

# Population health profile of the Macarthur

## Division of General Practice: supplement

Population Profile Series: No. 14a

PHIDU

March 2007



PHIDU



Australian Government

Australian Institute of  
Health and Welfare



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## National Library of Australia Cataloguing in Publication entry

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Population health profile of the Macarthur Division of General Practice: supplement.

ISBN 9 78073089 6142 (web).

1. Public health - New South Wales - Macarthur - Statistics.  
2. Health status indicators - New South Wales - Macarthur - Statistics. 3. Health service areas - New South Wales - Macarthur. 4. Macarthur (N.S.W.) - Statistics, Medical. I. Public Health Information Development Unit (Australia). (Series : Population profile series ; no. 14a).

362.1099441

ISSN 1833-0452 Population Profile Series

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

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

Interpretation of differences between data in this profile and similar data from other sources needs to be undertaken with care, as such differences may be due to the use of different methodology to produce the data.

Suggested citation:

PHIDU. (2007) *Population health profile of the Macarthur Division of General Practice: supplement*. Population Profile Series: No. 14a. Public Health Information Development Unit (PHIDU), Adelaide.

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

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

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# Population health profile of the Macarthur Division of General Practice: supplement

This profile is a supplement to the *Population health profile of the Macarthur Division of General Practice*, dated November 2005, available from [www.publichealth.gov.au](http://www.publichealth.gov.au). This supplement includes an update of the population of the Macarthur Division of General Practice, as well as additional indicators and aspects of the Division's socioeconomic status, use of GP services and health. The contents are:

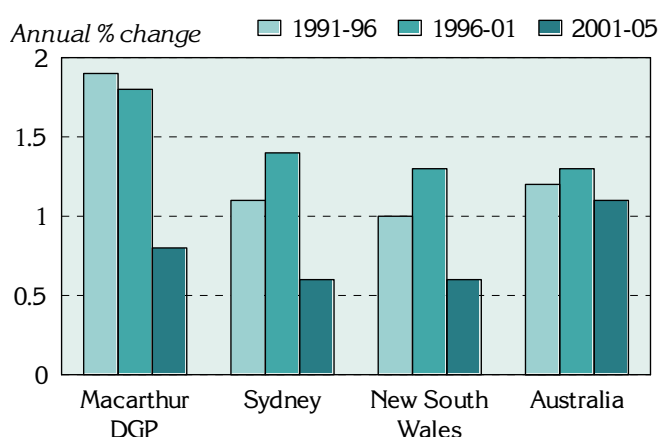
- Population [updated to June 2005]
- Additional socio-demographic indicators
- Unreferred attendances – patient flow/ GP catchment
- Additional prevalence estimates: chronic diseases and risk factors combined
- Avoidable hospitalisations: hospital admissions resulting from ambulatory care sensitive conditions
- Avoidable mortality

For further information on the way Division totals in this report have been estimated, please refer to the 'Notes on the data' section of the *Population health profile*, November 2005 ([www.publichealth.gov.au](http://www.publichealth.gov.au)).

## Population

The Macarthur Division had an Estimated Resident Population of 236,526 at 30 June 2005.

**Figure 1: Annual population change, Macarthur DGP, Sydney, New South Wales and Australia, 1991 to 1996, 1996 to 2001 and 2001 to 2005**



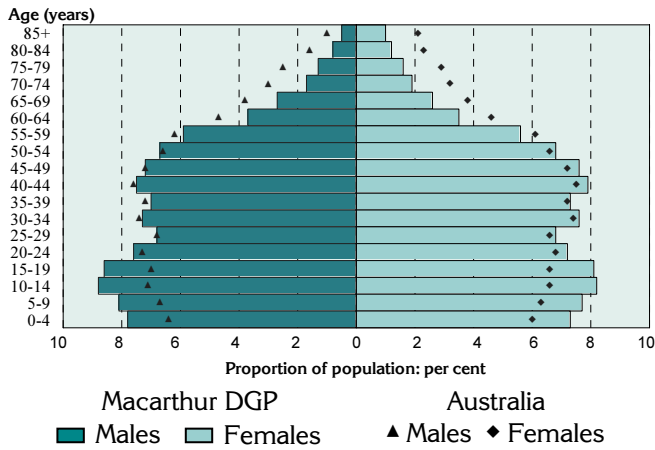
Over the five years from 1991 to 1996, the Division's population increased by 1.9% on average each year, well above that in Sydney (1.1%), New South Wales (1.0%), and Australia (1.2%). From 1996 to 2001, the annual percentage increase was 1.8%, again higher than in Sydney (1.4%) and New South Wales (1.3%). The growth rate declined to 0.8% per year from 2001 to 2005, still higher than the annual increases for Sydney and New South Wales (0.6%), although below the level for Australia (1.1%).

**Table 1: Population by age, Macarthur DGP and Australia, 2005**

Age group (years)	Macarthur DGP		Australia	
	No.	%	No.	%
0-14	56,804	24.0	3,978,221	19.6
15-24	37,251	15.7	2,819,834	13.9
25-44	68,818	29.1	5,878,107	28.9
45-64	55,500	23.5	4,984,446	24.5
65-74	10,549	4.5	1,398,831	6.9
75-84	5,838	2.5	954,143	4.7
85+	1,767	0.7	315,027	1.5
<b>Total</b>	<b>236,526</b>	<b>100.0</b>	<b>20,328,609</b>	<b>100.0</b>

As shown in the accompanying table and the age-sex pyramid below, Macarthur DGP had higher proportions of children and young people than Australia, with 24.0% at ages 0 to 14 years, and 15.7% aged 15 to 24 years (compared to 19.6% and 13.9% for Australia) (Table 1). Conversely, the 45 years and over age groups had lower (some markedly lower) proportions compared with Australia.

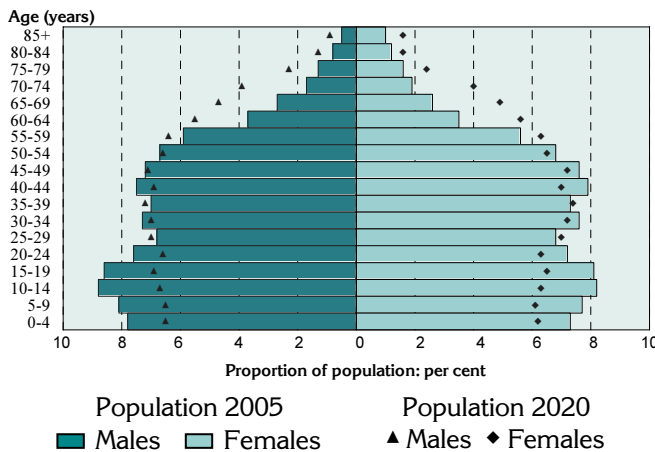
**Figure 2: Population in Macarthur DGP and Australia, by age and sex, 2005**



The most notable differences in the age distribution of the Division's population (when compared with Australia overall) are:

- at younger ages – notably higher proportions of children aged 0 to 14 years, and young people aged 15 to 19 years;
- slightly higher proportions of young males and females aged 20 to 24 years and females through to 54 years; and
- from 55 years and over – notably lower proportions of both males and females.

**Figure 3: Population projections for Macarthur DGP, by age and sex, 2005 and 2020**



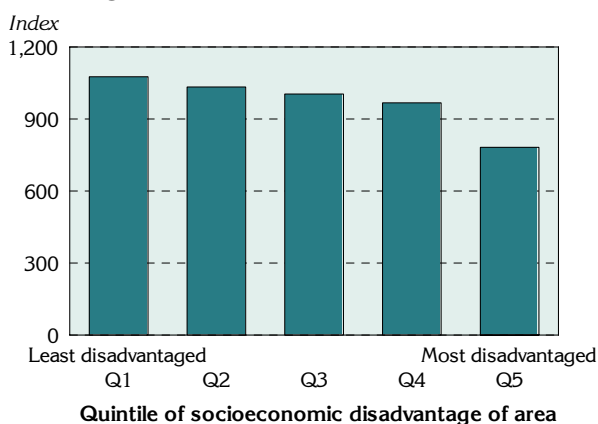
The population projections for the Division show a number of changes in age distribution, with the 2020 population projected to have:

- at younger ages – much lower proportions of males and females aged 0 to 24 years; and
- from 55 years old and onwards – notably higher proportions of both males and females (most pronounced at ages 60 to 74 years).

## Additional socio-demographic indicators

Please refer to the earlier *Population health profile of the Macarthur Division of General Practice*, dated November 2005, available from [www.publichealth.gov.au](http://www.publichealth.gov.au), for other socio-demographic indicators.

**Figure 4: Index of Relative Socio-Economic Disadvantage, Macarthur DGP, 2001**



One of four socioeconomic indexes for areas produced at the 2001 ABS Census is the Index of Relative Socio-Economic Disadvantage.

The Macarthur DGP has an index score of 973, below the score for Australia of 1000: this score varies widely across the Division, from 782 in the most disadvantaged areas to 1076 in the least disadvantaged areas.

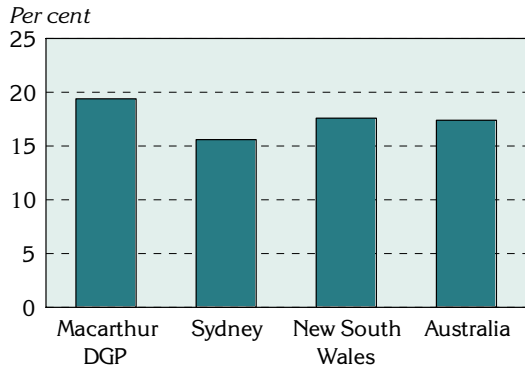
Note: each 'quintile' comprises approximately 20% of the population of the Division.

A new indicator, produced for the first time at the 2001 ABS Census, shows the number of jobless families with children under 15 years of age. There were markedly more jobless families in the Macarthur DGP (19.4%), compared to Sydney as a whole (15.6%) (Figure 5, Table 2).

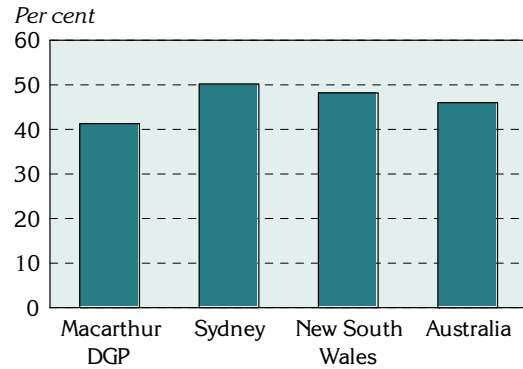
With the introduction of the 30% rebate for private health insurance premiums, there was a once-off registration process, providing information of the postcode and residence of those who had such insurance (these data are not available at this area level for later dates). In 2001, the Division had a notably lower proportion of the population with private health insurance (41.3%), compared to Sydney (50.2%) (Figure 5, Table 2).

**Figure 5: Socio-demographic indicators, Macarthur DGP, Sydney, New South Wales and Australia, 2001**

**Jobless families with children under 15 years old**



**Private health insurance, 30 June**

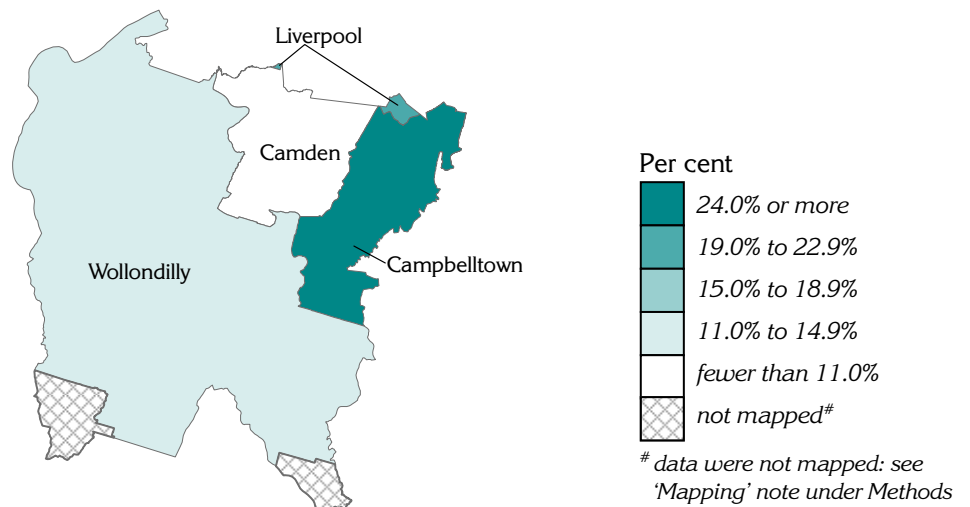


**Table 2: Socio-demographic indicators, Macarthur DGP, Sydney, New South Wales and Australia, 2001**

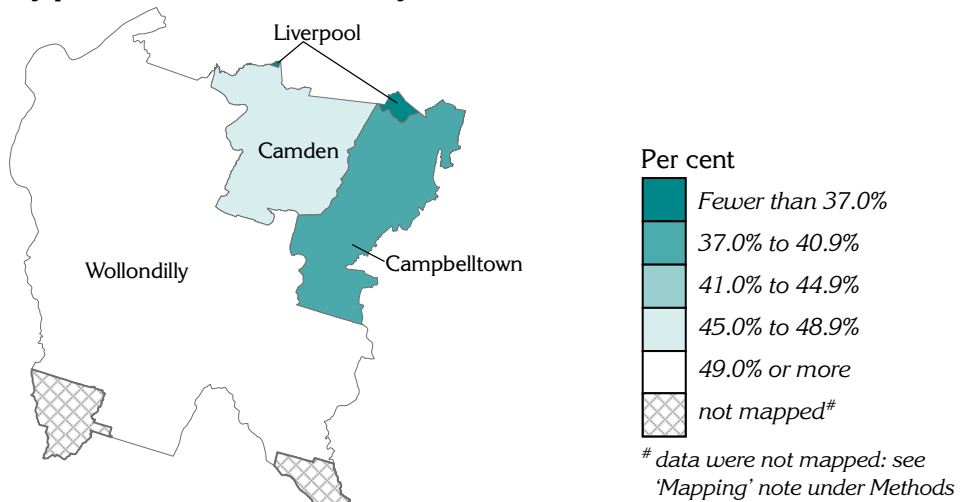
Indicator	Macarthur DGP		Sydney		New South Wales		Australia	
	No.	%	No.	%	No.	%	No.	%
Jobless families with children under 15 years old	5,786	19.4	66,526	15.6	121,409	17.6	357,563	17.4
Private health insurance (30 June)	91,291	41.3	2,000,802	50.2	3,062,382	48.2	8,671,106	46.0

Details of the distribution of jobless families and of the population covered by private health insurance are shown by Statistical Local Area (SLA) in Maps 1 and 2, respectively.

**Map 1: Jobless families with children under 15 years of age by SLA, Macarthur DGP, 2001**



**Map 2: People covered by private health insurance by SLA, Macarthur DGP, 30 June 2001**



## GP services to residents of the Macarthur DGP

The following tables include information, purchased from Medicare Australia, of the movement of patients and GPs between Divisions. Note that the data only include unreferral attendances recorded under Medicare: unreferral attendances not included are those for which the cost is met by the Department of Veterans' Affairs or a compensation scheme; or are provided by salaried medical officers in hospitals, community health services or Aboriginal Medical Services, and which are not billed to Medicare. At any attendance, one or more services may have been provided.

More than four fifths (84.6%) of all unreferral attendances to residents of Macarthur DGP were provided in the Division (ie. by a GP with a provider number in the Division): this represented 1,220,952 GP unreferral attendances (Table 3). A further 4.3% of unreferral attendances to residents were provided by GPs with a provider number in Liverpool DGP.

**Table 3: Patient flow – People living<sup>1</sup> in Macarthur DGP by Division where attendance occurred<sup>2</sup>, 2003/04**

Division		Unreferral attendances	
Number	Name	No.	% <sup>3</sup>
215	Macarthur DGP	1,220,952	84.6
210	Liverpool DGP	61,911	4.3
211	Fairfield DGP	36,571	2.5
205	Bankstown DGP	17,289	1.2
206	Western Sydney DGP (now WentWest & part Hawkesbury-Hills)	14,863	1.0
201	Central Sydney DGP	13,483	0.9
202	Eastern Sydney DGP	8,692	0.6
209	St George DGP	8,514	0.6
Other	..	60,582	4.2
<b>Total</b>	<b>..</b>	<b>1,442,857</b>	<b>100.0</b>

<sup>1</sup> Based on address in Medicare records

<sup>2</sup> Division of GP based on provider number

<sup>3</sup> Proportion of all unreferral attendances of patients with an address in Division 215 by Division in which attendance occurred

The majority (89.2 %) of unreferral attendances provided by GPs with a provider number in Macarthur DGP were also to people living in the Division (ie. their Medicare address was in the Division) (Table 4). A further 3.1% of unreferral attendances by GPs in the Division were to people living in Liverpool DGP.

**Table 4: GP catchment – Unreferral attendances provided by GPs<sup>1</sup> in Macarthur DGP by Division of patient address<sup>2</sup>, 2003/04**

Division		Unreferral attendances	
Number	Name	No.	% <sup>3</sup>
215	Macarthur DGP	1,220,952	89.2
210	Liverpool DGP	41,893	3.1
235	Southern Highlands DGP	13,412	1.0
211	Fairfield DGP	9,836	0.7
206	Western Sydney DGP (now WentWest & part Hawkesbury-Hills)	8,198	0.6
237	Nepean DGP	8,167	0.6
205	Bankstown DGP	6,813	0.5
216	Illawarra DGP	4,939	0.4
Other	..	54,931	4.0
<b>Total</b>	<b>..</b>	<b>1,369,141</b>	<b>100.0</b>

<sup>1</sup> Division of GP based on provider number

<sup>2</sup> Based on address in Medicare records

<sup>3</sup> Proportion of all unreferral attendances to GPs with a provider number in Division 215 by Division of patient address

## Additional prevalence estimates: chronic diseases and risk factors combined

Please refer to the earlier *Population health profile of the Macarthur Division of General Practice*, dated November 2005, available from [www.publichealth.gov.au](http://www.publichealth.gov.au), for the separate prevalence estimates of chronic disease; measures of self-reported health and risk factors. The process by which the estimates have been made, and details of their limitations, are also described in the 'Notes on the data' section of this earlier profile.

In this section two estimates, which combine the prevalence of selected chronic diseases with a risk factor, are shown for the Division. The measures are of people who *had asthma and were smokers*, and people who *had type 2 diabetes and were overweight or obese*: note that the estimates have been predicted from self-reported data, and are not based on clinical records or physical measures.

It is estimated that there were more people in Macarthur DGP who had asthma and were smokers, compared to Sydney (in particular) and Australia as a whole (Figure 6, Table 5): that is, the prevalence rates per 1,000 population were higher. The rates of people in Macarthur DGP who had type 2 diabetes and were overweight or obese were higher than those in Australia and consistent with those in Sydney.

**Figure 6: Estimates of selected chronic diseases and risk factors, Macarthur DGP, Sydney and Australia, 2001**



**Table 5: Estimates of selected chronic diseases and risk factors, Macarthur DGP, Sydney, New South Wales and Australia, 2001**

Variable	Macarthur DGP		Sydney		New South Wales		Australia	
	No. <sup>1</sup>	Rate <sup>2</sup>	No. <sup>1</sup>	Rate <sup>2</sup>	No. <sup>1</sup>	Rate <sup>2</sup>	No. <sup>1</sup>	Rate <sup>1</sup>
Had asthma and smoked <sup>3</sup>	5,105	22.6	72,198	17.0	126,542	19.7	397,734	20.8
Had type 2 diabetes & were overweight/ obese <sup>4</sup>	2,603	16.1	59,451	15.9	100,235	15.7	283,176	15.2

<sup>1</sup> No. is a weighted estimate of the number of people in Macarthur DGP reporting these chronic conditions/ with these risk factors and is derived from synthetic predictions from the 2001 NHS

<sup>2</sup> Rate is the indirectly age-standardised rate per 1,000 population

<sup>3</sup> Population aged 18 years and over

<sup>4</sup> Population aged 15 years and over

## Avoidable hospitalisations: hospital admissions resulting from ambulatory care sensitive conditions

The rationale underlying the concept of avoidable hospitalisations is that timely and effective care of certain conditions, delivered in a primary care setting, can reduce the risk of hospitalisation. Admissions to hospital for these ambulatory care sensitive (ACS) conditions can be avoided in three ways. Firstly, for conditions that are usually preventable through immunisation or nutritional intervention, disease can be prevented almost entirely. Secondly, diseases or conditions that can lead to rapid onset problems, such as dehydration and gastroenteritis, can be treated. Thirdly, chronic conditions, such as congestive heart failure, can be managed to prevent or reduce the severity of acute flare-ups to avoid hospitalisation.

This measure does not include other aspects of avoidable morbidity, namely potentially preventable hospitalisations (hospitalisations resulting from diseases preventable through population based health promotion strategies, e.g. alcohol-related conditions; and most cases of lung cancer) and hospitalisations avoidable through injury prevention (e.g. road traffic accidents).

For information on the ambulatory care sensitive conditions and ICD codes included in the analysis in this section, please refer to the *Atlas of Avoidable Hospitalisations in Australia: ambulatory care-sensitive conditions*, available from [www.publichealth.gov.au](http://www.publichealth.gov.au).

In 2001 to 2002, the 4,815 admissions from ambulatory care sensitive (ACS) conditions accounted for 8.7% of all admissions in the Macarthur DGP (Table 6, Figure 7), consistent with the levels for both New South Wales (8.6%) and Australia (8.7%).

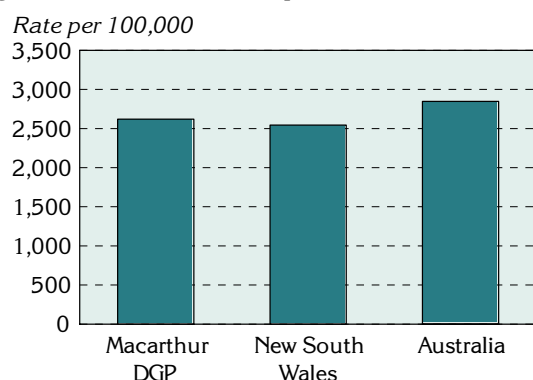
**Table 6: Avoidable<sup>1</sup> and unavoidable hospitalisations, Macarthur DGP, New South Wales, and Australia, 2001/02**

Category	Macarthur DGP			New South Wales			Australia		
	No.	Rate <sup>2</sup>	%	No.	Rate <sup>2</sup>	%	No.	Rate <sup>2</sup>	%
Avoidable <sup>1</sup>	4,815	2,620.4	8.7	170,066	2,543.8	8.6	552,786	2,847.5	8.7
Unavoidable	50,649	25,975.9	91.3	1,810,901	27,255.3	91.4	5,818,199	29,970.7	91.3
<b>Total</b>	<b>55,464</b>	<b>28,588.3</b>	<b>100.0</b>	<b>1,980,967</b>	<b>29,798.8</b>	<b>100.0</b>	<b>6,370,985</b>	<b>32,818.2</b>	<b>100.0</b>

<sup>1</sup> Admissions resulting from ACS conditions

<sup>2</sup> Rate is the indirectly age-standardised rate per 100,000 population

**Figure 7: Avoidable hospitalisations<sup>1</sup>, Macarthur DGP, New South Wales and Australia, 2001/02**



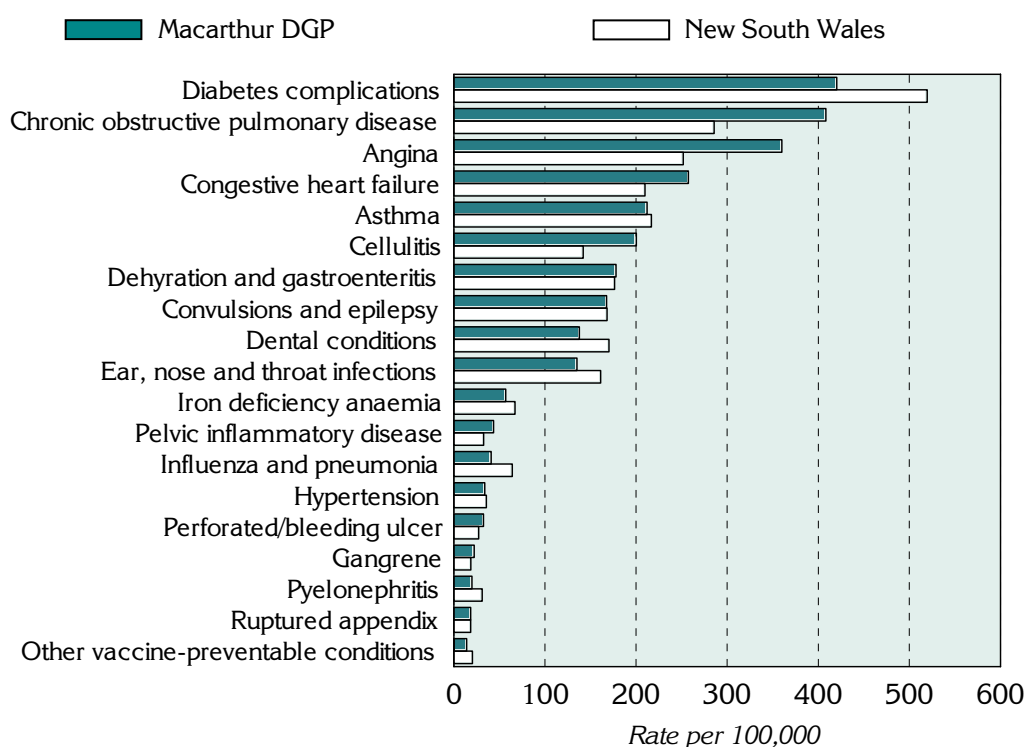
The rate of avoidable hospitalisations in Macarthur DGP (2,620.4 admissions per 100,000 population) is above the rate in New South Wales (2,543.8), but below that in Australia (2,847.5).

<sup>1</sup> Admissions resulting from ACS conditions

Diabetes complications, chronic obstructive pulmonary disease, angina and congestive heart failure were the four conditions with the highest rates of avoidable hospitalisations in the Macarthur DGP (Figure 8, Table 7). Of note is the relatively low rate of diabetes complications in the Division, compared with New South Wales.

Table 7 shows the number, rate and proportion of avoidable hospitalisations, for the individual ACS conditions, as well as the vaccine-preventable; acute; and chronic sub-categories. Almost two-thirds of avoidable hospitalisations are attributable to chronic health conditions. The predominance of hospitalisations for chronic conditions in this period can be primarily attributed to the large number of admissions for diabetes complications and chronic obstructive pulmonary disease. Dehydration and gastroenteritis; and convulsions and epilepsy have the highest rates of avoidable hospitalisations for the acute conditions.

**Figure 8: Avoidable hospitalisations<sup>1</sup> by condition, Macarthur DGP and New South Wales, 2001/02**



<sup>1</sup> Admissions resulting from ACS conditions: excludes nutritional deficiencies as less than ten admissions

**Table 7: Avoidable hospitalisations<sup>1</sup> by condition, Macarthur DGP, New South Wales and Australia, 2001/02**

Sub-category/ condition	Macarthur DGP		New South Wales		Australia	
	No.	Rate <sup>2</sup>	No.	Rate <sup>2</sup>	No.	Rate <sup>2</sup>
<b>Vaccine-preventable</b>	<b>109</b>	<b>54.9</b>	<b>5,630</b>	<b>84.5</b>	<b>16,573</b>	<b>85.4</b>
Influenza and pneumonia	78	40.9	4,280	64.1	13,021	67.1
Other vaccine preventable	31	14.0	1,350	20.4	3,552	18.3
<b>Chronic<sup>3</sup></b>	<b>2,749</b>	<b>1,748.8</b>	<b>106,803</b>	<b>1,587.0</b>	<b>352,545</b>	<b>1,816</b>
Diabetes complications	657	420.4	34,975	519.5	141,345	728.1
Iron deficiency anaemia	95	56.9	4,494	67.0	16,451	84.7
Hypertension	55	33.8	2,398	35.7	6,354	32.7
Congestive heart failure	319	257.4	14,270	209.7	42,447	218.6
Angina	536	360.0	16,987	251.8	49,963	257.4
Chronic obstructive pulmonary disease	563	408.3	19,359	285.6	54,853	282.6
Asthma	524	212.0	14,289	216.8	41,009	211.3
<b>Acute</b>	<b>2,076</b>	<b>955.3</b>	<b>62,543</b>	<b>946.0</b>	<b>200,913</b>	<b>1,035</b>
Dehydration and gastroenteritis	338	178.0	11,725	176.4	37,766	194.5
Convulsions and epilepsy	390	167.5	11,093	168.1	31,137	160.4
Ear, nose and throat infections	352	135.1	10,615	161.1	32,075	165.2
Dental conditions	340	137.8	11,196	170.3	43,667	224.9
Perforated/bleeding ulcer	48	32.5	1,830	27.1	5,795	29.9
Ruptured appendix	44	18.5	1,212	18.5	3,866	19.9
Pyelonephritis	43	19.8	2,038	31.0	7,386	38.0
Pelvic inflammatory disease	103	43.6	2,134	32.7	6,547	33.7
Cellulitis	383	200.3	9,451	142.0	28,204	145.3
Gangrene	35	22.2	1,249	18.6	4,470	23.0
<b>Total avoidable hospitalisations<sup>4</sup></b>	<b>4,815</b>	<b>2,620.4</b>	<b>170,066</b>	<b>2,543.8</b>	<b>552,786</b>	<b>2,847.5</b>

<sup>1</sup> Admissions resulting from ACS conditions

<sup>2</sup> Rate is the indirectly age-standardised rate per 100,000 population

<sup>3</sup> Excludes nutritional deficiencies as less than ten admissions

<sup>4</sup> Sub-category and condition numbers and rates do not add to the reported total avoidable admissions: five conditions (influenza & pneumonia, other vaccine preventable, diabetes complications, ruptured appendix and gangrene) are counted in 'any diagnosis', so may be included in more than one condition group

## Avoidable mortality

Avoidable and amenable mortality comprises those causes of death that are potentially avoidable at the present time, given available knowledge about social and economic policy impacts, health behaviours, and health care (the latter relating to the subset of amenable causes).

For information on the avoidable and amenable mortality conditions and ICD codes included in the analysis in this section, please refer to the *Australian and New Zealand Atlas of Avoidable Mortality*, available from [www.publichealth.gov.au](http://www.publichealth.gov.au).

Almost three quarters (73.6%) of all deaths in Macarthur DGP at ages 0 to 74 years over the period 1997 to 2001 are considered to be avoidable, slightly higher than the proportion for Sydney (71.3%) (Table 8). However, the rate in the Division is notably (17%) higher than that in Sydney, a differential of 1.17.

Deaths amenable to health care (amenable mortality, a subset of avoidable mortality) accounted for 29.4% of all deaths at ages 0 to 74 years in Macarthur DGP, compared to 28.6% in Sydney.

**Table 8: Avoidable and unavoidable mortality (0 to 74 years) by area, Macarthur DGP, Sydney, New South Wales and Australia, 1997 to 2001**

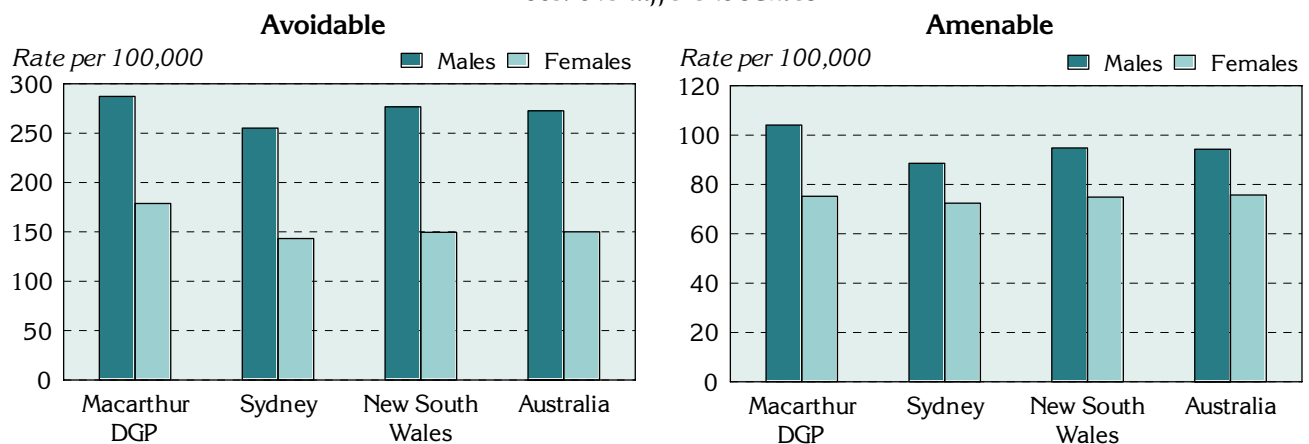
Mortality category	Macarthur DGP		Sydney		New South Wales		Australia	
	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>
Avoidable	1,815	233.4	36,709	199.5	66,151	213.6	189,845	211.8
% of total	<b>73.6</b>	..	<b>71.3</b>	..	<b>71.4</b>	..	<b>71.5</b>	..
(Amenable)	(726)	(94.9)	(14,736)	(80.6)	(26,374)	(85.0)	(76,249)	(85.1)
(% of total)	<b>(29.4)</b>	<b>(..)</b>	<b>(28.6)</b>	<b>(..)</b>	<b>(28.5)</b>	<b>(..)</b>	<b>(28.7)</b>	<b>(..)</b>
Unavoidable	625	84.6	14,768	80.6	26,468	85.3	75,582	84.3
% of total	<b>26.4</b>	..	<b>28.7</b>	..	<b>28.6</b>	..	<b>28.5</b>	..
<b>Total mortality</b>	<b>2,467</b>	<b>318.1</b>	<b>51,477</b>	<b>280.1</b>	<b>92,619</b>	<b>299.0</b>	<b>265,427</b>	<b>296.1</b>
%	<b>100.0</b>	..	<b>100.0</b>	..	<b>100.0</b>	..	<b>100.0</b>	..

<sup>1</sup> Rate is the indirectly age-standardised rate per 100,000 population

Rates of avoidable mortality were higher for males than for females in each of the comparator areas. Macarthur DGP's rate of avoidable mortality for males was 287.2 deaths per 100,000 males, more than twice the rate of 178.8 for females. Similarly, the rate of amenable mortality for males in the Division was higher, 100.8, compared to 88.8 for females, a rate ratio of 1.14 (Figure 9, Table 9).

**Figure 9: Avoidable and amenable mortality by sex (0 to 74 years), Macarthur DGP, Sydney, New South Wales and Australia, 1997 to 2001**

*Note: the different scales*



**Table 9: Avoidable and amenable mortality (0 to 74 years) by sex, Macarthur DGP, Sydney, New South Wales and Australia, 1997 to 2001**

Mortality category and sex	Macarthur DGP		Sydney		New South Wales		Australia	
	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>
<b>Avoidable</b>								
Males	1,122	287.2	23,505	255.1	43,074	276.8	123,026	272.6
Females	694	178.8	13,204	143.2	23,077	149.6	66,819	150.1
<b>Total</b>	<b>1,815</b>	<b>233.4</b>	<b>36,709</b>	<b>199.5</b>	<b>66,151</b>	<b>213.6</b>	<b>189,845</b>	<b>211.8</b>
<b>Rate ratio-M:F<sup>2</sup></b>	..	<b>1.61**</b>	..	<b>1.78**</b>	..	<b>1.85**</b>	..	<b>1.82**</b>
<b>Amenable</b>								
Males	379	100.8	8,068	88.6	14,811	94.8	42,568	94.3
Females	347	88.8	6,667	72.4	11,562	74.9	33,681	75.7
<b>Total</b>	<b>726</b>	<b>94.9</b>	<b>14,736</b>	<b>80.6</b>	<b>26,374</b>	<b>85.0</b>	<b>76,249</b>	<b>85.1</b>
<b>Rate ratio-M:F<sup>2</sup></b>	..	<b>1.14</b>	..	<b>1.22**</b>	..	<b>1.27**</b>	..	<b>1.25**</b>

<sup>1</sup> Rate is the indirectly age-standardised rate per 100,000 population

<sup>2</sup> Rate ratio (M:F) is the ratio of male to female rates; rate ratios differing significantly from 1.0 are shown with \* p < 0.05; \*\* p < 0.01

Another way of measuring premature mortality is to calculate the number of years of life lost (YLL)<sup>1</sup>, which takes into account the years a person could have expected to live at each age of death based on the average life expectancy at that age.

The numbers of YLL for Macarthur DGP, Sydney, New South Wales and Australia over the period of analysis are shown in Table 10 by mortality category. However, given the substantial variation in the populations of these areas, a comparison of the proportion of YLL for each area is also shown.

YLL from avoidable mortality accounted for 73.4% of total YLL (0 to 74 years) for Macarthur DGP, higher than the 71.7% for Sydney. At the same time, the proportion of YLL from amenable mortality for Macarthur DGP (29.1%) was higher than that for Sydney (28.0%).

**Table 10: Years of life lost from avoidable mortality (0 to 74 years), Macarthur DGP, Sydney, New South Wales and Australia, 1997 to 2001**

Mortality category	Macarthur DGP		Sydney		New South Wales		Australia	
	No.	% of total	No.	% of total	No.	% of total	No.	% of total
Avoidable	34,193	73.4	644,323	71.7	1,147,183	71.8	3,327,375	71.9
(Amenable)	(13,535)	(29.1)	(251,183)	(28.0)	(444,143)	(27.8)	(1,298,430)	(28.0)
Unavoidable	12,371	26.6	254,314	28.3	451,496	28.2	1,303,289	28.1
<b>Total</b>	<b>46,563</b>	<b>100.0</b>	<b>898,637</b>	<b>100.0</b>	<b>1,598,679</b>	<b>100.0</b>	<b>4,630,664</b>	<b>100.0</b>

<sup>1</sup> Years of life lost were calculated using the remaining life expectancy method (this provides an estimate of the average time a person would have lived had he or she not died prematurely). The reference life table was the Coale and Demeny Model Life Table West level 26 female (for both males and females), with the YLL discounted to net present value at a rate of 3 per cent per year.

In each of the areas in Table 11, the majority of avoidable mortality at ages 0 to 74 years occurred in the 65 to 74 year age group (Table 11), with 1,601.5 deaths per 100,000 population in Macarthur Division. The 45 to 64 year age group accounted for the next highest rate of avoidable death in all of the comparators, with a rate 332.7 in Macarthur Division.

**Table 11: Avoidable and amenable mortality by age, Macarthur DGP, Sydney, New South Wales and Australia, 1997 to 2001**

Mortality category and age (years)	Macarthur DGP		Sydney		New South Wales		Australia	
	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>
<b>Avoidable</b>								
0-14	86	29.7	1,098	26.6	1,836	27.5	5,669	28.8
15-24	112	64.7	1,303	44.9	2,241	50.9	7,045	52.8
25-44	274	80.3	4,802	74.3	8,119	82.9	24,356	83.9
45-64	680	332.7	12,603	289.9	22,358	311.1	64,282	304.9
65-74	663	1,601.5	16,903	1,307.3	31,597	1,375.8	88,493	1,358.1
<b>Total</b>	<b>1,815</b>	<b>233.4</b>	<b>36,709</b>	<b>199.5</b>	<b>66,151</b>	<b>213.6</b>	<b>189,845</b>	<b>211.8</b>
<b>Amenable</b>								
0-24	82	17.1	1,013	14.5	1,658	14.8	5,083	15.4
25-44	79	22.6	1,093	17.2	1,878	19.2	5,946	20.5
45-64	290	142.7	5,384	123.9	9,444	131.4	27,464	130.3
65-74	275	662.6	7,245	559.0	13,394	582.9	37,756	579.4
<b>Total</b>	<b>726</b>	<b>94.9</b>	<b>14,736</b>	<b>80.6</b>	<b>26,374</b>	<b>85.0</b>	<b>76,249</b>	<b>85.1</b>

<sup>1</sup> Rate is the indirectly age-standardised rate per 100,000 population

Table 12 shows the number and age-standardised death rate by selected major condition group and selected causes included in the avoidable mortality classification.

The highest rates of avoidable mortality for the selected major condition groups in the Macarthur DGP were for cardiovascular diseases, with a rate of 82.4 deaths per 100,000 population, and cancer, 74.1 deaths per 100,000 population (Table 12, Figure 10). For the selected causes within the condition groups, the two major causes of avoidable mortality were ischaemic heart disease and lung cancer, with rates of 57.8 per 100,000 population and 28.8 per 100,000, respectively.

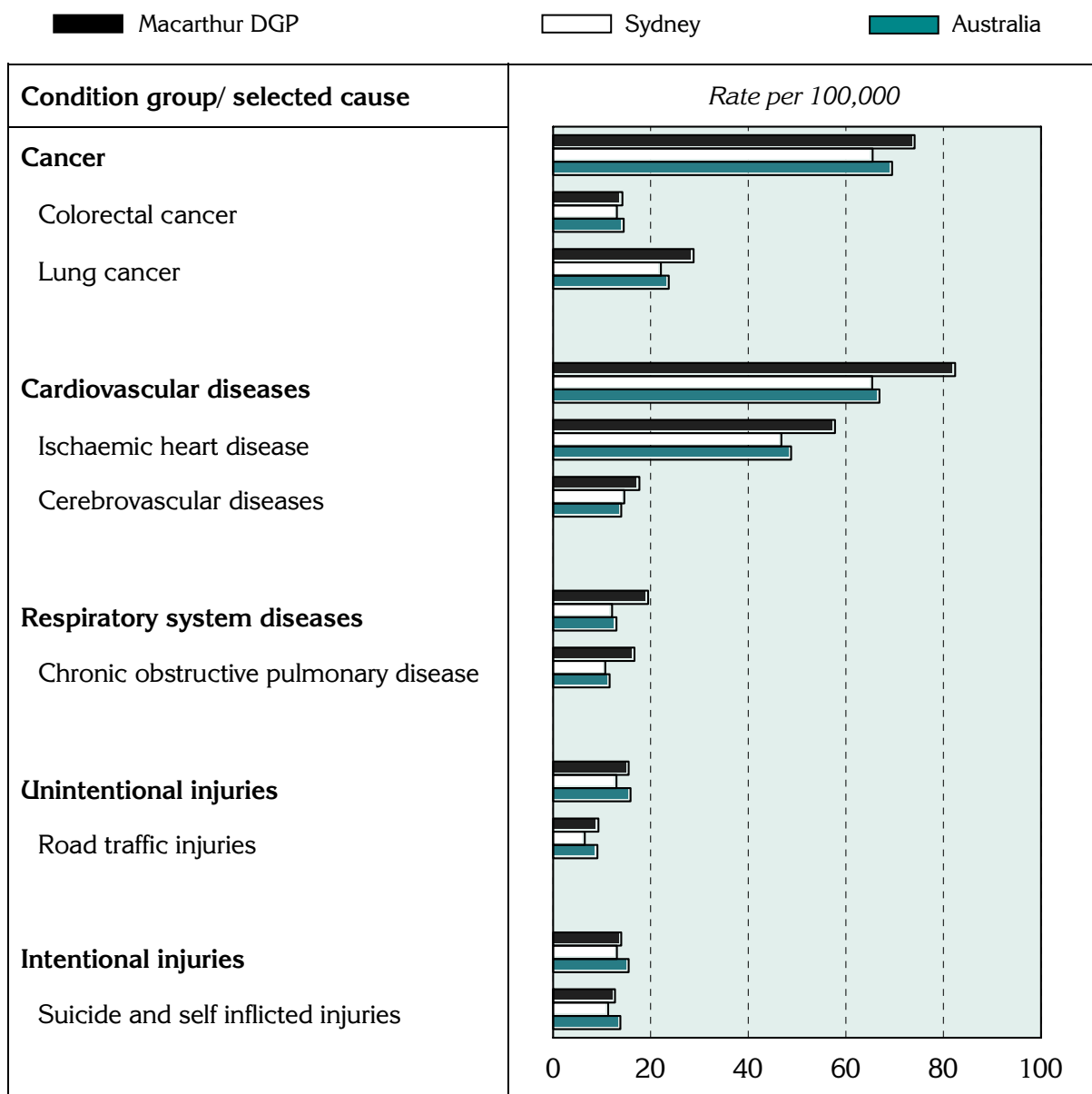
**Table 12: Avoidable mortality (0 to 74 years) by major condition group and selected cause, Macarthur DGP, Sydney, New South Wales and Australia, 1997 to 2001**

Condition group/ selected cause	Macarthur DGP		Sydney		New South Wales		Australia	
	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>	No.	Rate <sup>1</sup>
<b>Cancer</b>	<b>543</b>	<b>74.1</b>	<b>11,919</b>	<b>65.5</b>	<b>21,158</b>	<b>68.1</b>	<b>62,338</b>	<b>69.5</b>
Colorectal cancer	102	14.2	2,382	13.1	4,318	13.9	13,008	14.5
Lung cancer	199	28.8	3,983	22.1	7,297	23.4	21,208	23.7
<b>Cardiovascular diseases</b>	<b>567</b>	<b>82.4</b>	<b>11,824</b>	<b>65.4</b>	<b>21,925</b>	<b>70.3</b>	<b>59,945</b>	<b>66.9</b>
Ischaemic heart disease	399	57.8	8,461	46.8	15,935	51.1	43,712	48.8
Cerebrovascular diseases	120	17.7	2,641	14.6	4,656	14.9	12,558	14.0
<b>Respiratory system diseases</b>	<b>127</b>	<b>19.5</b>	<b>2,177</b>	<b>12.1</b>	<b>4,313</b>	<b>13.8</b>	<b>11,612</b>	<b>13.0</b>
Chronic obstructive pulmonary disease	104	16.7	1,916	10.7	3,882	12.4	10,395	11.6
<b>Unintentional injuries</b>	<b>159</b>	<b>15.5</b>	<b>2,513</b>	<b>13.0</b>	<b>4,540</b>	<b>15.0</b>	<b>14,224</b>	<b>15.9</b>
Road traffic injuries	97	9.3	1,249	6.5	2,528	8.4	8,138	9.1
<b>Intentional injuries</b>	<b>142</b>	<b>14.0</b>	<b>2,558</b>	<b>13.1</b>	<b>4,497</b>	<b>14.9</b>	<b>13,891</b>	<b>15.5</b>
Suicide and self inflicted injuries	128	12.7	2,211	11.3	3,941	13.0	12,393	13.8

<sup>1</sup> Rate is the indirectly age-standardised rate per 100,000 population

Rates in the Division were above those for Sydney for all of the condition groups and selected causes, and above the Australian rates for all but colorectal cancer (where the rates were consistent) and the unintentional injury group and selected cause (where the rates were consistent) and the intentional injury group and selected cause (where the rates were slightly lower) (Figure 10).

**Figure 10: Avoidable mortality (0 to 74 years) by major condition group and selected cause, Macarthur DGP, Sydney and Australia, 1997 to 2001**



# Notes on the data

## Data sources and limitations

### General

References to 'Sydney' relate to the Sydney Statistical Division.

### Data sources

Table 13 details the data sources for the material presented in this profile.

**Table 13: Data sources**

Section	Source
<b>Population</b>	
Figures 1 and 2; Table 1	Estimated Resident Population, ABS, 30 June for the periods shown
Figure 3	Estimated Resident Population, ABS, 30 June 2005; Population Projections, ABS, 30 June 2020 (unpublished) <sup>1</sup>
<b>Additional socio-demographic indicators</b>	
Figure 4	ABS SEIFA package, Census 2001
Table 2; Figure 5; Map 1	Jobless families, ABS, 2001 (unpublished)
Table 2; Figure 5; Map 2	Private health insurance, from Hansard
<b>GP services – patient flow/ GP catchment</b>	
Tables 3 and 4	Medicare Australia, 2003/04
<b>Additional prevalence estimates: chronic diseases and risk factors combined</b>	
Figure 6; Table 5	Estimated from 2001 National Health Survey (NHS), ABS (unpublished)
<b>Avoidable hospitalisations: hospital admissions resulting from ambulatory care sensitive conditions</b>	
Tables 6 and 7; Figures 7 and 8	National Hospital Morbidity Database at Australian Institute of Health & Welfare, 2001/02; data produced in HealthWIZ by Prometheus Information (not available in public release dataset)
<b>Avoidable mortality</b>	
Tables 8, 9, 10, 11 and 12; Figures 9 and 10	ABS Deaths 1997-2001; data produced in HealthWIZ by Prometheus Information (not available in public release dataset)

<sup>1</sup> The projected population at June 2020 is based on the 2002 ERP. As such, it is somewhat dated, and does not take into account more recent demographic trends: it is however the only projection series available at the SLA level for the whole of Australia.

## Methods

For background information on the additional prevalence estimates presented in this profile, please refer to the 'Notes on the data' section of the *Population health profile*, November 2005 ([www.publichealth.gov.au](http://www.publichealth.gov.au)).

Please also refer to the November 2005 profile for information on the data converters.

## Mapping

In some Divisions the maps may include a very small part of an SLA which has not been allocated any population; or has a population of less than 100 or has less than 1% of the SLAs total population; or there were less than five cases (ie. jobless families, people with health insurance): these areas are mapped with a pattern.

## Statistical geography of the Macarthur DGP

For information on the postcodes in the Division, please refer the Department of Health and Ageing website <http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-pcd-programs-divisions-divspc.htm>; also included in table format in the 'Notes on the data' section of the *Population health profile*, November 2005 ([www.publichealth.gov.au](http://www.publichealth.gov.au)).

Statistical Local Areas (SLAs) are defined by the Australian Bureau of Statistics to produce areas for the presentation and analysis of data. In Macarthur DGP, Camden and Campbelltown SLAs comprise the majority of the Division, with Liverpool and Wollondilly comprising smaller parts of the Division (Table 14).

**Table 14: SLAs and population in Macarthur DGP, 2005 on 2001 boundaries**

SLA code	SLA name	Per cent of the SLA's population in the Division*	Estimate of the SLA's 2005 population in the Division
11450	Camden	89.4	45,919
11500	Campbelltown	99.8	149,853
<b>12850</b>	<b>Fairfield</b>	<b>0.1</b>	<b>123</b>
14900	Liverpool	4.3	7,367
<b>17152</b>	<b>Sutherland Shire - West</b>	<b>0.1</b>	<b>112</b>
18400	Wollondilly	80.0	33,151

\* 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)

## Acknowledgements

Funding for these profiles was provided by the Population Health Division of the Department of Health and Ageing (DoHA).

## Further developments and updates

When the re-aligned boundaries are released and DoHA have made known their geographic composition, PHIDU will examine the need to revise and re-publish these profiles (*Population health profile*, dated November 2005, and the *Population health profile: supplement*, dated March 2007).

## PHIDU contact details

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