
26430	Strathbogie (60.9)	991	925	907	944
26671	Towong - Part A (66.0)	1035	995	972	999
26672	Towong - Part B (100.0)	1030	942	909	960
26701	Wangaratta - Central (100.0)	960	930	934	935
26704	Wangaratta - North (100.0)	1063	1000	970	1008
26705	Wangaratta - South (100.0)	1039	968	941	977
27170	Wodonga (6.9)	982	969	978	963

* 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)

Statistical geography of North East Victorian Division of General Practice

The North East Victorian DGP covers 29,358 square kilometres, based on 2001 SLA data.

The postcodes in the Division are shown below (Table 10).

Table 10: Postcodes in North East Victorian DGP, 2004

Postcode	Per cent of postcode population in the Division[*]	Postcode	Per cent of postcode population in the Division[*]	Postcode	Per cent of postcode population in the Division[*]
2642	8	3718	100	3704	100
2647	100	3719	100	3705	100
3666	100	3720	100	3707	100
3669	100	3722	100	3708	100
3670	100	3723	100	3709	100
3671	100	3724	100	3711	100
3672	100	3725	100	3730	100
3673	100	3726	100	3732	100
3675	100	3727	100	3733	100
3676	100	3728	100	3735	100
3677	100	3688	100	3736	100
3678	100	3691	34	3737	100
3682	100	3693	100	3738	100
3683	100	3694	100	3739	100
3685	100	3695	100	3740	100
3687	100	3697	100	3741	100
3712	100	3698	100	3744	100
3713	100	3699	100	3746	100
3714	100	3700	100	3747	100
3715	100	3701	100	3749	100
3717	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, Local Government Areas (LGAs) have been split into SLAs. For example, the LGA of Delatite has three SLAs – Benalla, North and South. All of these SLAs, and all or part of the other SLAs in Table 11, comprise the Division.

Table 11: SLAs in North East Victorian 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
10650	Berrigan	2.4	193
12300	Corowa	22.2	1,907
12450	*Culcairn*	*1.0*	*39*
14050	*Hume*	*3.6*	*296*
14950	*Lockhart*	*0.4*	*13*
17450	Tumbarumba	1.6	57
17700	*Urana*	*1.3*	*18*
20111	Alpine - East	93.5	8,172
20112	Alpine - West	100.0	4,562
21951	Delatite - Benalla	100.0	9,561
21954	Delatite - North	100.0	4,478
21955	Delatite - South	100.0	7,181
22834	Gtr Shepparton – Part B East	3.5	144
23351	Indigo - Part A	86.2	9,884
23352	Indigo - Part B	100.0	3,589
24901	Moira - East	91.3	8,146
25621	Murrindindi - East	83.7	5,269
25622	Murrindindi - West	29.4	2,233
26430	Strathbogie	60.9	5,842
26671	Towong - Part A	66.0	1,583
26672	Towong - Part B	100.0	3,794
26701	Wangaratta - Central	100.0	16,315
26704	Wangaratta - North	100.0	4,547
26705	Wangaratta - South	100.0	5,727
27170	Wodonga	6.9	2,399

[*] **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)**

Supporting data

The data used in Figure 4 to illustrate the rates of premature mortality in the Division are shown below in Table 12.

Table 12: Deaths before 75 years of age by major condition group and selected cause, North East Victorian DGP‡, country Victoria and Australia, 2000-02[*]

Indirectly age standardised rate per 100,000 population

Variable	North East Victorian DGP‡		Country Victoria		Australia	
	No.	Rate	No.	Rate	No.	Rate
Circulatory system diseases	217	62.8	3,163	78.2	38,357	72.3
Ischaemic heart disease	125	36.1	1,879	46.4	23,364	44.1
Cerebrovascular disease – stroke	34	9.7	568	14.0	6,920	13.0
Cancer	379	110.9	5,188	129.0	60,603	114.3
Cancer of the trachea, bronchus & lung	72	20.9	1,039	25.7	12,715	24.0
Respiratory system diseases	76	21.8	765	18.8	9,726	18.3
Chronic lower respiratory disease	59	16.8	574	14.1	6,657	12.6
Injuries and poisonings	111	39.1	1,406	38.0	18,573	35.0
Suicide	36	12.8	477	13.0	6,706	12.6
Motor vehicle accidents	41	14.5	473	12.9	5,014	9.5
Other causes	148	45.7	2,089	52.7	26,735	50.4
Diabetes mellitus	28	8.0	343	8.4	3,734	7.0

[*] **'No.' is the total number of deaths for the 2000-02 period; 'Rate' is an annual rate, based on the 3 year average**
‡ **See note under 'Data converters and mapping' re calculation of Division totals**

The rates used to illustrate the prevalence estimates of chronic disease and injury (Figure 5), measures of self-reported health (Figure 6), and selected risk factors (Figure 7), are shown in Table 13 below.

Table 13: Estimates of chronic disease and associated risk factors, North East Victorian DGP‡, country Victoria and Australia, 2001

Indirectly age standardised rate per 1,000 population

Variable	North East Victorian DGP‡	Country Victoria	Australia
Chronic disease and injury (Figure 5)			
Respiratory system diseases	288.0	286.6	310.8
Asthma	126.8	127.5	118.3
Circulatory system diseases	177.1	181.8	171.5
Diabetes type 2	18.6	21.1	23.4
Injury event	126.5	126.8	121.2
Mental & behavioural disorders	97.0	101.9	97.6
Musculoskeletal system diseases	347.1	351.4	326.2
Arthritis	141.1	145.0	138.8
- Osteoarthritis	76.9	78.6	74.9
- Rheumatoid arthritis	23.8	24.9	23.6
Osteoporosis (females)	17.4	17.1	26.4
Measures of self-reported health (Figure 6)			
Very high psychological distress levels (18+ years)	33.2	36.8	36.6
Fair or poor self-assessed health status (15+ years)	167.8	181.1	184.0
Risk factors (Figure 7)			
Overweight (not obese) males (15+ years)	403.9	404.6	389.7
Obese males (15+ years)	113.3	120.9	145.9
Overweight (not obese) females (15+ years)	207.3	210.8	223.9
Obese females (15+ years)	151.8	164.4	148.0
Smokers (18+ years)	262.1	263.6	248.0
Physical inactivity (15+ years)	286.9	296.3	315.5
High health risk due to alcohol consumed (18+ years)	45.7	45.9	42.1

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

References

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

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Acknowledgements

Further developments and updates

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

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

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

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

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

PHIDU contact details

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

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