

General practice activity in the states and territories of Australia 1998–2003

GP Statistics and Classification Unit

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Bettering the Evaluation and Care of Health

General practice activity in the states and territories of Australia 1998–2003

**Helena Britt, Graeme C Miller, Stephanie Knox, Janice Charles, Lisa Valenti,
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Foreword

The BEACH survey of general practice activity, which has been conducted since 1998, provides uniquely informative insights into general practice.

The series of reports 'General Practice Activity in Australia' provide a comprehensive picture of the characteristics of general practitioners and their patients, of problems managed, medications prescribed or advised, other (non-pharmacological) management of problems, referrals and so on. These annual reports concentrate on Australia as a whole, and the amount of sub-national data has been small, owing to the limited sample size from the states and territories for individual years.

General Practice Activity in the States and Territories of Australia 1998–2003 provides, for the first time, comprehensive comparative analyses of general practice activity in the eight states and territories, based on BEACH data for survey years 1998 through 2003 combined. The report is based on data gathered from one segment of the health care system, but in the light of the very large proportion of the population that have contact with general practitioners (especially over the combined five-year period), the information presented here can also provide valuable insights into the health conditions that affect the Australian population.

From the data presented here, the reader can discern both common themes and unique features of the general practitioners, patients and encounters in the various states and territories. For some dimensions of clinical practice and especially for the largest states, it is evident that the experience of a state can mirror closely the nation-wide experience, so policy makers and analysts can rely on national patterns as a guide to state experience and practice. For other dimensions and for the smaller states and territories, the pattern of, say, problems encountered and management undertaken can differ appreciably from the nation-wide patterns. For example, general practitioners in Queensland manage skin problems (particularly solar keratosis and malignant skin neoplasms) and those in Tasmania manage musculoskeletal problems (particularly back complaints) significantly more often than the national average.

This report is a valuable addition to the information base available to health policy makers and administrators in the states and territories – and to investigators with an interest in general practice or, more broadly, in the patterns of health problems and medical practice.

Interesting as this report is in its own right, it brings to light many significant variations in problems presented to general practitioners, and in clinical practice that can prompt more detailed analyses of the very rich BEACH database for the individual states and territories of Australia.

Richard Madden
Director
Australian Institute of Health and Welfare

Contents

Foreword	v
List of tables	xi
List of figures	xiii
Acknowledgments.....	xiv
Summary	xv
1 Introduction.....	1
1.1 Aims.....	2
2 Methods.....	3
2.1 Sampling methods.....	3
2.2 Recruitment methods.....	3
2.3 Data elements.....	3
2.4 The BEACH relational database.....	6
2.5 Statistical methods.....	7
2.6 Classification of data.....	8
Classification of pharmaceuticals.....	9
2.7 Quality assurance.....	9
2.8 Validity and reliability.....	9
3 Australia.....	11
3.1 Background.....	11
3.2 The BEACH data set 1998–2003.....	12
4 New South Wales.....	14
4.1 Background.....	14
4.2 Results.....	15
The general practitioners.....	16
The encounters.....	16
Patient risk factors.....	23
4.3 Discussion.....	24
4.4 Conclusion.....	26
5 Victoria.....	27
5.1 Background.....	27
5.2 Results.....	28

The general practitioners	28
The encounters	29
Patient risk factors.....	36
5.3 Discussion	36
5.4 Conclusion	38
6 Queensland.....	39
6.1 Background.....	39
6.2 Results	40
The general practitioners	40
The encounters	41
Patient risk factors.....	48
6.3 Discussion	49
6.4 Conclusion	51
7 Western Australia	52
7.1 Background.....	52
7.2 Results	53
The general practitioners	53
The encounters	54
Patient risk factors.....	60
7.3 Discussion	61
7.4 Conclusion	62
8 South Australia	63
8.1 Background.....	63
8.2 Results	64
The general practitioners	64
The encounters	65
Patient risk factors.....	72
8.3 Discussion	72
8.4 Conclusion	73
9 Tasmania	74
9.1 Background.....	74
9.2 Results	75
The general practitioners	75
The encounters	76

Patient risk factors.....	82
9.3 Discussion.....	83
9.4 Conclusion.....	84
10 Australian Capital Territory.....	85
10.1 Background.....	85
10.2 Results.....	86
The general practitioners.....	86
The encounters.....	87
Patient risk factors.....	94
10.3 Discussion.....	95
10.4 Conclusion.....	98
11 Northern Territory.....	99
11.1 Background.....	99
11.2 Results.....	100
The general practitioners.....	100
The encounters.....	101
Patient risk factors.....	107
11.3 Discussion.....	108
11.4 Conclusion.....	109
12 Discussion.....	111
12.1 Using BEACH data with those from other sources.....	113
The National Health Survey (NHS) and state based telephone interviews.....	113
The Pharmaceutical Benefits Scheme (PBS).....	114
The Medicare Benefits Schedule (MBS) items.....	115
Pathology data from the MBS.....	115
Imaging data from the MBS.....	116
13 Conclusion.....	117
13.1 Access to BEACH data.....	117
Reference list.....	118
Glossary.....	123
Abbreviations.....	126
Appendices.....	128
Appendix 1: Example of a 2001-02 recording form.....	128
Appendix 2: GP characteristics questionnaire for 2001-02.....	130

Appendix 3: Australian population, GP workforce and GP Medicare services	132
Appendix 4: Results by states and territories of Australia 1998-2003	134
Appendix 5: Code groups from ICPC-2 and ICPC-2 PLUS.....	204

List of tables

Table A3.1:	Overview of state and territory populations, GP workforce and general practice services provided	133
Table A4.1:	Characteristics of participating GPs by state/territory, crude rates (1998–2003).....	135
Table A4.2:	The BEACH data set by state/territory, crude numbers (1998–2003).....	137
Table A4.3a:	Summary of morbidity and management by state/territory, crude rates (1998–2003).....	138
Table A4.3b:	Summary of morbidity and management by state/territory, patient age-standardised rates (1998–2003).....	140
Table A4.4a:	Type of encounter by state/territory, crude rates (1998–2003)	142
Table A4.4b:	Type of encounter by state/territory, patient age-standardised rates (1998–2003).....	143
Table A4.5a:	Characteristics of the patients at encounters by state/territory, crude rates (1998–2003)	145
Table A4.5b:	Characteristics of the patients at encounters by state/territory, patient age-standardised rates (1998–2003).....	146
Table A4.6a:	Distribution of patient reasons for encounter across ICPC-2 chapter, by state/territory, crude rates (1998–2003).....	147
Table A4.6b:	Distribution of patient reasons for encounter across ICPC-2 chapter, by state/territory, patient age-standardised rates (1998–2003)	148
Table A4.7a:	Most frequent patient reasons for encounter by state/territory, crude rates (1998–2003)	150
Table A4.7b:	Most frequent patient reasons for encounter by state/territory, patient age-standardised rates (1998–2003).....	152
Table A4.8a:	Number of problems managed at an encounter by state/territory, crude rates (1998–2003)	155
Table A4.8b:	Number of problems managed at an encounter by state/territory, patient age-standardised rates (1998–2003).....	155
Table A4.9a:	Distribution of problems managed across ICPC-2 chapter, by state/territory, crude rates (1998–2003).....	156
Table A4.9b:	Distribution of problems managed across ICPC-2 chapter, by state/territory, patient age-standardised rates (1998–2003)	157
Table A4.10a:	Most frequently managed problems by state/territory, crude rates (1998–2003).....	159
Table A4.10b:	Most frequently managed problems by state/territory, patient age-standardised rates (1998–2003)	161
Table A4.11a:	Most frequently managed new problems by state/territory, crude rates (1998–2003)	164

Table A4.11b: Most frequently managed new problems by state/territory, patient age-standardised rates (1998–2003)	165
Table A4.12a: Summary of management by state/territory, per 100 problems managed, crude rates (1998–2003)	167
Table A4.12b: Summary of management by state/territory, per 100 problems managed, patient age-standardised rates (1998–2003)	168
Table A4.13a: Encounters by state/territory at which management was recorded, crude rates (1998–2003)	170
Table A4.13b: Encounters by state/territory at which management was recorded, patient age-standardised rates (1998–2003)	171
Table A4.14a: Distribution of medications prescribed by group and subgroup, by state/territory, crude rates (1998–2003).....	173
Table A4.14b: Distribution of medications prescribed by group and subgroup, by state/territory, patient age-standardised rates (1998–2003).....	177
Table A4.15a: Most frequently prescribed medications by state/territory, crude rates (1998–2003).....	181
Table A4.15b: Most frequently prescribed medications by state/territory, patient age-standardised rates (1998–2003)	183
Table A4.16a: Most frequent clinical treatments by state/territory, crude rates (1998–2003).....	186
Table A4.16b: Most frequent clinical treatments by state/territory, patient age-standardised rates (1998–2003).....	188
Table A4.17a: Most frequent procedural treatments by state/territory, crude rates (1998–2003).....	190
Table A4.17b: Most frequent procedural treatments by state/territory, patient age-standardised rates (1998–2003)	191
Table A4.18a: Most frequent referrals to specialists and allied health professionals by state/territory, crude rates (1998–2003).....	192
Table A4.18b: Most frequent referrals to specialists and allied health professionals by state/territory, patient age-standardised rates (1998–2003)	194
Table A4.19a: Distribution of pathology orders across MBS pathology groups by state/territory, crude rates (1998–2003).....	196
Table A4.19b: Distribution of pathology orders across MBS pathology groups by state/territory, patient age-standardised rates (1998–2003)	198
Table A4.20a: Most frequent imaging tests ordered, by MBS group and most frequent tests, by state/territory, crude rates (1998–2003)	200
Table A4.20b: Most frequent imaging tests ordered, by MBS group and most frequent tests, by state/territory, patient age-standardised rates (1998–2003).....	201
Table A4.21: Patient risk factors by state/territory, crude rates (1998–2003)	202
Table A5.1: Code groups from ICPC-2 and ICPC-2 PLUS.....	204

List of figures

Figure 2.1:	The BEACH relational database.....	6
Figure 2.2:	The structure of the International Classification of Primary Care – Version 2 (ICPC-2)	8
Figure 3.1:	Age distribution of the Australian population, 2001	11
Figure 3.2:	Age-specific Medicare-claimed general practice attendance rates for the population of Australia	12
Figure 3.3:	Distribution by state and territory of BEACH participating GPs, 1998–2003, and all GPs in the 2000–01 sample frame.....	12
Figure 4.1:	Age distribution of the New South Wales population, 2001.....	14
Figure 4.2:	Age-specific Medicare-claimed general practice attendance rates for the population of New South Wales	15
Figure 5.1:	Age distribution of the Victorian population, 2001	27
Figure 5.2:	Age-specific Medicare-claimed general practice attendance rates for the population of Victoria.....	28
Figure 6.1:	Age distribution of the Queensland population, 2001	39
Figure 6.2:	Age-specific Medicare-claimed general practice attendance rates for the population of Queensland	40
Figure 7.1:	Age distribution of the Western Australian population, 2001	52
Figure 7.2:	Age-specific Medicare-claimed general practice attendance rates for the population of Western Australia.....	53
Figure 8.1:	Age distribution of the South Australian population, 2001	63
Figure 8.2:	Age-specific Medicare-claimed general practice attendance rates for the population of South Australia	64
Figure 9.1:	Age distribution of the Tasmanian population, 2001.....	74
Figure 9.2:	Age-specific Medicare-claimed general practice attendance rates for the population of Tasmania.....	75
Figure 10.1:	Age distribution of the Australian Capital Territory population, 2001.....	85
Figure 10.2:	Age-specific Medicare-claimed general practice attendance rates for the population of the Australian Capital Territory	86
Figure 11.1:	Age distribution of the Northern Territory population, 2001.....	99
Figure 11.2:	Age-specific Medicare-claimed general practice attendance rates for the population of the Northern Territory	100

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Summary

Background

Previous reports from the BEACH program have described, and measured changes in, general practice activity on a national basis using each year's national random sample of general practice (GP) activity. This report provides the first picture of the activities of general practice in each state and territory of Australia. It uses a combination of 5 years of BEACH data to provide sufficient sample size for independent study of each state and territory and compares their activities with the national average for the same period.

Method

A random sample of GPs who have claimed at least 375 general practice Medicare items of service in the previous 3 months is regularly drawn from the Health Insurance Commission (HIC) data by the General Practice Branch of the Australian Department of Health and Ageing (DoHA). GPs are approached by letter and followed up by telephone recruitment. Participating GPs complete details about 100 consecutive patient encounters on structured paper encounter forms and provide information about themselves and their practice.

This analysis is based on the BEACH data period April 1998 – March 2003 in which 5,021 GPs participated in the program, providing details regarding 502,100 GP–patient encounters. Results for each state and territory are reported in independent chapters and are described in terms of GP and patient characteristics, patient reasons for encounter, problems managed and management techniques used. Questions about selected patient health risk factors were asked of a subsample of patients, and the results are included in this publication.

Comparisons are made between each state and territory and the national average for the total 5 years. Significance of differences is identified by non-overlapping confidence intervals (adjusted for the study cluster design). The data were then age-standardised to the population of Australia in 2001 and the comparisons repeated to test the extent to which identified differences were due to the age distribution in the state or territory of interest, compared with the Australian population. Differences that remain after age-standardisation can be said to be independent of differences in population age distribution.

Sample size by state or territory

The majority of participating GPs were practising in the eastern states of Australia: 37.7% in New South Wales, 22.7% in Victoria, and 18.6% in Queensland. Smaller proportions were in Western Australia (8.2%), South Australia (7.6%), Tasmania (2.6%) and in the Territories (Australian Capital Territory 1.6% and the Northern Territory 1.0%), and this distribution reflected that of the total GP sample frame.

The following analysis is based on 189,200 encounters with 1,892 GPs in New South Wales, 114,000 encounters with 1,140 GPs in Victoria, 93,300 encounters with 933 GPs in Queensland, 41,200 encounters with 412 GPs in Western Australia, 38,100 encounters with 381 GPs in South Australia, 13,300 encounters with 133 GPs in Tasmania, 7,800 encounters with 78 GPs in the Australian Capital Territory and 5,200 encounters with 52 GPs in the Northern Territory.

Australia

In 2001, the population of Australia was 19,413,240 people and there were 21,338 general practitioners (GPs) and other medical practitioners (OMPs) who provided at least one general practice Medicare item of service, equating to 16,824.3 full-time workload equivalent (FWE) GPs/OMPs. Therefore, there was one FWE GP or OMP per 1,153.9 people. One-quarter of the FWE GPs/OMPs were female, while 22% were aged more than 55 years. Medicare-claimed GP attendances averaged 4.9 per head of population in that year.

New South Wales

In 2001 in New South Wales 7,247 GPs/OMPs provided at least one general practice Medicare item of service and made up 5,894.3 FWEs, or one FWE GP per 1,115.5 people. Medicare-claimed GP attendances averaged 5.2 per head of population in that year, slightly higher than the Australian population as a whole (4.9).

The 1,892 BEACH GP participants from New South Wales were a little older than average, more likely to work in solo practice, and were less often in practices of 5 or more GPs, less likely to have graduated in Australia, more likely to have graduated in Asia, and less often Fellows of the Royal Australian College of General Practitioners (FRACGP). The patients they encountered were similar to all patients encountered in Australia except that a lower proportion held a Commonwealth Concession Card and a greater proportion were from a non-English-speaking background. They described more reasons for encounter (RFEs) related to the respiratory, circulatory, digestive, blood/blood-forming organ systems, and fewer related to the skin when compared with the national average.

Problems managed more often at encounters with New South Wales GPs included hypertension, lipid disorders and oesophageal disease and only the last of these was explained by the age distribution of the population.

GPs in New South Wales prescribed and advised over-the-counter purchase of medications at a significantly higher rate than average. Higher prescribing rates were apparent for medications acting on the central nervous system, and on the cardiovascular, musculoskeletal and digestive systems and those applied to the skin. They prescribed fewer psychological medications and contraceptives. Some of these differences were influenced by the age distribution of the population but all remained (some becoming marginal) after age-standardisation. They provided fewer procedural treatments, particularly excision/removal of tissue, but did not differ in their use of clinical treatments. They ordered significantly fewer pathology tests per 100 problems managed but the average number per 100 encounters. There were fewer orders for thyroid function tests than average.

The patients seen by GPs in New South Wales did not differ from the national average in terms of the proportion who were overweight or obese. However, significantly fewer patients reported daily smoking, more reported being non-drinkers of alcohol and a smaller proportion reported at-risk levels of alcohol consumption.

Victoria

In 2001 in Victoria 5,349 GPs/OMPs provided at least one Medicare item of service, equating with 4,149.5 FWE GPs, one FWE GP per 1,157.9 people. Residents of Victoria attended GPs 5.0 times per head of population, a similar rate to the average for Australia (4.9).

The 1,140 BEACH GPs practising in Victoria were younger than average, and more likely to be FRACGP, to be Australian graduates, and to practise in larger practices. They were less likely to provide their own or cooperative after-hours services and residential aged care visits were also less common than average. Young people (<5 years) and Indigenous people

made up a smaller proportion of the patients they encountered. Patients presented with fewer problems related to the blood and blood-forming organs, but higher presentation rates of circulatory and skin problems were explained by the population age distribution.

The pattern of problems managed at encounters with Victorian GPs differed in few respects from the national average. However, they did involve higher management rates of psychological problems (anxiety in particular), acute bronchitis and circulatory problems but this last difference disappeared after age-standardisation. They managed solar keratosis less frequently than average.

Victorian GPs did not differ from the Australian average in terms of their rate of medication provision, total prescriptions, clinical treatments, therapeutic treatments, in their referral rate or their pathology and imaging order rates. However, after age-standardisation they were found to order fewer imaging tests. Their pattern of pathology test orders differed from the average in that they ordered more electrolyte, urea and creatine tests, liver function and glucose tolerance tests, but ordered fewer multi-biochemical analyses.

These GPs had higher prescribing rates of anti-anxiety agents (particularly diazepam), drugs acting on the urogenital system (particularly diuretics), and topical steroids, and lower prescribing rates of topical ear and nose medications. A higher prescribing rate of total psychological medications was explained by the age distribution of the population, though the higher management rate of psychological problems was not.

The subsample studies of patients at encounters with Victorian GPs demonstrated they did not differ from the Australian average in the proportions who were current smokers, past smokers, or overweight or obese. However, they were less likely to report at-risk alcohol consumption levels and more likely to be responsible drinkers.

Queensland

There were 3,946 GPs/OMPs working in Queensland during the last 3 months of 2001, equivalent to 3,283.1 FWEs, or one FWE GP per 1,105.3 people. This was the highest GP-population ratio in Australia. However, the GP attendance rate of 4.8 per person per year was similar to the national average (4.9).

When compared with the national average, a greater proportion of the GP participants in Queensland were female and a smaller proportion worked in the capital city (Brisbane). A greater proportion of the patients they encountered were children (<15 years) or aged 65–74 years. The patients were less likely to hold a Repatriation Health Card and were less likely to be from a non-English-speaking background than the average for all of Australia. A lower proportion of these encounters were home visits and these encounters involved the lowest proportion of work-related problems and workers compensation paid consultations in the country.

Patients presented at encounters with Queensland GPs with fewer RFEs than average, but the number of problems managed at encounter did not differ from the average. Skin problems were managed significantly more often, particularly solar keratosis and malignant skin neoplasms. In contrast, contact dermatitis was less frequently managed. Other morbidity groups managed less often by Queensland GPs were circulatory problems (hypertension in particular), endocrine and metabolic problems (particularly diabetes), digestive and respiratory problems and those related to the ear. Queensland GPs provided medications at a significantly lower rate than average and this was largely due to lower prescribing rates. They also undertook significantly more procedural treatments, particularly excision/biopsy, probably because of their high management rate of skin problems. However, they referred less often to both specialist (particularly dermatologists) and allied

health services. They did not differ from the average in the rates of clinical treatments provided, or the rates of pathology and imaging test orders.

The subsample studies of patient risk factors suggested that the children were less likely to be overweight or obese than average, though the proportion of obese/overweight adults did not differ from the average. Adults were more likely than average to report drinking at-risk levels of alcohol but did not differ in the proportion that reported daily smoking.

Western Australia

There were 2,014 GPs/OMP practising in Western Australia in 2001, equating with 1,441 FWE GPs, one GP per 1,319.2 people (compared with 1:1,153 nationally). Medicare-claimed attendances in that year averaged 4.4 per head of population, somewhat less than the national average (4.9).

Compared with all GP participants, a greater proportion of those practising in Western Australia were in the youngest age group, and a greater proportion practised in metropolitan areas. They were inclined to work fewer sessions per week than average and were more likely to have graduated overseas (particularly in the United Kingdom). When compared with patients at all encounters, the patients encountered in Western Australia were more likely to be Indigenous people (reflecting the higher proportion of Indigenous people in this state's population) and less likely to be from a non-English-speaking background. Fewer patients were non-drinkers and a greater proportion reported at-risk alcohol consumption levels. A larger proportion of these patients were ex-smokers than was average for the nation.

Compared with the national average, the patient encounters involved lower management rates of respiratory problems (particularly upper respiratory tract infection) and circulatory problems and a higher rate of endocrine/metabolic problems. A lower management rate of anxiety was found to be due to the age distribution of the population.

GPs in Western Australia prescribed significantly fewer medications than average, particularly antibiotics, anti-hypertensives, anti-anxiety medications and digestive, skin and respiratory medications. They ordered significantly more pathology tests than average but this was explained by the age distribution of the population.

South Australia

In 2001 1,859 GPs/OMPs provided at least one Medicare service in South Australia, equating to 1,358.8 (FWE) GPs or one FWE GP for every 1,112.6 people (about average for the country). Each South Australian attended general practice an average of 5.0 times in 2001.

Compared with all GP participants, a greater proportion of those in South Australia were male, reflecting the low proportion of female full-time workload equivalents in this state. They were more likely to be Australian graduates, to work in larger practices of 5 or more GPs, in capital cities or other remote locations, and less likely to be located in rural centres. A smaller proportion of their encounters were with babies (aged <1 year) and with people from a non-English-speaking background. A greater proportion of the patients encountered held a Commonwealth Concession Card than the national average.

The patients presented to general practice with fewer RFEs than average. However, South Australian GPs managed a similar number of problems to the national average. Patients presented less frequently with problems associated with the skin and for immunisation/vaccination and these problems were also less often managed at encounter. In turn this related to fewer procedures being undertaken and skin medications and vaccines being prescribed. These differences were not due to the age distribution of the population, as

they remained after standardisation. It is possible that the involvement of local councils and community centres in the South Australian immunisation program means that these patients are not required to visit their GP for immunisation.

South Australian GPs managed hypertension and pregnancy/family planning less often than average and this remained after age-standardisation. The lower rate of hypertension management was reflected in lower rates of prescription of medications acting on the cardiovascular system (particularly anti-hypertensives). A higher proportion of the patients encountered were obese compared with all patients at GP encounters, and advice and counselling regarding exercise was provided at a lower rate than average.

Tasmania

In 2001, there were 589 GPs/OMPs in Tasmania who provided at least one Medicare item of service, equating to 388.7 FWE GPs. There was one FWE GP per 1,213.8 people, compared with 1:1,153.9 persons nationally. The annual GP visit rate per head of population of 4.6 visits per year was similar to the national average. The population of Tasmania was older (median age 38.1) than the total Australian population (median age 36.1).

Compared with all GP participants, those in Tasmania were less often Australian graduates (almost a quarter graduated in the United Kingdom), they worked fewer sessions per week and worked in larger practices. The patients they encountered were somewhat older than their mainland counterparts, were more likely to hold a Commonwealth Concession Card or Repatriation Health Card, much less likely to be an Indigenous person or from a non-English-speaking background, and were more likely to be daily smokers. They presented to general practice less often than average with acute conditions such as cough, throat complaints, fever and diarrhoea. The low rate of fever and diarrhoea was found to be due to the age distribution of the population.

Compared with the national average, encounters in Tasmanian general practice involved higher management rates of musculoskeletal problems (particularly back complaints) and higher prescribing rates of narcotic analgesics and psychotropic drugs, which may be explained by the higher rate of back complaints. Their higher referral rates to physiotherapists may reflect the higher management rate of musculoskeletal problems. Problems managed less often than average by Tasmanian GPs included respiratory, digestive (9.1 compared with 10.0), endocrine and metabolic (8.9 compared with 9.9) and eye problems (2.1 compared with 2.7 per 100 encounters). A lower prescribing rate of respiratory medications and antibiotics may reflect the lower management rates of respiratory problems in Tasmanian general practice.

Australian Capital Territory

In the last 3 months of 2001, there were 366 GPs/OMPs in the Australian Capital Territory who provided at least one Medicare item of service (215.5 FWEs). There was one FWE GP per 1,481.8 people, somewhat fewer than in Australia as a whole (1:1,153.9 people). The annual GP visit rate per head of population was about 25% lower than the average and the lower attendance rate applies to people in all age groups. The population of the Australian Capital Territory was younger than the national average in 2001, with a median age of 33.8 years, some three years less than the national median.

When compared with all GP participants, the GPs in the Australian Capital Territory were far more likely to be female, more likely to be aged 45 years or more and more likely to be FRACGP. They were less likely to practise in larger practices, work 11 sessions or more per week or provide their own after-hours care. Almost all participants practised in the capital

city of Canberra and they recorded significantly fewer home, hospital and residential aged care visits than average. The patients encountered in general practice were younger than average, less likely to hold a Commonwealth Concession Card, and less often Indigenous people or from a non-English-speaking background. Among the subsample of patients asked about alcohol consumption fewer were non-drinkers and more were responsible drinkers than average. However, the proportion who reported at-risk levels of alcohol consumption, current daily smoking, or were overweight/obese did not differ from the average.

The number of problems managed by GPs in the Australian Capital Territory did not differ from the national average. Respiratory problems were managed significantly more often in this state, while problems less often managed included hypertension, diabetes, lipid disorders, anxiety and insomnia. However, all these differences were found to be due to the age distribution of the population. Only one problem demonstrated a significantly different management rate that could not be explained by the age distribution of the population: GPs managed skin problems less often than average.

GPs in the Australian Capital Territory provided fewer medications per 100 problems managed through both prescription and direct supply. The lower prescribing rate was reflected in lower rates of medications acting on the cardiovascular, central nervous, digestive and urogenital systems, and psychological medications, topical otic medications and oral or systemic contraceptives. They also undertook fewer procedures, particularly excisions/removal of tissue/biopsies.

Northern Territory

In 2001, there were 221 GPs/OMPs in the Northern Territory who provided at least one Medicare item of service (92.8 FWEs). There was one FWE GP per 2,131.1 people, the lowest GP:population ratio in the country. It also had the lowest GP attendance rate, at 2.6 visits per annum per person on average (about half the average for Australia). In 2001, the population of the Northern Territory was younger than average with a median age of 30.3 years, six years less than the national median.

When compared with all GP participants, those from the Northern Territory were a little older, less likely to work <6 sessions per week, less likely to work in practices of five or more GPs, more likely to hold FRACGP and to work in their capital city (Darwin) or in remote centres or other remote/offshore locations. The patients they encountered were younger than average, a greater proportion being 1–4 years and 25–44 years and a lesser proportion aged 65 years or more. A greater proportion were new to the practice, suggesting less continuity of care than in other areas. Fewer held a Commonwealth Concession Card (though this was partially explained by the age distribution of the population) and the proportion of Indigenous people was 8 times the average for Australia.

The pattern of encounters was similar to that for the nation, though GPs in the Territory provided significantly more services at 'no charge', fewer that were Medicare-claimed and fewer visits to aged care facilities (due only to the age distribution of the population).

Work-related problems were managed at twice the average rate but this was due to the age distribution of the Territory's population. These patients reported fewer circulatory problems and less immunisation/vaccinations as RFEs, and described more RFEs related to skin and ear problems, fever, ear pain and diarrhoea. With the exception of ear pain and diarrhoea these differences were explained by the age distribution of the population.

Problems more often managed at encounter included skin and ear problems, pregnancy & family planning and check-ups. Circulatory problems were less frequently managed. Immunisation/vaccination and osteoarthritis were also managed less frequently but this was

due to the population age distribution. Although the crude management rate of diabetes was not significantly higher than average, age-standardisation revealed a significantly higher rate of diabetes management in the Northern Territory. Among the new problems managed, otitis externa was more frequent than average.

The pattern of prescribed medications was similar to that for the nation. However, antibiotics (particularly penicillin) and topical ear medications were prescribed at significantly higher rates than average. Simple analgesics, anti-anxiety agents, and medications acting on the endocrine/nutrition/metabolic system were prescribed significantly less often but this was largely due to the age distribution of the population.

Overall, other treatments were provided at average rates. However, Northern Territory GPs provided advice and education about smoking at a significantly higher rate than average and was not explained by the age distribution of the sample. The overall referral rate was similar to the national average but there was a higher rate of referral to surgeons and low rates to gastroenterologists, urologists, and (due to the age of the population) ophthalmologists.

In the subsample studies there was no difference between the Northern Territory and the national average in the proportion of patients who were overweight (31.3%) or obese (19.3%). However, a significantly greater proportion were at-risk drinkers and the difference was large (39.9% compared with 25.0%). Patients in the Northern Territory were also significantly more likely to smoke daily (28.9%) than average (18.6%).

Discussion

This report has highlighted differences in the activities of general practice between individual states and territories and the national average. However, relatively few significant differences were identified and some of these were found to be due to the age distribution of the population, rather than differences in practise style. The results for each of the larger eastern states of New South Wales, Victoria and (to a lesser extent) Queensland were quite similar to the national average. This is not surprising as they represent the greatest proportion of the sample because they have more practising GPs than do other states and territories. Even though Western Australia and South Australia have a far smaller impact on the national average, the differences observed were fewer than might have been expected. However, Tasmania and the Australian Capital Territory showed marked differences that were only sometimes due to difference in their age distributions compared with the national population. The many differences identified in the Northern Territory are only partially explained by differences in the age distribution of its population and differences in the structure of primary health services.

Conclusion

General practice in Australia is remarkably consistent across the country. However, when compared with the national average there are differences identified in every state and territory that should be of interest to state and territory health care planners. More detailed analyses of specific aspects of care in each state and territory are available on request.

