Locality matters

The influence of geography on general practice activity in Australia 1998–2004

Australian GP Statistics and Classification Centre

The Australian Institute of Health and Welfare is an independent health and welfare statistics and information agency. The Institute's mission is *better health and wellbeing for Australians through better health and welfare statistics and information*.

The Australian General Practice Statistics and Classification Centre (previously Unit) is a collaborating centre of the Australian Institute of Health and Welfare and the University of Sydney, situated within the Family Medicine Research Centre at Westmead Hospital. It fulfils the obligation of the Australian Institute of Health and Welfare to collect statistics regarding general practitioners, their patients and their patients' care.

Recent related publications:

Britt H, Miller GC, Knox S, Charles J, Valenti L, Pan Y, Henderson J, Bayram C, O'Halloran J, Ng A 2004. General practice activity in Australia 2003–04. AIHW Cat. No. GEP 16. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 16).

General Practice Statistics and Classification Unit 2004 [cited 26/8/2005]. SAND abstracts from the BEACH program. Sydney: AIHW/University of Sydney. Available from Internet: http:/www.fmrc.org.au/publications/SAND_abstracts.htm.

Britt H, Miller GC, Knox S, Charles J, Valenti L, Bayram C, O'Halloran J, Henderson J, Pan Y, Harrison C 2004. General practice activity in the states and territories of Australia 1998–2003. AIHW Cat. No. GEP 15. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 15).

Britt H, Miller GC, Knox S, Charles J, Valenti L, Henderson J, Pan Y, Bayram C, Harrison C 2003. General practice activity in Australia 2002–03. AIHW Cat. No. GEP 14. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 14).

Britt H, Knox S, Miller GC 2003. Changes in pathology ordering by general practitioners in Australia, 1998–2001. AIHW Cat. No. GEP 13. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 13).

O'Halloran J, Britt H, Valenti L, Harrison C, Pan Y, Knox S 2003. Older patients attending general practice 2000–02. AIHW Cat. No. GEP 12. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 12).

Bayram C, Britt H, Kelly Z, Valenti L 2003. Male consultations in general practice in Australia 1999–00. AIHW Cat. No. GEP 11. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 11).

Britt H, Miller GC, Knox S, Charles J, Valenti L, Henderson J, et al. 2002. General practice activity in Australia 2001–02. AIHW Cat. No. GEP 10. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 10).

Henderson J, Pan Y, Britt H, Charles J, Miller GC, Knox S 2002. Cardiovascular problems and risk behaviours among patients at general practice encounters in Australia 1998–00. AIHW Cat. No. GEP 9. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 9).

Britt H, Miller GC, Knox S, Charles J, Valenti L, Henderson J, Kelly Z, Pan Y 2001. General practice activity in Australia 2000–01. AIHW Cat. No. GEP 8. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 8).

GENERAL PRACTICE SERIES
Number 17

BEACH

Bettering the Evaluation and Care of Health

Locality matters

The influence of geography on general practice activity in Australia 1998–2004

Stephanie Knox, Helena Britt, Ying Pan, Graeme C Miller, Clare Bayram, Lisa Valenti, Janice Charles, Joan Henderson, Anthea Ng, Julie O'Halloran

September 2005

A joint report by the University of Sydney and the Australian Institute of Health and Welfare
AIHW Cat. No. GEP 17

This is the seventeenth publication of the General Practice Series, from the Australian General Practice Statistics and Classification Centre (previously Unit), a collaborating centre of the University of Sydney and the Australian Institute of Health and Welfare. A complete list of the Institute's publications is available from the Publications Unit, Australian Institute of Health and Welfare, GPO Box 570, Canberra ACT 2601, or via the Institute's website: <http://www.aihw.gov.au>.

ISBN 1 74024 498 2

ISSN 1442-3022

Suggested citation

Knox S, Britt H, Pan Y, Miller GC, Bayram C, Valenti L, Charles J, Henderson J, Ng A, O'Halloran J 2005. Locality matters: the influence of geography on general practice activity in Australia 1998–2004. AIHW Cat. No. GEP 17. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 17).

Keywords: Rural, Geography/classification, Australia, Delivery of Health Care/statistics & numerical data, Family Practice/statistics & numerical data, Health Care Surveys/methods.

Any enquiries about or comments on this publication should be directed to:

Australian General Practice Statistics and Classification Centre
University of Sydney
Acacia House
Westmead Hospital
WESTMEAD New South Wales 2145
Phone: 61 2 9845 8151
Fax: 61 2 9845 8155
Email: gpstats@fmrc.org.au

Published by the Australian Institute of Health and Welfare

Printed by Pirion

Foreword

This report on the influence of geography on general practice activity is timely. The recent Australian Government review of the use of the Rural, Remote and Metropolitan Areas (RRMA) of Australia to classify localities and its use of the RRMA classifications to provide targeted incentives to rural general practices means that geographic location has become a very hot topic in Australian health care. Even before this review there has been an ongoing discussion about the extent to which general practice differs between the city and country. The Australian College of Rural and Remote Medicine's application to the Australian Medical Council for specialty status and the debate whether rural and remote medicine constitutes a separate specialty adds even more interest in this review.

Currently most health policy decisions related to geographical location use the Rural, Remote and Metropolitan Areas (RRMA) of Australia to classify localities. The use of this system for health policy and funding has direct and significant effects on rural workforce and, as a result, on the health of our rural communities. However is the RRMA classification able to accurately classify regions into categories with equivalent health care needs and equivalent access to services? The current RRMA classification has not changed significantly in content since the 1991 census data, despite the fact that there have been censuses in 1996 and 2001. Should the RRMA classification continue to be used as the preferred geographical classification?

The Australian Standard Geographical Classification Remoteness Structure (ASGC) is a relatively new classification based on ARIA (Australian Remoteness Index of Australia) which classifies localities based on road distance from services. There are claimed flaws in the ARIA system too. ARIA for example is not able to distinguish between a dirt road and a major highway, nor between a town of 50,000 and a town of 200,000.

No classification system is perfect but for the first time, through a secondary analysis of BEACH data over 6 years, using information from 601,900 patient encounters, and 6,019 participating general practitioners, there has been enough data for each RRMA category to be described in terms of patient morbidity and management in general practice. This report gives us real tools to compare general practice activity across RRMA categories. This report also allows analysis using the newer ASGC classification of remoteness and provides a systematic comparison of the relative effectiveness of each classification in describing regional differences in general practice activity.

So does this analysis show the differences in rural practice across locations and will this report allow us to develop one system of classification that allow us to provide fair targeted incentives for our rural GPs and their communities? To achieve these aims the system must be able to distinguish those things that rural GPs working in towns find the most challenging: medical need, access to back up and access to services.

Dr Chris Mitchell B.Med. Dip RACOG, FRACGP, FACRRM

Chair of the National Rural Faculty

Royal Australian College of General Practitioners

Acknowledgments

The Australian General Practice Statistics and Classification Centre wishes to thank the 6,019 general practitioners who participated in BEACH between 1998 and 2004. This report would not have been possible without their valued cooperation and effort in providing the data.

We also thank Dr John Kramer (the former Chair of the National Rural Faculty of the Royal Australian College of General Practitioners) for giving us the initial idea for this study.

We thank the following organisations for their financial support and their contribution to the ongoing development of the BEACH program over the six years included in this analysis.

- The Australian Government Department of Health and Ageing (1998–2004)
- AstraZeneca Pty Ltd (Australia) (1998–2004)
- Roche Products Pty Ltd (1998–2004)
- Janssen-Cilag Pty Ltd (2002–04)
- Merck, Sharpe and Dohme (Australia) Pty Ltd (2002–04)
- The National Occupational Health and Safety Commission (1998–2000)
- The Australian Government Department of Veterans' Affairs (1998–2000)
- Aventis Pharma Pty Ltd (1998–2000).

In 2003–04 some financial support for the program was also provided by:

- The National Occupational Health and Safety Commission
- The Australian Government Department of Veterans' Affairs

We acknowledge the support of the Royal Australian College of General Practitioners, the Australian Medical Association, the Australian Divisions of General Practice, the Australian College of Rural and Remote Medicine and the Consumers Health Forum, and the contribution of their representatives to the BEACH Advisory Board.

The research team is grateful for the intensive editing work undertaken on this report by Clare Bayram, for the strong IT support of Timothy Chambers, the administrative support of Gervaise Woods, and the valuable contribution of the general practitioner recruitment staff (particularly Errol Henderson) and data entry staff. We recognise the contribution of past members of the BEACH team.

We appreciate the cooperation of Anthony Lawrence of the General Practice Branch of the Australian Department of Health and Ageing in regularly supplying general practitioner random samples and national Health Insurance Commission data. The Health Insurance Commission kindly supplied data pertaining to general practitioner numbers and area Medicare attendance rates. At the Australian Institute of Health and Welfare, Dr Ken Tallis edited the report and Ainsley Morrissey and Cecilia Burke coordinated the printing and publication process.

Ethics approval for this study was obtained from the Human Ethics Committee of the University of Sydney and the Ethics Committee of the Australian Institute of Health and Welfare.

Contents

Foreword ..... **v**

Acknowledgments ..... **vi**

List of tables ..... **x**

List of figures ..... **xii**

Executive summary ..... **xiii**

1 Introduction **1**

1.1 Aims 2

1.2 Geographical classification 2

RRMA 2

ARIA and ASGC Remoteness Structure 3

1.3 MBS claims and full-time workload equivalents 3

2 Methods **6**

2.1 Sampling frame 6

2.2 Recruitment methods 6

2.3 Data elements 6

2.4 Applying RRMA and ASGC Remoteness Structure to the BEACH sample 7

2.5 The BEACH relational database 7

2.6 Statistical methods 8

2.7 Classification of data 9

Classification of pharmaceuticals 10

2.8 Quality assurance 11

2.9 Validity and reliability 11

3 The sample **12**

3.1 GP sample size 12

3.2 The BEACH data set 12

RRMA versus ASGC Remoteness concordance 17

BEACH versus MBS claims 17

4 The participating GPs 19
4.1 Characteristics of the GPs 19
4.2 GP computer use in the practice 25
5 The encounters 28
5.1 Types of encounter 28
5.2 Distribution of Medicare-claimable encounters 32
5.3 Summary of morbidity and management 35
6 The patients 38
6.1 Patient characteristics 38
6.2 Patient reasons for encounter 44
Number of RFEs at encounter 44
Reasons for encounter by ICPC-2 component 46
Reasons for encounter by ICPC-2 chapter and common individual RFEs 49
7 Problems managed 57
7.1 Number of problems managed at the encounter 57
7.2 Nature of morbidity 58
Types of problems managed 58
Problems managed by ICPC-2 chapter 62
Most frequently managed problems 66
Most frequently managed new problems 74
National Health Priority Areas 80
8 Treatments 83
8.1 Medications 83
Types of medications prescribed or supplied 87
8.2 Other treatments 93
Clinical treatments 96
Procedures 101
9 Referrals 104
9.1 Referral rates 104
10 Tests and investigations 108
10.1 Rates of tests and investigations 108
10.2 Distribution of pathology orders across MBS pathology groups 111
10.3 Distribution of imaging tests across MBS groups 116

11 Summary of results **119**
11.1 RRMA 119
11.2 ASGC Remoteness 129
12 Discussion **132**
RRMA versus ASGC 132
National Health Priority Areas 135
GP visit rates per head of population 136
12.1 Methodological issues 137
13 Conclusion **138**
Reference list **139**
Glossary **142**
Abbreviations **145**
Appendices **146**
Appendix 1: Example of a 2003–04 recording form 146
Appendix 2: GP characteristics questionnaire for 2003–04 148
Appendix 3: Code groups from ICPC-2 and ICPC-2 PLUS 149
Available from: <http://www.aihw.gov.au/publications/index.cfm/title/10171>
Appendix 4: Chronic code groups from ICPC-2 and ICPC-2 PLUS 149
Available from: <http://www.aihw.gov.au/publications/index.cfm/title/10171>

List of tables

Table 3.1(a): GP sample size by BEACH data year by RRMA 13
Table 3.1(b): GP sample size by BEACH data year by ASGC Remoteness 14
Table 3.2(a): The BEACH data set by RRMA 15
Table 3.2(b): The BEACH data set by ASGC Remoteness 16
Table 4.1(a): Characteristics of participating GPs by RRMA 21
Table 4.1(b): Characteristics of participating GPs by ASGC Remoteness 23
Table 4.2(a): GP computer use in practice by RRMA 26
Table 4.2(b): GP computer use in practice by ASGC Remoteness 27
Table 5.1(a): Type of encounter by RRMA 30
Table 5.1(b): Type of encounter by ASGC Remoteness 31
Table 5.2(a): Distribution of Medicare-claimable encounters by RRMA 33
Table 5.2(b): Distribution of Medicare-claimable encounters by ASGC Remoteness 34
Table 5.3(a): Summary of morbidity and management by RRMA 36
Table 5.3(b): Summary of morbidity and management by ASGC Remoteness 37
Table 6.1(a): Characteristics of the patients at encounters by RRMA 40
Table 6.1(b): Characteristics of the patients at encounters by ASGC Remoteness 42
Table 6.2(a): Number of reasons for encounter, by RRMA 45
Table 6.2(b): Number of reasons for encounter, by ASGC Remoteness 45
Table 6.3(a): Distribution of patient reasons for encounter across ICPC-2 components, by RRMA 47
Table 6.3(b): Distribution of patient reasons for encounter across ICPC-2 components, by ASGC Remoteness 48
Table 6.4(a): Rates of patient reasons for encounter across ICPC-2 chapters and selected individual RFEs, by RRMA 51
Table 6.4(b): Rates of patient reasons for encounter across ICPC-2 chapters and selected individual RFEs, by ASGC Remoteness 54
Table 7.1(a): Number of problems managed at an encounter by RRMA 59
Table 7.1(b): Number of problems managed at encounter by ASGC Remoteness 59
Table 7.2(a): Distribution of problems managed across problem type and ICPC-2 component, by RRMA 60
Table 7.2(b): Distribution of problems managed across problem type and ICPC-2 component by ASGC Remoteness 61
Table 7.3(a): Distribution of problems managed across ICPC-2 chapters, by RRMA 63

Table 7.3(b): Distribution of problems managed across ICPC-2 chapters, by ASGC Remoteness 64
Table 7.4(a): Most frequently managed problems by RRMA 68
Table 7.4(b): Most frequently managed problems by ASGC Remoteness 71
Table 7.5(a): Most frequently managed new problems by RRMA 76
Table 7.5(b): Most frequently managed new problems by ASGC Remoteness 78
Table 7.6(a): National Health Priority Areas by RRMA 81
Table 7.6(b): National Health Priority Areas by ASGC Remoteness 82
Table 8.1(a): Medication rates by RRMA 85
Table 8.1(b): Medication rates by ASGC Remoteness 86
Table 8.2(a): Distribution of medication prescribed or supplied by RRMA 89
Table 8.2(b): Distribution of medication prescribed or supplied by ASGC Remoteness 91
Table 8.3(a): Rates of other treatments by RRMA 94
Table 8.3(b): Rates of other treatments by ASGC Remoteness 95
Table 8.4(a): Most frequent clinical treatments by RRMA 97
Table 8.4(b): Most frequent clinical treatments by ASGC Remoteness 99
Table 8.5(a): Most frequent procedural treatments by RRMA 102
Table 8.5(b): Most frequent procedural treatments by ASGC Remoteness 103
Table 9.1(a): Referral rates by RRMA 106
Table 9.1(b): Referral rates by ASGC Remoteness 107
Table 10.1(a): Test and investigation rates by RRMA 110
Table 10.1(b): Test and investigation rates by ASGC Remoteness 110
Table 10.2(a): Distribution of pathology orders across MBS pathology groups by RRMA 112
Table 10.2(b): Distribution of pathology orders across MBS pathology groups by ASGC Remoteness 114
Table 10.3(a): Most frequent imaging tests ordered, by MBS group and most frequent tests, by RRMA 117
Table 10.3(b): Most frequent imaging tests ordered, by MBS group and most frequent tests, by ASGC Remoteness 118
Table A3.1: Code groups from ICPC-2 and ICPC-2 PLUS. Available from: <http://www.aihw.gov.au/publications/index.cfm/title/10171>
Table A4.1: Code groups from ICPC-2 and ICPC-2 PLUS. Available from: <http://www.aihw.gov.au/publications/index.cfm/title/10171>

List of figures

Figure 1.1: Population per FWE GPs/OMPs by RRMA, 2001 4
Figure 1.2: Population per FWE GPs/OMPs by ASGC Remoteness, 2001 4
Figure 1.3: Mean annual number of GP visits per head of population by RRMA, 2001 (MBS A1 and A2 item claims) 5
Figure 1.4: Mean annual number of GP visits per head of population by ASGC Remoteness, 2001 (MBS A1 and A2 item claims) 5
Figure 2.1: The BEACH relational database 8
Figure 2.2: The structure of the International Classification of Primary Care—Version 2 (ICPC-2) 10
Figure 3.1: Concordance of the GP sample by RRMA and ASGC Remoteness 17
Figure 3.2: Distribution of GP–patient encounters by RRMA: MBS A1 and A2 claims (2001) vs BEACH sample (April 1998 – March 2004) 18
Figure 3.3: Distribution of GP–patient encounters by ASGC Remoteness: MBS A1 and A2 claims (2001) vs BEACH sample (April 1998 – March 2004) 18

Executive summary

Locality matters: the influence of geography on general practice activity in Australia 1998–2004 investigates differences between general practice activity in each of the geographic areas defined by the Rural, Remote and Metropolitan Areas (RRMA) classification. It further examines the relative effectiveness of the RRMA classification and the more recently developed Australian Standard Geographical Classification (ASGC) Remoteness Structure in differentiating general practice activity across geographic areas.

This report details findings from a secondary analysis of data collected in the BEACH program, a continuous study of general practice activity in Australia. We analysed 601,900 patient encounters, details of which were recorded by 6,019 participating general practitioners (GPs), during the six years between April 1998 and March 2004. Combining six years of continuous data collection has for the first time allowed a sufficient quantity of representative data to compare GP activity separately in each of the RRMA and ASGC Remoteness categories. This study may provide a better understanding of the complex factors affecting general practice activity in different geographic locations and provide information to assist in the Australian Government's current review of geographic classifications.

Differences between RRMA and ASGC Remoteness categories, in terms of the supply of GP services and Medicare Benefits Schedule general practice claims per population ,are provided as background in Chapter 1. The substudy sample sizes by RRMA and ASGC Remoteness categories are reported in Chapter 3. In each chapter reporting the results of the BEACH study (Chapters 4–10), findings are first described in terms of differences across RRMA categories. This is followed by a description of additional findings using the ASGC Remoteness Structure. Chapter 11 provides a summary of findings for each RRMA category and for each ASGC category, drawn from the earlier results chapters.

The aim was to identify clear patterns of differences between the RRMA categories in terms of GP characteristics, patient demographics, morbidity managed, treatments received, referrals and test orders. Although there were many areas of general practice activity where GPs in the RRMA rural and remote zones differed from GPs in metropolitan areas, there were few systematic differences that distinctly defined one RRMA category from the categories adjacent to it. This may be partly explained by the RRMA method of allocating localities to categories based on population density and geographical distance to services.[1]

The ASGC Remoteness Structure, however, is based on road distance to service centres and is an unambiguous measure of remoteness in terms of distance from services. Using the ASGC gave a clearer picture of differences in general practice activity across geographical regions based on three emerging themes:

- trends with increasing remoteness
- unique aspects of Inner Regional Australia, and
- a better discrimination of extreme remoteness from services in the ASGC category Very Remote Australia.

Therefore, in the Discussion (Chapter 12), we have focussed on the differences revealed by the ASGC Remoteness Structure, specifically the trends with increasing remoteness, and the distinctive aspects of Inner Regional Australia and Very Remote Australia. The main points are detailed below.

Trends with increasing remoteness

- The proportion of encounters with male patients increased with remoteness across Outer Regional, Remote and Very Remote Australia. There was also an increase in the rate of encounters with Indigenous persons with increasing remoteness.
- There was an increase in management rates of diabetes with increasing remoteness. This may indicate a higher prevalence of diabetes with increasing remoteness, especially among Indigenous patients. With less access to GPs however, patients may also have different priorities for attending the GP. Patients may be maintaining visit rates for important problems such as diabetes that require regular management but attending less often for transient problems such as upper respiratory tract infections. This may partly explain why diabetes formed a relatively greater proportion of the daily workload for GPs as remoteness increased.
- Less frequent annual visits per patient and an increasing proportion of encounters with new patients indicate that there was less continuity of care for patients as remoteness from services increased. This was accompanied by a trend for more general check-ups and an increase in pathology ordering rates with increasing remoteness. It appears that GPs in more remote locations were taking the opportunity to perform check-ups on new patients or those who visited infrequently. However, a decrease in the rate of Pap tests with increasing remoteness indicated that a lack of continuity of care hampers preventive care for women in remote locations.
- There were changes in general practice activity with increasing remoteness that indicated an increasing GP involvement in all aspects of patient treatment in the absence or shortage of local specialists. With increasing remoteness there was a general increase in the rate of procedural treatments and in the management of pregnancy and family planning issues, including more test orders for obstetric ultrasound. An increase in the rate of hospital referrals/admissions with increasing remoteness may be partly explained by rural and remote GPs managing patients in the local hospital.

Inner Regional Australia

- Sixty-six per cent of the GP sample from the RRMA rural zone (Large Rural Centres, Small Rural Centres and Other Rural Areas) was classified into the ASGC category Inner Regional Australia and 32% as Outer Regional Australia. Inner Regional Australia encompasses satellite areas and coastal communities within reach of the Major Cities, while Outer Regional Australia is more representative of 'traditional' rural Australia.
- Patients seen at encounters in Inner Regional Australia were older than the national average. GPs in Inner Regional Australia were seeing fewer new patients, a greater proportion of concession card holders, fewer NESB patients and fewer Indigenous patients than GPs in other parts of Australia. This patient profile was reflected in the problems managed at encounters in Inner Regional Australia where patients had more chronic problems and fewer new or acute problems managed. The management rates of depression, back complaint, osteoarthritis, oesophageal disease and ischaemic heart disease were all significantly higher in Inner Regional Australia than the national average. These higher rates of chronic problems managed were not seen in either Major Cities or Outer Regional Australia, and marks Inner Regional Australia as distinct from its neighbouring categories in terms of morbidity managed.

Very Remote Australia

- Very Remote Australia sometimes represented the extreme end of trends with remoteness, but in other respects it was qualitatively different from the adjacent category Remote Australia. One salient difference between Very Remote Australia and Remote Australia was the very large proportion of encounters with Indigenous patients in Very Remote Australia, especially those who spoke a language other than English. Very Remote Australia also had the greatest proportion of encounters with male patients and the smallest proportion of encounters with patients aged 65 years and older. Solar keratosis/sunburn and skin neoplasms which were commonly managed in Remote Australia were less common in Very Remote Australia, perhaps because such sun-related skin problems are less prevalent among Indigenous people.
- Other distinctive aspects of general practice activity in Very Remote Australia compared with Remote Australia were the higher management rates of urological problems, higher rate of new lipid disorders, and a lower management rate of psychological problems, including depression and sleep disturbance.

Conclusion

In this study, differences in general practice activity that are related to rurality and remoteness have been clearly demonstrated. However, using the RRMA classification, clear patterns of differences cannot be easily described. We had greater success using the ASGC Remoteness Structure to describe general practice activity in terms of geographical location. Therefore RRMA may no longer be the most useful geographical classification for describing health care statistics or for health service policy development.

1 Introduction

The BEACH (Bettering the Evaluation and Care of Health) program is a continuous national study of general practice activity in Australia that began in April 1998. This is the second report from the BEACH program on general practice activity across metropolitan, rural and remote Australia.[2] There has been ongoing debate in Australia about the extent to which general practice in rural and remote locations differs from general practice in metropolitan areas and whether rural general practice constitutes a separate discipline.[3–5] The Australian Government has used the Rural, Remote and Metropolitan Areas (RRMA) classification[6] to define groups of GPs who should receive specific incentive payments due to their location. As a result there has been some discussion about where 'cut-offs' should be in RRMA, for such additional payments.[7] At the time this report was being prepared, the Australian Government was conducting a review of rural classifications in response to concerns regarding the appropriateness of the RRMA classification in defining rurality of general practice.[8] By combining 6 years of BEACH data this report is able to describe general practice activity separately for each of the seven categories of the RRMA classification.[6]

This report also includes for the first time a description of general practice activity across the five categories of the Australian Standard Geographical Classification (ASGC) Remoteness Structure.[9] One of the main purposes of the report is to compare the sensitivity of each classification system (RRMA and ASGC Remoteness) to detect differences in general practice activity across the regional/geographical spectrum of Australia.

The study investigates similarities and differences between each geographical category and the national average in terms of: the characteristics of the practising general practitioners (GPs), the patients they encounter, the problems they manage and the treatments they provide. It uses details from 6,019 GPs about more than 600,000 GP–patient encounters conducted and reported between April 1998 and March 2004. This sample represents about 30% of the practising recognised GP population and a one per 1,000 sample of all GP–patient encounters occurring during this 6-year period (Health Insurance Commission, unpublished data).

GPs perform a gatekeeper role for entry into the secondary and tertiary sectors of the Australian health care system. Most of the 19.7 million Australians (85%) attended a GP at least once during the year 2002 (personal communication, General Practice Programs Branch, Australian Government Department of Health and Ageing). An individual is free to visit multiple GPs of his/her choice and it is a fee-for-service system. However, by far the majority of visits to GPs are funded through the Commonwealth Medicare Benefits Schedule (MBS) on a fee-for-service basis, Medicare paying for 85% of the government recommended consultation fee during the period of this study.[10]

In 2001–02 there were about 19,500 recognised GPs claiming through Medicare, and around 4,700 other (primary care) medical practitioners (OMPs), providing a total of 16,700 full-time workload GP equivalents.[11] GPs provided by far the majority of the (approximately) 100 million non-specialist services to the population that were paid by Medicare, at an average rate of 5.2 services per person in 2001–02.[11]

1.1 Aims

The BEACH program aims:

- to provide a reliable and valid data collection process for general practice which is responsive to the ever-changing needs of information users; and
- to establish an ongoing database of GP–patient encounter information.

This report specifically aims:

- to provide an overview of the activities in general practice for each RRMA and ASGC Remoteness category and identify any geographical differences that affect general practice activity compared with Australia as a whole; and
- to examine the relative effectiveness of the RRMA classification and the ASGC Remoteness Structure in describing any differences in general practice activity according to geographical location.

1.2 Geographical classification

RRMA

The Rural, Remote and Metropolitan Areas (RRMA) classification was developed in 1994 by the Department of Primary Industries and Energy and the then Department of Human Services and Health.[6] It is currently the remoteness classification system most widely used in government policy and funding arrangements.[1] The RRMA has seven categories which collapse into three zones. The metropolitan zone includes the categories Capital Cities and Other Metropolitan Centres, the rural zone includes Large Rural Centres, Small Rural Centres and Other Rural Areas, while the remote zone includes Remote Centres and Other Remote Areas. RRMA is allocated at the level of Statistical Local Area (SLA). RRMA values are based on the population density of the SLA plus the straight line distance between the centre of the SLA and urban centres of various sizes. RRMA scores are only calculated for locations outside large urban centres of population 100,000 or more, and large urban centres are divided into Capital Cities or Other Metropolitan Centres. Recently the use of RRMA as the standard measure of remoteness has been questioned on the basis of perceived methodological weaknesses.[1,6]

One major criticism of RRMA is the inclusion of population density in the calculation; two localities may be the same distance from goods and services, but the locality with the greater population density may fall into a less 'remote' RRMA category.[1,6] A similar problem exists for classifying metropolitan areas, for example some Other Metropolitan Centres such as Geelong are larger and less remote than some Capital Cities such as Hobart. RRMA classification has also been criticised for its use of straight line distance to measure remoteness from urban centres, as this masks the real distance to goods and services in terms of road travel time.[1,6] As the current standard classification of geography used in health care statistics, RRMA has been used in this report to describe general practice activity across regional categories.

ARIA and ASGC Remoteness Structure

The Accessibility and Remoteness Index of Australia (ARIA) was developed by the Commonwealth Department of Health and Aged Care in 1997 in collaboration with the National Key Centre for the Social Application of GIS (GISCA), as a measure of geographical remoteness from goods and services.[1,12] Remoteness in ARIA is measured in terms of road distance to four categories of urban service centre based on population size. These were later increased to five categories of service centre in the revised version ARIA+. ARIA is a continuous linear measure of remoteness; however, it can be broken into ordinal categories based on the range of remoteness scores.[13,14]

The Australian Bureau of Statistics applied the ARIA+ scores to the Australian Standard Geographical Classification (ASGC) units to produce the ASGC Remoteness Structure with five ordinal remoteness categories: Major Cities, Inner Regional Australia, Outer Regional Australia, Remote Australia and Very Remote Australia.[9] ARIA has become a serious contender for a new geographical classification system in Australia.[1,12] Therefore the ASGC Remoteness Structure has been used in this report as an ordinal measure to compare general practice activity across areas with increasing geographical remoteness from goods and services.

1.3 MBS claims and full-time workload equivalents

According to the RRMA classification, in 2001 there were 11,443 full-time workload equivalent (FWE) GPs/Other medical practitioners (OMPs) in Capital Cities. There were 1,320 in Other Metropolitan Centres, 1,004 in Large Rural Centres, 1,055 in Small Rural Centres, 1,718 in Other Rural Areas, 126 in Remote Centres and 158 in Other Remote Areas (HIC unpublished data). According to the ASGC Remoteness Structure, in 2001 there were 11,808 FWE GPs/OMPs in Major Cities, 2,974 in Inner Regional Australia, 1,298 in Outer Regional Australia, 156 in Remote Australia and 46 in Very Remote Australia (HIC unpublished data). Figures 1.1 and 1.2 show the ratio of population to FWE GPs/OMPs by RRMA and ASGC Remoteness. Both classification systems demonstrated that population per GPs/OMPs increased with increasing distance from Capital and Major Cities. This was particularly evident in the ASGC Remoteness Structure where the ratio of population to GPs/OMPs in Very Remote Australia was more than treble that of the Major Cities.

Figures 1.3 and 1.4 show the mean annual GP visits by geographical area, calculated as the ratio of general practice (A1 and A2 item) claims to population. These figures illustrate how annual visit rates per person decreased according to the relative decrease in FWE GPs.

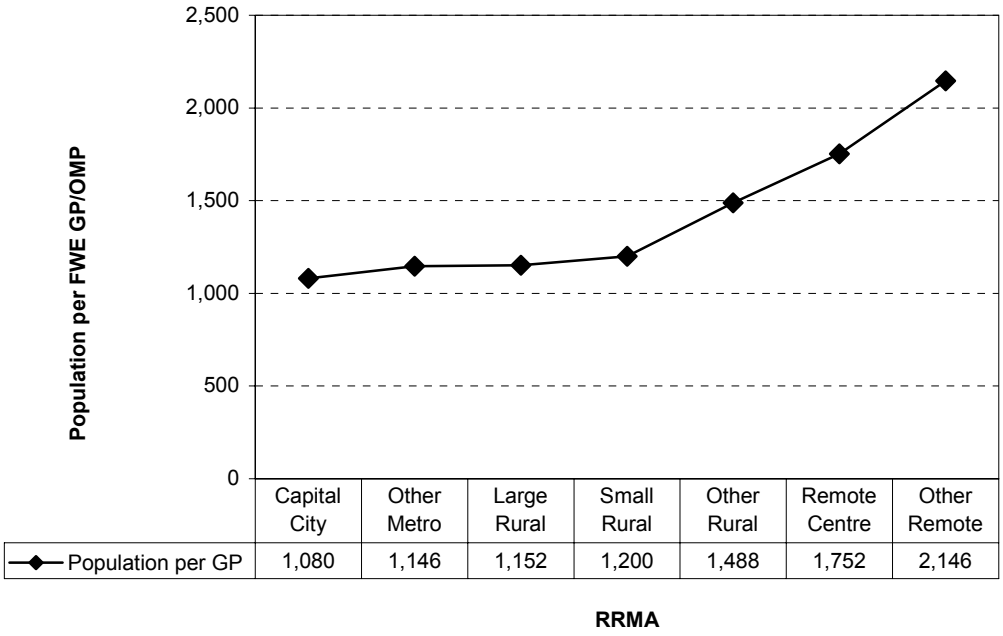


Figure 1.1: Population per FWE GPs/OMPs by RRMA, 2001

Note: Metro—Metropolitan.
Source: Health Insurance Commission unpublished data.

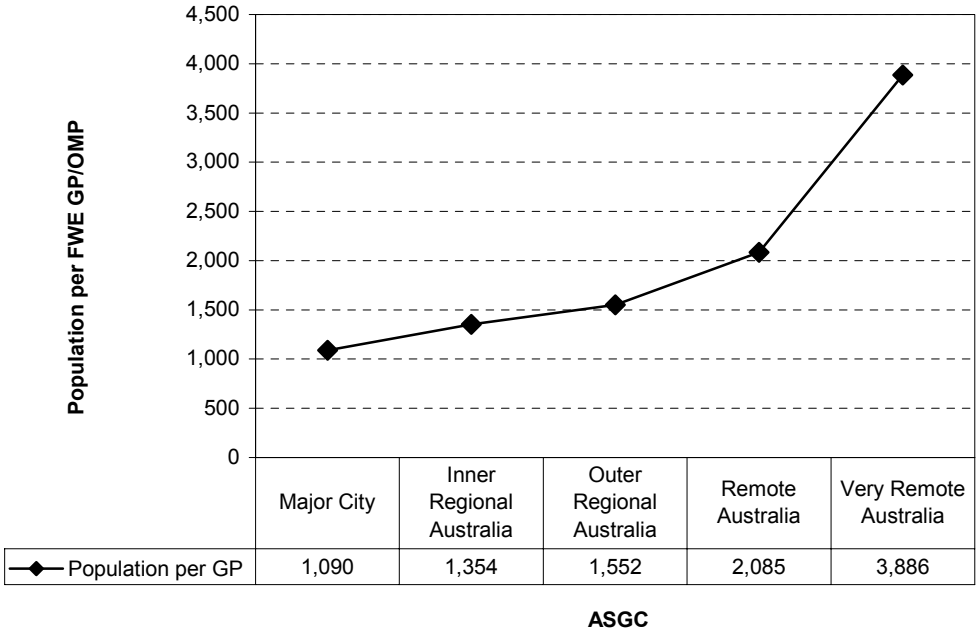


Figure 1.2: Population per FWE GPs/OMPs by ASGC Remoteness, 2001

Source: Health Insurance Commission unpublished data.

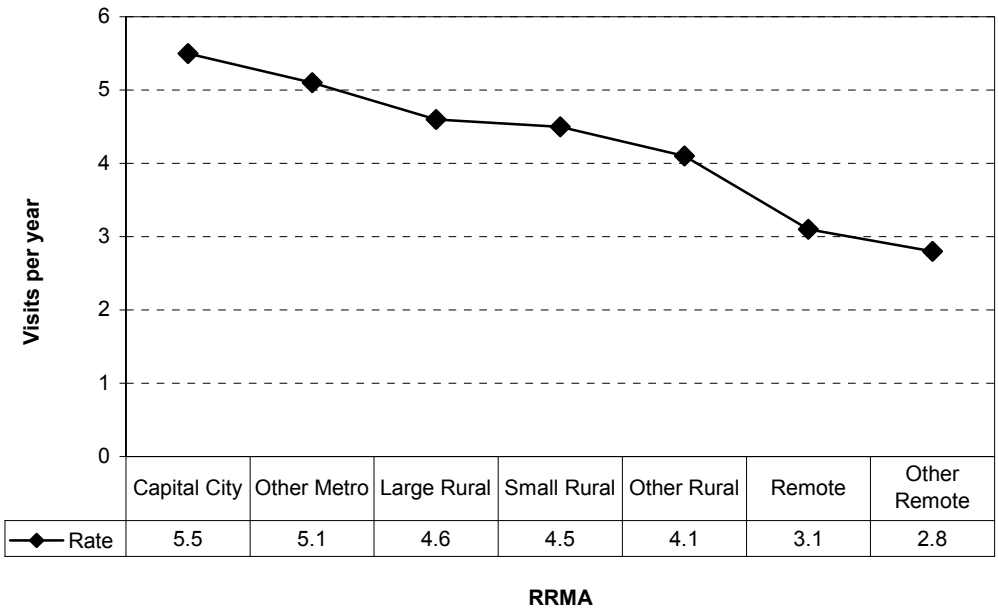


Figure 1.3: Mean annual number of GP visits per head of population by RRMA, 2001 (MBS A1 and A2 item claims)

Note: Metro—Metropolitan.
Source: Health Insurance Commission Medicare Benefits Schedule (MBS) A1 and A2 item claims data.

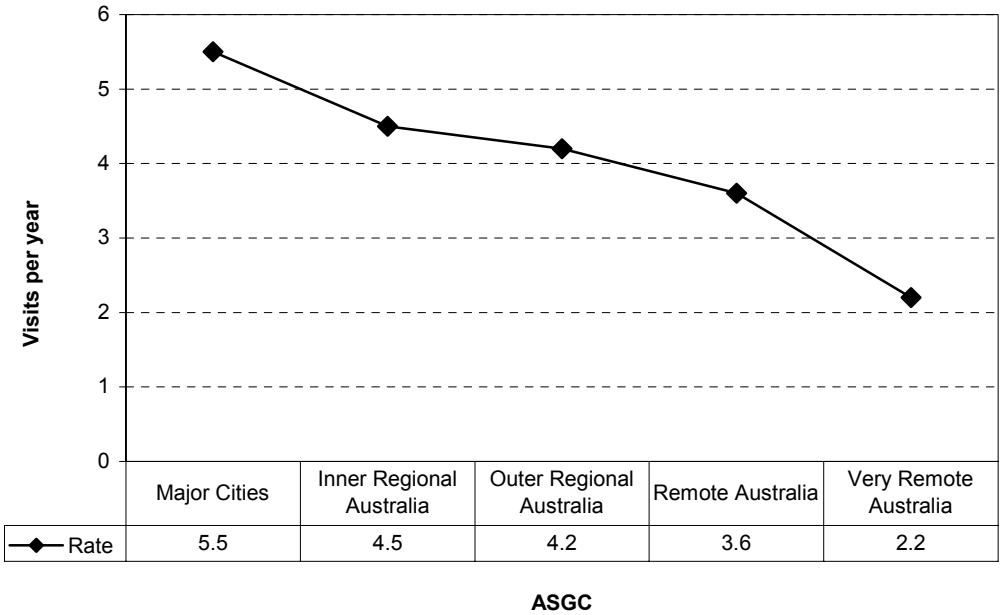


Figure 1.4: Mean annual number of GP visits per head of population by ASGC Remoteness, 2001 (MBS A1 and A2 item claims)

Source: Health Insurance Commission Medicare Benefits Schedule (MBS) A1 and A2 item claims data.

2 Methods

This report details findings from a secondary analysis of data collected in the BEACH (Bettering the Evaluation and Care of Health) program between April 1998 and March 2004. During this period 6,019 GPs recorded data about 601,900 encounters.

The methods applied in the BEACH program have been described in detail elsewhere.[15–17] In summary each year a random sample of approximately 1,000 recognised GPs each records details about 100 doctor–patient encounters of all types. The information is recorded on structured encounter forms (on paper). The GPs are recruited across the year in a rolling sample, approximately 20 GPs participate each week, 50 weeks a year.

2.1 Sampling frame

The source population includes all GPs who claimed a minimum of 375 general practice A1 Medicare items in the most recently available 3-month Health Insurance Commission (HIC) data period. This equates with 1,500 Medicare claims a year and ensures inclusion of the majority of part-time GPs while excluding those who are not in private practice but claim for a few consultations a year. The General Practice Branch of the Australian Government Department of Health and Ageing draws a sample on a regular basis.

2.2 Recruitment methods

The randomly selected GPs are approached initially by letter, then by telephone follow-up. GPs who agree to participate are set an agreed recording date approximately 3 to 4 weeks ahead. A research pack is sent to each participant about 10 days before the planned recording date. A telephone reminder is made to each participating GP in the first days of the agreed recording period. Non-returns are followed up by regular telephone calls.

Participating GPs earn Clinical Audit points towards their quality assurance (QA) requirements. As part of this QA process, each GP receives an analysis of his or her results compared with those of nine other de-identified GPs who recorded at approximately the same time. Comparisons with the national average and with targets relating to the National Health Priority Areas are also made. In addition, GPs receive some educational material related to the identification and management of patients who smoke or consume alcohol at hazardous levels.

2.3 Data elements

BEACH includes three interrelated data collections: encounter data, GP characteristics, and patient health status. An example of the forms used to collect the encounter data and the data on patient health status is included as Appendix 1. The GP characteristics questionnaire is included as Appendix 2.

Encounter data include date of consultation, type of consultation (direct, indirect), Medicare/Department of Veterans' Affairs item number (where applicable) and specified other payment source (tick boxes).

Information about **the patient** includes date of birth, sex and postcode of residence. Tick boxes are provided for Commonwealth concession card holder, Repatriation health card holder, non-English-speaking background (NESB), an Aboriginal person (self-identification) and Torres Strait Islander (self-identification). Space is provided for up to three patient reasons for encounter (RFEs).

The **content of the encounter** is described in terms of the problems managed and the management techniques applied to each of these problems. Data elements include up to four diagnoses/problems. Tick boxes are provided to denote the status of each problem as new to the patient (if applicable).

Management data for each problem include medications prescribed, over-the-counter medications advised and other medications supplied by the GP. Details for each **medication** comprise brand name, form (where required), strength, regimen, status (if new medication for this problem for this patient) and number of repeats. **Other management** techniques recorded for each problem, include counselling, procedures, new referrals, pathology and imaging ordered.

GP characteristics include age and sex, years in general practice, number of GP sessions worked per week, number of GPs working in the practice (to generate a measure of practice size), postcode of major practice address, country of graduation, vocational general practice training, Fellowship of the Royal Australian College of General Practitioners (RACGP) status, after-hours care arrangements, use of computers in the practice, whether the practice is accredited and whether it is a teaching practice, work undertaken by the GP in other clinical settings, hours worked in direct patient care and hours on call per week.

2.4 Applying RRMA and ASGC Remoteness Structure to the BEACH sample

RRMA and ASGC Remoteness categories were allocated based on the postcode of the GP's practice using concordance maps between postcode and RRMA or ASGC Remoteness categories. Where a postcode fell into more than one category it was allocated to the category that accounted for the largest proportion of the postcode. All encounters were then classified to the GP's RRMA or ASGC Remoteness category.

2.5 The BEACH relational database

The BEACH relational database is described diagrammatically in Figure 2.1. Note that all variables can be directly related to GP and patient characteristics and to the encounter. Reasons for encounter have only an indirect relationship with problems managed. All types of management are directly related to the problem being treated.

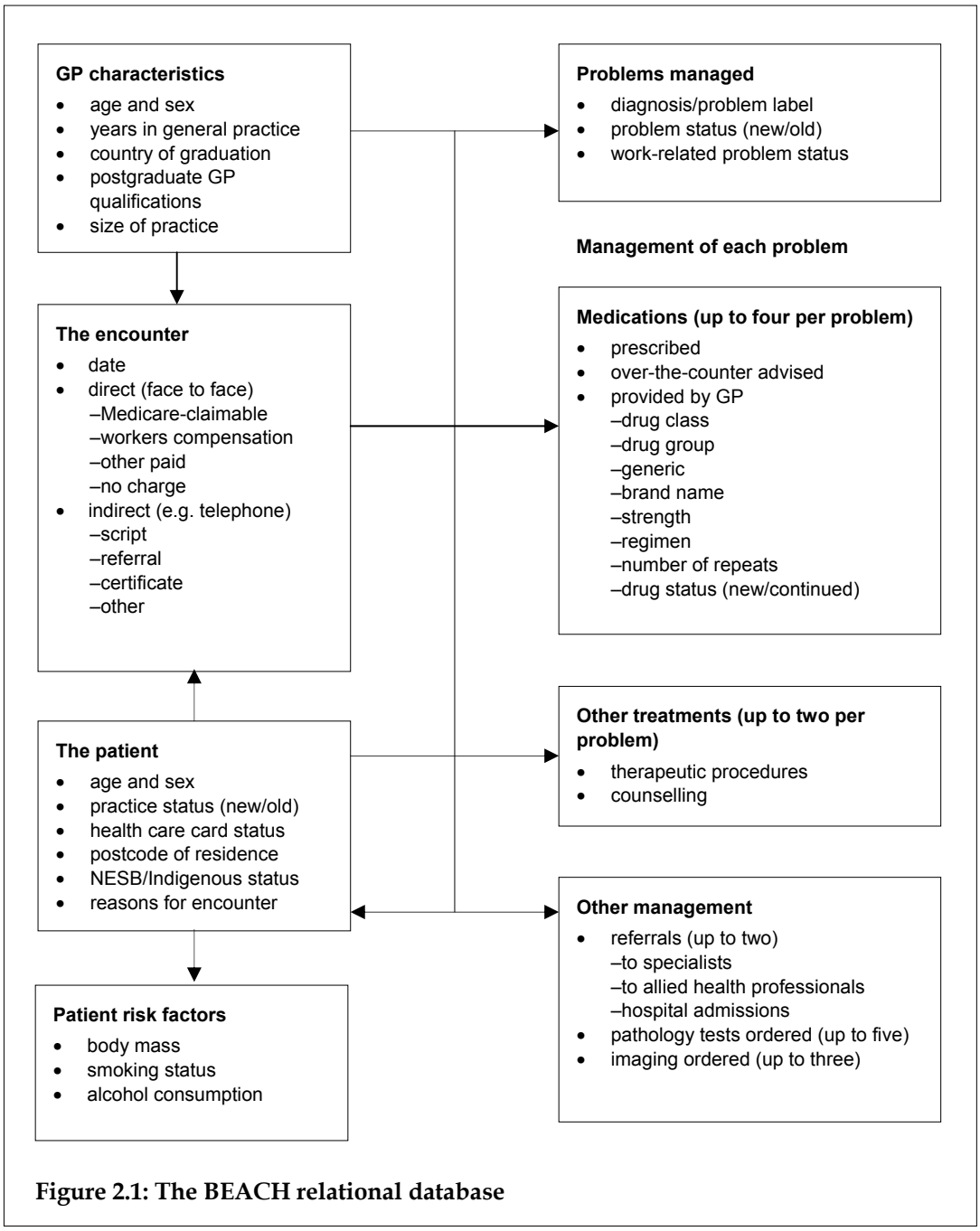


Figure 2.1: The BEACH relational database

2.6 Statistical methods

The analysis of the BEACH database was conducted with SAS version 8.2.[18] Proportions (%) are used only when describing the distribution of an event that can arise only once at an encounter (e.g. age, sex or item numbers) or to describe the distribution of events within a class of events (e.g. problem *A* as a percentage of total problems). Rates per 100 encounters are used when an event can occur more than once at the encounter (e.g. RFEs, problems managed or medications). Rates per 100 problems are also sometimes used when a management event can occur more than once per problem managed. In general, the

following results present the number of observations *(n)*, rate per 100 encounters and the 95% confidence intervals.

The BEACH study is a random sample of GPs, each providing data about a cluster of encounters. When the encounter is the unit of inference, the cluster sampling study design violates the simple random sample (SRS) assumption of equal probability of selection of observations, because the probability of an encounter being included is a function of the probability of the GP being selected.[19] Cluster samples also violate the assumption of independence of observations as there is an inherent relationship or correlation between encounters sampled in the same cluster. Therefore the certainty that the sample estimates reflect the true underlying population values is reduced by cluster sampling, thus decreasing the precision of national estimates.

When a study design other than SRS is used, analytical techniques that consider the study design should be employed. In this report data were analysed using SAS 8.2 procedures that adjust the standard error for the intra-cluster correlation of the cluster sample. In this way the 95% confidence intervals were adjusted to reflect the reduced precision of the estimates.

In this report we compared the results for each RRMA or ASGC category with the national average. Statistical significance of differences is identified by non-overlapping 95% confidence intervals. Marginal differences (where the confidence intervals meet but do not overlap) are generally not noted but can be identified in the tables. The width of confidence intervals (and hence the bounds for identifying differences between a given area and the national average) tend to differ systematically with the size of the sample from that category. Less populated areas are represented by a smaller sample of GPs and encounters than more populated areas. Confidence intervals for small samples are therefore wider, giving less precision for the estimates. This means that there will be a decreased chance of identifying real differences between the less populated remote categories and the national average.

However, since the ASGC Remoteness Structure is essentially an ordinal scale, linear trends with increasing remoteness across ASGC categories were also examined to allow more power to detect real differences related to remoteness.

2.7 Classification of data

The patient reasons for encounter, problems managed, procedures, other treatments, referrals, pathology and imaging orders are coded using ICPC-2 PLUS.[20] This is an extended vocabulary of terms classified according to the International Classification of Primary Care—Version 2 (ICPC-2), a product of the World Organization of Family Doctors (Wonca).[21] The ICPC is used in more than 45 countries as the standard for data classification in primary care.

The ICPC has a bi-axial structure, with 17 chapters on one axis (each with an alphabetic code) and seven components on the other (numeric codes) (Figure 2.2). Chapters are based on body systems, with additional chapters for psychological and social problems. Component 1 includes symptoms and complaints. Component 7 covers diagnoses. These are independent in each chapter and both can be used for patient reasons for encounter or for problems managed.

Components 2 to 6 cover the process of care and are common throughout all chapters. The processes of care, including referrals, other treatments and orders for pathology and imaging, are classified in these process components of ICPC-2.

Component 2 (diagnostic screening and prevention) is also often applied in describing the problem managed (e.g. check-up, immunisation).

Components	Chapters																
	A	B	D	F	H	K	L	N	P	R	S	T	U	W	X	Y	Z
1. Symptoms, complaints																	
2. Diagnostic, screening, prevention																	
3. Treatment, procedures, medication																	
4. Test results																	
5. Administrative																	
6. Other																	
7. Diagnoses, disease																	

A	General	L	Musculoskeletal	U	Urinary
B	Blood, blood-forming	N	Neurological	W	Pregnancy, family planning
D	Digestive	P	Psychological	X	Female genital
F	Eye	R	Respiratory	Y	Male genital
H	Ear	S	Skin	Z	Social
K	Circulatory	T	Metabolic, endocrine, nutritional		

Figure 2.2: The structure of the International Classification of Primary Care—Version 2 (ICPC-2)

The ICPC-2 is an excellent epidemiological tool. The diagnostic and symptomatic rubrics have been selected for inclusion on the basis of their relative frequency in primary care settings or because of their relative importance in describing the health of the community. It has only about 1,370 rubrics and these are sufficient for meaningful analyses. However, reliability of data entry, using ICPC-2 alone, would require a thorough knowledge of the classification if correct classification of a concept were to be ensured. In 1995, recognising a need for a coding and classification system for general practice electronic health records, the Family Medicine Research Centre (then Unit) developed an extended vocabulary of terms classified according to the ICPC. These terms were derived from those recorded by GPs on more than half a million encounter forms. The terms have developed further over the past 8 years in response to the use of terminology by GPs participating in the BEACH program and in response to requests from GPs using ICPC-2 PLUS in their electronic clinical systems. This allows far greater specificity in data entry and ensures high inter-coder reliability between secondary coding staff. It also facilitates analyses of information about more specific problems when required.[20]

Classification of pharmaceuticals

Pharmaceuticals prescribed or provided and over-the-counter medications advised by the GP are coded and classified according to an in-house classification, the Coding Atlas for Pharmaceutical Substances (CAPS). This is a hierarchical structure that facilitates analysis of data at a variety of levels, such as medication class, medication group, generic composition and brand name.

2.8 Quality assurance

All morbidity and therapeutic data elements are automatically coded and classified by computer as secondary coding staff enter key words or word fragments and select the required term or label from a pick list. A quality assurance program to ensure reliability of data entry includes ongoing development of computer-aided error checks ('locks') at the data entry stage and a physical check of samples of data entered versus those on the original recording form. Further automatic logical data checks are conducted on a regular basis.

2.9 Validity and reliability

In the development of a database such as BEACH, data gathering moves through specific stages: GP sample selection, cluster sampling around each GP, GP data recording, and secondary coding and data entry. At each stage, the data can be invalidated by the application of inappropriate methods. The methods of coding, data entry and statistical analysis described above ensure maximum reliability and validity in the recording and reporting of the data provided by the GPs in the sample.

3 The sample

3.1 GP sample size

Data included in this analysis were recorded between April 1998 and March 2004 (inclusive), with a total of 6,019 GPs reporting data about 601,900 encounters.

RRMA

Table 3.1(a) shows the number of GP participants in each of the 6 years of the sample and the distribution of the sample across RRMA categories.

- There were very few participants from areas in the remote zone in 1998–99.
- In 1999–00 there was a larger proportion of participants from Large Rural Centres than in other years.
- In 2000–01 there was a smaller proportion of participants from both Other Metropolitan Centres and Large Rural Centres.
- There was a smaller proportion of participants from Capital Cities in 2003–04.

ASGC Remoteness

Table 3.1(b) shows the sample of GPs in each year of the BEACH data set, by ASGC Remoteness classification.

- There were very few participants from Very Remote Australia, and most Very Remote GPs were recruited in the later 2 years of the study.

3.2 The BEACH data set

Tables 3.2(a) and 3.2(b) summarise the sample size for each of the data elements within the 6-year BEACH data set by RRMA and ASGC Remoteness classifications.

Table 3.1(a): GP sample size by BEACH data year by RRMA

Data year		Capital City	Other Metropolitan	Large Rural Centre	Small Rural Centre	Other Rural Area	Remote Centre	Other Remote Area	Australia
1998–99	Number	671	74	61	60	108	5	5	984
	Row per cent	68.2	7.5	6.2	6.1	11.0	0.5	0.5	100.0
1999–00	Number	683	77	80	65	128	4	10	1,047
	Row per cent	65.2	7.4	7.6	6.2	12.2	0.4	1.0	100.0
2000–01	Number	680	69	55	56	122	10	7	999
	Row per cent	68.1	6.9	5.5	5.6	12.2	1.0	0.7	100.0
2001–02	Number	681	80	58	48	103	5	8	983
	Row per cent	69.3	8.1	5.9	4.9	10.5	0.5	0.8	100.0
2002–03	Number	652	86	51	78	121	6	14	1,008
	Row per cent	64.7	8.5	5.1	7.7	12.0	0.6	1.4	100.0
2003–04	Number	623	64	70	70	142	9	20	998
	Row per cent	62.4	6.4	7.0	7.0	14.2	0.9	2.0	100.0
Total	**Number**	**3,990**	**450**	**375**	**377**	**724**	**39**	**64**	**6,019**
	Row per cent	**66.3**	**7.5**	**6.2**	**6.3**	**12.0**	**0.7**	**1.1**	**100.0**

Table 3.1(b): GP sample size by BEACH data year by ASGC Remoteness

Data year		Major Cities	Inner Regional Australia	Outer Regional Australia	Remote Australia	Very Remote Australia	Australia
1998–99	Number	698	178	94	12	2	984
	Row per cent	70.9	18.1	9.6	1.2	0.2	100.0
1999–00	Number	719	213	101	12	2	1,047
	Row per cent	68.7	20.3	9.7	1.2	0.2	100.0
2000–01	Number	707	188	86	14	4	999
	Row per cent	70.8	18.8	8.6	1.4	0.4	100.0
2001–02	Number	703	169	99	9	3	983
	Row per cent	71.5	17.2	10.1	0.9	0.3	100.0
2002–03	Number	699	191	95	17	6	1,008
	Row per cent	69.4	19.0	9.4	1.7	0.6	100.0
2003–04	Number	654	218	100	16	10	998
	Row per cent	65.5	21.8	10.0	1.6	1.0	100.0
Total	**Number**	**4,180**	**1,157**	**575**	**80**	**27**	**6,019**
	Row per cent	**69.4**	**19.2**	**9.6**	**1.3**	**0.4**	**100.0**

Table 3.2(a): The BEACH data set by RRMA

Variable	Capital City	Other Metropolitan	Large Rural Centre	Small Rural Centre	Other Rural Area	Remote Centre	Other Remote Area	Australia
General practitioners	3,990	450	375	377	724	39	64	6,019
Encounters	399,000	45,000	37,500	37,700	72,400	3,900	6,400	601,900
Reasons for encounter	604,360	67,372	55,874	55,293	107,059	5,641	9,137	904,736
Problems managed	589,295	66,543	57,219	56,159	109,404	5,579	9,124	893,323
Medications	421,902	49,265	39,690	38,870	77,734	3,982	6,783	638,226
Prescribed	349,628	41,735	33,584	33,315	67,321	3,089	5,213	533,885
Advised OTC	40,334	3,703	2,947	2,427	4,506	220	359	54,496
GP-supplied	31,940	3,827	3,159	3,128	5,907	673	1,211	49,845
Other treatments	209,029	22,992	20,137	18,068	34,913	1,852	3,455	310,446
Clinical	154,650	16,126	13,818	12,439	23,377	1,353	2,385	224,148
Procedural	54,379	6,866	6,319	5,629	11,536	499	1,070	86,298
Referrals	47,059	5,607	4,272	4,596	8,856	545	849	71,784
Allied health service	11,107	1,286	1,106	1,281	2,410	158	200	17,548
Specialist	32,339	3,796	2,812	2,890	5,390	291	518	48,036
Emergency department	543	46	42	34	38	7	9	719
Hospital	2,104	358	222	255	800	75	95	3,909
Other referral	966	121	90	136	218	14	27	1,572
Imaging (1999–2004)[+]	26,180	3,504	2,696	2,906	5,624	350	488	41,748
Pathology (2000–2004)[++]	86,289	10,823	9,156	9,626	19,269	1,409	2,014	138,586

\+ Limited to April 1999 to March 2004 inclusive due to older imaging codes in year 1 (1998–99). For numbers of encounters for these years by RRMA refer to Table 5.3(a).

++ Limited to April 2000 to March 2004 inclusive due to older pathology codes in years 1 and 2 (1998–2000). For numbers of encounters for these years by RRMA refer to Table 5.3(a).

Note: OTC—over-the-counter; GP—general practitioner.

Table 3.2(b): The BEACH data set by ASGC Remoteness

Variable	Major Cities	Inner Regional Australia	Outer Regional Australia	Remote Australia	Very Remote Australia	Australia
General practitioners	4,180	1,157	575	80	27	6,019
Encounters	418,000	115,700	57,500	8,000	2,700	601,900
Reasons for encounter	633,320	171,696	84,037	11,852	3,831	904,736
Problems managed	616,852	175,944	84,760	11,924	3,843	893,323
Medications	444,130	121,006	61,699	8,349	3,042	638,226
Prescribed	368,144	104,092	53,025	6,433	2,191	533,885
Advised OTC	41,732	8,153	3,936	483	192	54,496
GP-supplied	34,254	8,761	4,738	14,333	659	49,845
Other treatments	218,307	58,720	27,682	3,986	1,751	310,446
Clinical	160,912	40,280	18,955	2,697	1,304	224,148
Procedural	57,395	18,440	8,727	1,289	447	86,298
Referrals	49,483	13,996	6,824	1,085	396	71,784
Allied health service	11,527	3,822	1,809	306	84	17,548
Specialist	34,082	8,871	4,234	612	237	48,036
Emergency department	555	100	49	8	7	719
Hospital	2,321	837	565	138	48	3,909
Other referral	998	366	167	21	20	1,572
Imaging (1999–2004)[+]	27,918	8,774	4,266	605	185	41,748
Pathology (2000–2004)[++]	91,050	28,749	15,363	2,376	1,048	138,586

\+ Limited to April 1999 to March 2004 inclusive due to older imaging codes in year 1 (1998–99). For numbers of encounters for these years by ASGC refer to Table 5.3(b).
++ Limited to April 2000 to March 2004 inclusive due to older pathology codes in years 1 and 2 (1998–2000). For numbers of encounters for these years by ASGC refer to Table 5.3(b).
Note: OTC—over-the-counter; GP—general practitioner.

RRMA versus ASGC Remoteness concordance

Figure 3.1 shows the relationship between the RRMA and ASGC Remoteness classification in terms of the GP sample over the 6 years of the study.

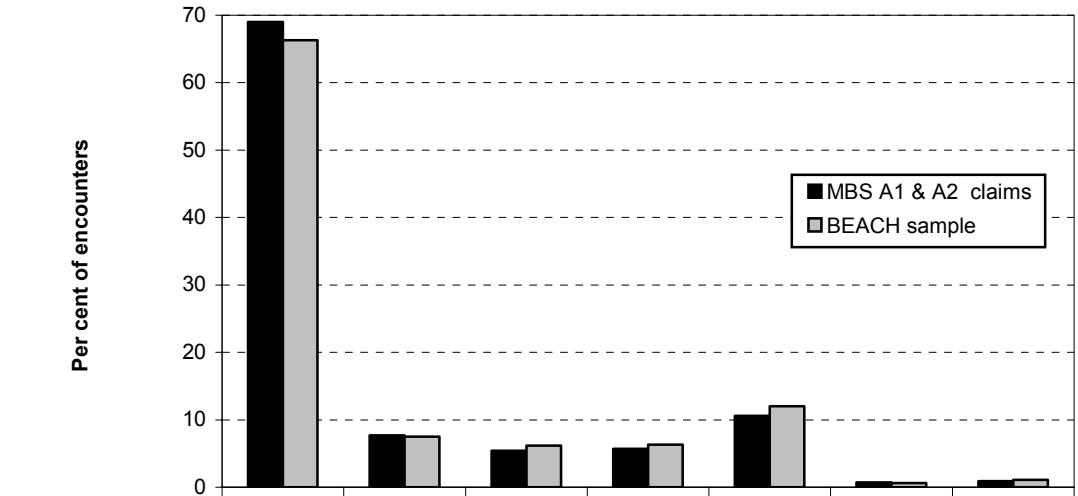
- Ninety-four per cent of the GP sample from the RRMA metropolitan zone (Capital City, Other Metropolitan) was classified into the ASGC category Major Cities, 4% into Inner Regional Australia and 1% into Outer Regional Australia.
- Sixty-six per cent of the GP sample from the RRMA rural zone (Large Rural, Small Rural and Other Rural) was classified into ASGC Inner Regional Australia, 32% into Outer Regional Australia and 2% into Remote Australia.
- Only 78% of the GP sample from the RRMA remote zone (Remote Centre, Other Remote Area) was classified into ASGC Remote or Very Remote Australia, the other 22% was classified into Outer Regional Australia.

	ASGC Remoteness categories					
RRMA categories	**Major Cities**	**Inner Regional Australia**	**Outer Regional Australia**	**Remote Australia**	**Very Remote Australia**	**Total**
Capital City	3,797	146	45	2	0	3,990
Other Metropolitan	380	36	34	0	0	450
Large Rural Centre	0	304	71	0	0	375
Small Rural Centre	0	284	85	8	0	377
Other Rural Area	3	387	317	16	1	724
Remote Centre	0	0	15	24	0	39
Other Remote Area	0	0	8	30	26	64
Total	4,180	1,157	575	80	27	6,019

Figure 3.1: Concordance of the GP sample by RRMA and ASGC Remoteness

BEACH versus MBS claims

Figures 3.2 and 3.3 show the distribution of MBS general practice claims (A1 and A2 items) and the BEACH sample of encounters by RRMA and ASGC. As these figures show, the BEACH program has sampled patient encounters well across all geographical regions, in proportion to the number of encounters that occur in each regional category.

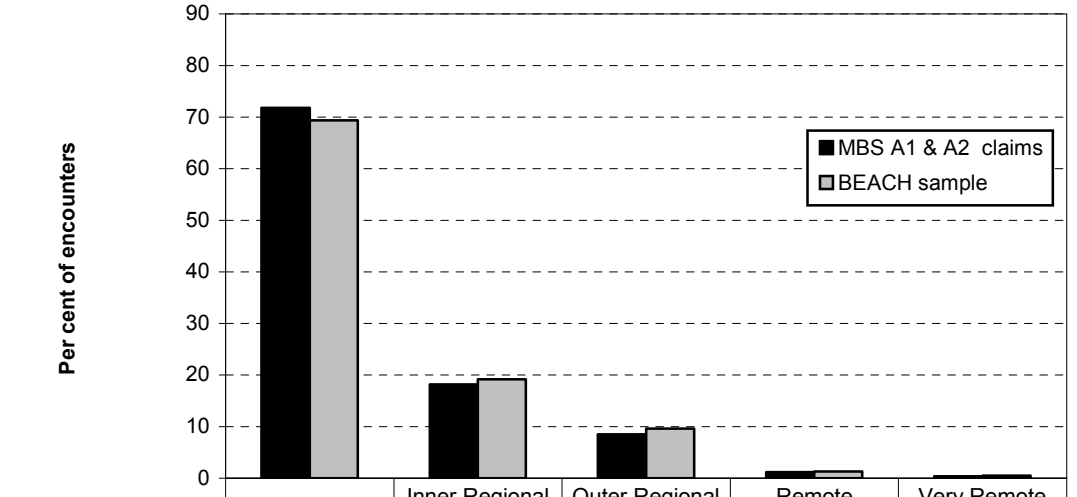


	Capital City	Other Metro	Large Rural	Small Rural	Other Rural	Remote Centre	Other Remote
MBS A1 & A2 claims	69.0	7.7	5.4	5.7	10.6	0.7	0.9
BEACH sample	66.3	7.5	6.2	6.3	12	0.6	1.1

RRMA

Figure 3.2: Distribution of GP–patient encounters by RRMA: MBS A1 and A2 claims (2001) vs BEACH sample (April 1998 – March 2004)

Note: Metro—Metropolitan.
Source: Health Insurance Commission Medicare Benefits Schedule (MBS) A1 and A2 item claims April 2001 – March 2002.



	Major Cities	Inner Regional Australia	Outer Regional Australia	Remote Australia	Very Remote Australia
MBS A1 & A2 claims	71.8	18.2	8.5	1.2	0.4
BEACH sample	69.4	19.2	9.6	1.3	0.5

ASGC

Figure 3.3: Distribution of GP–patient encounters by ASGC Remoteness: MBS A1 and A2 claims (2001) vs BEACH sample (April 1998 – March 2004)

Source: Health Insurance Commission Medicare Benefits Schedule (MBS) A1 and A2 item claims April 2001 – March 2002.

4 The participating GPs

This chapter describes differences that arose across RRMA and ASGC Remoteness categories. For a summary of findings in each individual RRMA category or trends with ASGC Remoteness, please refer to Chapter 11—Summary of results.

4.1 Characteristics of the GPs

RRMA

The characteristics of participating general practitioners (GPs) across RRMA categories are compared in Table 4.1(a). Compared with the national average:

- Small Rural Centres and Other Rural Areas had a larger proportion of male GPs
- Remote Centres and Other Remote Areas had larger proportions of GPs aged less than 35 years
- Other Remote Areas had a smaller proportion of GPs in the 35–44 year and the 45–54 year age groups
- Remote Centres had a smaller proportion of older GPs (55 years and older)
- Remote Centres had a considerably larger proportion of GPs who had been working in general practice for less than 2 years
- Other Remote Areas had a larger proportion of GPs who had been working in general practice for between 2 and 5 years
- a smaller proportion of GPs in Remote Centres and Other Remote Areas worked fewer than 6 sessions per week
- a larger proportion of GPs in the rural and remote zones worked 6–10 sessions per week
- a larger proportion of GPs in Remote Centres worked 11 or more sessions per week
- Remote Centres and Other Remote Areas had larger proportions of GPs currently taking part in a vocational training program for general practice
- Large Rural Centres and Other Remote Areas had larger proportions of GPs who were Fellows of the RACGP
- the rural and remote zones had larger proportions of GPs who provided their own after-hours care.

ASGC Remoteness

In Table 4.1(b) the same GP characteristics are compared across ASGC Remoteness categories. Compared with the national average:

- Inner Regional and Outer Regional Australia had a larger proportion of male GPs
- Inner Regional Australia and Remote Australia had fewer GPs who worked 11 or more sessions per week
- Very Remote Australia had the largest proportion of GPs who held Fellowship of the RACGP

- a smaller proportion of GPs in Major Cities provided their own after-hours arrangements.

Trends with increasing remoteness are summarised below.

- There was an increasing trend in the proportion of GPs aged less than 35 years with increasing remoteness.
- The proportion of GPs who had practised for 5 years or less increased with remoteness and the proportion who had worked for 20 years or more decreased with increasing remoteness.
- The proportion of GPs who worked fewer than 6 sessions per week decreased with increasing remoteness.
- The proportion of GPs currently partaking in a general practice training program with increased with remoteness.

Table 4.1(a): Characteristics of participating GPs by RRMA

	Per cent of GPs,[a] column specific							
GP characteristic	**Capital City (*n*=3,990)**	**Other Metropolitan (*n*=450)**	**Large Rural Centre (*n*=375)**	**Small Rural Centre (*n*=377)**	**Other Rural Area (*n*=724)**	**Remote Centre (*n*=39)**	**Other Remote Area (*n*=64)**	**Australia (*n*=6,019)**
Per cent of sample	66.3	7.5	6.2	6.3	12.0	0.7	1.1	100.0
Sex								
Male	65.0	70.5	68.3	73.2	75.2	69.2	65.6	67.4
Female	35.0	29.5	31.7	26.8	24.8	30.8	34.4	32.6
Age (missing)	(15)	(2)	(0)	(0)	(2)	(0)	(0)	(19)
<35 years	6.7	3.8	5.1	8.8	9.1	15.4	15.6	7.0
35–44 years	28.3	28.1	36.0	30.8	31.4	35.9	25.0	29.3
45–54 years	34.8	34.4	35.2	37.1	32.6	35.9	25.0	34.6
55+ years	30.2	33.7	23.7	23.3	26.9	12.8	34.4	29.1
Years in general practice (missing)	(32)	(3)	(1)	(1)	(6)	(0)	(2)	(45)
<2 years	0.2	0.7	0.5	1.6	2.5	10.3	1.6	0.7
2–5 years	6.4	4.7	4.8	10.1	8.6	10.3	16.1	6.8
6–10 years	14.5	12.3	12.8	13.6	13.6	23.1	11.3	14.1
11–19 years	29.1	29.1	37.2	32.2	31.8	25.6	25.8	30.1
20+ years	49.8	53.2	44.7	42.6	43.5	30.8	45.2	48.3
Sessions per week (missing)	(43)	(7)	(3)	(4)	(6)	(1)	(0)	(64)
<6 per week	18.1	16.9	12.6	11.8	9.6	5.3	3.1	16.0
6–10 per week	64.1	66.8	77.4	78.6	77.7	73.7	82.8	68.0
11+ per week	17.7	16.3	9.9	9.7	12.7	21.1	14.1	16.0
State/territory[b]								
New South Wales	38.3	55.8	23.2	34.0	33.1	0^	20.3	37.3
Victoria	24.3	9.8	18.9	28.4	23.7	0^	3.1	22.7

(continued)

Table 4.1(a) (continued): Characteristics of participating GPs by RRMA

GP characteristic	Per cent of GPs,[a] column specific							
	Capital City (*n*=3,990)	Other Metropolitan (*n*=450)	Large Rural Centre (*n*=375)	Small Rural Centre (*n*=377)	Other Rural Area (*n*=724)	Remote Centre (*n*=39)	Other Remote Area (*n*=64)	Australia (*n*=6,019)
Queensland	13.8	34.2	48.5	17.2	18.8	33.3	31.3	18.6
Western Australia	9.5	0^	0^	9.8	7.9	51.3	20.3	8.4
South Australia	8.7	0^	2.1	6.9	11.2	0^	7.8	7.8
Tasmania	2.0	0^	7.2	3.7	4.7	0^	0^	2.6
Australian Capital Territory	2.5	0.2	0^	0^	0^	0^	0^	1.6
Northern Territory	1.0	0^	0^	0^	0.7	15.4	17.2	1.0
GP training status (missing)	(133)	(21)	(10)	(19)	(34)	(1)	(4)	(222)
Currently in a vocational training program	2.2	1.4	2.5	6.1	4.6	15.8	10.0	2.9
RACGP status (missing)	(43)	(3)	(1)	(2)	(3)	(1)	(1)	(54)
Fellow of the RACGP	32.0	28.9	38.5	29.1	34.7	34.2	38.1	32.4
After-hours arrangement *(n)*[c]	**3,181**	**356**	**295**	**305**	**593**	**33**	**56**	**4,819**
Own or cooperative after-hours arrangements	45.2	56.8	88.4	86.5	91.1	75.8	87.3	57.7
Missing (*n*)	15	2	1	1	0	0	1	20

(a) Missing data removed.
(b) State or territory of the GP's major practice address.
(c) Data collection on after-hours arrangements was commenced in the second data year (1999–2000).
^ No postcodes in this state are classified to this RRMA group.
Note: GPs—general practitioners; RACGP—Royal Australian College of General Practitioners.

Table 4.1(b): Characteristics of participating GPs by ASGC Remoteness

	Per cent of GPs,[a] column specific					
GP characteristic	**Major Cities (*n*=4,180)**	**Inner Regional Australia (*n*=1,157)**	**Outer Regional Australia (*n*=575)**	**Remote Australia (*n*=80)**	**Very Remote Australia (*n*=27)**	**Australia (*n*=6,019)**
Per cent of sample	69.4	19.2	9.6	1.3	0.4	100.0
Sex						
Male	65.8	70.4	73.0	65.0	66.7	67.4
Female	34.2	29.6	27.0	35.0	33.3	32.6
Age (missing)	(17)	(1)	(1)	(0)	(0)	(19)
<35 years	6.4	7.6	8.5	12.5	18.5	7.0
35–44 years	27.9	32.5	32.4	31.3	29.6	29.3
45–54 years	34.9	35.9	30.5	31.3	22.2	34.6
55+ years	30.7	24.0	28.6	25.0	29.6	29.1
Years in general practice (missing)	(33)	(7)	(4)	(0)	(1)	(45)
<2 years	0.2	1.3	2.6	2.5	0	0.7
2–5 years	6.1	7.4	9.3	12.5	19.2	6.8
6–10 years	14.3	13.2	14.0	20.0	15.4	14.1
11–19 years	28.8	34.2	31.0	27.5	30.8	30.1
20+ years	50.6	43.9	43.1	37.5	34.6	48.3
Sessions per week (missing)	(49)	(10)	(5)	(0)	(0)	(64)
<6 per week	18.1	12.9	9.5	7.5	0	16.0
6–10 per week	64.1	77.0	75.1	83.8	81.5	68.0
11+ per week	17.8	10.1	15.4	8.8	18.5	16.0
State/territory[b]						
New South Wales	41.1	34.7	20.0	8.8	7.4	37.3
Victoria	23.9	24.4	14.4	1.3	0^	22.7
Queensland	15.4	23.2	31.5	20.0	40.7	18.6
Western Australia	8.9	4.0	9.4	32.5	18.5	8.4

(continued)

Table 4.1(b) (continued): Characteristics of participating GPs by ASGC Remoteness

	Per cent of GPs,[a] column specific					
GP characteristic	**Major Cities (*n*=4,180)**	**Inner Regional Australia (*n*=1,157)**	**Outer Regional Australia (*n*=575)**	**Remote Australia (*n*=80)**	**Very Remote Australia (*n*=27)**	**Australia (*n*=6,019)**
South Australia	8.2	4.4	9.4	23.8	3.7	7.8
Tasmania	0^	9.3	7.8	1.3	0^	2.6
Australian Capital Territory	2.4	0^	0^	0^	0^	1.6
Northern Territory	0^	0^	7.5	12.5	29.6	1.0
GP training status (missing)	(145)	(48)	(25)	(3)	(1)	(224)
Currently in a vocational training program	2.2	3.8	4.7	6.5	15.4	2.9
RACGP status (missing)	(42)	(8)	(3)	(0)	(1)	(54)
Fellow of the RACGP	31.2	34.2	36.4	36.3	38.5	32.4
After-hours arrangement *(n)*[c]	**3,331**	**940**	**460**	**64**	**24**	**4,819**
Own or cooperative after-hours arrangements	44.8	85.5	88.9	82.8	82.6	57.7
Missing (*n*)	17	1	1	0	1	20

(a) Missing data removed.
(b) State or territory of the GP's major practice address.
(c) Data collection on after-hours arrangements was commenced in the second data year (1999–2000).
^ No postcodes in this state are classified to this ASGC group.
Note: GPs—general practitioners; RACGP—Royal Australian College of General Practitioners.

4.2 GP computer use in the practice

RRMA

The extent of computer use at the major practice of participating GPs is compared across RRMA categories in Table 4.2(a). Compared with the national average:

- the proportion of GPs who reported not having a computer at all at their major practice was considerably lower in the rural zone; however, in Remote Centres all GPs had a computer at their major practice
- a larger proportion of GPs in the rural zone and in Remote Centres, but a smaller proportion of GPs in Other Remote Areas, were in practices where computers were used for billing purposes
- a larger proportion of GPs in the rural zone, but a somewhat smaller proportion in Capital Cities,were in practices that used computers for prescribing and for medical records
- a larger proportion of GPs in Large Rural Centres, Other Rural Areas, Remote Centres and Other Remote Areas were in practices where computers were used for other administrative purposes
- a larger proportion of GPs in the rural zone and a smaller proportion of GPs in Capital Cities were in practices that used Internet and/or email
- a considerably larger proportion of GPs in the rural zone were in practices where computers were used for all listed purposes.

ASGC Remoteness

The extent of computer use at the major practice of participating GPs is compared across ASGC categories in Table 4.2(b). Compared with the national average:

- the proportion of GPs who reported not having a computer at all at their major practice was considerably lower in Inner Regional Australia and Remote Australia
- the proportion of GPs in practices where computers were used for prescribing and for medical records was greater in Inner Regional, Outer Regional and Remote Australia
- computer use for medical records was higher in Very Remote Australia, but the use of computers for prescribing was lower
- a larger proportion of GPs in Inner Regional, Outer Regional, Remote and Very Remote Australia, and a smaller proportion of GPs in Major Cities were in practices where computers were used for other administrative work or for Internet and/or email communications
- in Inner Regional Australia and Outer Regional Australia a considerably larger proportion of GPs were in practices where computers were used for all listed purposes.

Table 4.2(a): GP computer use in practice by RRMA

Computer use in practice	Capital City (*n*=3,181)	Other Metropolitan (*n*=356)	Large Rural Centre (*n*=295)	Small Rural Centre (*n*=305)	Other Rural Area (*n*=593)	Remote Centre (*n*=33)	Other Remote Area (*n*=56)	Australia (*n*=4,819)
	Per cent of GPs,[(a)] column specific							
Not at all	11.9	9.9	5.8	6.9	7.1	0	9.1	10.4
Billing	67.4	71.3	80.3	81.6	77.7	81.8	54.5	70.6
Prescribing	66.9	76.3	83.1	85.2	81.7	69.7	72.7	71.7
Medical records	47.8	54.4	61.4	66.9	59.6	54.5	54.5	51.9
Other administrative	58.2	64.2	70.8	64.6	67.0	78.8	65.5	61.1
Internet/email	46.9	51.5	66.4	68.9	66.2	48.5	58.2	52.4
Missing (*n*)	11	1	0	0	2	0	1	15
	Per cent of GPs[(a)] with computers in practice							
Most common combinations	**(*n*=2,792)**	**(*n*=320)**	**(*n*=278)**	**(*n*=284)**	**(*n*=549)**	**(*n*=33)**	**(*n*=50)**	**(*n*=4,306)**
All five uses	24.5	31.6	41.0	44.7	43.7	30.3	24.0	29.9
Billing + prescribing + medical records + other admin	7.9	6.9	7.2	7.4	4.7	12.1	10.0	7.4
Billing + prescribing + other admin + internet/email	6.7	9.7	9.7	4.9	7.7	3.0	6.0	7.1
Billing + prescribing	5.4	4.7	4.0	3.9	5.1	3.0	4.0	5.1
Billing + prescribing + medical records	5.4	5.3	5.0	3.2	3.1	6.1	2.0	4.9
Billing + prescribing + other administrative	5.5	5.3	2.9	3.9	3.1	6.1	2.0	4.9
Billing + prescribing + medical records + internet/email	3.7	3.8	6.1	8.5	5.3	0	2.0	4.3
Billing + other administrative	4.8	2.2	1.8	0.7	2.4	6.1	0	3.8
Other administrative	4.1	2.8	2.9	1.4	1.8	3.0	4.0	3.5
Billing + prescribing + internet/email	3.1	1.9	2.9	6.0	4.6	0	6.0	3.4
Billing only	4.1	1.9	1.4	1.1	2.2	9.1	4.0	3.4

(a) Missing data about computer use removed.

Note: Admin—administrative.

Table 4.2(b): GP computer use in practice by ASGC Remoteness

	Per cent of GPs,[(a)] column specific					
Computer use in practice	**Major Cities (*n*=3,331)**	**Inner Regional Australia (*n*=940)**	**Outer Regional Australia (*n*=460)**	**Remote Australia (*n*=64)**	**Very Remote Australia (*n*=24)**	**Australia (*n*=4,819)**
Not at all	11.8	5.8	10.4	3.1	8.7	10.4
Billing	67.5	80.6	74.6	67.2	39.1	70.6
Prescribing	67.5	83.4	77.6	78.1	65.2	71.7
Medical records	48.1	61.9	58.0	56.3	65.2	51.9
Other administrative	58.2	67.6	67.2	71.9	69.6	61.2
Internet/email	46.9	65.0	64.8	59.4	60.9	52.4
Missing (*n*)	12	2	0	0	1	15
	Per cent of GPs[(a)] with computers in practice					
Most common combinations	**(*n*=2,927)**	**(*n*=884)**	**(*n*=412)**	**(*n*=62)**	**(*n*=21)**	**(*n*=4,306)**
All five uses	24.6	41.9	43.2	30.6	14.3	29.9
Billing + prescribing + medical records + other administrative	7.9	6.4	6.1	6.5	14.3	7.4
Billing + prescribing + other administrative + internet/email	7.0	7.7	7.3	6.5	0	7.1
Billing + prescribing	5.3	5.2	3.6	1.6	4.8	5.1
Billing + prescribing + medical records	5.3	4.1	3.6	3.2	4.8	4.9
Billing + prescribing + other administrative	5.5	3.5	3.4	4.8	0	4.9
Billing + prescribing + medical records + internet/email	3.8	6.4	4.4	3.2	0	4.3
Billing + other administrative	4.7	2.0	1.7	3.2	0	3.8
Other administrative	4.0	2.0	2.4	4.8	0	3.5
Billing + prescribing + internet/email	3.1	3.6	4.9	3.2	4.8	3.4
Billing only	4.0	1.9	1.9	4.8	0.0	3.4

(a) Missing data about computer use removed.

5 The encounters

An 'encounter' is any professional interchange between a patient and a general practitioner (GP). It can be described as indirect or direct. An indirect encounter is where there is no face-to-face meeting between the patient and the GP but a service is provided (e.g. prescription, referral). A direct encounter is where there is a face-to-face meeting of the patient and the GP. Direct encounters can be further divided into Medicare-claimable, workers compensation or other paid encounters.

This chapter describes differences that arose across RRMA and ASGC Remoteness categories. For a summary of findings in each individual RRMA category or trends with ASGC Remoteness, please refer to Chapter 11—Summary of results.

5.1 Types of encounter

The distribution of encounter types demonstrates the varied nature of general practice. The funding of Australian general practice reflects this variety, with a mixture of patient contribution, government rebate scheme through the Medicare Benefits Schedule (MBS), payment by other government programs (e.g. Australian Department of Veterans' Affairs) and insurance schemes (e.g. workers compensation). Indirect encounters are not eligible for payment through the MBS.

RRMA

Table 5.1(a) compares the types of encounters across RRMA categories. Reported differences were statistically significant ($p<0.05$) unless otherwise stated. Compared with the national average:

- there was a smaller proportion of encounters that involved direct consultations between the GP and patient in Large Rural Centres and Other Rural Areas
- the percentage of direct consultations that resulted in no charge was almost twice the national average in Other Remote Areas
- there was a larger proportion of encounters where a MBS item of service was claimable in Capital Cities
- in Large Rural Centres, Small Rural Centres and Other Rural Areas, the proportion of MBS-claimable encounters was smaller
- there was a larger proportion of indirect encounters in Large Rural Centres and Other Rural Areas.

ASGC Remoteness

Table 5.1(b) compares the types of encounters across ASGC Remoteness categories. Reported differences are significant ($p<0.05$) unless otherwise stated. Compared with the national average:

- Major Cities had a smaller proportion of indirect encounters and Inner Regional Australia had a larger proportion of indirect encounters

- no charge consultations were more common in Outer Regional Australia and Remote Australia
- Major Cities had a larger proportion of encounters where a MBS item of service was claimed and Inner Regional Australia, Outer Regional Australia and Remote Australia all had a smaller proportion of encounters where a MBS item of service was claimed
- there was a larger proportion of encounters paid through sources other than MBS in Inner Regional Australia and Remote Australia, with the latter almost four times the national average.

Table 5.1(a): Type of encounter by RRMA

Variable	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
	Per cent of encounters, 95% confidence interval, column specific							
Direct consultations	97.3 (97.1–97.4)	97.3 (96.9–97.8)	**95.4 (94.7–96.1)**	96.2 (95.6–96.8)	**96.2 (95.8–96.7)**	97.9 (96.9–98.8)	96.7 (95.5–97.9)	97.0 (96.8–97.1)
No charge	0.6 (0.5–0.7)	0.6 (0.5–0.8)	0.9 (0.7–1.0)	0.8 (0.6–0.9)	1.0 (0.7–1.3)	1.0 (0.2–1.7)	**1.2 (0.8–1.6)**	0.7 (0.6–0.7)
MBS items of service[(a)]	**93.5 (93.2–93.8)**	92.9 (92.0–93.8)	**90.5 (89.2–91.8)**	**90.6 (89.3–91.8)**	**91.3 (90.5–92.0)**	85.8 (77.9–93.7)	90.0 (87.0–93.0)	92.7 (92.5–93.0)
Workers compensation	1.9 (1.8–2.0)	2.1 (1.8–2.3)	2.0 (1.7–2.2)	2.1 (1.9–2.4)	1.7 (1.6–1.9)	2.3 (1.6–3.1)	2.0 (1.2–2.8)	1.9 (1.8–2.0)
Other paid (hospital, state, etc.)	1.3 (1.1–1.5)	1.8 (1.0–2.5)	2.1 (1.1–3.1)	2.7 (1.8–3.7)	2.2 (1.7–2.6)	8.7 (1.3–16.1)	3.5 (0.9–6.0)	1.7 (1.5–1.8)
Indirect consultations	2.7 (2.6–2.9)	2.7 (2.2–3.1)	**4.6 (3.9–5.3)**	3.8 (3.2–4.4)	**3.8 (3.3–4.2)**	2.2 (1.2–3.1)	3.3 (2.1–4.5)	3.0 (2.9–3.2)
Missing (*n*)	25,641	2,970	2,444	3,918	7,619	234	893	43,719

(a) Includes encounters that were recorded as claimable from the Australian Department of Veterans' Affairs.

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
MBS—Medicare Benefits Schedule.

Table 5.1(b): Type of encounter by ASGC Remoteness

Variable	Per cent of encounters, 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	**Inner Regional Australia (*n*=115,700)**	**Outer Regional Australia (*n*=57,500)**	**Remote Australia (*n*=8,000)**	**Very Remote Australia (*n*=2,700)**	**Australia (*n*=601,900)**
Direct consultations	**97.4 (97.2–97.5)**	**95.8 (95.4–96.1)**	96.5 (96.0–97.0)	97.4 (96.6–98.2)	97.1 (95.5–98.7)	97.0 (96.8–97.1)
No charge	0.6 (0.5–0.6)	0.8 (0.7–0.9)	**1.1 (0.8–1.5)**	**1.3 (0.8–1.8)**	1.0 (0.4–1.5)	0.7 (0.6–0.7)
MBS items of service[(a)]	**93.6 (93.3–93.9)**	**90.6 (89.9–91.3)**	**91.2 (90.2–92.1)**	**87.8 (83.5–92.0)**	90.0 (83.8–96.2)	92.7 (92.5–93.0)
Workers compensation	1.9 (1.8–2.0)	1.9 (1.8–2.1)	2.0 (1.7–2.2)	2.1 (1.5–2.6)	1.3 (0.4–2.2)	1.9 (1.8–2.0)
Other paid (hospital, state, etc.)	1.3 (1.1–1.5)	**2.4 (1.9–2.9)**	2.3 (1.6–3.0)	**6.3 (2.4–10.1)**	4.8 (0.0–10.7)	1.7 (1.5–1.8)
Indirect consultations	**2.6 (2.5–2.8)**	**4.3 (3.9–4.6)**	3.5 (3.0–4.0)	2.6 (1.8–3.4)	2.9 (1.3–4.5)	3.0 (2.9–3.2)
Missing (*n*)	26,931	9,932	5,594	885	377	43,719

(a) Includes encounters that were recorded as claimable from the Australian Department of Veterans' Affairs.

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
MBS—Medicare Benefits Schedule.

5.2 Distribution of Medicare-claimable encounters

RRMA

Table 5.2(a) compares the types of Medicare-claimable encounters across RRMA categories. Reported differences were statistically significant ($p<0.05$) unless otherwise stated. Compared with the national average:

- Other Rural Areas had a larger proportion of encounters that were claimable as short surgery consultations
- a greater percentage of encounters were claimable as standard surgery consultations in Large Rural Centres
- long surgery consultations were more common in Capital Cities, but were less common in the rural zone
- home visits were recorded less often in the rural zone and Remote Centres, but more often in Capital Cities
- there was a smaller proportion of hospital visits in Capital Cities and a larger proportion in Other Rural Areas
- the proportion of encounters that occurred in residential aged care facilities was almost half the national average in both Small Rural Centres and Other Rural Areas and was also less frequent in Other Remote Areas
- encounters that were claimable as other Medicare items were less common in Capital Cities, but more than double the national average in the rural and remote zones.

ASGC Remoteness

Table 5.2(b) compares the types of Medicare-claimable encounters across ASGC categories.

- There were no hospital visits recorded in Very Remote Australia, while residential aged care facility (RACF) encounters were recorded very rarely in Very Remote Australia.
- The rate of encounters taking place in a RACF in Remote Australia was less than half the national average.

Reported differences were statistically significant ($p<0.05$) unless otherwise stated. Compared with the national average:

- Inner Regional Australia and Outer Regional Australia had a larger proportion of encounters that were recorded as short surgery consultations, while Very Remote Australia had a smaller proportion of short surgery consultations
- there was a smaller proportion of long surgery consultations in both Inner Regional Australia and Outer Regional Australia
- the proportion of encounters that were claimable as prolonged surgery consultations was smaller in Outer Regional Australia.
- home visits were less common in Inner Regional Australia and Outer Regional Australia
- there was a larger proportion of encounters that were claimable as other Medicare items in Inner Regional Australia, Outer Regional Australia and Remote Australia, and a smaller proportion in Major Cities.

Table 5.2(a): Distribution of Medicare-claimable encounters by RRMA

Medicare claim type	Per cent of total Medicare-claimable encounters,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=348,994)	**Other Metropolitan (*n*=39,039)**	**Large Rural Centre (*n*=31,725)**	**Small Rural Centre (*n*=30,595)**	**Other Rural Area (*n*=59,132)**	**Remote Centre (*n*=3,147)**	**Other Remote Area (*n*=4,957)**	**Australia (*n*=517,589)**
Short surgery consultations	1.1 (1.0–1.2)	1.2 (1.0–1.5)	1.6 (1.3–1.9)	1.6 (1.3–2.0)	**1.8 (1.5–2.1)**	1.1 (0.2–2.1)	1.2 (0.4–2.0)	1.3 (1.2–1.3)
Standard surgery consultations	80.5 (80.0–81.1)	81.7 (80.2–83.2)	**82.7 (81.4–84.0)**	81.8 (80.1–83.6)	81.2 (80.1–82.4)	79.1 (73.6–84.6)	79.6 (75.2–84.1)	80.9 (80.5–81.3)
Long surgery consultations	**11.3 (11.0–11.7)**	9.9 (8.9–10.9)	**9.4 (8.5–10.3)**	**8.3 (7.3–9.3)**	**9.0 (8.2–9.8)**	9.6 (5.7–13.5)	10.6 (7.4–13.8)	10.7 (10.4–10.9)
Prolonged surgery consultations	1.1 (1.0–1.3)	1.1 (0.6–1.6)	0.8 (0.5–1.1)	0.5 (0.2–0.9)	0.7 (0.5–0.9)	1.4 (0.0–3.0)	1.2 (0.6–1.8)	1.0 (0.9–1.1)
Home visits	**2.1 (2.0–2.3)**	1.5 (1.2–1.9)	**1.1 (0.8–1.3)**	**0.8 (0.6–1.0)**	**0.9 (0.6–1.2)**	**0.6 (0.2–1.1)**	2.1 (0.2–4.1)	1.8 (1.7–1.9)
Hospital	**0.2 (0.1–0.3)**	0.9 (0.4–1.4)	0.7 (0.4–0.9)	0.7 (0.4–1.0)	**1.1 (0.8–1.3)**	1.0 (0.0–2.4)	0.4 (0.0–0.9)	0.4 (0.4–0.5)
Residential aged care facilities	1.2 (1.1–1.4)	1.0 (0.7–1.4)	1.1 (0.8–1.4)	**0.6 (0.4–0.8)**	**0.7 (0.6–0.9)**	1.2 (0.1–2.4)	**0.1 (0.0–0.3)**	1.1 (1.0–1.2)
Other items	**2.3 (2.1–2.5)**	2.6 (1.8–3.3)	2.7 (2.2–3.1)	**5.5 (4.2–6.9)**	**4.6 (3.9–5.3)**	**5.8 (3.8–7.9)**	**4.7 (3.1–6.3)**	2.8 (2.6–3.0)

(a) Includes encounters that were recorded as claimable from the Australian Department of Veterans' Affairs.

Table 5.2(b): Distribution of Medicare-claimable encounters by ASGC Remoteness

	Per cent of total Medicare-claimable encounters,[(a)] 95% confidence interval, column specific					
Variable	**Major Cities (*n*=366,112)**	**Inner Regional Australia (*n*=95,830)**	**Outer Regional Australia (*n*=47,313)**	**Remote Australia (*n*=6,244)**	**Very Remote Australia (*n*=2,090)**	**Australia (*n*=517,589)**
Short surgery consultations	1.1 (1.0–1.2)	**1.6 (1.4–1.8)**	**1.7 (1.4–2.0)**	1.9 (1.1–2.8)	**0.2 (0.0–0.5)**	1.3 (1.2–1.3)
Standard surgery consultations	80.6 (80.0–81.1)	81.4 (80.6–82.3)	82.6 (81.3–83.9)	80.0 (76.7–83.3)	76.2 (68.1–84.3)	80.9 (80.5–81.3)
Long surgery consultations	11.3 (10.9–11.6)	**9.5 (8.9–10.0)**	**8.1 (7.3–8.9)**	9.0 (6.6–11.4)	15.3 (8.9–21.6)	10.7 (10.4–10.9)
Prolonged surgery consultations	1.1 (1.0–1.3)	0.9 (0.6–1.1)	**0.6 (0.4–0.8)**	0.8 (0.2–1.5)	1.7 (0.7–2.8)	1.0 (0.9–1.1)
Home visits	2.1 (1.9–2.3)	**1.1 (0.9–1.2)**	**0.9 (0.5–1.2)**	1.3 (0–2.6)	1.7 (0.0–4.3)	1.8 (1.7–1.9)
Hospital	0.3 (0.2–0.4)	0.7 (0.5–0.8)	0.9 (0.5–1.2)	1.6 (0.5–2.7)	0	0.4 (0.4–0.5)
Residential aged care facilities	1.2 (1.1–1.4)	0.9 (0.7–1.1)	0.8 (0.6–1.0)	**0.4 (0.1–0.8)**	0.0 ǂ	1.1 (1.0–1.2)
Other items	**2.3 (2.1–2.5)**	**4.0 (3.4–4.5)**	**4.4 (3.6–5.2)**	**4.9 (3.7–6.2)**	4.9 (2.2–7.5)	2.8 (2.6–3.0)

(a) Includes encounters that were recorded as claimable from the Australian Department of Veterans' Affairs.
ǂ Rates are reported to one decimal place (n=1).

5.3 Summary of morbidity and management

RRMA

Table 5.3(a) provides an overview of the content of encounters across RRMA categories. All reported differences are significant ($p<0.05$) unless otherwise stated. Compared with the national average:

- there were fewer reasons for encounter in Small Rural Centres, Other Rural Areas and the remote zone
- there were more problems managed at the encounter in Large Rural Centres
- there was a higher rate of total medications (prescribed, advised for over-the-counter purchase and supplied by the GP) in Other Metropolitan Centres
- the rate of other treatments provided was slightly lower in Small Rural Centres and Other Rural Areas
- Other Metropolitan Centres, Small Rural Centres and Remote Centres all had higher rates of imaging test orders
- there was a lower rate of pathology test orders in Capital Cities and higher rates of pathology test orders across the rural and remote zones.

ASGC Remoteness

Table 5.3(b) provides an overview of the content of encounters across ASGC categories. All reported differences are significant ($p<0.05$) unless otherwise stated. Compared with the national average:

- patients presented with fewer RFEs in Outer Regional Australia
- Inner Regional Australia had a larger number of problems managed at the encounter
- the rate of medications prescribed, advised over-the-counter or GP-supplied in Inner Regional Australia was significantly lower
- there was a higher rate of referrals given in Very Remote Australia
- there was a higher rate of pathology test orders in Outer Regional Australia and Remote Australia. Major Cities had a lower rate of pathology test orders.

Table 5.3(a): Summary of morbidity and management by RRMA

Variable	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
	Rate per 100 encounters,[(a)] 95% confidence interval, column specific							
Reasons for encounter	151.5 (150.7–152.2)	149.7 (147.4–152.0)	149.0 (146.6–151.4)	**146.7 (144.3–149.0)**	**147.9 (146.2–149.6)**	144.6 (138.6–150.6)	**142.8 (137.2–148.3)**	150.3 (149.7–150.9)
Problems managed	147.7 (146.8–148.6)	147.9 (145.3–150.4)	**152.6 (149.8–155.4)**	149.0 (146.2–151.7)	151.1 (149.1–153.1)	143.1 (136.6–149.5)	142.6 (136.5–148.6)	148.4 (147.7–149.1)
	Rate per 100 problems,[(a)] 95% confidence interval, column specific							
Variable	**(*n*=589,295)**	**(*n*=66,543)**	**(*n*=57,219)**	**(*n*=56,159)**	**(*n*=109,404)**	**(*n*=5,579)**	**(*n*=9,124)**	**(*n*=893,323)**
Medications	71.6 (70.9–72.2)	**74.0 (72.1–76.0)**	69.4 (67.4–71.3)	69.2 (67.2–71.3)	71.1 (69.5–72.6)	71.4 (63.9–78.8)	74.3 (69.1–79.6)	71.4 (70.9–72.0)
Other treatments	35.5 (34.8–36.1)	34.6 (32.5–36.6)	35.2 (33.3–37.1)	**32.2 (30.5–33.8)**	**31.9 (30.6–33.2)**	33.2 (26.6–39.8)	37.9 (31.8–43.9)	34.8 (34.2–35.3)
Referrals	8.0 (7.8–8.1)	8.4 (7.9–9.0)	7.5 (7.1–7.9)	8.2 (7.8–8.6)	8.1 (7.7–8.4)	9.8 (8.1–11.5)	9.3 (8.1–10.5)	8.0 (7.9–8.2)
Number of problems 1999–2004[+]	**(*n*=490,244)**	**(*n*=55,517)**	**(*n*=48,071)**	**(*n*=47,525)**	**(*n*=93,497)**	**(*n*=4,850)**	**(*n*=8,436)**	**(*n*=748,140)**
Imaging[+]	5.3 (5.2–5.5)	**6.3 (5.8–6.9)**	5.6 (4.9–6.4)	**6.1 (5.8–6.5)**	6.0 (5.7–6.3)	**7.2 (5.8–8.7)**	5.8 (4.9–6.6)	5.6 (5.5–5.7)
Number of problems 2000–2004[++]	**(*n*=389,383)**	**(*n*=44,073)**	**(*n*=35,724)**	**(*n*=37,622)**	**(*n*=73,513)**	**(*n*=4,302)**	**(*n*=6,947)**	**(*n*=591,564)**
Pathology[++]	**22.2 (21.6–22.7)**	24.6 (22.8–26.3)	**25.6 (24.0–27.3)**	**25.6 (24.1–27.1)**	**26.2 (25.0–27.4)**	**32.8 (27.6–37.9)**	**29.0 (24.0–34.0)**	23.4 (23.0–23.9)

(a) Figures will not total 100 as multiple events may occur at each encounter or for the management of each problem at encounter.
\+ Limited to April 1999 to March 2004 inclusive due to older imaging codes in Year 1.
++ Limited to April 2000 to March 2004 inclusive due to older pathology codes in Years 1 and 2.
Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 5.3(b): Summary of morbidity and management by ASGC Remoteness

Variable	Major Cities (*n*=418,000)	Inner Regional Australia (*n*=115,700)	Outer Regional Australia (*n*=57,500)	Remote Australia (*n*=8,000)	Very Remote Australia (*n*=2,700)	Australia (*n*=601,900)
	Rate per 100 encounters,[(a)] 95% confidence interval, column specific					
Reasons for encounter	151.5 (150.7–152.3)	148.4 (147.0–149.8)	**146.2 (144.4–147.9)**	148.2 (142.4–153.9)	141.9 (132.1–151.7)	150.3 (149.7–150.9)
Problems managed	147.6 146.7–148.4)	**152.1 (150.5–153.7)**	147.4 (145.4–149.5)	149.1 (142.9–155.2)	142.3 (131.7–153.0)	148.4 (147.7–149.1)
	Rate per 100 problems,[(a)] 95% confidence interval, column specific					
Variable	**(*n*=616,852)**	**(*n*=175,944)**	**(*n*=84,760)**	**(*n*=11,924)**	**(*n*=3,843)**	**(*n*=893,323)**
Medications	72.0 (71.4–72.6)	**68.8 (67.6–69.9)**	72.8 (71.1–74.5)	70.0 (64.3–75.7)	79.2 (70.1–88.2)	71.4 (70.9–72.0)
Other treatments	35.4 (34.8–36.0)	33.4 (32.4–34.4)	32.7 (31.1–34.2)	33.4 (28.8–38.1)	45.6 (34.6–56.5)	34.8 (34.2–35.3)
Referrals	8.0 (7.9–8.2)	8.0 (7.7–8.2)	8.1 (7.7–8.4)	9.1 (8.0–10.2)	**10.3 (8.3–12.3)**	8.0 (7.9–8.2)
Number of problems 1999–2004[+]	**(*n*=513,614)**	**(*n*=149,745)**	**(*n*=71,073)**	**(*n*=10,122)**	**(*n*=3,586)**	**(*n*=748,140)**
Imaging[+]	5.4 (5.3–5.6)	5.9 (5.6–6.2)	6.0 (5.7–6.3)	6.0 (5.1–6.9)	5.2 (3.8–6.5)	5.6 (5.5–5.7)
Number of problems 2000–2004[++]	**(*n*=407,482)**	**(*n*=116,378)**	**(*n*=56,160)**	**(*n*=8,248)**	**(*n*=3,296)**	**(*n*=591,564)**
Pathology[++]	**22.3 (21.8–22.9)**	24.7 (23.9–25.5)	**27.4 (25.9–28.8)**	**28.8 (24.8–32.9)**	31.8 (23.7–39.9)	23.4 (23.0–23.9)

(a) Figures will not total 100 as multiple events may occur at each encounter or for the management of each problem at encounter.
\+ Limited to April 1999 to March 2004 inclusive due to older imaging codes in Year 1.
++ Limited to April 2000 to March 2004 inclusive due to older pathology codes in Years 1 and 2.
Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

6 The patients

This chapter describes differences in patient characteristics and reasons for encounter across RRMA and ASGC Remoteness categories. For a summary of findings in each individual RRMA category or trends with ASGC Remoteness, please refer to Chapter 11—Summary of results.

6.1 Patient characteristics

The characteristics of the patients at GP encounters in each RRMA category are described in Table 6.1(a) and in each ASGC category in Table 6.1(b). The results reported below are all statistically significant ($p<0.05$) unless otherwise stated.

RRMA

Sex

- Nationally, a larger proportion of encounters were with female patients. This was consistent across all RRMA categories.
- The relative proportion of encounters with male patients was larger in Other Rural Areas and in Other Remote Areas, when compared with the national average.

Age

Compared with the national average:

- there was a larger proportion of infants (aged <1 year) in Large Rural Centres and Remote Centres
- there was a smaller proportion of children aged 1–4 years in Small Rural Centres and Other Rural Areas and a larger proportion in the remote zone
- there was a larger proportion of children aged 5–14 years in Other Rural Areas and the remote zone
- there was a smaller proportion of adolescent/young adult patients aged 15–24 years in Other Rural Areas
- there was a larger proportion of adults of aged 25–44 years in Capital Cities and the remote zone
- there was a smaller proportion of older patients of 65–74 years in Capital Cities
- there was a larger proportion of patients 65 years and older in Small Rural Centres and Other Rural Areas, and a smaller proportion in the remote zone.

New patient to the practice

- Compared with the national average new patients accounted for a larger proportion of encounters in Other Metropolitan Centres and Remote Centres, and a smaller proportion of encounters in Other Rural Areas.

Card holders

- The proportion of patients who held a Commonwealth concession card was higher in Other Metropolitan Centres and the rural zone but decreased markedly in the remote zone compared with the national average.
- The proportion of patients holding a Repatriation health card was greater than average in the rural zone and markedly lower in the remote zone.

Non-English-speaking background

Patients from a non-English-speaking background (NESB) were those who self-reported that the primary language spoken at home was not English. Compared with the national average:

- a larger proportion of encounters in Capital Cities, and a smaller proportions of encounters in Other Metropolitan Centres, the rural zone and Remote Centres were with NESB patients .

Aboriginal and/or Torres Strait Islander

- There was a larger proportion of encounters with Aboriginal and Torres Strait Islander patients in the rural and remote zones compared with the national average. The proportion of encounters with Aboriginal and Torres Strait Islander patients in the remote zone was around 7 times that of the rural zone and 30 times that of the metropolitan zone.

ASGC Remoteness

Compared with the national average:

- In Inner Regional Australia there was a larger proportion of encounters with older patients (65 years and over)
- a smaller proportion of encounters in Inner Regional Australia and a larger proportion in Remote Australia were with new patients
- the proportion of encounters with patients from a non-English-speaking background was smaller in Inner Regional, Outer Regional and Remote Australia and although not statistically significant, Very Remote Australia had the highest proportion of encounters with patients from a non-English-speaking background
- the proportion of patients holding a Commonwealth concession card was larger in Inner and Outer Regional Australia.

Trends with increasing remoteness are described below.

- The proportion of encounters with male patients increased significantly with remoteness across Outer Regional, Remote and Very Remote Australia.
- The age of patients decreased significantly with increasing remoteness across Outer Regional, Remote and Very Remote Australia.
- Inner Regional Australia had the greatest proportion of encounters with patients who held a Repatriation health concession card, followed by a significant decreasing trend with increased remoteness across Outer Regional, Remote and Very Remote Australia.
- The proportion of encounters with Aboriginal or Torres Strait Islander patients increased significantly with increasing remoteness.

Table 6.1(a): Characteristics of the patients at encounters by RRMA

Patient characteristics	Per cent of encounters,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
Sex (missing)	(4,182)	(524)	(433)	(440)	(896)	(44)	(84)	(6,603)
Males	40.7 (40.3–41.1)	40.2 (39.0–41.4)	39.6 (38.3–41.0)	40.0 (38.7–41.3)	**42.4 (41.6–43.3)**	42.3 (39.2–45.4)	**44.9 (42.2–47.6)**	40.8 (40.5–41.2)
Females	59.3 (58.9–59.7)	59.8 (58.6–61.0)	60.4 (59.0–61.7)	60.0 (58.7–61.3)	**57.6 (56.7–58.4)**	57.7 (54.6–60.8)	**55.1 (52.4–57.8)**	59.2 (58.8–59.5)
Age group (missing)	(3,098)	(372)	(402)	(408)	(876)	(43)	(78)	(5,277)
<1 year	2.1 (2.0–2.1)	2.1 (1.9–2.3)	**2.5 (2.3–2.7)**	1.9 (1.7–2.1)	2.0 (1.8–2.1)	**3.1 (2.3–4.0)**	2.4 (1.8–3.0)	2.1 (2.0–2.1)
1–4 years	5.0 (4.8–5.1)	4.8 (4.5–5.1)	4.7 (4.3–5.0)	**4.0 (3.7–4.3)**	**4.1 (3.9–4.4)**	5.9 (4.7–7.0)	**5.8 (5.0–6.7)**	4.8 (4.7–4.9)
5–14 years	6.2 (6.1–6.4)	6.0 (5.6–6.4)	6.2 (5.7–6.6)	6.3 (5.9–6.6)	**6.8 (6.5–7.1)**	7.4 (6.1–8.6)	**8.4 (7.2–9.5)**	6.3 (6.2–6.4)
15–24 years	10.1 (9.9–10.3)	10.5 (9.8–11.2)	9.5 (9.0–10.1)	9.2 (8.6–9.9)	**8.3 (8.0–8.7)**	11.3 (9.7–12.8)	9.2 (8.2–10.2)	9.8 (9.7–10.0)
25–44 years	**26.5 (26.1–26.9)**	**24.0 (23.2–24.9)**	24.8 (23.8–25.7)	**23.5 (22.6–24.3)**	**22.4 (21.8–23.0)**	**33.9 (30.9–36.8)**	**30.1 (27.6–32.6)**	25.6 (25.3–25.9)
45–64 years	25.6 (25.4–25.9)	25.8 (25.1–26.5)	26.0 (25.3–26.8)	26.6 (25.8–27.3)	**27.0 (26.5–27.5)**	25.8 (23.2–28.4)	26.5 (24.7–28.3)	25.9 (25.7–26.1)
65–74 years	**11.6 (11.3–11.8)**	12.9 (12.2–13.5)	12.7 (12.0–13.4)	**13.9 (13.2–14.6)**	**14.4 (13.9–14.9)**	**6.5 (4.7–8.4)**	**9.2 (7.6–10.7)**	12.2 (12.0–12.3)
75+ years	13.0 (12.6–13.4)	14.0 (13.0–15.0)	13.6 (12.6–14.6)	**14.6 (13.7–15.6)**	**15.0 (14.4–15.7)**	**6.3 (3.5–9.1)**	**8.5 (6.5–10.5)**	13.4 (13.1–13.6)

(continued)

Table 6.1(a) (continued): Characteristics of the patients at encounters by RRMA

Patient characteristics	Per cent of encounters,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
Other characteristics								
New patient to practice	9.3 (9.0–9.7)	**11.8 (10.4–13.1)**	9.2 (8.2–10.3)	8.4 (7.4–9.4)	**7.8 (7.2–8.4)**	**17.4 (11.3–23.5)**	11.7 (8.2–15.3)	9.4 (9.1–9.6)
Commonwealth concession card	**36.8 (36.1–37.4)**	**43.6 (41.7–45.5)**	**44.5 (42.7–46.4)**	**47.4 (45.4–49.4)**	**47.0 (45.6–48.3)**	**29.3 (21.9–36.7)**	34.7 (28.4–40.9)	39.6 (39.0–40.1)
Repatriation health card	**3.2 (3.1–3.3)**	3.8 (3.4–4.2)	**4.3 (4.0–4.7)**	**4.6 (4.2–5.0)**	**4.1 (3.8–4.3)**	2.4 (1.0–3.9)	**2.0 (1.4–2.5)**	3.5 (3.4–3.6)
Non-English-speaking background	**11.9 (11.2–12.5)**	**4.1 (3.3–4.8)**	**1.7 (1.1–2.4)**	**1.4 (1.0–1.8)**	**1.4 (1.1–1.7)**	**3.5 (1.0–6.0)**	10.2 (4.0–16.4)	8.7 (8.2–9.2)
Aboriginal person and/or Torres Strait Islander	**0.5 (0.5–0.6)**	**0.7 (0.4–1.0)**	2.1 (1.2–2.9)	**2.8 (1.8–3.8)**	**2.1 (1.5–2.7)**	**15.2 (6.2–24.1)**	**18.6 (11.4–25.9)**	1.3 (1.1–1.4)

(a) Missing data removed.

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 6.1(b): Characteristics of the patients at encounters by ASGC Remoteness

Patient characteristics	Per cent of encounters,[(a)] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	Inner Regional Australia (*n*=115,700)	Outer Regional Australia (*n*=57,500)	Remote Australia (*n*=8,000)	Very Remote Australia (*n*=2,700)	Australia (*n*=601,900)
Sex (missing)	(4,389)	(1,353)	(720)	(102)	(39)	(6,603)
Males	40.7 (40.3–41.1)	40.3 (39.6–41.0)	**42.6 (41.6–43.6)**	**43.7 (41.5–45.8)**	44.8 (40.2–49.5)	40.8 (40.5–41.2)
Females	59.3 (58.9–59.7)	59.7 (59.0–60.4)	**57.4 (56.4–58.4)**	**56.3 (54.2–58.5)**	55.2 (50.5–59.8)	59.2 (58.8–59.5)
Age group (missing)	(3,262)	(1,267)	(604)	(107)	(37)	(5,277)
<1 year	2.1 (2.0–2.1)	2.1 (2.0–2.3)	2.1 (1.9–2.3)	2.3 (1.9–2.6)	3.2 (2.0–4.4)	2.1 (2.0–2.1)
1–4 years	5.0 (4.8–5.1)	**4.2 (4.0–4.4)**	4.7 (4.4–5.0)	4.9 (4.2–5.6)	**6.8 (5.3–8.3)**	4.8 (4.7–4.9)
5–14 years	6.2 (6.0–6.3)	6.4 (6.2–6.6)	**6.9 (6.5–7.2)**	**7.6 (6.6–8.6)**	7.7 (5.7–9.7)	6.3 (6.2–6.4)
15–24 years	10.2 (9.9–10.4)	**8.9 (8.6–9.3)**	**9.2 (8.7–9.6)**	9.7 (8.8–10.7)	10.1 (8.4–11.9)	9.8 (9.7–10.0)
25–44 years	26.3 (25.9–26.6)	**23.0 (22.4–23.5)**	25.2 (24.5–25.9)	**29.4 (27.1–31.7)**	**31.8 (27.4–36.2)**	25.6 (25.3–25.9)
45–64 years	25.6 (25.3–25.8)	26.6 (26.1–27.0)	**26.9 (26.2–27.5)**	25.9 (24.4–27.4)	26.8 (23.4–30.1)	25.9 (25.7–26.1)
65–74 years	**11.7 (11.5–11.9)**	**13.9 (13.5–14.3)**	12.5 (12.0–13.0)	10.6 (9.0–12.1)	**7.0 (4.5–9.4)**	12.2 (12.0–12.3)
75+ years	13.1 (12.8–13.5)	**14.9 (14.4–15.5)**	12.6 (11.9–13.3)	**9.7 (7.6–11.7)**	**6.7 (3.1–10.3)**	13.4 (13.1–13.6)

(continued)

Table 6.1(b) (continued): Characteristics of the patients at encounters by ASGC Remoteness

Patient characteristics	Per cent of encounters,[(a)] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	**Inner Regional Australia (*n*=115,700)**	**Outer Regional Australia (*n*=57,500)**	**Remote Australia (*n*=8,000)**	**Very Remote Australia (*n*=2,700)**	**Australia (*n*=601,900)**
Other characteristics						
New patient to practice	9.6 (9.2–10.0)	**8.1 (7.6–8.6)**	9.3 (8.5–10.1)	**14.1 (10.3–17.9)**	12.2 (7.5–16.9)	9.4 (9.1–9.6)
Commonwealth concession card	**37.2 (36.5–37.8)**	**46.5 (45.4–47.6)**	**43.7 (42.1–45.4)**	37.4 (32.3–42.6)	33.6 (22.7–44.4)	39.6 (39.0–40.1)
Repatriation health card	**3.2 (3.1–3.3)**	**4.6 (4.3–4.8)**	3.6 (3.3–3.9)	**2.6 (1.9–3.2)**	**1.3 (0.5–2.0)**	3.5 (3.4–3.6)
Non-English-speaking background	**11.6 (11.0–12.2)**	**1.3 (1.1–1.5)**	**2.8 (2.1–3.5)**	**3.2 (1.1–5.4)**	18.2 (4.9–31.5)	8.7 (8.2–9.2)
Aboriginal person and/or Torres Strait Islander	**0.5 (0.4–0.5)**	1.2 (0.9–1.5)	**4.2 (3.2–5.1)**	**13.4 (8.1–18.6)**	**27.4 (13.1–41.8)**	1.3 (1.1–1.4)

(a) Missing data removed.

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

6.2 Patient reasons for encounter

International interest in reasons for encounter (RFEs) has been developing over the past three decades. They reflect the patient's demand for care and can provide an indication of service utilisation patterns, which may benefit from intervention on a population level.[22]

RFEs are those concerns and expectations that patients bring to the GP. Participating GPs were asked to record at least one and up to three patient RFEs in words as close as possible to those used by the patient, before the diagnostic or management process had begun. These reflect the patient's view of their reasons for consulting the GP. RFEs can be expressed in terms of one or more symptoms (e.g. 'itchy eyes', 'chest pain'), in diagnostic terms (e.g. 'about my diabetes', 'for my hypertension'), a request for a service ('I need more scripts', 'I want a referral'), an expressed fear of disease, or a need for a check-up.

Patient RFEs have a many-to-many relationship to problems managed; that is, the patient may describe multiple symptoms that relate to a single problem managed at the encounter or may describe one RFE that relates to multiple problems.

Number of RFEs at encounter

The number of RFEs presented at encounters in each RRMA category are provided in Table 6.2(a) and for each ASGC Remoteness category in Table 6.2(b).

RRMA

- As earlier reported in Chapter 5 (The encounters), there were significantly fewer RFEs described by patients at encounters in Small Rural Centres, Other Rural Areas and Other Remote Areas compared with the national average.

ASGC Remoteness

- As earlier reported in Chapter 5 (The encounters), there were significantly fewer RFEs presented on average in Outer Regional Australia.
- The proportion of encounters having only one RFE increased with increasing remoteness.

Table 6.2(a): Number of reasons for encounter, by RRMA

Number of RFEs at encounter	Per cent of encounters, 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
One RFE	60.2 (59.7–60.7)	61.6 (60.1–63.1)	62.0 (60.4–63.5)	**63.5 (61.9–65.1)**	**62.8 (61.7–63.9)**	64.8 (60.6–69.1)	**66.3 (62.7–69.9)**	61.0 (60.6–61.4)
Two RFEs	28.2 (27.9–28.5)	27.1 (26.3–28.0)	27.0 (26.1–27.9)	**26.3 (25.3–27.3)**	**26.6 (25.9–27.2)**	25.7 (22.7–28.6)	**24.6 (22.5–26.8)**	27.7 (27.4–27.9)
Three RFEs	11.6 (11.4–11.9)	11.3 (10.4–12.2)	11.0 (10.1–11.9)	**10.2 (9.3–11.0)**	10.7 (10.0–11.3)	9.5 (7.8–11.2)	**9.1 (7.2–10.9)**	11.3 (11.1–11.6)
Total RFEs	**151.5 (150.7–152.2)**	**149.7 (147.4–152.0)**	**149.0 (146.6–151.4)**	**146.7 (144.3–149.0)**	**147.9 (146.2–149.6)**	**144.6 (138.6–150.6)**	**142.8 (137.2–148.3)**	**150.3 (149.7–150.9)**

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
RFE—reason for encounter.

Table 6.2(b): Number of reasons for encounter, by ASGC Remoteness

Number of RFEs at encounter	Per cent of encounters, 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	Inner Regional Australia (*n*=115,700)	Outer Regional Australia (*n*=57,500)	Remote Australia (*n*=8,000)	Very Remote Australia (*n*=2,700)	Australia (*n*=601,900)
One RFE	60.2 (59.7–60.7)	**62.4 (61.5–63.3)**	**63.8 (62.6–65.0)**	63.1 (59.5–66.7)	67.2 (61.2–73.2)	61.0 (60.6–61.4)
Two RFEs	28.2 (27.9–28.5)	**26.8 (26.3–27.3)**	**26.2 (25.5–26.9)**	25.7 (23.7–27.6)	**23.7 (20.5–26.8)**	27.7 (27.4–27.9)
Three RFEs	11.7 (11.4–12.0)	10.8 (10.3–11.3)	**10.0 (9.3–10.6)**	11.2 (9.0–13.5)	9.1 (5.8–12.4)	11.3 (11.1–11.6)
Total RFEs	**151.5 (150.7–152.3)**	**148.4 (147.0–149.8)**	**146.2 (144.4–147.9)**	**148.2 (142.4–153.9)**	**141.9 (132.1–151.7)**	**150.3 (149.7–150.9)**

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
RFE—reason for encounter.

Reasons for encounter by ICPC-2 component

For RFEs associated with each component of the ICPC, rates are reported in Table 6.3(a) for the RRMA categories and in Table 6.3(b) for the ASGC Remoteness categories. The results discussed below are compared with the national average and are all significant ($p<0.05$) unless otherwise stated.

RRMA

- RFEs described in terms of symptoms and complaints were most frequent in Capital Cities and steadily decreased across the rural and remote zones.
- Visits to receive test results were most common in Capital Cities and steadily decreased across the rural and remote zones.
- For every ten encounters about three RFEs were described in diagnostic terms (e.g. 'about my diabetes') and there were no significant differences among the RRMA categories.
- Rates of request for medications, treatments and therapeutics (usually requests for repeat prescriptions) were most frequent in Other Rural Areas and least frequent in the remote zone.
- Requests for referrals were more common in Small Rural Centres and Other Rural Areas.
- Requests for results of tests and investigations were less common in Other Rural and Other Remote Areas.

ASGC Remoteness

- RFEs described in terms of symptoms and complaints were more frequent in Major Cities, and significantly less frequent in Outer Regional Australia.
- Rates of requests for medications, treatment and therapeutics, and requests for referrals were higher in Inner Regional Australia.
- The rate of requests for test results decreased significantly with increasing remoteness.

Table 6.3(a): Distribution of patient reasons for encounter across ICPC-2 components, by RRMA

ICPC-2 component	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
	Rate per 100 encounters,[(a)] 95% confidence interval, column specific							
Symptoms & complaints	**74.3 (73.5–75.1)**	71.8 (69.5–74.1)	**68.6 (66.4–70.8)**	**65.2 (63.0–67.3)**	**66.3 (64.8–67.9)**	69.5 (62.7–76.3)	67.9 (62.7–73.2)	72.1 (71.5–72.7)
Diagnoses, diseases	27.7 (27.1–28.3)	28.0 (26.2–29.9)	28.3 (26.3–30.3)	29.0 (27.1–30.9)	28.6 (27.2–30.0)	30.4 (23.2–37.7)	29.6 (25.0–34.2)	28.0 (27.5–28.5)
Diagnostic & preventive procedures	24.1 (23.7–24.5)	23.9 (22.6–25.2)	25.0 (23.7–26.2)	24.7 (23.3–26.0)	25.3 (24.3–26.3)	20.9 (17.4–24.4)	21.7 (19.1–24.3)	24.3 (23.9–24.6)
Medications, treatments & therapeutics	12.2 (11.9–12.5)	13.1 (12.3–13.9)	13.0 (12.2–13.8)	13.5 (12.7–14.4)	**14.0 (13.3–14.7)**	10.9 (8.4–13.5)	11.2 (8.8–13.6)	12.6 (12.4–12.8)
Referral & other RFE	6.7 (6.5–6.9)	6.8 (6.1–7.5)	7.8 (7.1–8.5)	**8.2 (7.4–8.9)**	**8.0 (7.5–8.5)**	7.3 (5.1–9.4)	7.9 (5.8–10.0)	7.1 (6.9–7.2)
Results	5.0 (4.9–5.2)	4.7 (4.3–5.1)	4.6 (4.2–5.1)	4.4 (4.0–4.8)	**4.2 (3.9–4.5)**	3.9 (2.7–5.0)	**3.3 (2.4–4.3)**	4.8 (4.7–4.9)
Administrative	1.4 (1.4–1.5)	1.4 (1.2–1.6)	1.7 (1.5–1.9)	1.7 (1.5–2.0)	1.5 (1.4–1.6)	1.8 (1.2–2.4)	1.1 (0.7–1.5)	1.5 (1.4–1.5)
Total RFEs	**151.5 (150.7–152.2)**	**149.7 (147.4–152.0)**	**149.0 (146.6–151.4)**	**146.7 (144.3–149.0)**	**147.9 (146.2–149.6)**	**144.6 (138.6–150.6)**	**142.8 (137.2–148.3)**	**150.3 (149.7–150.9)**

(a) Figures do not total 100 as more than one RFE can be recorded at each encounter.

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
RFE—reason for encounter.

Table 6.3(b): Distribution of patient reasons for encounter across ICPC-2 components, by ASGC Remoteness

	Rate per 100 encounters,[a] 95% confidence interval, column specific					
ICPC-2 component	**Major Cities (*n*=418,000)**	**Inner Regional Australia (*n*=115,700)**	**Outer Regional Australia (*n*=57,500)**	**Remote Australia (*n*=8,000)**	**Very Remote Australia (*n*=2,700)**	**Australia (*n*=601,900)**
Symptoms & complaints	**74.3 (73.6–75.1)**	66.4 (65.2–76.6)	**68.3 (66.5–70.1)**	67.3 (62.4–72.3)	68.2 (58.3–78.0)	72.1 (71.5–72.7)
Diagnoses, diseases	27.9 (27.3–28.5)	28.1 (27.0–29.2)	27.8 (26.2–29.4)	32.9 (27.5–38.3)	31.2 (23.1–39.2)	28.0 (27.5–28.5)
Diagnostic & preventive procedures	24.1 (23.6–24.5)	**25.4 (24.7–26.2)**	23.8 (22.8–24.9)	24.2 (21.3–27.0)	19.7 (15.3–24.1)	24.3 (23.9–24.6)
Medications, treatments & therapeutics	12.2 (11.9–12.4)	**13.9 (13.4–14.4)**	13.2 (12.4–13.9)	12.1 (10.1–14.1)	9.5 (5.6–13.3)	12.6 (12.4–12.8)
Referral & other RFE	6.7 (6.5–6.9)	**8.2 (7.8–8.6)**	7.6 (7.1–8.2)	6.8 (5.4–8.2)	8.8 (4.3–13.3)	7.1 (6.9–7.2)
Results	5.0 (4.9–5.2)	4.6 (4.4–4.9)	**4.0 (3.6–4.3)**	**3.5 (2.7–4.3)**	3.1 (1.6–4.7)	4.8 (4.7–4.9)
Administrative	1.4 (1.3–1.4)	**1.7 (1.6–1.8)**	1.5 (1.3–1.6)	1.3 (1.0–1.7)	1.5 (0.7–2.2)	1.5 (1.4–1.5)
Total RFEs	**151.5 (150.7–152.3)**	**148.4 (147.0–149.8)**	**146.2 (144.4–147.9)**	**148.2 (142.4–153.9)**	**141.9 (132.1–151.7)**	**150.3 (149.7–150.9)**

(a) Figures do not total 100 as more than one RFE can be recorded at each encounter.

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
RFE—reason for encounter.

Reasons for encounter by ICPC-2 chapter and common individual RFEs

RRMA

Presentation rates for RFEs classified in each ICPC-2 chapter, and for those individual RFEs that are significantly different from the national average, are presented for RRMA in Table 6.4(a). The results reported below are compared with the national average and are all statistically significant ($p<0.05$) unless otherwise stated.

- RFEs related to the respiratory system were more common in Capital Cities and decreased across the rural and remote zones.
  - Presentations of cough and throat complaints were more frequent in Capital Cities, but less frequent in the rural zone (Large Rural Centres, Small Rural Centres and Other Rural Areas).
  - Presentations of upper respiratory tract infections (usually described as 'a cold') were more common in Capital Cities, and less common in Small Rural Centres, Other Rural Areas and Other Remote Areas.
  - Sneeze/nasal congestion presented less frequently in the rural zone and Other Remote Areas.
- RFEs related to the skin presented at a higher rate in Large Rural Centres and Other Rural Areas. An observed higher rate in Other Remote Areas was not statistically significant, possibly due to the smaller sample size.
  - Rash, the most common individual skin-related RFE, presented less frequently in Small Rural Centres and Other Rural Areas. Unspecified skin complaints presented at higher rates in the rural zone.
- In Remote Centres, RFEs related to the circulatory system presented at lower rates and RFEs associated with the ear arose at a higher rate.
- Neurological issues presented at lower rates in Small Rural Centres and Other Rural Areas.
- RFEs related to pregnancy/family planning were given at a lower rate in Capital Cities and at a higher rate in Small Rural Centres, Other Rural Areas and the remote zone. In Remote Centres patients described pregnancy and family planning issues at double the average rate.
  - RFEs related to contraception (other than oral) arose at a higher rate (double the average rate) in Very Remote Areas.
- RFEs of a psychological nature and those associated with the female genital system were less frequent in Other Rural Areas and in Other Remote Areas.
  - Depression was less commonly reported as a RFE in Other Remote Areas but more common in Large Rural Centres.
  - Sleep disturbance was less often given as a RFE in Large Rural Centres and Other Rural Areas.
  - Anxiety was given as a RFE less often in Other Rural Areas.
- RFEs related to the digestive system, particularly diarrhoea and vomiting, were significantly less common in both Small Rural Centres and Other Rural Areas.
- RFEs related to the female genital system were significantly less common in Other Rural and Other Remote Areas.

- Diabetes as an RFE presented significantly more often in Other Rural Areas and the rate remained high in Remote Centres and Other Remote Areas.
- RFEs related to the eye and to the blood/blood-forming organs were significantly less common in Small Rural Centres.
- Presentations of fever were significantly more common in Capital Cities, and significantly less common in the rural zone.
- Weakness/tiredness was a less common RFE in Other Rural Areas.
- Undifferentiated chest pain was significantly more common as a RFE in Other Remote Areas.
- Request for a check-up (either of a specific body system or a general check) was the most common RFE in all categories, but arose significantly more often in the rural zone.
- Presentations for receipt of test results were less common in Other Rural and Other Remote Areas.
- RFEs related to immunisation and vaccination were significantly less common in both Remote Centres and Other Remote Areas.
- There were no significant differences across RRMA categories in the rate of present.ation of issues related to the musculoskeletal, urological and male genital systems or of a social nature.

ASGC Remoteness

Presentation rates for RFEs classified in each ICPC-2 chapter, and for those individual RFEs that were significantly different from the national average, are presented for ASGC in Table 6.4(b). The results reported below are all statistically significant ($p<0.05$) unless otherwise stated. Compared with the national average:

- RFEs classified in the ICPC-2 General and Unspecific chapter arose at a higher rate in Inner Regional Australia
- the rates of RFEs related to all types of check-up and for prescriptions were higher in Inner Regional Australia
- fever was reported at a lower rate in Inner Regional Australia
- there was a significantly higher rate of RFEs related to the respiratory system in Major Cities, particularly, cough, throat complaint and URTI
- RFEs related to the skin were reported at higher rates in Inner and Outer Regional Australia and Remote Australia
- there were higher rates of RFEs related to 'other contraception' in Very Remote Australia, three times the national average
- there was a lower rate of RFEs for depression in Very Remote Australia
- the rate of RFEs related to the female genital system was lower in Very Remote Australia.

Trends with increasing remoteness are listed below.

- The rate of RFEs related to the circulatory system, neurological system and female genital system, along with the rate of RFEs for immunisations and test results, all decreased with increasing remoteness.
- The rate of RFEs for diabetes increased with increasing remoteness.

Table 6.4(a): Rates of patient reasons for encounter across ICPC-2 chapters and selected individual RFEs, by RRMA

ICPC-2 chapter and concept	Rate per 100 encounters,[a] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
General & unspecified	31.8 (31.4–32.3)	32.2 (30.8–33.5)	33.1 (31.7–34.4)	32.6 (31.2–34.0)	33.3 (32.3–34.4)	27.8 (23.6–32.0)	30.2 (27.2–33.1)	32.1 (31.8–32.5)
Fever	**2.1 (2.0–2.2)**	1.8 (1.5–2.0)	**1.5 (1.2–1.7)**	**1.2 (1.1–1.4)**	**1.4 (1.2–1.5)**	2.4 (1.4–3.3)	1.5 (1.1–2.0)	1.9 (1.8–1.9)
Weakness/tiredness	1.7 (1.6–1.7)	1.6 (1.3–1.8)	1.5 (1.3–1.7)	1.4 (1.2–1.6)	**1.3 (1.2–1.4)**	1.5 (1.0–2.0)	1.2 (0.8–1.5)	1.6 (1.5–1.6)
Chest pain NOS	1.2 (1.1–1.2)	1.3 (1.1–1.4)	1.2 (1.1–1.4)	1.3 (1.2–1.5)	1.4 (1.3–1.5)	1.0 (0.5–1.4)	**1.9 (1.5–2.3)**	1.2 (1.2–1.3)
Respiratory	**23.7 (23.3–24.0)**	21.5 (20.4–22.5)	**19.7 (18.7–20.7)**	**19.1 (18.1–20.1)**	**19.1 (18.4–19.8)**	**19.3 (16.5–22.0)**	**18.4 (16.2–20.7)**	22.3 (22.1–22.6)
Cough	**6.5 (6.3–6.6)**	6.0 (5.5–6.4)	**5.4 (4.9–5.8)**	**4.8 (4.3–5.2)**	**5.0 (4.7–5.3)**	6.0 (4.5–7.5)	4.9 (3.9–5.9)	6.1 (5.9–6.2)
Throat complaint	**3.9 (3.7–4.0)**	**3.0 (2.7–3.3)**	**2.6 (2.3–2.8)**	**2.5 (2.2–2.8)**	**2.6 (2.4–2.8)**	2.7 (1.8–3.6)	**2.5 (1.9–3.0)**	3.5 (3.4–3.5)
Upper respiratory tract infection	**2.5 (2.4–2.6)**	2.0 (1.7–2.3)	2.0 (1.7–2.3)	**1.7 (1.5–1.9)**	**1.4 (1.3–1.6)**	2.2 (1.3–3.0)	**1.4 (0.8–1.9)**	2.3 (2.2–2.3)
Sneeze/nasal congestion	1.5 (1.4–1.6)	1.2 (1.0–1.4)	**0.8 (0.7–1.0)**	**0.8 (0.6–0.9)**	**0.9 (0.7–1.0)**	0.9 (0.4–1.3)	**0.7 (0.4–1.1)**	1.3 (1.3–1.4)
Musculoskeletal	16.8 (16.5–17.1)	16.5 (15.8–17.2)	16.5 (15.7–17.2)	16.5 (15.8–17.1)	17.3 (16.7–17.8)	15.3 (13.3–17.2)	17.5 (15.8–19.2)	16.8 (16.5–17.0)
Skin	14.6 (14.3–14.8)	15.6 (14.7–16.5)	**17.1 (15.9–18.2)**	15.1 (14.5–15.8)	**15.8 (15.3–16.2)**	15.1 (13.6–16.5)	16.6 (15.1–18.0)	15.0 (14.8–15.2)
Rash*	2.8 (2.7–2.9)	2.9 (2.7–3.1)	2.8 (2.6–3.1)	**2.4 (2.2–2.6)**	**2.4 (2.2–2.5)**	2.4 (1.8–2.9)	2.4 (1.9–2.9)	2.7 (2.7–2.8)
Skin complaint	1.3 (1.2–1.3)	1.4 (1.2–1.5)	**1.7 (1.5–2.0)**	**1.7 (1.5–1.8)**	**1.7 (1.6–1.8)**	1.5 (0.9–2.1)	1.8 (1.3–2.2)	1.4 (1.3–1.4)
Circulatory	11.3 (11.1–11.6)	11.3 (10.5–12.0)	10.6 (9.8–11.4)	11.2 (10.5–12.0)	11.6 (11.1–12.2)	**7.3 (5.4–9.2)**	10.4 (8.6–12.2)	11.3 (11.1–11.5)

(continued)

Table 6.4(a) (continued): Rates of patient reasons for encounter across ICPC-2 chapters and selected individual RFEs, by RRMA

ICPC-2 chapter and concept	Rate per 100 encounters,[a] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
Digestive	10.6 (10.5–10.8)	10.0 (9.5–10.5)	9.9 (9.4–10.4)	**9.5 (9.0–9.9)**	**9.7 (9.4–10.1)**	10.4 (8.9–11.9)	10.4 (9.2–11.5)	10.4 (10.2–10.5)
Diarrhoea	1.4 (1.4–1.5)	1.2 (1.1–1.4)	1.2 (1.1–1.4)	**0.9 (0.8–1.0)**	**1.1 (1.0–1.1)**	1.8 (1.2–2.4)	1.5 (1.0–1.9)	1.3 (1.3–1.4)
Vomiting	1.1 (1.1–1.2)	1.1 (1.0–1.3)	1.1 (1.0–1.2)	0.9 (0.7–1.0)	**0.8 (0.8–0.9)**	1.3 (0.9–1.8)	1.1 (0.7–1.5)	1.1 (1.0–1.1)
Psychological	8.2 (7.9–8.4)	8.2 (7.2–9.1)	7.9 (7.3–8.5)	8.2 (7.5–9.0)	**7.0 (6.7–7.3)**	9.2 (7.0–11.3)	**5.4 (4.2–6.6)**	8.0 (7.8–8.2)
Depression*	2.0 (1.9–2.1)	2.1 (1.8–2.3)	**2.4 (2.2–2.6)**	2.3 (2.0–2.7)	1.9 (1.8–2.0)	2.3 (1.5–3.1)	**1.5 (1.1–1.9)**	2.1 (2.0–2.1)
Sleep disturbance	1.3 (1.2–1.3)	1.1 (0.9–1.2)	**0.9 (0.8–1.0)**	1.2 (1.0–1.3)	**1.0 (0.9–1.1)**	1.3 (0.9–1.7)	0.7 (0.4–1.0)	1.2 (1.2–1.2)
Anxiety*	1.1 (1.1–1.2)	1.2 (1.0–1.5)	1.0 (0.8–1.1)	1.1 (0.9–1.3)	**0.8 (0.8–0.9)**	0.7 (0.3–1.2)	0.6 (0.2–1.0)	1.1 (1.0–1.1)
Female genital system	6.4 (6.2–6.6)	6.8 (5.9–7.7)	6.4 (5.7–7.1)	6.2 (5.6–6.9)	**5.5 (5.0–5.9)**	6.0 (4.7–7.3)	**4.3 (3.5–5.2)**	6.3 (6.1–6.5)
Endocrine & metabolic	6.0 (5.9–6.2)	5.5 (5.1–6.0)	5.9 (5.2–6.6)	5.8 (5.4–6.3)	6.0 (5.7–6.3)	6.7 (5.1–8.4)	6.0 (5.0–7.1)	6.0 (5.8–6.1)
Diabetes*	0.9 (0.8–0.9)	0.9 (0.8–1.1)	1.0 (0.8–1.2)	1.0 (0.8–1.2)	**1.1 (1.0–1.2)**	1.2 (0.6–1.7)	1.2 (0.7–1.7)	0.9 (0.9–0.9)
Neurological	5.6 (5.5–5.7)	5.3 (5.0–5.6)	**5.1 (4.8–5.3)**	**5.0 (4.7–5.3)**	5.1 (4.9–5.4)	5.3 (4.3–6.2)	4.9 (4.1–5.7)	5.4 (5.4–5.5)
Headache	2.1 (2.0–2.1)	1.9 (1.7–2.0)	1.8 (1.6–1.9)	**1.5 (1.3–1.6)**	**1.6 (1.4–1.7)**	1.6 (1.1–2.1)	1.7 (1.3–2.1)	1.9 (1.9–2.0)
Ear	4.0 (3.9–4.1)	4.0 (3.8–4.3)	4.3 (4.0–4.6)	4.2 (3.9–4.5)	4.0 (3.8–4.2)	**5.1 (4.2–5.9)**	4.2 (3.5–4.8)	4.0 (4.0–4.1)

(continued)

Table 6.4(a) (continued): Rates of patient reasons for encounter across ICPC-2 chapters and selected individual RFEs, by RRMA

ICPC-2 chapter and concept	Rate per 100 encounters,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	**Other Metropolitan (*n*=45,000)**	**Large Rural Centre (*n*=37,500)**	**Small Rural Centre (*n*=37,700)**	**Other Rural Area (*n*=72,400)**	**Remote Centre (*n*=3,900)**	**Other Remote Area (*n*=6,400)**	**Australia (*n*=601,900)**
Pregnancy & family planning	**3.5 (3.3–3.6)**	4.3 (3.8–4.7)	4.2 (3.7–4.6)	**5.1 (4.4–5.8)**	**4.7 (4.3–5.1)**	**7.7 (6.3–9.2)**	**5.4 (4.3–6.5)**	3.9 (3.8–4.0)
Oral contraception*	1.0 (1.0–1.1)	1.1 (0.9–1.2)	0.9 (0.8–1.1)	0.8 (0.6–0.9)	**0.8 (0.6–0.8)**	1.0 (0.6–1.4)	0.8 (0.6–1.0)	1.0 (0.9–1.0)
Other contraception	0.4 (0.4–0.5)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.6 (0.3–0.9)	**1.0 (0.6–1.4)**	0.5 (0.5–0.5)
Pregnancy*	0.5 (0.5–0.5)	0.5 (0.4–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.8)	0.5 (0.4–0.6)	1.0 (0.5–1.4)	0.6 (0.3–0.9)	0.5 (0.5–0.5)
Eye	2.8 (2.7–2.8)	2.5 (2.3–2.7)	2.5 (2.3–2.7)	**2.3 (2.1–2.5)**	2.5 (2.4–2.6)	2.9 (2.2–3.5)	3.3 (2.7–3.8)	2.7 (2.6–2.7)
Urology	2.5 (2.5–2.6)	2.7 (2.5–2.9)	2.5 (2.3–2.7)	2.3 (2.1–2.5)	2.6 (2.4–2.7)	2.8 (1.8–3.8)	2.3 (1.9–2.8)	2.5 (2.5–2.6)
Blood	1.6 (1.5–1.7)	1.3 (1.2–1.5)	1.3 (1.2–1.5)	**1.2 (1.1–1.4)**	1.6 (1.4–1.7)	1.4 (0.9–1.9)	1.4 (1.0–1.8)	1.5 (1.5–1.6)
Social	1.1 (1.0–1.2)	1.0 (0.8–1.1)	1.1 (1.0–1.3)	1.1 (0.9–1.3)	1.0 (0.9–1.1)	1.4 (0.9–1.9)	1.1 (0.6–1.5)	1.1 (1.0–1.1)
Male genital system	1.0 (0.9–1.0)	1.0 (0.9–1.2)	1.0 (0.9–1.2)	1.1 (1.0–1.3)	1.2 (1.1–1.3)	1.2 (0.8–1.6)	1.1 (0.8–1.3)	1.0 (1.0–1.1)
Cross-chapter concepts								
Check-up—all*	14.1 (13.8–14.4)	14.8 (13.9–15.8)	**16.0 (15.0–17.1)**	**16.3 (15.3–17.3)**	**15.9 (15.2–16.7)**	15.5 (12.4–18.5)	14.1 (12.2–15.9)	14.7 (14.4–14.9)
Test results*	5.0 (4.9–5.2)	4.7 (4.3–5.1)	4.6 (4.2–5.1)	4.4 (4.0–4.8)	**4.2 (3.9–4.5)**	3.9 (2.7–5.0)	**3.3 (2.4–4.3)**	4.8 (4.7–4.9)
Immunisation/vaccination—all*	4.8 (4.6–5.0)	4.5 (4.0–5.1)	4.6 (4.1–5.2)	4.1 (3.5–4.7)	4.1 (3.6–4.5)	**1.6 (0.8–2.4)**	**2.6 (1.3–3.9)**	4.6 (4.4–4.8)
Total RFEs	**151.5 (150.7–152.2)**	**149.7 (147.4–152.0)**	**149.0 (146.6–151.4)**	**146.7 (144.3–149.0)**	**147.9 (146.2–149.6)**	**144.6 (138.6–150.6)**	**142.8 (137.2–148.3)**	**150.3 (149.7–150.9)**

(a) Figures do not total 100 as more than one RFE can be recorded at each encounter.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 6.4(b): Rates of patient reasons for encounter across ICPC-2 chapters and selected individual RFEs, by ASGC Remoteness

ICPC-2 chapter and concept	Rate per 100 encounters,[a] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	Inner Regional Australia (*n*=115,700)	Outer Regional Australia (*n*=57,500)	Remote Australia (*n*=8,000)	Very Remote Australia (*n*=2,700)	Australia (*n*=601,900)
General & unspecified	31.7 (31.3–32.1)	**33.6 (32.8–34.5)**	32.7 (31.5–33.8)	30.5 (28.0–33.1)	28.4 (23.6–33.2)	32.1 (31.8–32.5)
Fever	**2.1 (2.0–2.1)**	**1.3 (1.2–1.4)**	1.6 (1.4–1.8)	1.8 (1.2–2.4)	1.3 (0.6–2.1)	1.9 (1.8–1.9)
Weakness/tiredness	1.7 (1.6–1.7)	1.4 (1.3–1.5)	1.4 (1.3–1.6)	**1.2 (0.9–1.4)**	1.4 (0.8–2.0)	1.6 (1.5–1.6)
Pain, chest NOS	1.2 (1.1–1.2)	1.4 (1.3–1.4)	1.3 (1.2–1.4)	1.5 (1.2–1.8)	1.4 (0.7–2.1)	1.2 (1.2–1.3)
Respiratory	**23.7 (23.4–24.1)**	**19.2 (18.6–19.7)**	**19.5 (18.7–20.3)**	**18.1 (16.0–20.2)**	19.3 (15.4–23.3)	22.3 (22.1–22.6)
Cough	**6.5 (6.3–6.6)**	**5.0 (4.7–5.2)**	**5.4 (5.0–5.8)**	**4.5 (3.6–5.4)**	4.9 (3.2–6.7)	6.1 (5.9–6.2)
Throat complaint	**3.8 (3.7–3.9)**	**2.5 (2.4–2.7)**	**2.8 (2.6–3.0)**	**2.6 (2.1–3.2)**	**2.2 (1.4–3.0)**	3.5 (3.4–3.5)
Upper respiratory tract infection	**2.5 (2.4–2.6)**	**1.7 (1.6–1.9)**	**1.6 (1.4–1.8)**	**1.4 (1.0–1.8)**	1.7 (0.7–2.7)	2.3 (2.2–2.3)
Sneeze/nasal congestion	1.5 (1.4–1.6)	**0.8 (0.7–0.9)**	**1.0 (0.8–1.1)**	**0.8 (0.5–1.1)**	0.8 (0.3–1.4)	1.3 (1.3–1.4)
Musculoskeletal	16.8 (16.5–17.1)	16.8 (16.4–17.3)	16.7 (16.1–17.3)	17.5 (16.0–19.0)	16.2 (13.2–19.1)	16.8 (16.5–17.0)
Skin	14.6 (14.4–14.9)	**15.8 (15.3–16.3)**	**16.0 (15.5–16.5)**	**16.6 (15.4–17.8)**	15.6 (13.1–18.0)	15.0 (14.8–15.2)
Rash*	2.8 (2.8–2.9)	**2.5 (2.4–2.6)**	2.6 (2.4–2.8)	2.3 (1.9–2.7)	2.4 (1.6–3.2)	2.7 (2.7–2.8)
Skin complaint NOS	1.3 (1.2–1.3)	**1.7 (1.6–1.8)**	**1.7 (1.5–1.8)**	1.8 (1.3–2.2)	1.9 (1.2–2.7)	1.4 (1.3–1.4)
Circulatory	11.4 (11.1–11.6)	11.4 (11.0–11.8)	**10.5 (9.9–11.0)**	10.3 (8.5–12.1)	10.0 (6.2–13.7)	11.3 (11.1–11.5)

(continued)

Table 6.4(b) (continued): Rates of patient reasons for encounter across ICPC-2 chapters and selected individual RFEs, by ASGC Remoteness

	Rate per 100 encounters,[a] 95% confidence interval, column specific					
ICPC-2 chapter and concept	**Major Cities (*n*=418,000)**	**Inner Regional Australia (*n*=115,700)**	**Outer Regional Australia (*n*=57,500)**	**Remote Australia (*n*=8,000)**	**Very Remote Australia (*n*=2,700)**	**Australia (*n*=601,900)**
Digestive	10.6 (10.5–10.8)	**9.7 (9.4–10.0)**	**9.7 (9.3–10.0)**	10.3 (9.1–11.4)	11.2 (9.2–13.2)	10.4 (10.2–10.5)
Diarrhoea	1.4 (1.4–1.5)	**1.1 (1.0–1.1)**	**1.1 (1.0–1.2)**	1.5 (1.1–1.9)	2.0 (1.2–2.8)	1.3 (1.3–1.4)
Psychological	8.2 (7.9–8.4)	7.9 (7.5–8.3)	**6.9 (6.5–7.3)**	7.4 (6.0–8.7)	6.0 (3.6–8.4)	8.0 (7.8–8.2)
Depression*	2.0 (1.9–2.1)	2.2 (2.1–2.4)	1.8 (1.7–2.0)	2.4 (1.9–3.0)	**1.2 (0.5–1.8)**	2.1 (2.0–2.1)
Sleep disturbance	1.3 (1.2–1.3)	**1.0 (0.9–1.1)**	**1.0 (0.9–1.1)**	1.0 (0.8–1.3)	**0.7 (0.4–1.1)**	1.2 (1.2–1.2)
Anxiety*	1.2 (1.1–1.2)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	**0.7 (0.4–0.9)**	0.7 (0.0–1.5)	1.1 (1.0–1.1)
Female genital system	6.5 (6.2–6.7)	6.1 (5.7–6.5)	5.7 (5.2–6.1)	5.6 (4.5–6.6)	**4.4 (2.8–6.0)**	6.3 (6.1–6.5)
Endocrine & metabolic	6.0 (5.9–6.2)	5.9 (5.6–6.2)	5.6 (5.3–5.9)	6.8 (5.6–7.9)	6.8 (4.8–8.8)	6.0 (5.8–6.1)
Diabetes*	0.9 (0.8–0.9)	1.0 (0.9–1.0)	1.0 (0.9–1.2)	1.3 (0.7–1.8)	1.7 (0.7–2.7)	0.9 (0.9–0.9)
Neurological	5.6 (5.5–5.7)	**5.1 (4.9–5.3)**	**5.1 (4.8–5.3)**	4.9 (4.2–5.6)	4.7 (3.4–6.0)	5.4 (5.4–5.5)
Headache	2.1 (2.0–2.1)	**1.6 (1.5–1.7)**	**1.7 (1.5–1.8)**	**1.5 (1.2–1.8)**	1.9 (1.1–2.6)	1.9 (1.9–2.0)
Ear	4.0 (3.9–4.1)	4.1 (3.9–4.2)	4.4 (4.1–4.6)	4.6 (3.9–5.3)	4.0 (3.1–4.9)	4.0 (4.0–4.1)
Ear pain	1.6 (1.6–1.7)	1.7 (1.6–1.8)	**1.9 (1.8–2.1)**	2.0 (1.6–2.5)	1.9 (1.2–2.7)	1.7 (1.6–1.7)
Pregnancy & family planning	**3.5 (3.4–3.7)**	**4.4 (4.1–4.7)**	**4.9 (4.5–5.3)**	**6.1 (5.1–7.2)**	5.1 (3.7–6.5)	3.9 (3.8–4.0)

(continued)

Table 6.4(b) (continued): Rates of patient reasons for encounter across ICPC-2 chapters and selected individual RFEs, by ASGC Remoteness

ICPC-2 chapter and concept	Rate per 100 encounters,[(a)] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	**Inner Regional Australia (*n*=115,700)**	**Outer Regional Australia (*n*=57,500)**	**Remote Australia (*n*=8,000)**	**Very Remote Australia (*n*=2,700)**	**Australia (*n*=601,900)**
Oral contraception*	1.0 (1.0–1.1)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.8 (0.6–1.1)	0.9 (0.4–1.4)	1.0 (0.9–1.0)
Other contraception	0.5 (0.4–0.5)	0.5 (0.5–0.6)	0.6 (0.5–0.7)	0.6 (0.4–0.9)	**1.4 (0.7–2.2)**	0.5 (0.5–0.5)
Pregnancy*	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.7)	1.1 (0.6–1.5)	0.3 (0.1–0.4)	0.5 (0.5–0.5)
Eye	2.8 (2.7–2.8)	**2.4 (2.3–2.5)**	2.6 (2.4–2.8)	3.0 (2.6–3.5)	3.7 (2.7–4.7)	2.7 (2.6–2.7)
Urology	2.6 (2.5–2.6)	2.4 (2.3–2.5)	2.5 (2.3–2.6)	2.9 (2.3–3.6)	2.6 (1.9–3.3)	2.5 (2.5–2.6)
Blood	1.6 (1.5–1.7)	1.4 (1.3–1.5)	1.4 (1.3–1.6)	1.7 (1.3–2.1)	1.3 (0.8–1.8)	1.5 (1.5–1.6)
Social	1.1 (1.0–1.1)	1.2 (1.0–1.2)	1.0 (0.9–1.1)	0.9 (0.6–1.2)	1.5 (0.6–2.4)	1.1 (1.0–1.1)
Male genital system	1.0 (0.9–1.0)	1.1 (1.0–1.2)	1.2 (1.1–1.3)	0.9 (0.7–1.2)	1.1 (0.7–1.6)	1.0 (1.0–1.1)
Cross-chapter concepts						
Check-up—all*	14.1 (13.8–14.4)	**16.1 (15.5–16.6)**	15.4 (14.6–16.2)	16.1 (13.8–18.3)	12.4 (9.8–15.1)	14.7 (14.4–14.9)
Prescription—all*	10.1 (9.9–10.4)	**11.1 (10.6–11.5)**	10.4 (9.7–11.1)	9.2 (7.5–10.9)	7.2 (3.8–10.5)	10.3 (10.1–10.5)
Test results*	5.0 (4.9–5.2)	4.6 (4.4–4.9)	**4.0 (3.6–4.3)**	**3.5 (2.7–4.3)**	3.1 (1.6–4.7)	4.8 (4.7–4.9)
Immunisation/vaccination—all*	4.8 (4.6–5.0)	4.6 (4.2–4.9)	**3.5 (3.1–3.9)**	**3.0 (1.8–4.2)**	3.0 (0.3–5.6)	4.6 (4.4–4.8)
Total RFEs	**151.5 (150.7–152.3)**	**148.4 (147.0–149.8)**	**146.2 (144.4–147.9)**	**148.2 (142.4–153.9)**	**141.9 (132.1–151.7)**	**150.3 (149.7–150.9)**

(a) Figures do not total 100 as more than one RFE can be recorded at each encounter.
* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).
Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result. Results for chest pain NOS, Oral contraception and pregnancy have been included in this table for comparability with Table 6.4(a). RFEs—reasons for encounter; NOS—not otherwise specified.

7 Problems managed

A 'problem managed' is a formal statement of the provider's understanding of a health problem presented by the patient, family or community. It can be described in terms of a disease, symptom or complaint, social problem or ill-defined condition managed at the encounter. As GPs were instructed to record each problem to the most specific level possible from the information available, the problem managed may at times be limited to the level of a presenting symptom.

At each patient encounter, up to four problems could be recorded by the GP. A minimum of one problem was compulsory. The status of each problem to the patient—new (first presentation to a medical practitioner) or old (follow-up of previous problem)—was also indicated. The concept of a principal diagnosis, which is often used in hospital statistics, is not adopted in studies of general practice where multiple problem management is the norm rather than the exception. Further, the range of problems managed at the encounter often crosses multiple body systems and may include undiagnosed symptoms, psychosocial problems or chronic disease, which makes the designation of a principal diagnosis difficult. Thus the order in which the problems were recorded by the GP is not salient.

Problems were coded using ICPC-2 PLUS, an extended terminology classified according to the internationally recognised International Classification of Primary Care—Version 2 (ICPC-2). ICPC-2 has a bi-axial structure with 17 chapters on one axis and seven components on the other. Chapters are based on body systems, with additional chapters for psychological problems and for social problems (see Chapter 2—Methods).

The relative frequency of problems managed can be described in two ways: as a percentage of all problems managed in the study, or as a rate of problems managed per 100 encounters. Where groups of problems are reported (e.g. circulatory problems), it must be remembered that more than one type of problem (e.g. hypertension and oedema) may have been managed at a single encounter. In considering these results, the reader must be mindful that although a rate per 100 encounters for a single ungrouped problem (e.g. asthma, 2.6 per 100 encounters) can be regarded as equivalent to 'asthma is managed at 2.6% of encounters', such a statement cannot be made for grouped concepts (those marked with an asterisk in the tables).

This chapter describes differences that arose across RRMA and ASGC Remoteness categories. For a summary of findings in each individual RRMA category or trends with ASGC Remoteness, please refer to Chapter 11—Summary of results.

7.1 Number of problems managed at the encounter

RRMA

Table 7.1(a) compares the number of problems managed at the encounter across RRMA categories. The majority of encounters involved the management of only one problem. The results reported below are compared with the national average.

- Other Remote Areas had a significantly larger proportion of encounters where only one problem was managed and a significantly smaller proportion of encounters where two problems were managed.

- Large Rural Centres had a significantly smaller proportion of encounters where only one problem was managed and a significantly larger proportion of encounters where three problems were managed.

ASGC Remoteness

Table 7.1(b) compares the number of problems managed at the encounter across ASGC Remoteness categories. Compared with the national average:

- Inner Regional Australia had a significantly larger proportion of encounters where three or four problems were managed
- although not statistically significant, Very Remote Australia had a larger proportion of encounters with only one problem managed.

7.2 Nature of morbidity

Types of problems managed

RRMA

Table 7.2(a) compares the types of problems managed across RRMA categories. Compared with the national average:

- a significantly smaller proportion of problems managed were new to the patient and a significantly larger proportion were chronic problems in Small Rural Centres and Other Rural Areas
- Remote Centres had a significantly smaller proportion of problems that were chronic problems
- Remote Centres and Other Remote Areas had a significantly smaller proportion of problems labelled as the discussion of test results.

ASGC Remoteness

Table 7.2(b) compares the types of problems managed across ASGC Remoteness categories. Compared with the national average:

- there was a significantly smaller proportion of new problems and a significantly larger proportion of chronic problems managed by GPs in Inner Regional Australia
- Very Remote Australia had a significantly smaller proportion of problems labelled as the discussion of test results.

Table 7.1(a): Number of problems managed at an encounter by RRMA

Number of problems managed at encounter	Per cent of encounters, 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
One problem	65.1 (64.5–65.6)	65.1 (63.6–66.6)	**62.4 (60.8–64.0)**	64.3 (62.7–65.9)	63.2 (62.1–64.3)	67.4 (63.3–71.4)	**68.8 (65.4–72.3)**	64.7 (64.3–65.1)
Two problems	24.5 (24.2–24.8)	24.3 (23.5–25.2)	25.4 (24.5–26.3)	24.9 (24.0–25.8)	25.2 (24.6–25.8)	24.0 (21.3–26.7)	**21.8 (19.9–23.7)**	24.6 (24.4–24.9)
Three problems	8.1 (7.9–8.3)	8.3 (7.7–8.9)	**9.5 (8.8–10.1)**	8.4 (7.8–9.1)	8.8 (8.3–9.2)	6.8 (5.4–8.2)	7.3 (6.1–8.6)	8.3 (8.1–8.4)
Four problems	2.3 (2.2–2.4)	2.3 (2.0–2.7)	2.8 (2.4–3.2)	2.4 (2.1–2.8)	2.8 (2.5–3.1)	1.8 (1.1–2.5)	2.0 (1.2–2.9)	2.4 (2.3–2.5)

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 7.1(b): Number of problems managed at encounter by ASGC Remoteness

Number of problems managed at encounter	Per cent of encounters, 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	Inner Regional Australia (*n*=115,700)	Outer Regional Australia (*n*=57,500)	Remote Australia (*n*=8,000)	Very Remote Australia (*n*=2,700)	Australia (*n*=601,900)
One problem	65.1 (64.6–65.6)	**62.7 (61.8–63.6)**	65.3 (64.1–66.5)	64.8 (61.4–68.2)	69.0 (63.5–74.6)	64.7 (64.3–65.1)
Two problems	24.5 (24.2–24.8)	25.4 (24.9–25.9)	24.4 (23.6–25.1)	24.0 (22.2–25.7)	21.6 (18.7–24.6)	24.6 (24.4–24.9)
Three problems	8.1 (7.9–8.3)	**9.1 (8.7–9.4)**	8.1 (7.6–8.6)	8.6 (7.1–10.2)	7.3 (5.2–9.4)	8.3 (8.1–8.4)
Four problems	2.3 (2.2–2.4)	**2.8 (2.6–3.1)**	2.3 (2.0–2.6)	2.6 (1.8–3.4)	2.0 (0.4–3.7)	2.4 (2.3–2.5)

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 7.2(a): Distribution of problems managed across problem type and ICPC-2 component, by RRMA

	Per cent of problems, 95% confidence interval, column specific							
	Capital City (*n*=589,295)	**Other Metropolitan (*n*=66,543)**	**Large Rural Centre (*n*=57,219)**	**Small Rural Centre (*n*=56,159)**	**Other Rural Area (*n*=109,404)**	**Remote Centre (*n*=5,579)**	**Other Remote Area (*n*=9,124)**	**Australia (*n*=893,323)**
New problems	35.9 (35.4–36.3)	34.8 (33.4–36.1)	33.8 (32.4–35.3)	**32.9 (31.5–34.2)**	**32.7 (31.7–33.7)**	35.3 (30.4–40.1)	34.7 (31.1–38.2)	35.1 (34.7–35.4)
Work-related problems	1.6 (1.5–1.6)	1.5 (1.3–1.7)	1.5 (1.3–1.7)	1.4 (1.2–1.5)	1.4 (1.3–1.5)	2.1 (1.2–3.0)	1.7 (0.9–2.6)	1.5 (1.5–1.6)
Chronic problems**	32.3 (31.9–32.7)	33.8 (32.6–35.0)	**34.7 (33.6–35.9)**	**34.9 (33.7–36.0)**	**36.1 (35.3–36.9)**	**29.6 (26.7–32.4)**	33.2 (30.7–35.8)	33.2 (32.9–33.5)
By ICPC-2 component								
Symptoms & complaints	22.8 (22.5–23.0)	22.2 (21.5–22.9)	22.1 (21.3–22.8)	21.8 (21.1–22.4)	**21.4 (21.0–21.9)**	22.9 (21.0–24.8)	22.0 (20.6–23.3)	22.4 (22.3–22.6)
Diagnoses, diseases	63.7 (63.3–64.1)	64.3 (63.1–65.5)	64.3 (63.2–65.4)	63.5 (62.3–64.7)	64.6 (63.8–65.4)	63.1 (60.1–66.1)	65.0 (62.6–67.4)	63.9 (63.6–64.2)
Diagnostic & preventive procedures	9.4 (9.2–9.6)	9.3 (8.6–10.0)	9.6 (9.0–10.3)	10.0 (9.3–10.8)	9.5 (9.0–10.1)	9.5 (7.8–11.1)	9.2 (7.8–10.6)	9.5 (9.3–9.7)
Medications, treatments & therapeutics	2.2 (2.1–2.3)	2.4 (2.2–2.7)	2.3 (2.1–2.5)	2.7 (2.4–3.0)	2.5 (2.3–2.7)	2.8 (2.2–3.5)	2.2 (1.6–2.8)	2.3 (2.2–2.4)
Referral & other RFE	0.9 (0.8–0.9)	0.8 (0.7–1.0)	0.8 (0.7–0.9)	1.0 (0.8–1.2)	1.0 (0.9–1.2)	0.8 (0.4–1.2)	1.0 (0.7–1.3)	0.9 (0.8–0.9)
Results	0.8 (0.7–0.8)	0.7 (0.5–0.8)	0.5 (0.4–0.6)	0.6 (0.5–0.7)	0.5 (0.4–0.6)	**0.4 (0.1–0.6)**	**0.4 (0.2–0.6)**	0.7 (0.7–0.7)
Administrative	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.3 (0.3–0.4)	0.5 (0.3–0.8)	0.3 (0.1–0.4)	0.3 (0.3–0.4)

** Chronic code groups include multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 4, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

Note: Missing data removed. Shading indicates a significant difference between RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result. RFE—reason for encounter.

Table 7.2(b): Distribution of problems managed across problem type and ICPC-2 component by ASGC Remoteness

	Per cent of problems, 95% confidence interval, column specific					
ICPC-2 component	**Major Cities (*n*=616,852)**	**Inner Regional Australia (*n*=175,944)**	**Outer Regional Australia (*n*=84,760)**	**Remote Australia (*n*=11,924)**	**Very Remote Australia (*n*=3,843)**	**Australia (*n*=893,323)**
New problems	35.8 (35.3–36.2)	**32.8 (32.0–33.6)**	34.5 (33.3–35.7)	34.0 (30.8–37.2)	35.7 (30.2–41.2)	35.1 (34.7–35.4)
Work-related problems	1.5 (1.5–1.6)	1.4 (1.3–1.5)	1.7 (1.5–1.9)	1.9 (1.2–2.7)	1.2 (0.3–2.1)	1.5 (1.5–1.6)
Chronic problems**	32.4 (32.1–32.8)	**35.3 (34.7–36.0)**	34.3 (33.4–35.3)	32.7 (30.3–35.2)	32.1 (27.7–36.4)	33.2 (32.9–33.5)
By ICPC-2 component						
Symptoms & complaints	22.7 (22.4–22.9)	22.1 (21.7–22.5)	**21.6 (21.1–22.1)**	22.1 (20.9–23.4)	22.3 (19.9–24.8)	22.4 (22.3–22.6)
Diagnoses, diseases	63.8 (63.5–64.2)	63.7 (63.1–64.4)	64.7 (63.8–65.6)	62.6 (60.1–65.1)	65.6 (62.1–69.1)	63.9 (63.6–64.2)
Diagnostic & preventive procedures	9.4 (9.2–9.6)	9.8 (9.4–10.2)	9.4 (8.8–9.9)	10.3 (8.9–11.7)	8.7 (6.6–10.9)	9.5 (9.3–9.7)
Medications, treatments & therapeutics	2.2 (2.1–2.3)	2.5 (2.4–2.7)	2.5 (2.3–2.8)	3.0 (2.4–3.6)	1.7 (1.0–2.5)	2.3 (2.2–2.4)
Referral & other RFE	0.9 (0.8–0.9)	0.9 (0.9–1.0)	0.9 (0.8–1.1)	1.2 (0.8–1.6)	1.0 (0.5–1.4)	0.9 (0.8–0.9)
Results	0.7 (0.7–0.8)	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.3–0.7)	**0.3 (0.1–0.5)**	0.7 (0.7–0.7)
Administrative	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.3 (0.2–0.5)	0.3 (0.1–0.5)	0.3 (0.3–0.4)

** Chronic code groups include multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 4, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

Note: Missing data removed. Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result. RFE—reason for encounter.

Problems managed by ICPC-2 chapter

RRMA

Table 7.3(a) compares problems managed by ICPC-2 chapters across RRMA categories. Reported results were significant ($p<0.05$) unless otherwise stated. Compared with the national average:

- respiratory problems were managed less often in the rural and remote zones
- musculoskeletal and circulatory problems were managed at a higher rate in Other Rural Areas
- circulatory problems were managed at a lower rate in Remote Centres
- skin problems were managed at a higher rate in Large Rural Centres and Other Remote Areas
- ear problems were managed at a higher rate in Remote Centres
- pregnancy and family planning were managed at higher rates in Small Rural Centres, Other Rural Areas, Remote Centres and Other Remote Areas
- general and unspecified problems, psychological problems and problems related to the female genital system were managed less frequently in Other Remote Areas
- eye problems were managed more often in Other Remote Areas.

ASGC Remoteness

Table 7.3(b) compares problems managed by ICPC-2 chapters across ASGC Remoteness categories. Compared with the national average:

- respiratory problems were managed significantly more often in Major Cities
- skin problems were managed significantly more often in Inner Regional, Outer Regional and Remote Australia
- family planning, ear problems and eye problems were managed at significantly higher rates in Remote Australia
- in Very Remote Australia, psychological problems were managed at a significantly lower rate and urological problems at a significantly higher rate
- problems related to the male genital system were managed at a significantly higher rate in Outer Regional Australia.

Table 7.3(a): Distribution of problems managed across ICPC-2 chapters, by RRMA

ICPC-2 chapter	Rate per 100 encounters,[a] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
Respiratory	**22.3 (22.0–22.6)**	20.4 (19.5–21.2)	**20.1 (19.2–21.0)**	**19.5 (18.6–20.4)**	**19.1 (18.5–19.7)**	**18.8 (16.6–21.0)**	**18.7 (16.8–20.6)**	21.4 (21.1–21.6)
Musculoskeletal	17.1 (16.7–17.4)	17.3 (16.6–18.0)	17.8 (17.1–18.6)	17.8 (17.1–18.4)	**18.5 (17.9–19.0)**	15.1 (13.5–16.6)	17.2 (15.6–18.8)	17.3 (17.1–17.5)
Skin	16.2 (16.0–16.5)	17.3 (16.4–18.2)	**19.1 (17.9–20.3)**	16.9 (16.3–17.6)	17.6 (17.1–18.0)	16.0 (14.6–17.5)	**18.4 (16.9–19.9)**	16.7 (16.5–16.9)
Circulatory	16.2 (15.9–16.6)	17.0 (16.0–18.0)	16.9 (15.8–17.9)	17.6 (16.6–18.6)	**19.2 (18.5–20.0)**	**11.1 (9.2–13.0)**	16.1 (14.0–18.2)	16.7 (16.5–17.0)
General & unspecified	15.3 (15.0–15.6)	14.7 (13.9–15.4)	15.4 (14.6–16.2)	15.2 (14.4–16.0)	14.6 (14.0–15.1)	14.4 (11.9–16.9)	**13.2 (11.7–14.8)**	15.1 (14.9–15.3)
Psychological	11.5 (11.2–11.8)	11.2 (10.2–12.3)	12.6 (11.6–13.5)	11.6 (10.8–12.5)	10.8 (10.3–11.2)	11.5 (9.1–13.9)	**7.6 (6.2–9.0)**	11.4 (11.2–11.6)
Endocrine & metabolic	10.2 (10.0–10.4)	9.6 (9.0–10.2)	10.1 (9.2–11.0)	10.0 (9.4–10.6)	10.8 (10.4–11.2)	11.0 (9.2–12.9)	10.8 (9.2–12.5)	10.2 (10.0–10.4)
Digestive	10.1 (10.0–10.2)	10.1 (9.6–10.5)	10.1 (9.6–10.5)	9.7 (9.2–10.1)	10.4 (10.0–10.7)	9.9 (8.6–11.1)	10.1 (9.2–11.0)	10.1 (10.0–10.2)
Female genital system	7.2 (7.0–7.5)	7.9 (7.0–8.9)	7.7 (6.9–8.5)	7.6 (6.8–8.3)	6.6 (6.1–7.1)	6.4 (4.9–7.9)	**5.6 (4.6–6.5)**	7.2 (7.1–7.4)
Ear	4.2 (4.1–4.3)	4.2 (4.0–4.5)	4.6 (4.3–4.9)	4.5 (4.2–4.8)	4.3 (4.1–4.5)	**5.9 (5.0–6.8)**	4.6 (3.9–5.2)	4.3 (4.2–4.3)
Pregnancy & family planning	**3.9 (3.8–4.1)**	4.8 (4.3–5.3)	4.7 (4.2–5.1)	**5.6 (4.8–6.2)**	**5.2 (4.8–5.6)**	**8.3 (6.8–9.9)**	**5.9 (4.8–7.0)**	4.3 (4.2–4.5)
Neurological	4.0 (3.9–4.1)	3.9 (3.7–4.2)	4.1 (3.8–4.3)	3.9 (3.6–4.1)	4.2 (4.0–4.4)	3.7 (3.0–4.3)	3.9 (3.2–4.5)	4.0 (3.9–4.1)
Urology	2.9 (2.9–3.0)	3.1 (2.9–3.3)	3.0 (2.8–3.2)	2.8 (2.6–3.0)	3.2 (3.0–3.3)	3.4 (2.2–4.6)	3.4 (2.7–4.2)	3.0 (2.9–3.0)
Eye	2.7 (2.7–2.8)	2.6 (2.4–2.8)	2.6 (2.4–2.8)	2.4 (2.2–2.6)	2.6 (2.4–2.7)	3.0 (2.4–3.5)	**3.4 (2.8–3.9)**	2.7 (2.6–2.7)
Blood	1.6 (1.5–1.7)	1.5 (1.3–1.6)	1.5 (1.4–1.7)	1.5 (1.3–1.8)	1.7 (1.6–1.8)	1.7 (1.3–2.2)	1.7 (1.3–2.1)	1.6 (1.6–1.7)

(continued)

Table 7.3(a) (continued): Distribution of problems managed across ICPC-2 chapters, by RRMA

ICPC-2 chapter	Rate per 100 encounters,[a] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
Male genital system	1.3 (1.3–1.4)	1.4 (1.3–1.5)	1.5 (1.3–1.6)	1.6 (1.4–1.7)	**1.7 (1.6–1.8)**	1.5 (1.0–2.0)	1.2 (0.9–1.5)	1.4 (1.4–1.5)
Social	0.9 (0.9–1.0)	0.7 (0.6–0.9)	1.0 (0.8–1.1)	1.0 (0.8–1.1)	0.9 (0.8–1.0)	1.3 (0.5–2.1)	0.8 (0.4–1.1)	0.9 (0.9–1.0)
Total problems managed	**147.7 (146.8–148.6)**	**147.9 (145.3–150.4)**	**152.6 (149.8–155.4)**	**149.0 (146.2–151.7)**	**151.1 (149.1–153.1)**	**143.1 (136.6–149.5)**	**142.6 (136.5–148.6)**	**148.4 (147.7–149.1)**

(a) Figures do not total 100 as more than one problem can be recorded at each encounter.

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 7.3(b): Distribution of problems managed across ICPC-2 chapters, by ASGC Remoteness

ICPC-2 chapter	Rate per 100 encounters,[a] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	Inner Regional Australia (*n*=115,700)	Outer Regional Australia (*n*=57,500)	Remote Australia (*n*=8,000)	Very Remote Australia (*n*=2,700)	Australia (*n*=601,900)
Respiratory	**22.2 (21.9–22.5)**	**19.5 (18.9–20.0)**	**19.4 (18.8–20.1)**	**18.3 (16.6–20.0)**	19.4 (16.1–22.8)	21.4 (21.1–21.6)
General & unspecified	15.1 (14.9–15.4)	15.3 (14.8–15.7)	14.9 (14.2–15.5)	15.3 (13.6–17.0)	12.7 (10.5–15.0)	15.1 (14.9–15.3)
Musculoskeletal	17.0 (16.7–17.3)	18.3 (17.9–18.7)	17.5 (16.9–18.1)	17.5 (16.1–18.9)	15.2 (12.4–18.0)	17.3 (17.1–17.5)
Skin	16.2 (16.0–16.5)	**17.7 (17.2–18.2)**	**17.9 (17.4–18.5)**	**18.4 (17.0–19.7)**	17.7 (15.6–19.9)	16.7 (16.5–16.9)
Circulatory	16.3 (16.0–16.6)	**18.4 (17.8–18.9)**	17.0 (16.2–17.8)	15.3 (13.2–17.4)	14.9 (11.2–18.7)	16.7 (16.5–17.0)
Psychological	11.4 (11.1–11.7)	12.1 (11.6–12.6)	10.3 (9.8–10.8)	10.2 (8.7–11.6)	**8.0 (5.2–10.8)**	11.4 (11.2–11.6)
Endocrine & metabolic	10.2 (9.9–10.4)	10.3 (9.9–10.7)	10.1 (9.6–10.6)	11.0 (9.7–12.3)	12.0 (8.7–15.3)	10.2 (10.0–10.4)
Digestive	10.1 (10.0–10.2)	10.2 (9.9–10.4)	9.7 (9.4–10.0)	10.2 (9.2–11.3)	10.2 (8.8–11.5)	10.1 (10.0–10.2)

(continued)

Table 7.3(b) (continued): Distribution of problems managed across ICPC-2 chapters, by ASGC Remoteness

ICPC-2 chapter	Rate per 100 encounters,[a] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	**Inner Regional Australia (*n*=115,700)**	**Outer Regional Australia (*n*=57,500)**	**Remote Australia (*n*=8,000)**	**Very Remote Australia (*n*=2,700)**	**Australia (*n*=601,900)**
Female genital system	7.3 (7.0–7.5)	7.4 (7.0–7.9)	6.8 (6.2–7.3)	6.5 (5.4–7.6)	5.9 (4.3–7.4)	7.2 (7.1–7.4)
Neurological	4.0 (3.9–4.1)	4.1 (4.0–4.2)	4.0 (3.8–4.2)	4.0 (3.3–4.6)	3.8 (2.8–4.7)	4.0 (3.9–4.1)
Ear	4.2 (4.1–4.2)	4.4 (4.2–4.6)	4.6 (4.4–4.8)	**5.2 (4.5–5.8)**	4.6 (3.4–5.8)	4.3 (4.2–4.3)
Pregnancy & family planning	**4.0 (3.9–4.1)**	4.8 (4.5–5.1)	**5.5 (5.0–6.0)**	**6.7 (5.6–7.8)**	5.7 (4.2–7.3)	4.3 (4.2–4.5)
Urology	3.0 (2.9–3.0)	3.0 (2.9–3.1)	3.0 (2.8–3.2)	3.4 (2.7–4.1)	**4.6 (3.2–6.0)**	3.0 (2.9–3.0)
Eye	2.7 (2.7–2.8)	2.5 (2.4–2.6)	2.7 (2.5–2.8)	**3.2 (2.8–3.7)**	**3.8 (2.7–4.8)**	2.7 (2.6–2.7)
Blood	1.6 (1.5–1.7)	1.6 (1.5–1.7)	1.6 (1.5–1.7)	1.8 (1.5–2.2)	1.4 (0.9–2.0)	1.6 (1.6–1.7)
Male genital system	1.3 (1.3–1.4)	1.5 (1.5–1.6)	**1.7 (1.6–1.8)**	1.3 (0.9–1.6)	1.4 (0.9–1.9)	1.4 (1.4–1.5)
Social	0.9 (0.8–1.0)	1.0 (0.9–1.1)	0.8 (0.7–0.9)	0.9 (0.4–1.3)	1.0 (0.3–1.7)	0.9 (0.9–1.0)
Total problems managed	**147.6 (146.7–148.4)**	**152.1 (150.5–153.7)**	**147.4 (145.4–149.5)**	**149.1 (142.9–155.2)**	**142.3 (131.7–153.0)**	**148.4 (147.7–149.1)**

(a) Figures do not total 100 as more than one problem can be recorded at each encounter.

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Most frequently managed problems

RRMA

Tables 7.4(a) show the most frequently managed problems for Australia and their comparative rates across RRMA categories. Compared with the national average:

- hypertension was the most common problem managed across all RRMA areas; however, it was managed significantly less often at encounters in Remote Centres and significantly more often in Other Rural Areas
- URTI was managed at a significantly lower rate in rural and remote areas
- immunisation/vaccination was managed significantly less often in Remote Centres and Other Remote Areas
- depression was managed at a significantly higher rate in Large Rural Centres
- diabetes was managed at a significantly higher rate in Other Remote Areas
- lipid disorders were managed at a significantly lower rate in Remote Centres and at a somewhat lower rate in Other Remote Areas
- general check-ups were performed at a significantly higher rate in Remote Centres and Other Remote Areas
- female genital check-ups were performed significantly less often in Remote Centres and Other Remote Areas
- solar keratosis/sunburn was managed significantly more often in the rural zone
- anxiety, menopausal complaints and non-specified viral disease were managed significantly less often in Other Remote Areas.

There were a large number of differences in the order of the most frequent problems managed across each RRMA category.

- Capital Cities reflected the national average in terms of the top 30 problems managed.
- Malignant neoplasms were among the top 30 problems managed in the rural zone, where they were managed significantly more often than the national average.
- Pre/postnatal check-ups were amongst the top 30 problems managed in Small Rural Centres, Other Rural Areas, Remote Centres and Other Remote Areas, managed at significantly higher rates than the national average.
- Pregnancy was a common problem managed in Remote Centres and Other Remote Areas.
- Heart failure was a common problem managed in Small Rural Centres and Other Rural Areas.
- Otitis externa was a common problem in Remote Centres, managed at twice the national average rate.
- Laceration/cut, other contraception and chronic obstructive pulmonary disease were common problems managed in Other Remote Areas that were less commonly managed in other parts of Australia.

ASGC Remoteness

Table 7.4(b) shows the most frequently managed problems for Australia and their comparative rates across ASGC Remoteness categories. Compared with the national average:

- URTI was managed at a significantly lower rate per 100 encounters in Inner Regional and Outer Regional and Remote Australia
- immunisation/vaccination was managed at a significantly lower rate in Outer Regional and Remote Australia
- lipid disorder was managed at a significantly lower rate in Remote Australia
- solar keratosis was managed at a significantly higher rate in Inner and Outer Regional Australia
- depression, back complaint, osteoarthritis, oesophageal disease, and ischaemic heart disease were all managed at significantly higher rates in Inner Regional Australia.
- fracture was managed at a significantly higher rate in Remote Australia.

Trends with increasing remoteness are listed below.

- The management rate of diabetes was significantly higher in Outer Regional, Remote and Very Remote Australia, the rate increasing with remoteness.
- The rate of general check-up increased significantly with increasing with remoteness.
- The management rate of female genital check-up decreased significantly with increasing remoteness.
- The rates of management of contact/allergic dermatitis, and anxiety decreased significantly with increasing remoteness.

There were a large number of differences in the order of the most frequent problems managed across each ASGC Remoteness category.

- Malignant neoplasms were among the top 30 problems managed in Inner Regional, Outer Regional and Remote Australia.
- Pre/postnatal check-up was a common problem managed in Inner Regional, Outer Regional, Remote and Very Remote Australia.
- Pregnancy was commonly managed in Remote and Very Remote Australia.
- Otitis externa was commonly managed in Remote Australia, significantly more often than the national average. However, in Very Remote Australia the management rate of otitis externa was not different from the national average.
- Laceration/cut, other urinary disease, other contraception and other respiratory infection were common problems managed in Very Remote Australia that were less commonly managed in the rest of Australia.

Table 7.4(a): Most frequently managed problems by RRMA

Problem managed	Rate per 100 encounters,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
Hypertension*	8.8 (8.6–9.1)	8.9 (8.3–9.5)	8.6 (8.0–9.3)	8.9 (8.3–9.5)	**9.8 (9.3–10.3)**	**5.3 (4.0–6.6)**	8.7 (7.2–10.2)	8.9 (8.7–9.1)
Upper respiratory tract infection	**6.7 (6.5–6.9)**	**5.1 (4.7–5.5)**	**4.7 (4.2–5.1)**	**4.0 (3.6–4.4)**	**3.9 (3.6–4.2)**	**4.1 (3.1–5.1)**	**3.7 (2.9–4.5)**	5.9 (5.8–6.0)
Immunisation/vaccination—all*	5.1 (4.9–5.3)	4.7 (4.2–5.3)	4.9 (4.3–5.5)	4.4 (3.7–5.0)	4.4 (3.9–4.8)	**1.8 (1.1–2.4)**	**3.0 (1.6–4.4)**	4.9 (4.7–5.0)
Depression*	3.7 (3.6–3.8)	3.9 (3.6–4.2)	**4.8 (4.4–5.1)**	4.3 (3.8–4.7)	3.9 (3.7–4.1)	4.0 (2.9–5.1)	3.0 (2.4–3.7)	3.8 (3.7–3.9)
Diabetes—all*	2.8 (2.7–2.8)	2.7 (2.4–3.0)	2.9 (2.6–3.2)	3.0 (2.8–3.3)	3.3 (3.1–3.5)	3.6 (2.6–4.7)	**4.0 (3.0–4.9)**	2.9 (2.8–2.9)
Asthma	2.8 (2.7–2.9)	2.8 (2.5–3.0)	3.1 (2.9–3.4)	2.9 (2.6–3.1)	2.9 (2.7–3.1)	3.2 (2.4–3.9)	2.7 (2.1–3.3)	2.8 (2.8–2.9)
Lipid disorder	3.0 (2.9–3.1)	2.6 (2.3–2.8)	**2.4 (2.2–2.7)**	**2.4 (2.2–2.6)**	2.8 (2.6–3.0)	**2.0 (1.4–2.6)**	2.1 (1.5–2.8)	2.8 (2.8–2.9)
Acute bronchitis/bronchiolitis	2.6 (2.5–2.7)	2.8 (2.6–3.1)	2.9 (2.6–3.1)	2.9 (2.6–3.2)	2.8 (2.6–3.0)	3.6 (2.5–4.6)	2.4 (1.8–3.1)	2.7 (2.6–2.8)
Back complaint*	2.6 (2.4–2.7)	2.7 (2.4–2.9)	2.8 (2.6–3.1)	2.9 (2.6–3.1)	2.9 (2.7–3.1)	2.4 (1.8–3.1)	2.4 (1.9–2.9)	2.6 (2.6–2.7)
Osteoarthritis*	2.4 (2.3–2.4)	2.6 (2.3–2.8)	2.8 (2.5–3.1)	2.7 (2.5–3.0)	2.8 (2.6–3.0)	1.9 (1.2–2.6)	2.1 (1.6–2.6)	2.5 (2.4–2.5)
Female genital check-up/Pap smear*	2.1 (2.0–2.2)	2.2 (1.8–2.6)	2.1 (1.7–2.6)	2.2 (1.9–2.6)	1.8 (1.6–2.0)	**1.2 (0.7–1.6)**	**1.3 (0.9–1.7)**	2.1 (2.0–2.1)
General check-up*	1.7 (1.6–1.8)	1.7 (1.5–1.9)	2.3 (2.0–2.5)	2.4 (2.1–2.7)	2.4 (2.2–2.6)	**3.4 (2.0–4.7)**	**3.3 (2.6–4.0)**	1.9 (1.8–2.0)
Prescription—all*	1.9 (1.8–2.0)	1.9 (1.6–2.2)	1.9 (1.6–2.2)	2.2 (1.8–2.6)	1.9 (1.7–2.1)	2.2 (1.4–3.0)	1.2 (0.6–1.9)	1.9 (1.8–2.0)
Dermatitis, contact/allergic	1.9 (1.9–2.0)	1.9 (1.7–2.0)	1.6 (1.5–1.8)	1.7 (1.5–1.8)	1.5 (1.4–1.6)	1.7 (1.2–2.1)	**1.1 (0.8–1.4)**	1.8 (1.8–1.9)
Anxiety*	1.8 (1.8–1.9)	1.8 (1.5–2.1)	1.8 (1.6–2.0)	1.7 (1.5–1.9)	1.4 (1.3–1.6)	1.4 (0.9–2.0)	**0.9 (0.4–1.4)**	1.8 (1.7–1.8)

(continued)

Table 7.4(a) (continued): Most frequently managed problems by RRMA

Problem managed	Rate per 100 encounters,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
Oesophageal disease	1.6 (1.6–1.7)	2.0 (1.8–2.2)	1.9 (1.7–2.1)	2.0 (1.8–2.2)	**2.2 (2.0–2.3)**	1.5 (1.0–2.0)	1.6 (1.3–1.9)	1.8 (1.7–1.8)
Sprain/strain*	1.9 (1.8–1.9)	1.6 (1.4–1.8)	1.5 (1.3–1.7)	1.3 (1.2–1.5)	1.4 (1.2–1.5)	1.3 (0.8–1.7)	1.6 (1.1–2.1)	1.7 (1.7–1.8)
Urinary tract infection*	1.7 (1.7–1.8)	1.8 (1.6–1.9)	1.7 (1.5–1.8)	1.5 (1.4–1.7)	1.7 (1.6–1.8)	1.9 (1.3–2.4)	1.8 (1.3–2.2)	1.7 (1.7–1.7)
Sleep disturbance	1.7 (1.6–1.7)	1.5 (1.3–1.7)	1.4 (1.3–1.6)	1.6 (1.4–1.9)	1.5 (1.4–1.6)	1.4 (0.8–1.9)	0.8 (0.4–1.1)	1.6 (1.6–1.7)
Menopausal symptom/complaint	1.5 (1.4–1.5)	2.0 (1.7–2.2)	1.7 (1.5–1.9)	1.6 (1.4–1.8)	1.5 (1.4–1.7)	**1.0 (0.5–1.4)**	**0.8 (0.5–1.0)**	1.5 (1.5–1.6)
Acute otitis media/myringitis	1.4 (1.3–1.4)	1.4 (1.2–1.6)	1.4 (1.2–1.5)	1.3 (1.1–1.5)	1.4 (1.3–1.6)	**2.4 (1.7–3.2)**	1.7 (1.2–2.1)	1.4 (1.3–1.4)
Viral disease, other/NOS	1.5 (1.5–1.6)	1.3 (1.1–1.5)	1.1 (0.9–1.2)	1.0 (0.8–1.2)	0.9 (0.8–1.0)	**0.9 (0.5–1.2)**	**0.6 (0.3–0.9)**	1.4 (1.3–1.4)
Sinusitis acute/chronic	1.5 (1.4–1.5)	1.4 (1.3–1.6)	1.5 (1.4–1.7)	1.3 (1.1–1.4)	1.2 (1.1–1.3)	1.4 (0.9–2.0)	1.3 (1.0–1.5)	1.4 (1.4–1.5)
Ischaemic heart disease*	1.3 (1.2–1.3)	**1.7 (1.5–1.9)**	1.4 (1.3–1.6)	1.5 (1.3–1.7)	**1.7 (1.6–1.9)**	**0.8 (0.4–1.2)**	1.2 (0.8–1.6)	1.4 (1.3–1.4)
Cardiac check-up*	1.3 (1.2–1.4)	1.1 (0.9–1.3)	1.3 (1.0–1.5)	1.3 (1.1–1.5)	1.2 (1.0–1.4)	1.1 (0.0–2.2)	1.0 (0.5–1.4)	1.3 (1.2–1.3)
Tonsillitis*	1.2 (1.1–1.2)	1.1 (1.0–1.3)	1.2 (1.0–1.3)	1.1 (0.9–1.3)	1.1 (1.0–1.2)	1.7 (1.1–2.3)	1.5 (1.1–2.0)	1.2 (1.1–1.2)
Solar keratosis/sunburn	**1.0 (0.9–1.0)**	1.2 (1.0–1.3)	**2.0 (1.5–2.5)**	**1.5 (1.3–1.7)**	**1.7 (1.6–1.9)**	1.0 (0.5–1.5)	1.1 (0.8–1.4)	1.2 (1.1–1.2)
Fracture*	1.0 (1.0–1.0)	1.2 (1.0–1.4)	1.1 (1.0–1.2)	1.1 (0.9–1.2)	**1.4 (1.2–1.5)**	1.4 (0.9–1.8)	**1.7 (1.2–2.2)**	1.1 (1.0–1.1)
Gastroenteritis, presumed infection	1.1 (1.1–1.2)	0.9 (0.8–1.0)	**0.8 (0.7–0.9)**	**0.6 (0.5–0.7)**	**0.7 (0.6–0.7)**	1.1 (0.6–1.5)	1.1 (0.7–1.5)	1.0 (1.0–1.0)
Oral contraception	1.1 (1.0–1.1)	1.1 (0.9–1.3)	1.0 (0.8–1.1)	0.9 (0.8–1.1)	**0.8 (0.7–0.9)**	1.1 (0.6–1.6)	1.0 (0.7–1.3)	1.0 (1.0–1.1)

(continued)

Table 7.4(a) (continued): Most frequently managed problems by RRMA

Problem managed	Rate per 100 encounters,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
Problems commonly managed in specific ASGC categories								
Test results*	1.1 (1.1–1.2)†	1.0 (0.8–1.1)	0.8 (0.6–0.9)	0.9 (0.7–1.0)	0.8 (0.7–0.9)	**0.5 (0.1–0.9)**	**0.6 (0.3–0.9)**	1.0 (1.0–1.1)
Malignant skin neoplasm	**0.7 (0.7–0.8)**	1.1 (0.9–1.3)	**1.6 (1.4–1.8)†**	**1.4 (1.2–1.6)**	**1.5 (1.4–1.6)†**	0.7 (0.4–1.1)	1.2 (0.7–1.6)†	1.0 (0.9–1.0)
Pre/postnatal check-up	0.6 (0.6–0.7)	1.1 (0.9–1.3)†	1.1 (0.9–1.4)†	**1.8 (1.4–2.2)**	**1.7 (1.4–1.9)†**	**2.9 (1.8–4.0)†**	**1.7 (1.2–2.1)†**	0.9 (0.9–1.0)
Heart failure	0.7 (0.7–0.7)	0.8 (0.7–0.9)	1.0 (0.8–1.1)	**1.1 (0.9–1.3)**	**1.2 (1.1–1.3)†**	0.6 (0.2–1.0)	0.8 (0.5–1.1)	0.8 (0.8–0.8)
Pregnancy	0.8 (0.7–0.8)	0.8 (0.7–1.0)	0.8 (0.7–0.9)	1.0 (0.7–1.3)	1.0 (0.8–1.2)	**1.9 (1.1–2.7)†**	1.3 (0.9–1.7)†	0.8 (0.8–0.9)
Otitis externa	0.7 (0.6–0.7)	0.8 (0.7–1.0)	0.9 (0.7–1.0)	0.8 (0.7–1.0)	0.7 (0.7–0.8)	**1.4 (0.8–1.9)†**	0.8 (0.5–1.0)	0.7 (0.7–0.7)
Obesity	0.7 (0.6–0.7)	0.6 (0.5–0.7)	0.8 (0.4–1.3)	0.7 (0.5–0.9)	0.6 (0.5–0.7)	1.1 (0.6–1.6)†	0.6 (0.4–0.9)	0.7 (0.6–0.7)
Laceration/cut	0.8 (0.7–0.8)	0.8 (0.7–1.0)	0.7 (0.6–0.8)	0.6 (0.5–0.7)	0.9 (0.8–0.9)	0.8 (0.4–1.2)	1.1 (0.7–1.5)†	0.8 (0.7–0.8)
Contraception other	0.7 (0.7–0.7)	0.9 (0.8–1.0)	1.0 (0.8–1.1)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.9 (0.5–1.3)	1.1 (0.7–1.5)†	0.8 (0.7–0.8)
Chronic obstructive pulmonary disease	0.7 (0.6–0.7)	0.8 (0.6–0.9)	0.9 (0.8–1.1)	1.0 (0.8–1.1)	1.0 (0.9–1.1)	0.6 (0.3–0.8)	1.0 (0.6–1.5)†	0.8 (0.7–0.8)
Total problems	**147.7 (146.8–148.6)**	**147.9 (145.3–150.4)**	**152.6 (149.8–155.4)**	**149.0 (146.2–151.7)**	**151.1 (149.1–153.1)**	**143.1 (136.6–149.5)**	**142.6 (136.5–148.6)**	**148.4 (147.7–149.1)**

(a) Figures do not total 100 as more than one problem can be recorded at each encounter.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

† Indicates a problem managed in the thirty most frequently managed problems for a region, not included in the thirty most frequently managed problems for Australia.

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
NOS—not otherwise specified.

Table 7.4(b): Most frequently managed problems by ASGC Remoteness

Problem managed	Rate per 100 encounters,[a] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	Inner Regional Australia (*n*=115,700)	Outer Regional Australia (*n*=57,500)	Remote Australia (*n*=8,000)	Very Remote Australia (*n*=2,700)	Australia (*n*=601,900)
Hypertension*	8.9 (8.6–9.1)	9.3 (8.9–9.7)	8.9 (8.4–9.5)	7.4 (5.9–8.8)	7.9 (5.4–10.5)	8.9 (8.7–9.1)
Upper respiratory tract infection	**6.6 (6.4–6.8)**	**4.2 (4.0–4.5)**	**4.4 (4.1–4.7)**	**3.2 (2.6–3.9)**	4.7 (3.1–6.3)	5.9 (5.8–6.0)
Immunisation/vaccination—all*	5.0 (4.8–5.2)	5.0 (4.6–5.3)	**3.7 (3.2–4.1)**	**3.4 (2.1–4.6)**	3.3 (0.5–6.1)	4.9 (4.7–5.0)
Depression*	3.7 (3.6–3.8)	**4.4 (4.2–4.6)**	3.7 (3.5–4.0)	3.9 (3.2–4.6)	**2.5 (1.7–3.3)**	3.8 (3.7–3.9)
Diabetes—all*	2.8 (2.7–2.8)	2.9 (2.8–3.1)	**3.2 (3.0–3.4)**	**3.9 (3.1–4.7)**	**4.6 (2.9–6.4)**	2.9 (2.8–2.9)
Asthma	2.8 (2.7–2.9)	2.8 (2.7–3.0)	3.0 (2.8–3.2)	3.1 (2.6–3.6)	2.2 (1.4–3.0)	2.8 (2.8–2.9)
Lipid disorder	2.9 (2.9–3.0)	2.6 (2.5–2.8)	2.6 (2.4–2.8)	**2.0 (1.5–2.4)**	2.6 (1.2–4.0)	2.8 (2.8–2.9)
Acute bronchitis/bronchiolitis	2.7 (2.6–2.7)	2.7 (2.6–2.9)	2.9 (2.7–3.1)	2.7 (2.0–3.3)	2.4 (1.5–3.4)	2.7 (2.6–2.8)
Back complaint*	2.5 (2.4–2.6)	**3.0 (2.8–3.1)**	2.7 (2.5–2.9)	2.6 (2.1–3.0)	2.2 (1.4–3.0)	2.6 (2.6–2.7)
Osteoarthritis*	2.4 (2.3–2.4)	**2.9 (2.7–3.0)**	2.6 (2.4–2.8)	2.1 (1.6–2.5)	1.7 (0.9–2.5)	2.5 (2.4–2.5)
Female genital check-up/Pap smear*	2.1 (2.0–2.2)	2.1 (1.9–2.4)	1.8 (1.6–2.0)	**1.4 (1.0–1.9)**	1.4 (0.6–2.2)	2.1 (2.0–2.1)
General check-up*	1.7 (1.6–1.8)	2.2 (2.0–2.3)	**2.6 (2.4–2.9)**	**3.7 (2.9–4.5)**	**3.1 (2.2–4.0)**	1.9 (1.8–2.0)
Prescription—all*	1.9 (1.8–2.0)	2.1 (1.9–2.2)	1.9 (1.7–2.2)	2.0 (1.4–2.6)	1.2 (0.4–2.0)	1.9 (1.8–2.0)
Dermatitis, contact/allergic	1.9 (1.9–2.0)	**1.6 (1.5–1.7)**	**1.6 (1.4–1.7)**	**1.3 (1.0–1.5)**	**1.2 (0.6–1.7)**	1.8 (1.8–1.9)
Anxiety*	1.8 (1.8–1.9)	1.7 (1.6–1.8)	**1.5 (1.3–1.6)**	**1.2 (0.8–1.5)**	1.0 (0.0–2.1)	1.8 (1.7–1.8)

(continued)

Table 7.4(b) (continued): Most frequently managed problems by ASGC Remoteness

Problem managed	Rate per 100 encounters,[a] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	Inner Regional Australia (*n*=115,700)	Outer Regional Australia (*n*=57,500)	Remote Australia (*n*=8,000)	Very Remote Australia (*n*=2,700)	Australia (*n*=601,900)
Oesophageal disease	1.6 (1.6–1.7)	**2.1 (2.0–2.2)**	1.9 (1.7–2.1)	1.7 (1.3–2.1)	1.3 (0.7–1.8)	1.8 (1.7–1.8)
Sprain/strain*	1.9 (1.8–1.9)	1.4 (1.3–1.5)	1.4 (1.3–1.6)	1.3 (0.9–1.7)	1.7 (0.9–2.4)	1.7 (1.7–1.8)
Urinary tract infection*	1.7 (1.7–1.8)	1.6 (1.5–1.7)	1.7 (1.5–1.8)	1.8 (1.4–2.1)	2.0 (1.3–2.7)	1.7 (1.7–1.7)
Sleep disturbance	1.7 (1.6–1.7)	1.6 (1.5–1.7)	1.4 (1.2–1.5)	1.3 (0.9–1.7)	**0.8 (0.3–1.2)**	1.6 (1.6–1.7)
Menopausal symptom/complaint	1.5 (1.4–1.6)	1.7 (1.5–1.8)	1.6 (1.4–1.7)	**1.1 (0.8–1.3)**	**0.6 (0.2–1.0)**	1.5 (1.5–1.6)
Acute otitis media/myringitis	1.4 (1.3–1.4)	1.4 (1.3–1.5)	1.5 (1.4–1.6)	1.7 (1.3–2.1)	1.7 (0.9–2.5)	1.4 (1.3–1.4)
Viral disease, other/NOS	1.5 (1.4–1.6)	**1.0 (0.9–1.1)**	**1.1 (1.0–1.3)**	**0.8 (0.5–1.1)**	**0.6 (0.2–1.1)**	1.4 (1.3–1.4)
Sinusitis acute/chronic	1.5 (1.4–1.5)	1.3 (1.2–1.4)	1.3 (1.2–1.5)	1.2 (0.9–1.5)	1.2 (0.7–1.6)	1.4 (1.4–1.5)
Ischaemic heart disease*	1.3 (1.2–1.3)	**1.6 (1.5–1.7)**	1.4 (1.2–1.5)	1.5 (1.0–2.0)	1.4 (0.7–2.2)	1.4 (1.3–1.4)
Cardiac check-up*	1.3 (1.2–1.4)	1.4 (1.2–1.5)	1.0 (0.9–1.2)	1.2 (0.5–1.8)	**0.7 (0.3–1.0)**	1.3 (1.2–1.3)
Tonsillitis*	1.2 (1.1–1.2)	1.1 (1.0–1.2)	1.2 (1.1–1.4)	1.5 (1.1–1.9)	1.4 (0.8–2.0)	1.2 (1.1–1.2)
Solar keratosis/sunburn	1.0 (0.9–1.0)	**1.7 (1.5–1.9)**	**1.5 (1.4–1.7)**	1.6 (1.1–2.0)	0.9 (0.5–1.3)	1.2 (1.1–1.2)
Fracture*	1.0 (1.0–1.1)	1.2 (1.1–1.2)	1.3 (1.1–1.4)	**1.6 (1.2–1.9)**	1.4 (0.6–2.1)	1.1 (1.0–1.1)
Gastroenteritis, presumed infection	1.1 (1.1–1.2)	**0.7 (0.7–0.8)**	**0.7 (0.6–0.8)**	0.9 (0.6–1.3)	1.7 (0.9–2.5)	1.0 (1.0–1.0)
Test results*	1.1 (1.0–1.2)	**0.8 (0.8–0.9)**	**0.7 (0.6–0.8)**	0.7 (0.4–1.0)	**0.4 (0.1–0.8)**	1.0 (1.0–1.1)

(continued)

Table 7.4(b) (continued): Most frequently managed problems by ASGC Remoteness

Problem managed	Rate per 100 encounters,[(a)] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	**Inner Regional Australia (*n*=115,700)**	**Outer Regional Australia (*n*=57,500)**	**Remote Australia (*n*=8,000)**	**Very Remote Australia (*n*=2,700)**	**Australia (*n*=601,900)**
Problems commonly managed in specific ASGC categories						
Oral contraception	1.1 (1.0–1.1)	0.9 (0.8–0.9)	1.0 (0.9–1.1)	0.8 (0.6–1.1)	1.2 (0.6–1.7)†	1.0 (1.0–1.1)
Malignant skin neoplasm	**0.8 (0.7–0.8)**	**1.4 (1.2–1.5)†**	**1.5 (1.4–1.6)†**	1.3 (0.9–1.7)†	1.0 (0.3–1.7)	1.0 (0.9–1.0)
Pre/postnatal check-up	**0.7 (0.6–0.7)**	**1.4 (1.2–1.5)†**	**1.8 (1.5–2.0)†**	**2.1 (1.5–2.6)†**	1.4 (0.9–1.9)†	0.9 (0.9–1.0)
Heart failure	0.7 (0.7–0.8)	1.1 (1.0–1.2)†	0.9 (0.8–1.1)	1.0 (0.6–1.3)	0.6 (0.2–1.1)	0.8 (0.8–0.8)
Pregnancy	0.8 (0.7–0.8)	0.9 (0.8–1.0)	1.0 (08–1.2)	**1.6 (1.1–2.1)†**	1.2 (0.7–1.6)†	0.8 (0.8–0.9)
Otitis externa	0.7 (0.6–0.7)	0.7 (0.7–0.8)	1.0 (09–1.1)	**1.2 (0.8–1.6)†**	0.8 (0.3–1.2)	0.7 (0.7–0.7)
Laceration/cut	0.8 (0.7–0.8)	0.8 (0.7–0.8)	0.8 (0.7–0.9)	0.9 (0.6–1.1)	1.2 (0.6–1.8)†	0.8 (0.7–0.8)
Urinary disease, other	0.2 (0.2–0.2)	0.3 (0.2–0.3)	0.3 (0.2–0.4)	0.4 (0.2–0.6)	**1.3 (0.4–2.2)†**	0.2 (0.2–0.3)
Contraception other	0.7 (0.7–0.8)	0.8 (0.8–0.9)	0.9 (0.8–1.0)	0.9 (0.6–1.2)	1.2 (0.4–1.9)†	0.8 (0.8–0.8)
Respiratory infection, other	0.6 (0.6–0.7)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.3 (0.1–0.6)	1.1 (0.1–2.1)†	0.6 (0.5–0.6)
Total problems	**147.6 (146.7–148.4)**	**152.1 (150.5–153.7)**	**147.4 (145.4–149.5)**	**149.1 (142.9–155.2)**	**142.3 (131.7–153.0)**	**148.4 (147.7–149.1)**

(a) Figures do not total 100 as more than one problem can be recorded at each encounter.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

† Indicates a problem managed in the thirty most frequently managed problems for a region, not included in the thirty most frequently managed problems for Australia.

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result. NOS—not otherwise specified.

Most frequently managed new problems

Tables 7.5(a) and 7.5(b) show the most frequently managed NEW problems for Australia and their comparative rates across RRMA and ASGC categories.

RRMA

- Acute upper respiratory tract infection (URTI) was the most frequently managed new problem across all RRMA categories.
- In areas outside Capital Cities, new URTI problems were managed at a significantly lower rate than the national average.
- New immunisations were managed at a significantly higher rate in Capital Cities and a significantly lower rate in Remote Centres compared with the national average.
- The rate of new presentations of acute otitis media was appreciably higher in Remote Centres, although only marginally significant.
- Management of new non-specified viral disease was significantly lower in the rural and remote zones.
- In Small Rural Centres and Other Rural Areas, new sprain and strain problems were managed significantly less often than the national average.
- In Other Rural Areas, Remote Centres and Other Remote Areas, general check-up was the fourth most common new problem managed, with a significantly higher rate in Other Rural Areas.
- In the rural zone, new presumed gastroenteritis infections were managed at a significantly lower rate than the national average.
- New female genital check-ups were lower in the remote zone compared with the national average.

There were a large number of differences in the order of most frequent new problems managed across each RRMA category.

- Capital Cities reflected the national average in terms of the top 15 new problems managed.
- Malignant neoplasms and solar keratosis/sunburn were among the top 15 new problems managed in the rural zone, where they were managed significantly more often than the national average.
- Fractures were common new problems in Remote Centres and Other Remote Areas.
- Otitis externa was a common new problem managed in Remote Centres.
- Laceration/cut and boil/carbuncle were common new problems managed in Other Remote Areas.

ASGC Remoteness

- Significantly lower than average rates of new URTI problems were found in Inner Regional, Outer Regional and Remote Australia.
- New presentations of non-specified viral disease decreased with increasing remoteness.
- The management of new contact/allergic dermatitis decreased with increasing remoteness.
- The rate of new general check-ups increased with remoteness.

- Management of new presumed gastroenteritis infection increased with remoteness.
- The rate of new female genital check-ups decreased with increasing remoteness.
- Solar keratosis/sunburn was a common new problem managed in Inner Regional, Outer Regional and Remote Australia. However, in Very Remote Australia, new solar keratosis/sunburn was managed at a significantly lower rate than the national average.
- New malignant skin neoplasms were common in Inner Regional and Outer Regional Australia, but were managed significantly less often than average in Very Remote Australia.
- Lipid disorders, boils/carbuncles and lacerations/cuts were common new problems managed in Very Remote Australia.

Table 7.5(a): Most frequently managed new problems by RRMA

New problem managed	Rate per 100 encounters,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
Upper respiratory tract infection	**4.8 (4.6–4.9)**	**3.5 (3.2–3.8)**	**3.2 (2.8–3.5)**	**2.7 (2.4–3.0)**	**2.7 (2.5–2.9)**	**2.7 (1.9–3.6)**	**2.4 (1.7–3.0)**	4.2 (4.1–4.3)
Immunisation/vaccination—all*	**2.6 (2.4–2.7)**	2.4 (2.0–2.8)	2.4 (2.0–2.8)	2.1 (1.6–2.5)	2.1 (1.8–2.5)	**0.9 (0.5–1.4)**	1.7 (0.6–2.7)	2.4 (2.3–2.6)
Acute bronchitis/bronchiolitis	1.7 (1.6–1.7)	1.8 (1.6–2.0)	1.8 (1.6–2.0)	1.9 (1.7–2.1)	1.8 (1.6–1.9)	2.4 (1.4–3.3)	1.3 (0.9–1.8)	1.7 (1.7–1.8)
Urinary tract infection*	1.0 (1.0–1.0)	1.0 (0.9–1.1)	1.0 (0.8–1.1)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.6–1.2)	0.8 (0.5–1.1)	1.0 (0.9–1.0)
Sprain/strain*	1.0 (1.0–1.1)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	**0.7 (0.6–0.8)**	**0.8 (0.7–0.8)**	0.7 (0.4–1.0)	0.8 (0.5–1.1)	0.9 (0.9–1.0)
Viral disease, other/NOS	1.1 (1.0–1.1)	0.9 (0.8–1.1)	**0.7 (0.5–0.8)**	**0.6 (0.5–0.8)**	**0.6 (0.5–0.7)**	**0.6 (0.3–0.8)**	**0.4 (0.2–0.6)**	0.9 (0.9–1.0)
Acute otitis media/myringitis	0.9 (0.8–0.9)	1.0 (0.8–1.1)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	1.3 (0.9–1.8)	1.1 (0.8–1.5)	0.9 (0.9–0.9)
Sinusitis acute/chronic	0.9 (0.9–0.9)	0.9 (0.7–1.0)	0.9 (0.8–1.1)	0.8 (0.6–0.9)	0.7 (0.6–0.8)	0.9 (0.5–1.3)	0.8 (0.5–1.0)	0.9 (0.8–0.9)
Tonsillitis*	0.8 (0.8–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.6–0.9)	0.8 (0.7–0.9)	1.0 (0.6–1.4)	1.0 (0.6–1.3)	0.8 (0.8–0.9)
Dermatitis, contact/allergic	0.9 (0.8–0.9)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	**0.6 (0.5–0.6)**	0.7 (0.4–1.0)	**0.4 (0.2–0.6)**	0.8 (0.8–0.8)
General check-up*	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.9 (0.7–1.0)	0.9 (0.7–1.1)	**1.0 (0.9–1.1)**	1.2 (0.6–1.8)	1.1 (0.7–1.6)	0.7 (0.7–0.8)
Gastroenteritis, presumed infection	0.8 (0.8–0.9)	0.6 (0.5–0.7)	**0.5 (0.4–0.6)**	**0.5 (0.4–0.5)**	**0.5 (0.4–0.5)**	0.7 (0.3–1.1)	0.8 (0.4–1.1)	0.7 (0.7–0.8)
Depression*	0.6 (0.6–0.7)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.6–0.8)	0.7 (0.6–0.8)	0.6 (0.3–0.9)	0.6 (0.4–0.8)	0.7 (0.6–0.7)
Female genital check-up	0.7 (0.6–0.7)	0.7 (0.5–0.8)	0.8 (0.4–1.1)	0.7 (0.5–0.8)	0.5 (0.4–0.6)	**0.4 (0.2–0.5)**	0.4 (0.2–0.6)	0.7 (0.6–0.7)
Back complaint*	0.6 (0.6–0.6)	0.5 (0.4–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.7 (0.6–0.7)	0.6 (0.3–0.9)	0.8 (0.5–1.1)	0.6 (0.6–0.6)

(continued)

Table 7.5(a) (continued): Most frequently managed new problems by RRMA

New problem managed	Capital City (*n*=399,000)	Other Metropolitan (*n*=45,000)	Large Rural Centre (*n*=37,500)	Small Rural Centre (*n*=37,700)	Other Rural Area (*n*=72,400)	Remote Centre (*n*=3,900)	Other Remote Area (*n*=6,400)	Australia (*n*=601,900)
	Rate per 100 encounters,[(a)] 95% confidence interval, column specific							
New problems commonly managed in specific RRMA categories								
Infectious conjunctivitis	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.3–0.8)	0.6 (0.4–0.9)†	0.5 (0.5–0.5)
Solar keratosis/sunburn	0.4 (0.4–0.5)	0.5 (0.4–0.7)	**0.7 (0.6–0.8)†**	0.6 (0.5–0.7)†	**0.8 (0.7–0.8)†**	0.4 (0.1–0.7)	0.4 (0.2–0.6)	0.5 (0.5–0.5)
Malignant skin neoplasm	0.4 (0.3–0.4)	0.6 (0.4–0.7)†	**0.8 (0.6–0.9)†**	**0.7 (0.6–0.8)†**	**0.7 (0.6–0.8)†**	0.3 (0.1–0.6)	0.4 (0.2–0.6)	0.5 (0.4–0.5)
Fracture	0.4 (0.4–0.4)	0.6 (0.4–0.7)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.6 (0.5–0.6)	0.7 (0.4–1.1)†	0.6 (0.3–0.9)†	0.5 (0.4–0.5)
Otitis externa	0.4 (0.4–0.4)	0.5 (0.4–0.6)	**0.6 (0.5–0.7)**	0.5 (0.4–0.6)	0.4 (0.3–0.4)	0.7 (0.4–1.1)†	0.3 (0.2–0.4)	0.4 (0.4–0.4)
Laceration/cut	0.4 (0.4–0.4)	0.5 (0.4–0.6)	0.3 (0.3–0.4)	0.3 (0.2–0.4)	0.4 (0.4–0.5)	0.4 (0.1–0.6)	0.7 (0.4–1.0)†	0.4 (0.4–0.4)
Pregnancy*	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.3 (0.2–0.4)	0.3 (0.3–0.4)	0.6 (0.4–0.9)†	0.5 (0.3–0.6)	0.4 (0.3–0.4)
Boil/carbuncle	0.3 (0.3–0.3)	0.3 (0.2–0.3)	0.4 (0.3–0.5)	0.3 (0.2–0.3)	0.3 (0.3–0.3)	0.4 (0.2–0.7)	**0.6 (0.4–0.8)†**	0.3 (0.3–0.3)
Total new problems	**114.5 (114.1–114.8)**	**114.5 (113.4–115.6)**	**116.7 (115.5–117.9)**	**114.5 (113.3–115.6)**	**114.4 (113.5–115.2)**	**113.5 (111.2–115.8)**	**113.6 (111.2–116.0)**	**114.6 (114.3–114.9)**

(a) Figures do not total 100 as more than one problem can be managed at each encounter.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

† Indicates a problem managed in the 15 most frequently managed new problems for a region, not included in the 15 most frequently managed new problems for Australia.

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
NOS—not otherwise specified.

Table 7.5(b): Most frequently managed new problems by ASGC Remoteness

New problem managed	Rate per 100 encounters,[a] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	Inner Regional Australia (*n*=115,700)	Outer Regional Australia (*n*=57,500)	Remote Australia (*n*=8,000)	Very Remote Australia (*n*=2,700)	Australia (*n*=601,900)
Upper respiratory tract infection	**4.7 (4.6–4.9)**	**2.9 (2.7–3.1)**	**3.1 (2.8–3.3)**	**2.1 (1.6–2.6)**	3.2 (1.6–4.8)	4.2 (4.1–4.3)
Immunisation/vaccination—all*	2.6 (2.4–2.7)	2.4 (2.1–2.7)	**1.8 (1.5–2.1)**	1.9 (1.0–2.7)	2.1 (0.0–4.5)	2.4 (2.3–2.6)
Acute bronchitis/bronchiolitis	1.7 (1.6–1.7)	1.7 (1.6–1.8)	1.9 (1.7–2.0)	1.8 (1.2–2.3)	1.2 (0.5–1.8)	1.7 (1.7–1.8)
Urinary tract infection*	1.0 (1.0–1.0)	0.9 (0.9–1.0)	0.9 (0.8–1.0)	0.8 (0.6–1.1)	1.0 (0.4–1.5)	1.0 (0.9–1.0)
Sprain/strain*	1.0 (1.0–1.1)	**0.8 (0.7–0.8)**	0.8 (0.7–0.9)	0.8 (0.5–1.1)	0.7 (0.2–1.2)	0.9 (0.9–1.0)
Viral disease, other/NOS	1.1 (1.0–1.1)	**0.7 (0.6–0.8)**	0.7 (0.6–0.9)	**0.6 (0.3–0.8)**	**0.3 (0.1–0.5)**	0.9 (0.9–1.0)
Acute otitis media/myringitis	0.9 (0.8–0.9)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	1.1 (0.8–1.4)	1.0 (0.4–1.6)	0.9 (0.9–0.9)
Sinusitis acute/chronic	0.9 (0.9–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.5–1.0)	0.7 (0.3–1.1)	0.9 (0.8–0.9)
Tonsillitis*	0.8 (0.8–0.8)	0.8 (0.7–0.8)	0.9 (0.8–1.0)	0.9 (0.6–1.2)	1.0 (0.4–1.6)	0.8 (0.8–0.9)
Dermatitis, contact/allergic	0.9 (0.8–0.9)	**0.7 (0.6–0.7)**	**0.6 (0.6–0.7)**	**0.5 (0.3–0.6)**	0.4 (0.1–0.8)	0.8 (0.8–0.8)
General check-up*	0.6 (0.6–0.7)	0.8 (0.7–0.9)	**1.1 (0.9–1.3)**	**1.5 (1.1–1.9)**	1.2 (0.4–1.9)	0.7 (0.7–0.8)
Gastroenteritis, presumed infection	0.8 (0.8–0.8)	**0.5 (0.4–0.6)**	**0.5 (0.5–0.6)**	0.7 (0.4–1.0)	1.3 (0.5–2.0)	0.7 (0.7–0.8)
Depression*	0.7 (0.6–0.7)	0.8 (0.7–0.8)	0.6 (0.6–0.7)	0.6 (0.4–0.8)	0.5 (0.2–0.9)	0.7 (0.6–0.7)
Female genital check-up	0.7 (0.6–0.7)	0.7 (0.5–0.8)	0.6 (0.4–0.7)	**0.4 (0.2–0.5)**	**0.2 (0.0–0.3)**	0.7 (0.6–0.7)
Back complaint*	0.6 (0.5–0.6)	0.6 (0.6–0.7)	0.6 (0.5–0.7)	0.9 (0.6–1.1)	0.9 (0.4–1.3)	0.6 (0.6–0.6)

(continued)

Table 7.5(b) (continued): Most frequently managed new problems by ASGC Remoteness

New problem managed	Rate per 100 encounters,[(a)] 95% confidence interval, column specific					
	Major Cities (*n*=418,000)	**Inner Regional Australia (*n*=115,700)**	**Outer Regional Australia (*n*=57,500)**	**Remote Australia (*n*=8,000)**	**Very Remote Australia (*n*=2,700)**	**Australia (*n*=601,900)**
New problems commonly managed in specific ASGC categories						
Infectious conjunctivitis	0.6 (0.5–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.3–0.7)	0.7 (0.3–1.1)†	0.5 (0.5–0.5)
Solar keratosis/sunburn	0.4 (0.4–0.5)	**0.7 (0.6–0.7)†**	**0.7 (0.6–0.8)†**	0.7 (0.4–1.0)†	**0.2 (0.0–0.4)**	0.5 (0.5–0.5)
Malignant skin neoplasm	0.4 (0.3–0.4)	**0.7 (0.6–0.7)†**	**0.8 (0.7–0.9)†**	0.6 (0.3–0.8)	**0.2 (0.0–0.3)**	0.5 (0.4–0.5)
Fracture	0.4 (0.4–0.5)	0.5 (0.4–0.5)	**0.5 (0.5–0.6)**	0.7 (0.4–0.9)†	0.6 (0.1–1.1)	0.5 (0.4–0.5)
Otitis externa	0.4 (0.4–0.4)	0.4 (0.4–0.5)	**0.6 (0.5–0.6)**	0.6 (0.4–0.9)†	0.4 (0.1–0.6)	0.4 (0.4–0.4)
Lipid disorders*	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.2 (0.1–0.3)	0.9 (0.3–1.4)†	0.4 (0.3–0.4)
Boil/carbuncle	0.3 (0.3–0.3)	0.3 (0.2–0.3)	**0.4 (0.4–0.5)**	0.5 (0.3–0.6)	0.8 (0.3–1.3)†	0.3 (0.3–0.3)
Laceration/cut	0.4 (0.4–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.5 (0.3–0.7)	0.8 (0.3–1.3)†	0.4 (0.4–0.4)
Total new problems	**114.5 (114.1–114.8)**	**115.2 (114.5–115.9)**	**114.4 (113.5–115.2)**	**114.6 (111.9–117.2)**	**113.2 (108.8–117.6)**	**114.6 (114.3–114.9)**

(a) Figures do not total 100 as more than one problem can be managed at each encounter.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

† Indicates a problem managed in the 15 most frequently managed new problems for a region, not included in the 15 most frequently managed new problems for Australia.

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result. NOS—not otherwise specified.

National Health Priority Areas

The Commonwealth, and state and territory governments have agreed to work together on specific national health priority areas (NHPAs) of chronic diseases that pose a significant burden of disease to the Australian population.[23] There are currently seven national health priority initiatives: asthma, cancer control, cardiovascular health, diabetes mellitus, injury prevention, mental health, and arthritis and other musculoskeletal conditions. Tables 7.6(a) and 7.6(b) summarise the management of problems included in NHPAs by RRMA and ASGC respectively.

RRMA

The results for diabetes, psychological problems and circulatory problems have already been reported earlier in Tables 7.3(a) and 7.3(b). In addition there were significant differences across RRMA categories for the remaining health priority areas reported below. Compared with the national average:

- physical injuries were managed at a significantly higher rate in Other Remote Areas
- malignant neoplasms were managed significantly more often in the rural zone
- arthritis problems were managed at a significantly higher rate in Small Rural Centres and Other Rural Areas, and at a significantly lower rate in Remote Centres.

ASGC Remoteness

The significant differences across ASGC categories for the remaining national health priority areas are reported below.

- Malignant neoplasms were managed significantly more often than the national average in Inner Regional, Outer Regional and Remote Australia, but not in Very Remote Australia.
- Arthritis of all kinds was managed significantly more frequently than average in Inner Regional Australia.

Table 7.6(a): National Health Priority Areas by RRMA

Problem managed	Rate per 100 encounters, 95% confidence interval, column specific							
	Capital City (*n*=399,000)	**Other Metropolitan (*n*=45,000)**	**Large Rural Centre (*n*=37,500)**	**Small Rural Centre (*n*=37,700)**	**Other Rural Area (*n*=72,400)**	**Remote Centre (*n*=3,900)**	**Other Remote Area (*n*=6,400)**	**Australia (*n*=601,900)**
Physical injury*	7.3 (7.2–7.5)	7.4 (6.9–7.9)	6.6 (6.2–7.1)	6.2 (5.9–6.6)	7.4 (7.0–7.7)	6.8 (5.6–8.0)	**9.2 (7.9–10.5)**	7.2 (7.1–7.4)
Psychological	11.5 (11.2–11.8)	11.2 (10.2–12.3)	12.6 (11.6–13.5)	11.6 (10.8–12.5)	10.8 (10.3–11.2)	11.5 (9.1–13.9)	**7.6 (6.2–9.0)**	11.4 (11.2–11.6)
Depression*	3.7 (3.6–3.8)	3.9 (3.6–4.2)	**4.8 (4.4–5.1)**	4.3 (3.8–4.7)	3.9 (3.7–4.1)	4.0 (2.9–5.1)	3.0 (2.4–3.7)	3.8 (3.7–3.9)
Diabetes—all*	2.8 (2.7–2.8)	2.7 (2.4–3.0)	2.9 (2.6–3.2)	3.0 (2.8–3.3)	**3.3 (3.1–3.5)**	3.6 (2.6–4.7)	**4.0 (3.0–4.9)**	2.9 (2.8–2.9)
Asthma	2.8 (2.7–2.9)	2.8 (2.5–3.0)	3.1 (2.9–3.4)	2.9 (2.6–3.1)	2.9 (2.7–3.1)	3.2 (2.4–3.9)	2.7 (2.1–3.3)	2.8 (2.8–2.9)
Malignant neoplasm*	1.7 (1.6–1.8)	2.2 (2.0–2.4)	**2.8 (2.5–3.1)**	**2.6 (2.4–2.9)**	**2.9 (2.7–3.1)**	1.9 (1.3–2.5)	2.4 (1.7–3.0)	2.0 (1.9–2.1)
Circulatory	16.2 (15.9–16.6)	17.0 (16.0–18.0)	16.9 (15.8–17.9)	17.6 (16.6–18.6)	**19.2 (18.5–20.0)**	**11.1 (9.2–13.0)**	16.1 (14.0–18.2)	16.7 (16.5–17.0)
Arthritis—all*	3.6 (3.5–3.7)	3.9 (3.6–4.1)	4.1 (3.8–4.5)	**4.3 (4.0–4.6)**	**4.4 (4.2–4.6)**	**2.8 (2.0–3.5)**	3.3 (2.7–4.0)	3.8 (3.7–3.9)
Total problems	**147.7 (146.8–148.6)**	**147.9 (145.3–150.4)**	**152.6 (149.8–155.4)**	**149.0 (146.2–151.7)**	**151.1 (149.1–153.1)**	**143.1 (136.6–149.5)**	**142.6 (136.5–148.6)**	**148.4 (147.7–149.1)**

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 7.6(b): National Health Priority Areas by ASGC Remoteness

	Rate per 100 encounters, 95% confidence interval, column specific					
Problem managed	**Major Cities (*n*=418,000)**	**Inner Regional Australia (*n*=115,700)**	**Outer Regional Australia (*n*=57,500)**	**Remote Australia (*n*=8,000)**	**Very Remote Australia (*n*=2,700)**	**Australia (*n*=601,900)**
Physical injury*	7.3 (7.2–7.5)	6.9 (6.6–7.1)	7.2 (6.8–7.6)	7.7 (6.7–8.7)	9.0 (7.0–11.0)	7.2 (7.1–7.4)
Psychological	11.4 (11.1–11.7)	12.1 (11.6–12.6)	10.3 (9.8–10.8)	10.2 (8.7–11.6)	**8.0 (5.2–10.8)**	11.4 (11.2–11.6)
Depression*	3.7 (3.6–3.8)	**4.4 (4.2–4.6)**	3.7 (3.5–4.0)	3.9 (3.2–4.6)	**2.5 (1.7–3.3)**	3.8 (3.7–3.9)
Malignant neoplasm*	1.7 (1.6–1.8)	**2.6 (2.5–2.8)**	**2.8 (2.6–3.0)**	**2.7 (2.2–3.3)**	2.2 (1.1–3.3)	2.0 (1.9–2.1)
Diabetes—all*	2.8 (2.7–2.8)	2.9 (2.8–3.1)	**3.2 (3.0–3.4)**	**3.9 (3.1–4.7)**	**4.6 (2.9–6.4)**	2.9 (2.8–2.9)
Asthma	2.8 (2.7–2.9)	2.8 (2.7–3.0)	3.0 (2.8–3.2)	3.1 (2.6–3.6)	2.2 (1.4–3.0)	2.8 (2.8–2.9)
Circulatory	16.3 (16.0–16.6)	**18.4 (17.8–18.9)**	17.0 (16.2–17.8)	15.3 (13.2–17.4)	14.9 (11.2–18.7)	16.7 (16.5–17.0)
Arthritis—all*	3.6 (3.5–3.7)	**4.3 (4.1–4.5)**	4.2 (3.9–4.4)	3.5 (2.8–4.1)	2.8 (1.8–3.8)	3.8 (3.7–3.9)
Total problems	**147.6 (146.7–148.4)**	**152.1 (150.5–153.7)**	**147.4 (145.4–149.5)**	**149.1 (142.9–155.2)**	**142.3 (131.7–153.0)**	**148.4 (147.7–149.1)**

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

8 Treatments

This chapter describes differences in treatments that arose across RRMA and ASGC Remoteness categories. For a summary of findings in each individual RRMA category or trends with ASGC Remoteness, please refer to Chapter of 11—Summary of results.

8.1 Medications

GP participants could record up to four medications for each of four problems. A maximum of 16 medications could therefore be recorded at each encounter. Each medication was recorded either as prescribed (the default), recommended for over-the-counter (OTC) purchase or supplied by the GP from surgery stocks or samples. GPs could enter the brand or generic name. Medications were classified using the CAPS system (developed by the Family Medicine Research Centre)[24] and are reported here at the CAPS major group level.

A total of 638,226 medications were recorded at a rate of 106 per 100 encounters and 71 per 100 problems managed. Most medications (83.7%) were prescribed, 8.5% were advised for over-the-counter purchase and 7.8% were supplied by the GP directly to the patient.

RRMA

Table 8.1(a) compares medications prescribed, advised or supplied per 100 problems managed and the percentage of problems with at least one medication across RRMA categories. All reported differences between categories and the national average were statistically significant ($p<0.05$). Compared with the national average:

- Other Metropolitan Centres had a higher total medication rate, particularly prescribed medications
- GPs advised medications for OTC purchase at a higher rate in Capital Cities
- OTC medications were advised at a lower rate in the rural and remote zones
- GPs in Other Remote Areas supplied medications from their own supplies significantly more often.

The above differences from the national average were also apparent in the percentage of problems managed with at least one medication, except that:

- there was no significant difference in the percentage of problems with at least one medication in Other Metropolitan Centres
- a smaller proportion of problems was managed with at least one medication in Large and Small Rural Centres.

ASGC Remoteness

Table 8.1(b) describes medications prescribed, advised or supplied per 100 problems managed and the percentage of problems with at least one medication across ASGC Remoteness categories. Compared with the national average:

- the total medication rate was lower in Inner Regional Australia
- prescribing rates in Outer Regional Australia were higher
- the rate at which GPs advised OTC medications was higher in Major Cities and lower in Inner Regional, Outer Regional and Remote Australia
- GPs supplied medication at a higher rate in Remote Australia.

In terms of percentage of problems managed with at least one medication and compared with the national average:

- a smaller proportion of problems was managed with a prescribed medication in Remote Australia
- the percentage of problems managed with advised OTC medications was higher in Major Cities and lower in Inner Regional, Outer Regional and Remote Australia
- a larger proportion of problems was managed with at least one GP-supplied medication in Remote and Very Remote Australia
- a smaller proportion of problems was managed with at least one medication in Inner Regional Australia.

Table 8.1(a): Medication rates by RRMA

	Capital City (*n*=589,295)	Other Metropolitan (*n*=66,543)	Large Rural Centre (*n*=57,219)	Small Rural Centre (*n*=56,159)	Other Rural Area (*n*=109,404)	Remote Centre (*n*=5,579)	Other Remote Area (*n*=9,124)	Australia (*n*=893,323)
	Rate per 100 problems managed, 95% confidence interval, column specific							
Prescribed	59.3 (58.6–60.0)	**62.7 (60.6–64.8)**	58.7 (56.7–60.7)	59.3 (57.1–61.5)	61.5 (59.8–63.3)	55.4 (47.6–63.1)	57.1 (51.2–63.1)	59.8 (59.2–60.3)
Advised OTC	**6.8 (6.6–7.0)**	5.6 (5.0–6.1)	**5.2 (4.6–5.7)**	**4.3 (3.8–4.8)**	**4.1 (3.8–4.4)**	**3.9 (2.6–5.3)**	**3.9 (2.8–5.1)**	6.1 (5.9–6.3)
GP-supplied	5.4 (5.1–5.7)	5.8 (4.8–6.7)	5.5 (4.4–6.6)	5.6 (4.5–6.6)	5.4 (4.6–6.2)	12.1 (3.5–20.6)	**13.3 (7.3–19.3)**	5.6 (5.3–5.8)
All medications	71.6 (70.9–72.2)	**74.0 (72.1–76.0)**	69.4 (67.4–71.3)	69.2 (67.2–71.3)	71.1 (69.5–72.6)	71.4 (63.9–78.8)	74.3 (69.1–79.6)	71.4 (70.9–72.0)
	Per cent of problems with at least one medication, 95% confidence interval, column specific							
At least one prescribed	48.0 (47.5–48.5)	**49.9 (48.5–51.3)**	46.7 (45.4–48.0)	47.1 (45.6–48.6)	48.3 (47.1–49.4)	43.8 (38.6–48.9)	45.1 (40.8–49.3)	48.0 (47.6–48.3)
At least one advised OTC	**6.2 (6.0–6.4)**	5.1 (4.6–5.5)	**4.7 (4.2–5.1)**	**4.0 (3.6–4.4)**	**3.8 (3.5–4.1)**	**3.7 (2.5–5.0)**	**3.7 (2.7–4.7)**	5.5 (5.4–5.7)
At least one GP-supplied	4.3 (4.1–4.6)	4.5 (3.8–5.2)	4.3 (3.5–5.2)	4.5 (3.7–5.3)	4.4 (3.7–5.0)	8.9 (3.3–14.5)	**9.9 (5.9–14.0)**	4.5 (4.3–4.7)
At least one medication	56.6 (56.1–57.0)	57.6 (56.4–58.9)	**53.9 (52.7–55.1)**	**54.1 (52.8–55.4)**	55.1 (54.2–56.1)	54.9 (50.7–59.1)	56.9 (54.1–59.8)	56.1 (55.8–56.5)

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 8.1(b): Medication rates by ASGC Remoteness

	Rate per 100 problems managed, 95% confidence interval, column specific					
	Major Cities (*n*=616,852)	**Inner Regional Australia (*n*=175,944)**	**Outer Regional Australia (*n*=84,760)**	**Remote Australia (*n*=11,924)**	**Very Remote Australia (*n*=3,843)**	**Australia (*n*=893,323)**
Prescribed	59.7 (59.0–60.4)	59.2 (57.9–60.4)	**62.6 (60.7–64.4)**	54.0 (47.7–60.2)	57.0 (46.5–67.5)	59.8 (59.2–60.3)
Advised OTC	**6.8 (6.6–7.0)**	**4.6 (4.4–4.9)**	**4.6 (4.2–5.1)**	**4.1 (3.2–4.9)**	5.0 (2.5–7.5)	6.1 (5.9–6.3)
GP-supplied	5.6 (5.2–5.9)	5.0 (4.5–5.5)	5.6 (4.6–6.6)	**12.0 (7.0–17.0)**	17.2 (5.0–29.3)	5.6 (5.3–5.8)
All medications	72.0 (71.4–72.6)	**68.8 (67.6–69.9)**	72.8 (71.1–74.5)	70.0 (64.3–75.7)	79.2 (70.1–88.2)	71.4 (70.9–72.0)
	Per cent of problems with at least one medication, 95% confidence interval, column specific					
At least one prescribed	48.2 (47.7–48.7)	47.1 (46.3–47.9)	49.0 (47.8–50.3)	**42.5 (38.3–46.8)**	44.3 (36.9–51.6)	48.0 (47.6–48.3)
At least one advised OTC	**6.1 (6.0–6.3)**	**4.2 (4.0–4.5)**	**4.3 (3.9–4.6)**	**3.8 (3.0–4.5)**	4.6 (2.5–6.6)	5.5 (5.4–5.7)
At least one GP-supplied	4.4 (4.2–4.7)	4.0 (3.6–4.4)	4.5 (3.7–5.2)	**9.3 (5.8–12.8)**	**12.0 (4.8–19.3)**	4.5 (4.3–4.7)
At least one medication	56.8 (56.4–57.2)	**53.9 (53.1–54.6)**	56.3 (55.2–57.3)	54.0 (50.6–57.4)	58.5 (54.3–62.7)	56.1 (55.8–56.5)

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Types of medications prescribed or supplied

Medications are shown by CAPS groupings, in order of the national rate per 100 problems managed.

RRMA

Table 8.2(a) compares prescribed or supplied medications with the national average across RRMA categories. All reported differences were statistically significant ($p<0.05$).

- Other Metropolitan Centres had a higher rate of total medications prescribed or supplied.
- Antibiotics were prescribed or supplied at higher rates in Remote Centres and Other Remote Areas.
- Cardiovascular medications were prescribed/supplied at a higher rate in Other Rural Areas and at a lower rate in Remote Centres.
- Medications for the central nervous system were prescribed/supplied at higher rates in Other Metropolitan Centres and Other Rural Areas.
- Psychological medications were prescribed/supplied at a higher rate in Large Rural Centres and a lower rate in Other Remote Areas.
- The rates of musculoskeletal medications prescribed/supplied were higher in Other Rural and Other Remote Areas.
- Hormones were prescribed/supplied at higher rates in Other Rural and Other Remote Areas.
- Allergy, immune system medications were prescribed/supplied at lower rates in Other Rural Areas, Remote Centres and Other Remote Areas.
- Skin medications were prescribed/supplied at lower rates in Small Rural Centres and Other Rural Areas.
- The prescription/supply rates of topical ear medications and nose medications were lower in Other Rural Areas.
- The prescription/supply rate of urogenital medications was higher in Other Rural Areas, and eye medications was higher in Other Remote Areas.
- Nutrition/metabolism medications were prescribed/supplied at a lower rate in Other Rural Areas.

ASGC Remoteness

Table 8.2(b) compares prescribed or supplied medications with the national average across ASGC categories. All reported differences were statistically significant ($p<0.05$).

- Medications were prescribed or supplied at a higher rate in Outer Regional Australia.
- Antibiotics were prescribed/supplied less often in Inner Regional Australia and more often in Very Remote Australia.
- Central nervous system medications were more common in Other Regional Australia.
- Psychological medications were more common in Inner Regional Australia.
- The rate of musculoskeletal medication prescribing/supplying was higher in Outer Regional, Remote and Very Remote Australia.

- Hormone medication rates were higher in Outer Regional and Remote Australia.
- Respiratory medications were prescribed/supplied less often in Inner Regional Australia.
- Outer Regional and Remote Australia had lower rates of allergy, immune system medications.
- Skin and topical ear/nose medications were less common in Inner Regional Australia.
- Eye medications were less common in Inner Regional Australia and marginally more common in Very Remote Australia.

Table 8.2(a): Distribution of medication prescribed or supplied by RRMA

Group	Rate per 100 problems managed,[a] 95% confidence interval, column specific							
	Capital City (*n*=589,295)	Other Metropolitan (*n*=66,543)	Large Rural Centre (*n*=57,219)	Small Rural Centre (*n*=56,159)	Other Rural Area (*n*=109,404)	Remote Centre (*n*=5,579)	Other Remote Area (*n*=9,124)	Australia (*n*=893,323)
Antibiotics	10.4 (10.2–10.6)	10.4 (9.8–11.0)	9.9 (9.4–10.5)	9.6 (9.1–10.2)	9.8 (9.4–10.2)	**13.4 (11.3–15.5)**	**13.5 (11.9–15.1)**	10.3 (10.2–10.5)
Cardiovascular	9.4 (9.2–9.7)	10.4 (9.7–11.1)	9.2 (8.6–9.9)	10.2 (9.5–10.9)	**11.1 (10.6–11.7)**	**7.7 (6.4–8.9)**	10.2 (8.8–11.6)	9.8 (9.6–9.9)
Central nervous system	7.5 (7.3–7.7)	**9.0 (8.3–9.7)**	7.1 (6.7–7.5)	7.5 (7.0–8.0)	**8.2 (7.9–8.6)**	8.1 (6.1–10.1)	7.6 (6.3–8.9)	7.7 (7.5–7.8)
Psychological	5.4 (5.3–5.5)	5.7 (5.3–6.0)	**6.2 (5.8–6.5)**	5.9 (5.5–6.2)	5.6 (5.4–5.9)	5.5 (4.3–6.7)	**4.2 (3.4–5.0)**	5.5 (5.4–5.6)
Musculoskeletal	4.1 (4.0–4.2)	4.2 (4.0–4.5)	4.0 (3.8–4.3)	4.2 (3.9–4.4)	**4.6 (4.4–4.8)**	5.1 (4.0–6.1)	**5.7 (4.9–6.5)**	4.2 (4.1–4.3)
Hormones	4.1 (4.0–4.2)	4.7 (4.4–5.0)	4.5 (4.1–4.7)	4.6 (4.3–4.8)	**4.8 (4.5–5.0)**	5.8 (4.4–7.1)	**5.7 (4.8–6.6)**	4.3 (4.2–4.4)
Respiratory	4.1 (4.0–4.2)	4.1 (3.8–4.5)	4.0 (3.7–4.3)	4.1 (3.7–4.5)	4.0 (3.7–4.2)	4.4 (3.0–5.8)	4.3 (3.3–5.2)	4.1 (4.0–4.2)
Allergy, immune system	5.3 (5.1–5.5)	5.0 (4.4–5.5)	5.2 (4.7–5.7)	4.7 (4.1–5.3)	**4.4 (4.0–4.8)**	**2.8 (1.9–3.8)**	**3.5 (2.3–4.7)**	5.1 (4.9–5.2)
Skin	3.1 (3.1–3.2)	3.1 (2.9–3.3)	3.1 (2.6–3.5)	**2.6 (2.4–2.8)**	**2.5 (2.4–2.7)**	3.2 (2.6–3.9)	3.0 (2.5–3.4)	3.0 (3.0–3.1)
Digestive	2.9 (2.9–3.0)	3.0 (2.8–3.2)	2.7 (2.5–2.9)	3.0 (2.8–3.2)	3.1 (3.0–3.2)	2.8 (2.1–3.5)	3.3 (2.8–3.8)	3.0 (2.9–3.0)
Blood	1.2 (1.2–1.3)	1.4 (1.3–1.6)	1.4 (1.2–1.5)	1.5 (1.3–1.7)	1.6 (1.4–1.7)	1.4 (0.9–1.9)	1.6 (1.2–2.0)	1.3 (1.3–1.4)
Ear, nose topical	1.4 (1.4–1.5)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.3 (1.2–1.4)	**1.2 (1.2–1.3)**	1.7 (1.1–2.3)	1.4 (1.1–1.8)	1.4 (1.4–1.4)
Urogenital	1.4 (1.3–1.4)	1.4 (1.3–1.5)	1.4 (1.3–1.6)	1.6 (1.4–1.8)	**1.8 (1.6–1.9)**	1.2 (0.8–1.6)	1.7 (1.3–2.0)	1.4 (1.4–1.5)
Contraceptives	1.3 (1.3–1.3)	1.5 (1.3–1.6)	1.4 (1.3–1.5)	1.3 (1.1–1.4)	1.2 (1.1–1.3)	1.3 (0.8–1.8)	1.3 (0.9–1.6)	1.3 (1.3–1.3)
Nutrition, metabolism	1.1 (1.1–1.2)	1.0 (0.9–1.1)	1.1 (0.9–1.2)	1.0 (0.8–1.1)	**0.9 (0.8–1.0)**	0.9 (0.6–1.2)	1.0 (0.6–1.3)	1.1 (1.0–1.1)

(continued)

Table 8.2(a) (continued): Distribution of medication prescribed or supplied by RRMA

Group	Rate per 100 problems managed,[a] 95% confidence interval, column specific							
	Capital City (*n*=589,295)	**Other Metropolitan (*n*=66,543)**	**Large Rural Centre (*n*=57,219)**	**Small Rural Centre (*n*=56,159)**	**Other Rural Area (*n*=109,404)**	**Remote Centre (*n*=5,579)**	**Other Remote Area (*n*=9,124)**	**Australia (*n*=893,323)**
Eye medications	1.2 (1.1–1.2)	1.2 (1.1–1.3)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (1.0–1.1)	1.0 (0.8–1.3)	**1.5 (1.2–1.8)**	1.1 (1.1–1.1)
Miscellaneous	0.4 (0.3–0.4)	0.5 (0.3–0.8)	0.3 (0.2–0.4)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.4 (0.2–0.6)	0.4 (0.1–0.7)	0.4 (0.3–0.4)
Anti-neoplastics	0.2 (0.2–0.2)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.3 (0.1–0.5)	0.3 (0.2–0.4)	0.3 (0.3–0.3)
Surgical preparations	0.1 (0.1–0.1)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.3 (0.2–0.4)	0.3 (0.1–0.6)	0.2 (0.0–0.4)	0.1 (0.1–0.2)
Diagnostic agents	0.1 (0.0–0.1)	0.0 (0.0–0.1)	0.0 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.1 0.0–0.2)	0.1 (0.0–0.2)	0.1 (0.0–0.1)
Total medications prescribed or supplied	**64.7 (64.1–65.4)**	**68.5 (66.5–70.4)**	**64.2 (62.3–66.1)**	**64.9 (62.9–66.9)**	**66.9 (65.4–68.5)**	**67.4 (59.8–75.0)**	**70.4 (65.0–75.8)**	**65.3 (64.8–65.9)**

(a) Figures do not total 100 as more than one medication can be recorded for each problem.

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 8.2(b): Distribution of medication prescribed or supplied by ASGC Remoteness

Group	Rate per 100 problems managed,[a] 95% confidence interval, column specific					
	Major Cities (*n*=616,852)	Inner Regional Australia (*n*=175,944)	Outer Regional Australia (*n*=84,760)	Remote Australia (*n*=11,924)	Very Remote Australia (*n*=3,843)	Australia (*n*=893,323)
Antibiotics	10.4 (10.3–10.6)	**9.3 (9.0–9.6)**	11.0 (10.5–11.5)	11.4 (10.0–12.8)	**15.2 (12.1–18.3)**	10.3 (10.2–10.5)
Cardiovascular	9.6 (9.3–9.8)	10.1 (9.7–10.5)	10.4 (9.8–11.0)	9.4 (8.0–10.8)	9.7 (7.4–11.9)	9.8 (9.6–9.9)
Central nervous system	7.6 (7.4–7.8)	7.5 (7.3–7.8)	**8.3 (7.9–8.7)**	7.8 (6.4–9.2)	8.6 (6.0–11.1)	7.7 (7.5–7.8)
Psychological	5.4 (5.3–5.5)	**5.9 (5.7–6.1)**	5.6 (5.3–5.8)	5.1 (4.4–5.8)	3.9 (2.4–5.4)	5.5 (5.4–5.6)
Musculoskeletal	4.2 (4.1–4.2)	4.2 (4.0–4.3)	**4.6 (4.4–4.9)**	**5.3 (4.5–6.0)**	**5.8 (4.4–7.2)**	4.2 (4.1–4.3)
Hormones	4.1 (4.0–4.2)	4.4 (4.3–4.6)	**5.0 (4.7–5.3)**	**5.4 (4.6–6.2)**	5.9 (4.2–7.6)	4.3 (4.2–4.4)
Respiratory	4.2 (4.0–4.2)	**3.7 (3.5–3.9)**	4.5 (4.1–4.8)	3.9 (3.1–4.7)	4.4 (2.7–6.1)	4.1 (4.0–4.2)
Allergy, immune system	5.3 (5.1–5.4)	5.1 (4.7–5.4)	**4.2 (3.7–4.5)**	**3.5 (2.6–4.4)**	3.7 (1.3–6.0)	5.1 (4.9–5.2)
Skin	3.1 (3.1–3.2)	**2.7 (2.5–2.8)**	2.8 (2.7–3.0)	2.8 (2.3–3.2)	3.0 (2.3–3.7)	3.0 (3.0–3.1)
Digestive	3.0 (2.9–3.0)	3.0 (2.8–3.1)	3.0 (2.9–3.2)	2.7 (2.3–3.1)	3.2 (2.3–4.0)	3.0 (2.9–3.0)
Blood	1.3 (1.2–1.3)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.5 (1.2–1.8)	1.9 (1.2–2.6)	1.3 (1.3–1.4)
Ear, nose topical	1.4 (1.4–1.5)	**1.2 (1.2–1.3)**	1.5 (1.3–1.6)	1.6 (1.3–1.9)	1.9 (1.2–2.5)	1.4 (1.4–1.4)
Urogenital	1.4 (1.3–1.4)	1.6 (1.5–1.7)	1.6 (1.5–1.7)	1.6 (1.2–2.0)	1.5 (0.8–2.1)	1.4 (1.4–1.5)
Contraceptives	1.3 (1.3–1.4)	1.3 (1.2–1.3)	1.4 (1.2–1.5)	1.1 (0.8–1.3)	1.4 (0.9–1.9)	1.3 (1.3–1.3)
Nutrition, metabolism	1.1 (1.1–1.2)	1.0 (0.9–1.1)	0.9 (0.7–1.0)	0.8 (0.6–1.0)	1.3 (0.6–1.9)	1.1 (1.0–1.1)

(continued)

Table 8.2(b) (continued): Distribution of medication prescribed or supplied by ASGC Remoteness

Group	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific					
	Major Cities (*n*=616,852)	**Inner Regional Australia (*n*=175,944)**	**Outer Regional Australia (*n*=84,760)**	**Remote Australia (*n*=11,924)**	**Very Remote Australia (*n*=3,843)**	**Australia (*n*=893,323)**
Eye medications	1.2 (1.1–1.2)	**1.0 (0.9–1.0)**	1.2 (1.1–1.2)	1.2 (0.9–1.4)	1.6 (1.1–2.1)	1.1 (1.1–1.1)
Miscellaneous	0.4 (0.3–0.5)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.4 (0.2–0.5)	0.6 (0.0–1.3)	0.4 (0.3–0.4)
Anti-neoplastics	0.2 (0.2–0.2)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.3 (0.2–0.5)	0.3 (0.1–0.5)	0.3 (0.3–0.3)
Surgical preparations	0.1 (0.1–0.1)	0.2 (0.1–0.3)	0.2 (0.1–0.2)	0.3 (0.1–0.5)	0.3 (0.0–0.7)	0.1 (0.1–0.2)
Diagnostic agents	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.2)	0.1 (0.0–0.1)
Total medications prescribed or supplied	**65.2 (64.6–65.9)**	**64.1 (63.0–65.3)**	**68.1 (66.5–69.8)**	**66.0 (60.3–71.6)**	**74.1 (65.0–83.3)**	**65.3 (64.8–65.9)**

(a) Figures do not total 100 as more than one medication can be recorded for each problem.

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

8.2 Other treatments

The survey form allowed GPs to record up to two other treatments for each problem managed at the encounter. Other treatments included all clinical and procedural treatments provided by the GPs at the encounters. These groups are defined in Appendix 3 (see www.aihw.gov au).

Clinical treatments include general and specific advice, counselling or education, family planning, and administrative processes. Procedural treatments involve all procedures carried out by GPs, such as excision of skin lesion or application/removal of plaster.

Observations of the patient regarded as routine clinical assessments, such as measurements of blood pressure, were not included.

RRMA

Table 8.3(a) compares rates of other treatments provided per 100 problems managed and the percentage of problems with at least one other treatment across RRMA categories. All differences between categories and the national average referred to here were statistically significant ($p<0.05$).

Compared with the national average:

- rates of total other treatments were lower in Small Rural Centres and Other Rural Areas
- clinical treatments were performed more often in Capital Cities and less often in Small Rural Centres and Other Rural Areas
- procedural treatments were more common in Large Rural Centres, Other Rural Areas and Other Remote Areas.

The above differences from the national average were also apparent in the percentage of problems managed with at least one other treatment, except that:

- the proportion of problems managed with a procedural treatment was smaller in Capital Cities
- there was no significant difference in the percentage of problems with at least one other treatment in Small Rural Centres.

ASGC Remoteness

Table 8.3(b) compares other treatments per 100 problems managed and the percentage of problems with at least one other treatment across ASGC categories.

- Clinical treatments were significantly less common in Inner and Outer Regional Australia compared with the national average.
- There was a trend towards more procedural treatments with increasing remoteness.

Table 8.3(a): Rates of other treatments by RRMA

	Capital City (*n*=589,295)	Other Metropolitan (*n*=66,543)	Large Rural Centre (*n*=57,219)	Small Rural Centre (*n*=56,159)	Other Rural Area (*n*=109,404)	Remote Centre (*n*=5,579)	Other Remote Area (*n*=9,124)	Australia (*n*=893,323)
	Rate per 100 problem managed, 95% confidence interval, column specific							
Clinical treatments	**26.2 (25.7–26.8)**	24.2 (22.4–26.0)	24.2 (22.4–25.9)	**22.2 (20.6–23.7)**	**21.4 (20.3–22.5)**	24.3 (18.7–29.9)	26.1 (20.5–31.8)	25.1 (24.6–25.5)
Procedural treatments	9.2 (9.0–9.5)	10.3 (9.6–11.1)	**11.0 (10.3–11.8)**	10.0 (9.4–10.7)	**10.5 (10.1–11.0)**	8.9 (7.0–10.9)	**11.7 (10.1–13.4)**	9.7 (9.5–9.8)
Total other treatments	**35.5 (34.8–36.1)**	**34.6 (32.5–36.6)**	**35.2 (33.3–37.1)**	**32.2 (30.5–33.8)**	**31.9 (30.6–33.2)**	**33.2 (26.6–39.8)**	**37.9 (31.8–43.9)**	**34.8 (34.2–35.3)**
	Per cent of problems with at least one other treatment, 95% confidence interval, column specific							
Clinical treatments	**23.4 (22.9–23.9)**	21.6 (20.1–23.2)	21.9 (20.4–23.4)	**20.2 (18.8–21.5)**	**19.4 (18.4–20.4)**	21.7 (16.8–26.7)	23.0 (18.4–27.6)	22.5 (22.1–22.8)
Procedural treatments	**8.2 (8.0–8.4)**	9.3 (8.6–9.9)	**9.9 (9.2–10.6)**	8.9 (8.4–9.5)	**9.6 (9.2–9.9)**	8.1 (6.5–9.7)	**10.6 (9.1–12.1)**	8.7 (8.5–8.8)
Total other treatments	**30.6 (30.1–31.1)**	**29.8 (28.2–31.4)**	**30.9 (29.4–32.5)**	**28.4 (27.0–29.8)**	**28.1 (27.0–29.1)**	**28.9 (23.5–34.3)**	**32.3 (27.7–36.9)**	**30.1 (29.7–30.5)**

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 8.3(b): Rates of other treatments by ASGC Remoteness

	Rate per 100 problems managed, 95% confidence interval, column specific					
	Major Cities (*n*=616,852)	**Inner Regional Australia (*n*=175,944)**	**Outer Regional Australia (*n*=84,760)**	**Remote Australia (*n*=11,924)**	**Very Remote Australia (*n*=3,843)**	**Australia (*n*=893,323)**
Clinical treatments	26.1 (25.5–26.6)	**22.9 (22.0–23.8)**	**22.4 (21.0–23.7)**	22.6 (18.6–26.6)	33.9 (24.0–43.8)	25.1 (24.6–25.5)
Procedural treatments	9.3 (9.1–9.5)	**10.5 (10.1–10.9)**	10.3 (9.8–10.8)	10.8 (9.4–12.2)	11.6 (8.4–14.9)	9.7 (9.5–9.8)
Total other treatments	**35.4 (34.8–36.0)**	**33.4 (32.4–34.4)**	**32.7 (31.1–34.2)**	**33.4 (28.8–38.1)**	**45.6 (34.6–56.5)**	**34.8 (34.2–35.3)**
	Per cent of problems with at least one other treatment, 95% confidence interval, column specific					
At least one clinical treatment	23.2 (22.8–23.7)	**20.8 (20.0–21.6)**	**20.2 (19.1–21.4)**	20.0 (16.8–23.2)	29.7 (21.4–38.1)	22.5 (22.1–22.8)
At least one procedural treatment	8.3 (8.1–8.5)	**9.4 (9.1–9.7)**	**9.3 (8.9–9.8)**	9.8 (8.5–11.0)	10.5 (7.6–13.5)	8.7 (8.5–8.8)
At least one other treatment	**30.5 (30.0–31.0)**	**29.4 (28.6–30.2)**	**28.7 (27.4–29.9)**	**29.0 (25.4–32.6)**	**38.1 (29.8–46.5)**	**30.1 (29.7–30.5)**

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Clinical treatments

Clinical treatments are presented in national frequency order as a rate per 100 problems managed.

RRMA

Table 8.4(a) compares clinical treatments across RRMA categories. All reported differences were statistically significant ($p<0.05$).

Compared with the national average:

- general advice/education was given less often in Other Rural Areas
- GPs provided advice about treatment less frequently in Small Rural Centres and Other Rural Areas
- advice/education about nutrition and weight was more common in Capital Cities and less common in Small Rural Centres and Other Rural Areas
- psychological counselling was given less often in Other Rural Areas
- GPs provided sickness certificates less often in Small Rural Centres, Other Rural Areas, and Other Remote Areas
- in Remote Centres, observe/wait was recorded less often.

ASGC Remoteness

Table 8.4(b) compares clinical treatments across ASGC categories. All reported differences were statistically significant ($p<0.05$) unless otherwise stated.

- GPs gave patients advice about their nutrition or weight more often in Major Cities and less often in Inner and Outer Regional Australia compared with the national average.
- Treatment advice was given less often than average in Inner Regional Australia.
- Psychological counselling was given less often than average in Outer Regional Australia.
- Medication advice was less common than average in Very Remote Australia.
- Advice on smoking was given at twice the national average rate in Very Remote Australia.
- The rate of sickness certificates decreased with increasing remoteness.

Table 8.4(a): Most frequent clinical treatments by RRMA

Treatment	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=589,295)	Other Metropolitan (*n*=66,543)	Large Rural Centre (*n*=57,219)	Small Rural Centre (*n*=56,159)	Other Rural Area (*n*=109,404)	Remote Centre (*n*=5,579)	Other Remote Area (*n*=9,124)	Australia (*n*=893,323)
Advice/education*	4.1 (3.9–4.3)	3.9 (3.3–4.5)	4.0 (3.3–4.7)	3.7 (3.1–4.2)	**3.3 (2.9–3.6)**	2.6 (1.5–3.8)	5.2 (3.2–7.2)	3.9 (3.8–4.1)
Advice/education—treatment*	3.7 (3.5–3.8)	3.6 (3.1–4.1)	3.2 (2.6–3.7)	**2.8 (2.4–3.1)**	**2.9 (2.6–3.2)**	3.1 (1.6–4.6)	3.4 (2.3–4.6)	3.5 (3.4–3.6)
Counselling/advice—nutrition/weight*	**3.5 (3.4–3.7)**	2.7 (2.4–3.1)	2.7 (2.2–3.1)	**2.2 (2.0–2.4)**	**2.5 (2.2–2.7)**	2.8 (1.9–3.8)	2.5 (1.2–3.9)	3.2 (3.1–3.3)
Counselling—problem*	3.1 (2.9–3.3)	2.9 (2.4–3.4)	3.1 (2.6–3.7)	3.1 (2.4–3.8)	2.6 (2.3–3.0)	4.2 (1.9–6.5)	4.5 (2.2–6.8)	3.1 (2.9–3.2)
Counselling—psychological*	2.2 (2.1–2.3)	2.1 (1.7–2.5)	2.0 (1.8–2.2)	2.1 (1.7–2.5)	**1.7 (1.6–1.9)**	1.7 (1.0–2.4)	1.5 (0.9–2.0)	2.1 (2.0–2.2)
Advice/education—medication*	2.0 (1.9–2.1)	1.9 (1.7–2.1)	2.3 (2.0–2.6)	2.0 (1.8–2.3)	2.1 (1.9–2.3)	2.3 (0.9–3.6)	1.6 (1.0–2.2)	2.0 (2.0–2.1)
Counselling/advice—exercise*	1.3 (1.2–1.4)	1.1 (0.9–1.2)	1.1 (0.7–1.5)	0.9 (0.8–1.1)	1.0 (0.8–1.1)	1.0 (0.5–1.4)	1.0 (0.4–1.6)	1.2 (1.1–1.3)
Reassurance, support	1.1 (1.0–1.2)	0.9 (0.8–1.1)	1.0 (0.8–1.2)	1.0 (0.9–1.2)	1.1 (0.9–1.2)	1.0 (0.5–1.6)	0.9 (0.5–1.3)	1.1 (1.0–1.1)
Other admin/document*	1.0 (0.9–1.0)	1.0 (0.8–1.1)	1.1 (1.0–1.3)	1.0 (0.9–1.2)	1.0 (0.9–1.1)	1.2 (0.7–1.8)	1.2 (0.7–1.6)	1.0 (1.0–1.0)
Sickness certificate	0.8 (0.7–0.8)	0.6 (0.5–0.8)	0.5 (0.4–0.6)	**0.4 (0.3–0.5)**	**0.4 (0.3–0.5)**	0.7 (0.2–1.1)	**0.3 (0.1–0.5)**	0.7 (0.6–0.7)
Counselling/advice—smoking*	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.8 (0.5–1.1)	0.7 (0.4–1.1)	0.5 (0.5–0.5)
Observe/wait*	0.4 (0.3–0.4)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	**0.1 (0.0–0.2)**	0.3 (0.1–0.5)	0.3 (0.3–0.4)
Counselling/advice—health/body*	0.3 (0.3–0.4)	0.4 (0.3–0.5)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.7 (0.0–1.6)	0.3 (0.1–0.5)	0.3 (0.3–0.4)
Counselling/advice—alcohol*	0.3 (0.3–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.5 (0.2–0.7)	0.5 (0.2–0.7)	0.3 (0.3–0.3)

(continued)

Table 8.4(a) (continued): Most frequent clinical treatments by RRMA

Treatment	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=589,295)	Other Metropolitan (*n*=66,543)	Large Rural Centre (*n*=57,219)	Small Rural Centre (*n*=56,159)	Other Rural Area (*n*=109,404)	Remote Centre (*n*=5,579)	Other Remote Area (*n*=9,124)	Australia (*n*=893,323)
Counselling/advice—lifestyle*	0.3 (0.2–0.3)	0.3 (0.1–0.4)	0.3 (0.2–0.3)	0.2 (0.1–0.3)	0.2 (0.1–0.2)	0.0 Ŧ	0.4 (0.1–0.7)	0.3 (0.2–0.3)
Counselling/advice—prevention*	0.3 (0.2–0.3)	0.3 (0.2–0.4)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.0–0.2)	0.3 (0.0–0.5)	0.3 (0.2–0.3)
Family planning*	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.1–0.4)	0.2 (0.1–0.3)	0.2 (0.2–0.3)
Counselling/advice—relaxation*	0.2 (0.2–0.3)	0.2 (0.1–0.3)	0.2 (0.1–0.3)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.0–0.5)	0.2 (0.1–0.3)	0.2 (0.2–0.2)
Counselling/advice—relationship*	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.1–0.3)	0.1 (0.0–0.3)	0.2 (0.2–0.2)
Counselling/advice—drug abuse*	0.2 (0.1–0.2)	0.2 (0.1–0.3)	0.1 (0.0–0.2)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.0–0.2)	0.1 (0.0–0.1)	0.2 (0.1–0.2)
Total clinical treatments	**26.2 (25.7–26.8)**	**24.2 (22.4–26.0)**	**24.2 (22.4–25.9)**	**22.2 (20.6–23.7)**	**21.4 (20.3–22.5)**	**24.3 (18.7–29.9)**	**26.1 (20.5–31.8)**	**25.1 (24.6–25.5)**

(a) Figures do not total 100 as more than one treatment can be recorded for each problem.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

Ŧ Rates are reported to one decimal place (n=2).

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 8.4(b): Most frequent clinical treatments by ASGC Remoteness

Treatment	Rate per 100 problems managed,[a] 95% confidence interval, column specific					
	Major Cities (*n*=616,852)	Inner Regional Australia (*n*=175,944)	Outer Regional Australia (*n*=84,760)	Remote Australia (*n*=11,924)	Very Remote Australia (*n*=3,843)	Australia (*n*=893,323)
Advice/education*	4.0 (3.8–4.2)	3.7 (3.4–4.1)	3.9 (3.4–4.4)	3.1 (1.9–4.2)	5.7 (2.3–9.1)	3.9 (3.8–4.1)
Advice/education—treatment*	3.7 (3.5–3.8)	**3.0 (2.7–3.2)**	3.2 (2.8–3.6)	2.8 (1.9–3.7)	4.8 (2.8–6.8)	3.5 (3.4–3.6)
Counselling/advice—nutrition/weight*	**3.5 (3.4–3.6)**	**2.4 (2.2–2.6)**	**2.5 (2.2–2.7)**	3.4 (2.0–4.7)	3.4 (0.7–6.1)	3.2 (3.1–3.3)
Counselling—problem*	3.1 (2.9–3.3)	3.1 (2.8–3.4)	**2.4 (2.0–2.7)**	2.6 (1.7–3.5)	7.4 (2.2–12.6)	3.1 (2.9–3.2)
Counselling—psychological*	2.2 (2.1–2.3)	2.1 (1.9–2.2)	**1.6 (1.5–1.8)**	1.7 (1.3–2.1)	1.7 (0.6–2.8)	2.1 (2.0–2.2)
Advice/education—medication*	2.0 (1.9–2.1)	2.2 (2.0–2.3)	2.1 (1.9–2.4)	1.8 (1.3–2.3)	**1.1 (0.4–1.8)**	2.0 (2.0–2.1)
Counselling/advice—exercise*	1.3 (1.2–1.4)	1.0 (0.8–1.1)	1.0 (0.9–1.2)	1.3 (0.6–2.0)	1.5 (0.3–2.6)	1.2 (1.1–1.3)
Reassurance, support	1.1 (1.0–1.2)	1.0 (0.9–1.1)	1.0 (0.8–1.1)	0.9 (0.5–1.3)	0.9 (0.3–1.4)	1.1 (1.0–1.1)
Other admin/document*	1.0 (0.9–1.0)	1.1 (1.0–1.1)	1.1 (1.0–1.2)	1.1 (0.8–1.5)	1.5 (0.7–2.2)	1.0 (1.0–1.0)
Sickness certificate	0.7 (0.7–0.8)	**0.5 (0.4–0.5)**	**0.4 (0.4–0.5)**	0.3 (0.1–0.6)	0.3 (0.0–0.6)	0.7 (0.6–0.7)
Counselling/advice—smoking*	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.6 (0.5–0.7)	0.7 (0.5–1.0)	**1.1 (0.6–1.5)**	0.5 (0.5–0.5)
Observe/wait*	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.2–0.4)	0.2 (0.0–0.4)	0.5 (0.0–1.0)	0.3 (0.3–0.4)
Counselling/advice—health/body*	0.3 (0.3–0.4)	0.3 (0.2–0.4)	0.3 (0.2–0.3)	0.5 (0.1–0.9)	0.7 (0.2–1.1)	0.3 (0.3–0.4)
Counselling/advice—alcohol*	0.3 (0.3–0.3)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.5 (0.3–0.6)	0.6 (0.0–1.3)	0.3 (0.3–0.3)

(continued)

Table 8.4(b) (continued): Most frequent clinical treatments by ASGC Remoteness

	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific					
Treatment	**Major Cities (*n*=616,852)**	**Inner Regional Australia (*n*=175,944)**	**Outer Regional Australia (*n*=84,760)**	**Remote Australia (*n*=11,924)**	**Very Remote Australia (*n*=3,843)**	**Australia (*n*=893,323)**
Counselling/advice—lifestyle*	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.0–0.4)	0.3 (0.0–0.8)	0.3 (0.2–0.3)
Counselling/advice—prevention*	0.3 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.0–0.3)	0.2 (0.0–0.4)	0.3 (0.2–0.3)
Family planning*	0.3 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.1–0.3)	0.3 (0.1–0.5)	0.2 (0.2–0.3)
Counselling/advice—relaxation*	0.2 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.3 (0.1–0.4)	0.2 (0.0–0.4)	0.2 (0.2–0.2)
Counselling/advice—relationship*	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.1 (0.1–0.2)	0.2 (0.0–0.5)	0.2 (0.2–0.2)
Counselling/advice—drug abuse*	0.2 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.2)	0.1 (0.0–0.2)	0.2 0.1–0.2)
Total clinical treatments	**26.1 (25.5–26.6)**	**22.9 (22.0–23.8)**	**22.4 (21.0–23.7)**	**22.6 (18.6–26.6)**	**33.9 (24.0–43.8)**	**25.1 (24.6–25.5)**

(a) Figures do not total 100 as more than one treatment can be recorded for each problem.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Procedures

Procedures are presented in national frequency order as a rate per 100 problems managed.

RRMA

Table 8.5(a) compares procedural treatments across RRMA categories. All reported differences were statistically significant ($p<0.05$).

Compared with the national average:

- in Large Rural Centres and Other Rural Areas, there was a higher frequency of procedures involving excision/removal tissue/biopsy/cauterisation
- physical medicine/rehabilitation and unspecified therapeutic procedures were less common in Remote Centres
- repair/fixation–suture/cast/prosthetic device was more common in Other Rural and Other Remote Areas.

ASGC Remoteness

Table 8.5(b) compares procedural treatments across ASGC categories. Compared with the national average:

- in Inner Regional, Outer Regional and Remote Australia, procedures involving excision/removal tissue/biopsy/cauterisation were performed more often
- repair/fixation–suture/cast/prosthetic device was more common in Outer Regional Australia.

Table 8.5(a): Most frequent procedural treatments by RRMA

Treatment	Rate per problem managed,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=589,295)	**Other Metropolitan (*n*=66,543)**	**Large Rural Centre (*n*=57,219)**	**Small Rural Centre (*n*=56,159)**	**Other Rural Area (*n*=109,404)**	**Remote Centre (*n*=5,579)**	**Other Remote Area (*n*=9,124)**	**Australia (*n*=893,323)**
Excision/removal tissue/biopsy/ destruction/debridement/cauterisation*	1.7 (1.6–1.8)	2.0 (1.8–2.2)	**2.8 (2.4–3.2)**	2.2 (2.0–2.4)	**2.5 (2.4–2.7)**	2.0 (1.3–2.6)	2.3 (1.8–2.7)	1.9 (1.8–2.0)
Dressing/pressure/compression/ tamponade*	1.3 (1.3–1.4)	1.4 (1.2–1.5)	1.2 (1.1–1.4)	1.1 (1.0–1.3)	1.3 (1.2–1.4)	1.2 (0.7–1.6)	1.5 (1.1–1.9)	1.3 (1.3–1.3)
Physical medicine/rehabilitation*	1.3 (1.2–1.4)	1.1 (0.9–1.2)	1.2 (1.0–1.5)	1.1 (0.9–1.3)	1.2 (1.0–1.3)	**0.4 (0.2–0.6)**	1.1 (0.7–1.5)	1.3 (1.2–1.3)
Local injection/infiltration*	1.0 (0.9–1.0)	1.1 (0.9–1.4)	1.1 (0.9–1.3)	1.3 (1.0–1.7)	1.1 (0.9–1.3)	0.9 (0.4–1.4)	1.2 (0.7–1.7)	1.0 (1.0–1.1)
Other therapeutic procedures/surgery NEC*	0.8 (0.8–0.9)	0.9 (0.6–1.2)	0.9 (0.6–1.1)	0.7 (0.5–0.8)	0.7 (0.5–0.8)	**0.4 (0.1–0.6)**	1.1 (0.5–1.7)	0.8 (0.7–0.9)
Incision/drainage/flushing/aspiration/ removal body fluid*	0.7 (0.7–0.7)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	1.0 (0.8–1.3)	0.8 (0.6–1.1)	0.7 (0.7–0.8)
Pap smear	0.7 (0.7–0.7)	0.9 (0.7–1.1)	0.8 (0.7–0.9)	0.8 (0.6–1.0)	0.7 (0.6–0.8)	0.6 (0.3–0.9)	0.8 (0.5–1.1)	0.7 (0.7–0.8)
Repair/fixation–suture/cast/prosthetic device (apply/remove)*	0.6 (0.5–0.6)	0.8 (0.6–0.9)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	**0.9 (0.8–1.0)**	0.6 (0.3–0.8)	**1.3 (0.9–1.7)**	0.6 (0.6–0.7)
Physical function test*	0.3 (0.2–0.3)	0.3 (0.2–0.4)	0.4 (0.3–0.5)	0.3 (0.2–0.4)	0.3 (0.2–0.3)	0.6 (0.0–1.3)	0.4 (0.2–0.5)	0.3 (0.3–0.3)
Electrical tracings*	0.2 (0.2–0.2)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.2 (0.2–0.3)	0.3 (0.3–0.4)	0.4 (0.2–0.5)	0.4 (0.2–0.6)	0.2 (0.2–0.3)
Total procedural treatments	**9.2 (9.0–9.5)**	**10.3 (9.6–11.1)**	**11.0 (10.3–11.8)**	**10.0 (9.4–10.7)**	**10.5 (10.1–11.0)**	**8.9 (7.0–10.9)**	**11.7 (10.1–13.4)**	**9.7 (9.5–9.8)**

(a) Figures do not total 100 as more than one procedure can be described for each problem.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
NEC—not elsewhere classified.

Table 8.5(b): Most frequent procedural treatments by ASGC Remoteness

Treatment	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific					
	Major Cities (*n*=616,852)	Inner Regional Australia (*n*=175,944)	Outer Regional Australia (*n*=84,760)	Remote Australia (*n*=11,924)	Very Remote Australia (*n*=3,843)	Australia (*n*=893,323)
Excision/removal tissue/biopsy/ destruction/debridement/cauterisation*	1.7 (1.6–1.8)	**2.5 (2.3–2.6)**	**2.4 (2.2–2.5)**	**2.6 (2.1–3.1)**	1.7 (1.1–2.4)	1.9 (1.8–2.0)
Dressing/pressure/compression/ tamponade*	1.3 (1.3–1.3)	1.3 (1.2–1.3)	1.3 (1.2–1.4)	1.3 (1.0–1.6)	1.8 (1.1–2.5)	1.3 (1.3–1.3)
Physical medicine/rehabilitation*	1.3 (1.2–1.4)	1.1 (1.0–1.3)	1.1 (0.9–1.2)	1.1 (0.5–1.6)	1.4 (0.5–2.3)	1.3 (1.2–1.3)
Local injection/infiltration*	1.0 (0.9–1.1)	1.2 (1.0–1.3)	1.0 (0.8–1.2)	1.0 (0.7–1.4)	1.1 (0.1–2.2)	1.0 (1.0–1.1)
Other therapeutic procedures/surgery NEC*	0.9 (0.8–0.9)	0.8 (0.6–0.9)	0.6 (0.5–0.7)	0.8 (0.3–1.3)	1.4 (0.4–2.4)	0.8 (0.7–0.9)
Incision/drainage/flushing/aspiration/ removal body fluid*	0.7 (0.7–0.7)	0.8 (0.7–0.8)	0.9 (0.8–1.0)	0.9 (0.7–1.1)	0.7 (0.4–0.9)	0.7 (0.7–0.8)
Pap smear	0.7 (0.7–0.8)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.6 (0.4–0.8)	0.9 (0.2–1.6)	0.7 (0.7–0.8)
Repair/fixation–suture/cast/prosthetic device (apply/remove)*	0.6 (0.5–0.6)	0.7 (0.7–0.8)	**0.9 (0.8–1.0)**	1.0 (0.7–1.2)	1.2 (0.4–1.9)	0.6 (0.6–0.7)
Physical function test*	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.4 (0.2–0.5)	0.6 (0.2–0.9)	0.2 (0.0–0.4)	0.3 (0.3–0.3)
Electrical tracings*	0.2 (0.2–0.2)	0.3 (0.3–0.3)	0.3 (0.3–0.4)	0.4 (0.2–0.5)	0.3 (0.1–0.5)	0.2 (0.2–0.3)
Total procedural treatments	**9.3 (9.1–9.5)**	**10.5 (10.1–10.9)**	**10.3 (9.8–10.8)**	**10.8 (9.4–12.2)**	**11.6 (8.4–14.9)**	**9.7 (9.5–9.8)**

(a) Figures do not total 100 as more than one procedure can be described for each problem.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result. NEC—not elsewhere classified.

9 Referrals

A referral is defined as the process by which the responsibility for part, or all, of the care of a patient is temporarily transferred to another health care provider. Only new referrals arising at the encounter were included (i.e. continuations were not recorded). For each encounter, GPs could record up to two referrals. These included referrals to specialists, allied health professionals, hospitals, emergency departments or other medical services. Referrals to hospital outpatient clinics and other GPs were classed as referrals to other medical services.

This chapter describes differences that arose across RRMA and ASGC Remoteness categories. For a summary of findings in each individual RRMA category or trends with ASGC Remoteness, please refer to Chapter 11—Summary of results.

9.1 Referral rates

RRMA

Table 9.1(a) compares referrals per 100 problems managed across RRMA categories. All differences between categories and the national average referred to here were statistically significant ($p<0.05$) unless otherwise stated.

Compared with the national average, referrals to:

- medical specialists were less common in Large Rural Centres and Other Rural Areas
- surgeons (not otherwise classified) were more common in Small Rural Centres and Other Rural Areas, with marginally (not significant) higher rates in Remote Centres and Other Remote Areas
- dermatologists and gastroenterologists were less common in the rural zone and Remote Centres
- cardiologists were less common in Large Rural Centres
- urologists were less common in Remote Centre and Other Remote Areas
- psychiatrists were less common in Other Rural Areas
- allied health professionals were more frequent in Small Rural Centres and Remote Centres
- dietitians/nutritionists were more common in Other Rural Areas
- dentists were more common in Other Remote Areas
- hospitals were more common in Other Rural and Other Remote Areas
- hospital accident and emergency departments were less common in Other Rural Areas.

ASGC Remoteness

Table 9.1(b) compares referrals per 100 problems managed across ASGC categories. All differences between categories and the national average referred to here were statistically significant unless otherwise stated. Compared with the national average, referrals:

- to medical specialists were less common in Inner Regional Australia

- to surgeons (not otherwise classified) were more common in Inner Regional and Outer Regional Australia
- to dermatologists and gastroenterologists were less common in Inner Regional and Outer Regional Australia
- to psychiatrists were less common in Outer Regional Australia
- to hospitals were more common in Outer Regional Australia and Remote Australia, increasing with remoteness
- in total were more common in Very Remote Australia.

Table 9.1(a): Referral rates by RRMA

	Rate per 100 problems managed,[a] 95% confidence interval, column specific							
	Capital City (*n*=589,295)	**Other Metropolitan (*n*=66,543)**	**Large Rural Centre (*n*=57,219)**	**Small Rural Centre (*n*=56,159)**	**Other Rural Area (*n*=109,404)**	**Remote Centre (*n*=5,579)**	**Other Remote Area (*n*=9,124)**	**Total (*n*=893,323)**
Medical specialist	5.5 (5.4–5.6)	5.7 (5.3–6.1)	**4.9 (4.6–5.2)**	5.2 (4.9–5.4)	**4.9 (4.7–5.2)**	5.2 (4.2–6.2)	5.7 (4.9–6.5)	5.4 (5.3–5.5)
Surgeon NOS	0.5 (0.5–0.5)	0.6 (0.5–0.6)	0.7 (0.6–0.7)	**0.9 (0.8–1.0)**	**0.8 (0.7–0.8)**	0.9 (0.6–1.2)	0.8 (0.6–1.0)	0.6 (0.5–0.6)
Dermatologist	0.5 (0.5–0.5)	0.4 (0.4–0.5)	**0.3 (0.2–0.3)**	**0.3 (0.2–0.3)**	**0.2 (0.2–0.3)**	**0.2 (0.1–0.3)**	0.3 (0.1–0.4)	0.4 (0.4–0.5)
Cardiologist	0.3 (0.3–0.3)	0.4 (0.3–0.5)	**0.2 (0.1–0.2)**	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.1–0.4)	0.4 (0.2–0.6)	0.3 (0.3–0.3)
Gastroenterologist	0.3 (0.3–0.3)	0.3 (0.3–0.4)	**0.2 (0.1–0.2)**	**0.1 (0.1–0.2)**	**0.2 (0.1–0.2)**	**0.1 (0.0–0.2)**	0.2 (0.1–0.3)	0.3 (0.3–0.3)
Urologist	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	**0.1 (0.0–0.1)**	0.1 (0.0–0.2)	0.2 (0.2–0.2)
Psychiatrist	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	**0.1 (0.1–0.1)**	0.2 (0.1–0.4)	0.1 (0.0–0.2)	0.2 (0.2–0.2)
Allied health services	1.9 (1.8–1.9)	1.9 (1.7–2.1)	1.9 (1.7–2.1)	**2.3 (2.1–2.5)**	2.2 (2.0–2.4)	**2.8 (2.2–3.5)**	2.2 (1.7–2.7)	2.0 (1.9–2.0)
Dietitian/nutritionist	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.2 (0.1–0.2)	**0.2 (0.2–0.2)**	0.2 (0.1–0.4)	0.1 (0.0–0.2)	0.1 (0.1–0.1)
Dentist	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.2 (0.0–0.3)	**0.3 (0.2–0.4)**	0.1 (0.1–0.1)
Hospital	0.4 (0.3–0.4)	0.5 (0.3–0.7)	0.4 (0.3–0.5)	0.5 (0.4–0.5)	**0.7 (0.6–0.8)**	1.3 (0.5–2.2)	**1.0 (0.6–1.4)**	0.4 (0.4–0.5)
Accident & emergency department	0.1 (0.1–0.1)	0.1 (0.0–0.1)	0.1 (0.0–01)	0.1 (0.0–0.1)	**0.0** [Ŧ]	0.1 (0.0–0.3)	0.1 (0.0–0.2)	0.1 (0.1–0.1)
Other referral	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.3)	0.2 (0.2–0.2)	0.3 (0.1–0.4)	0.3 (0.1–0.5)	0.2 (0.2–0.2)
Total referrals	**8.0 (7.8–8.1)**	**8.4 (7.9–9.0)**	**7.5 (7.1–7.9)**	**8.2 (7.8–8.6)**	**8.1 (7.7–8.4)**	**9.8 (8.1–11.5)**	**9.3 (8.1–10.5)**	**8.0 (7.9–8.2)**

(a) Figures do not total 100 as more than referral can be given at each encounter and for each problem.

Ŧ Rates are reported to one decimal place (n=38).

Note: Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
NOS—not otherwise specified.

Table 9.1(b): Referral rates by ASGC Remoteness

	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific					
	Major Cities (*n*=616,852)	**Inner Regional Australia (*n*=175,944)**	**Outer Regional Australia (*n*=84,760)**	**Remote Australia (*n*=11,924)**	**Very Remote Australia (*n*=3,843)**	**Total (*n*=893,323)**
Medical specialist	5.5 (5.4–5.6)	**5.0 (4.9–5.2)**	5.0 (4.7–5.3)	5.1 (4.4–5.8)	6.2 (5.0–7.3)	5.4 (5.3–5.5)
Surgeon NOS	0.5 (0.5–0.5)	**0.7 (0.7–0.8)**	**0.8 (0.7–0.9)**	0.7 (0.6–0.9)	0.9 (0.6–1.3)	0.6 (0.5–0.6)
Dermatologist	0.5 (0.5–0.5)	**0.3 (0.3–0.3)**	**0.2 (0.2–0.3)**	0.2 (0.1–0.4)	0.3 (0.0–0.5)	0.4 (0.4–0.5)
Cardiologist	0.3 (0.3–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.1–0.3)	0.6 (0.2–1.1)	0.3 (0.3–0.3)
Gastroenterologist	0.3 (0.3–0.3)	**0.2 (0.2–0.2)**	**0.2 (0.1–0.2)**	0.2 (0.1–0.3)	0.2 (0.0–0.3)	0.3 (0.3–0.3)
Urologist	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.0–0.2)	0.2 (0.2–0.2)
Psychiatrist	0.2 (0.2–0.2)	0.1 (0.1–0.2)	**0.1 (0.1–0.1)**	0.2 (0.1–0.2)	0.1 (0.0–0.3)	0.2 (0.2–0.2)
Allied health services	1.9 (1.8–1.9)	2.2 (2.0–2.3)	2.1 (2.0–2.3)	2.6 (2.0–3.1)	2.2 (1.3–3.1)	2.0 (1.9–2.0)
Hospital	0.4 (0.3–0.4)	0.5 (0.4–0.5)	**0.7 (0.6–0.8)**	**1.2 (0.6–1.7)**	1.3 (0.4–2.1)	0.4 (0.4–0.5)
Accident & emergency department	0.1 (0.1–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.10)	0.2 (0.0–0.4)	0.1 (0.1–0.1)
Other referral	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.1–0.3)	0.5 (0.0–1.0)	0.2 (0.2–0.2)
Total referrals	**8.0 (7.9–8.2)**	**8.0 (7.7–8.2)**	**8.1 (7.7–8.4)**	**9.1 (8.0–10.2)**	**10.3 (8.3–12.3)**	**8.0 (7.9–8.2)**

(a) Figures do not total 100 as more than referral can be given at each encounter and for each problem.

Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.
NOS—not otherwise specified

10 Tests and investigations

The GPs participating in the study were asked to record (in free text) any pathology, imaging or other tests ordered or undertaken at the encounter and to nominate the patient problem(s) associated with each test order placed. This allows the linkage of test orders to a single problem or multiple problems. Up to five orders for pathology and two for imaging and other tests could be recorded at each encounter. A single test may have been ordered for the management of multiple problems, and multiple tests may have been used in the management of a single problem.

A pathology test order may be for a single test (e.g. Pap smear, HbA1c) or for a battery of tests (e.g. lipids, full blood count). Where a battery of tests was ordered, the battery name was recorded rather than each individual test. GPs also recorded the body site for any imaging ordered (e.g. X-ray chest, CT head).

This chapter describes differences that arose across RRMA and ASGC Remoteness categories. For a summary of findings in each individual RRMA category or trends with ASGC Remoteness, please refer to Chapter 11—Summary of results.

10.1 Rates of tests and investigations

There were no tests recorded for the vast majority of problems managed. In the national sample, at least one pathology test was ordered for 11.8% of problems managed and at least one imaging test was ordered for 5.0% of problems managed. Pathology tests were recorded at a rate of 23.4 per 100 problems and imaging tests at a rate of 5.6 per 100 problems (Table 10.1(a)).

RRMA

Table 10.1(a) compares the number of tests and investigations ordered across RRMA categories. All reported differences were statistically significant ($p<0.05$). The majority of encounters involved the management of only one problem. Compared with the national average:

- Capital Cities had a lower rate of pathology test ordering, all rural and remote areas had higher pathology ordering rates, and pathology test ordering rates tended to increase across the rural and remote zones
- there were higher rates of imaging orders in Other Metropolitan Centres, Small Rural Centres and Remote Centres
- the rural and remote zones had larger proportions of problems at which at least one pathology test was ordered, and Capital Cities a smaller proportion
- Other Metropolitan Centres, Small Rural Centres, Other Rural Areas and Remote Centres all had a higher percentage of problems which resulted in least one imaging test.

ASGC Remoteness

Table 10.1(b) compares the number of tests and investigations ordered across ASGC Remoteness categories. All reported differences were statistically significant ($p<0.05$) unless otherwise stated.

- Outer Regional Australia and Remote Australia had higher than average rates of pathology ordering and Major Cities a lower rate, with an increasing trend in pathology ordering rates with increasing remoteness.
- Inner Regional Australia, Outer Regional Australia and Remote Australia had a higher than average proportion of problems at which at least one pathology test was ordered and Major Cities a lower rate, with an increasing trend for problems to receive a test order with increasing remoteness.
- There were no differences in the number of imaging tests ordered per 100 encounters across ASGC categories; however, in Outer Regional Australia there was a higher than average proportion of problems for which at least one imaging test was ordered.

Table 10.1(a): Test and investigation rates by RRMA

	Rate per 100 problems managed, 95% confidence interval, column specific							
Number of problems 2000–2004[a]	**Capital City (*n*=389,383)**	**Other Metropolitan (*n*=44,073)**	**Large Rural Centre (*n*=35,724)**	**Small Rural Centre (*n*=37,622)**	**Other Rural Area (*n*=73,513)**	**Remote Centre (*n*=4,302)**	**Other Remote Area (*n*=6,947)**	**Australia (*n*=591,564)**
Pathology test	**22.2 (21.6–22.7)**	24.6 (22.8–26.3)	**25.6 (24.0–27.3)**	**25.6 (24.1–27.1)**	**26.2 (25.0–27.4)**	**32.8 (27.6–37.9)**	**29.0 (24.0–34.0)**	23.4 (23.0–23.9)
Number of problems 1999–2004[b]	**(*n*=490,244)**	**(*n*=55,517)**	**(*n*=48,071)**	**(*n*=47,525)**	**(*n*=93,497)**	**(*n*=4,850)**	**(*n*=8,436)**	**(*n*=748,140)**
Imaging test	5.3 (5.2–5.5)	**6.3 (5.8–6.9)**	5.6 (4.9–6.4)	**6.1 (5.8–6.5)**	6.0 (5.7–6.3)	**7.2 (5.8–8.7)**	5.8 (4.9–6.6)	5.6 (5.5–5.7)
	Per cent of problems with at least one investigation, 95% confidence interval, column specific							
Pathology test	**11.2 (11.0–11.5)**	12.2 (11.5–13.0)	**13.1 (12.3–14.0)**	12.7 (12.0–13.4)	**13.2 (12.7–13.7)**	**15.6 (13.6–17.5)**	**14.6 (12.5–16.7)**	11.8 (11.6–12.0)
Imaging test	4.8 (4.7–4.9)	**5.7 (5.2–6.2)**	5.0 (4.5–5.5)	**5.5 (5.2–5.9)**	**5.5 (5.2–5.7)**	**6.8 (5.5–8.1)**	5.3 (4.5–6.1)	5.0 (4.9–5.1)

Table 10.1(b): Test and investigation rates by ASGC Remoteness

	Rate per 100 problems managed, 95% confidence interval, column specific					
Number of problems 2000–2004[a]	**Major Cities (*n*=407,482)**	**Inner Regional Australia (*n*=116,378)**	**Outer Regional Australia (*n*=56,160)**	**Remote Australia (*n*=8,248)**	**Very Remote Australia (*n*=3,296)**	**Australia (*n*=591,564)**
Pathology test	**22.3 (21.8–22.9)**	24.7 (23.9–25.5)	**27.4 (25.9–28.8)**	**28.8 (24.8–32.9)**	31.8 (23.7–39.9)	23.4 (23.0–23.9)
Number of problems 1999–2004[b]	**(*n*=513,614)**	**(*n*=149,745)**	**(*n*=71,073)**	**(*n*=10,122)**	**(*n*=3,586)**	**(*n*=748,140)**
Imaging test	5.4 (5.3–5.6)	5.9 (5.6–6.2)	6.0 (5.7–6.3)	6.0 (5.1–6.9)	5.2 (3.8–6.5)	5.6 (5.5–5.7)
	Per cent of problems with at least one investigation, 95% confidence interval, column specific					
Pathology test	**11.3 (11.0–11.5)**	**12.5 (12.1–12.9)**	**13.9 (13.3–14.6)**	**15.1 (13.4–16.9)**	15.1 (11.8–18.5)	11.8 (11.6–12.0)
Imaging test	4.9 (4.8–5.0)	5.3 (5.1–5.5)	**5.5 (5.2–5.8)**	5.5 (4.7–6.3)	4.8 (3.6–6.0)	5.0 (4.9–5.1)

(a) Limited to April 2000 to March 2004 inclusive due to older pathology codes in Years 1 and 2.
(b) Limited to April 1999 to March 2004 inclusive due to older imaging codes in Year 1.
Note: Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

10.2 Distribution of pathology orders across MBS pathology groups

The top 10 most frequently ordered pathology tests were the basis for selection for individual test reporting in this section. The top 10 ordered by all GPs (nationally) were mainly reflected in the orders by region; however, there were some differences in the order of frequency. HbA1c and coagulation studies entered the top 10 in the Outer Regional Australia and Remote Australia ASGC categories and were therefore added to the list for comparison.

RRMA

Table 10.2(a) shows the distribution of pathology orders across Medicare Benefits Schedule (MBS) pathology groups and the most common tests in each group by RRMA categories. All reported differences were statistically significant ($p<0.05$). Compared with the national average:

- chemistry tests were ordered at a higher rate in Other Rural Areas and in Remote Centres
- EUC was ordered at a lower rate in Capital Cities and at a higher rate in Small Rural Centres and Other Rural Areas
- multi-biochemical analysis was ordered at higher rates in Other Metropolitan Centres
- HbA1c had a higher rate of ordering in both Other Rural and Other Remote Areas
- haematology tests (particularly full blood count (FBC) and erythrocyte sedimentation rate (ESR)) were ordered at lower rates in Capital Cities and at higher rates in Small Rural Centres, Other Rural Areas and Remote Centres
- ESR and coagulation studies were ordered at higher rates in Other Rural Areas and coagulation studies were lower in Other Metropolitan Centres
- microbiology tests were ordered at a higher rate in the remote zone, while tissue pathology was ordered at a higher rate in Large Rural Centres and Other Rural Areas.

ASGC Remoteness

Table 10.2(b) shows the distribution of pathology orders across MBS pathology groups and the most common tests in each group by ASGC categories. All reported results were statistically significant ($p<0.05$).

- Glucose tests order rates were higher than average in Outer Regional Australia.
- Haematology order rates were generally higher outside the Major Cities. FBCs were ordered at higher rates in Inner and Outer Regional Australia and ESR at higher rates in Inner Regional Australia compared with the national average.
- Coagulation studies were ordered at higher than average rates in Outer Regional and Remote Australia, but not Very Remote Australia.
- Tissue pathology order rates were higher than average across Inner Regional, Outer Regional and Remote Australia, but not Very Remote Australia.
- The rate of microbiology test orders increased with increasing remoteness.
- The rate of chemistry orders increased with increasing remoteness—in particular EUC and HbA1c orders.

Table 10.2(a): Distribution of pathology orders across MBS pathology groups by RRMA

Pathology test ordered	Capital City (*n*=389,383)	Other Metropolitan (*n*=44,073)	Large Rural Centre (*n*=35,724)	Small Rural Centre (*n*=37,622)	Other Rural Area (*n*=73,513)	Remote Centre (*n*=4,302)	Other Remote Area (*n*=6,947)	Australia (*n*=591,564)
	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific							
Chemistry	11.8 (11.5–12.2)	12.5 (11.6–13.5)	13.3 (12.2–14.4)	13.5 (12.6–14.5)	**14.1 (13.3–14.8)**	**16.4 (13.0–19.7)**	14.0 (11.0–17.0)	12.4 (12.2–12.7)
Lipids*	2.3 (2.2–2.4)	2.1 (1.8–2.3)	2.3 (2.0–2.6)	2.3 (2.0–2.5)	2.5 (2.3–2.7)	2.3 (1.4–3.1)	2.4 (1.6–3.2)	2.3 (2.2–2.4)
EUC*	**1.4 (1.3–1.4)**	1.3 (1.1–1.5)	1.8 (1.5–2.1)	**2.1 (1.8–2.4)**	**2.2 (2.0–2.5)**	2.5 (1.6–3.4)	1.9 (1.1–2.6)	1.6 (1.5–1.6)
Liver function*	1.5 (1.4–1.5)	1.2 (1.1–1.4)	1.6 (1.4–1.8)	1.6 (1.4–1.8)	1.7 (1.5–1.9)	2.1 (1.5–2.8)	1.7 (1.0–2.3)	1.5 (1.4–1.6)
Glucose—all*	1.5 (1.4–1.5)	1.4 (1.2–1.6)	1.3 (1.1–1.6)	1.6 (1.4–1.8)	1.6 (1.4–1.8)	1.9 (1.1–2.6)	1.1 (0.7–1.5)	1.5 (1.4–1.5)
Thyroid function*	1.2 (1.1–1.2)	1.3 (1.1–1.5)	1.5 (1.3–1.7)	1.4 (1.3–1.6)	1.3 (1.2–1.4)	1.7 (1.1–2.2)	1.5 (1.1–2.0)	1.3 (1.2–1.3)
Multi-biochemical analysis*	0.8 (0.7–0.9)	**1.4 (1.1–1.7)**	1.0 (0.8–1.3)	0.8 (0.6–1.0)	0.9 (0.7–1.1)	1.0 (0.3–1.7)	0.9 (0.4–1.4)	0.9 (0.8–0.9)
HbA1c	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	**0.7 (0.6–0.8)**	1.0 (0.4–1.5)	**0.9 (0.6–1.2)**	0.5 (0.5–0.5)
Haematology	**4.1 (4.0–4.2)**	4.6 (4.2–5.1)	5.1 (4.6–5.5)	**5.4 (5.0–5.8)**	**5.8 (5.4–6.1)**	**6.4 (5.0–7.7)**	5.4 (4.3–6.5)	4.5 (4.4–4.6)
Full blood count	**2.9 (2.8–2.9)**	3.2 (2.9–3.5)	3.5 (3.2–3.8)	**3.8 (3.4–4.1)**	**3.8 (3.5–4.0)**	**4.5 (3.6–5.4)**	3.7 (2.8–4.6)	3.1 (3.0–3.2)
Erythrocyte sedimentation rate	**0.6 (0.6–0.6)**	0.8 (0.7–1.0)	0.9 (0.7–1.0)	0.8 (0.7–0.9)	**1.0 (0.9–1.1)**	0.8 (0.4–1.1)	0.7 (0.3–1.0)	0.7 (0.7–0.7)
Coagulation	0.5 (0.4–0.5)	**0.3 (0.3–0.4)**	0.4 (0.4–0.5)	0.5 (0.4–0.6)	**0.8 (0.7–0.9)**	0.5 (0.2–0.8)	0.7 (0.5–1.0)	0.5 (0.5–0.5)
Microbiology	3.5 (3.4–3.6)	4.2 (3.7–4.7)	3.9 (3.5–4.4)	3.7 (3.3–4.0)	3.4 (3.1–3.6)	**6.7 (4.9–8.5)**	**5.8 (4.3–7.2)**	3.6 (3.5–3.7)
Urine MC&S*	1.2 (1.1–1.2)	1.3 (1.2–1.5)	1.3 (1.1–1.4)	1.2 (1.0–1.3)	1.1 (1.0–1.2)	1.5 (1.0–2.1)	1.5 (1.1–2.0)	1.2 (1.1–1.2)

(continued)

Table 10.2(a) (continued): Distribution of pathology orders across MBS pathology groups by RRMA

	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific							
Pathology test ordered	**Capital City (*n*=389,383)**	**Other Metropolitan (*n*=44,073)**	**Large Rural Centre (*n*=35,724)**	**Small Rural Centre (*n*=37,622)**	**Other Rural Area (*n*=73,513)**	**Remote Centre (*n*=4,302)**	**Other Remote Area (*n*=6,947)**	**Australia (*n*=591,564)**
Cytology	1.4 (1.3–1.4)	1.6 (1.3–1.9)	1.5 (1.3–1.8)	1.4 (1.2–1.7)	1.2 (1.0–1.4)	1.3 (0.7–1.8)	1.3 (0.8–1.8)	1.4 (1.3–1.4)
Pap smear*	1.3 (1.3–1.4)	1.6 (1.3–1.8)	1.5 (1.3–1.7)	1.4 (1.1–1.6)	1.2 (1.0–1.4)	1.2 (0.7–1.7)	1.3 (0.7–1.8)	1.4 (1.3–1.4)
Other NEC	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.4 (0.3–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.7 (0.3–1.1)	1.1 (0.6–1.6)	0.5 (0.5–0.6)
Infertility/pregnancy	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.3)	0.2 (0.1–0.2)	0.2 (0.1–0.4)	0.3 (0.1–0.6)	0.2 (0.2–0.2)
Tissue pathology	0.3 (0.2–0.3)	0.5 (0.3–0.6)	**0.8 (0.6–1.0)**	0.5 (0.4–0.6)	**0.5 (0.5–0.6)**	0.6 (0.3–0.9)	0.6 (0.3–0.8)	0.4 (0.3–0.4)
Immunology	0.3 (0.3–0.3)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.3 (0.2–0.4)	0.4 (0.4–0.5)	0.5 (0.2–0.8)	0.4 (0.2–0.6)	0.3 (0.3–0.4)
Simple basic tests	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.2)	0.1 (0.0–0.3)	0.1 (0.0–0.1)
Total pathology tests	**22.2 (21.6–22.7)**	**24.6 (22.8–26.3)**	**25.6 (24.0–27.3)**	**25.6 (24.1–27.1)**	**26.2 (25.0–27.4)**	**32.8 (27.6–37.9)**	**29.0 (24.0–34.0)**	**23.4 (23.0–23.9)**

(a) Figures do not total 100 as more than one pathology test can be ordered at each encounter and for each problem.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

Note: Limited to April 2000 to March 2004 inclusive due to older pathology codes in Years 1 and 2. Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result. EUC—electrolytes, urea & creatinine; MC&S—microscopy, culture & sensitivity; NEC—not elsewhere classified.

Table 10.2(b): Distribution of pathology orders across MBS pathology groups by ASGC Remoteness

Pathology test ordered	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific					
	Major Cities (*n*=407,482)	Inner Regional Australia (*n*=116,378)	Outer Regional Australia (*n*=56,160)	Remote Australia (*n*=8,248)	Very Remote Australia (*n*=3,296)	Australia (*n*=591,564)
Chemistry	11.9 (11.6–12.2)	13.1 (12.6–13.7)	**14.4 (13.4–15.3)**	14.5 (11.6–17.3)	15.6 (10.5–20.6)	12.4 (12.2–12.7)
Lipids*	2.3 (2.2–2.4)	2.3 (2.1–2.4)	2.6 (2.4–2.9)	2.5 (1.6–3.3)	2.8 (1.4–4.1)	2.3 (2.2–2.4)
EUC*	**1.4 (1.3–1.4)**	**1.9 (1.7–2.1)**	**2.3 (2.0–2.5)**	2.1 (1.4–2.8)	2.5 (1.0–4.0)	1.6 (1.5–1.6)
Liver function*	1.4 (1.4–1.5)	1.6 (1.5–1.7)	1.7 (1.5–1.9)	1.7 (1.2–2.1)	2.0 (0.7–3.2)	1.5 (1.4–1.6)
Glucose—all*	1.4 (1.4–1.5)	1.4 (1.3–1.5)	**1.8 (1.6–2.0)**	1.3 (0.9–1.8)	1.1 (0.5–1.7)	1.5 (1.4–1.5)
Thyroid function*	1.2 (1.2–1.3)	1.3 (1.2–1.4)	1.4 (1.2–1.5)	1.5 (1.1–1.8)	1.5 (0.9–2.1)	1.3 (1.2–1.3)
Multi-biochemical analysis*	0.9 (0.8–1.0)	1.0 (0.8–1.1)	0.6 (0.5–0.8)	0.7 (0.3–1.1)	1.1 (0.2–1.9)	0.9 (0.8–0.9)
HbA1c	0.5 (0.4–0.5)	**0.6 (0.6–0.7)**	**0.7 (0.6–0.8)[†]**	**1.1 (0.6–1.5)[†]**	1.0 (0.5–1.5)	0.5 (0.5–0.5)
Haematology	**4.2 (4.0–4.3)**	**5.2 (4.9–5.4)**	**5.7 (5.3–6.1)**	5.4 (4.4–6.4)	5.8 (3.9–7.7)	4.5 (4.4–4.6)
Full blood count	2.9 (2.8–3.0)	**3.5 (3.3–3.7)**	**3.8 (3.5–4.1)**	3.2 (2.5–3.8)	4.4 (3.0–5.8)	3.1 (3.0–3.2)
Erythrocyte sedimentation rate	0.6 (0.6–0.7)	**0.9 (0.8–1.0)**	0.8 (0.7–0.9)	0.8 (0.5–1.1)	0.6 (0.1–1.1)	0.7 (0.7–0.7)
Coagulation	0.5 (0.4–0.5)	0.5 (0.5–0.6)	**0.7 (0.6–0.8)[†]**	**1.0 (0.8–1.3)[†]**	0.4 (0.2–0.6)	0.5 (0.5–0.5)
Microbiology	3.6 (3.4–3.7)	3.5 (3.2–3.7)	3.9 (3.6–4.2)	**5.4 (4.0–6.7)**	**6.7 (4.5–8.9)**	3.6 (3.5–3.7)
Urine MC&S*	1.2 (1.1–1.2)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.5 (1.1–1.8)	1.6 (0.8–2.4)	1.2 (1.1–1.2)

(continued)

Table 10.2(b) (continued): Distribution of pathology orders across MBS pathology groups by ASGC Remoteness

	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific					
Pathology test ordered	**Major Cities (*n*=407,482)**	**Inner Regional Australia (*n*=116,378)**	**Outer Regional Australia (*n*=56,160)**	**Remote Australia (*n*=8,248)**	**Very Remote Australia (*n*=3,296)**	**Australia (*n*=591,564)**
Cytology	1.4 (1.3–1.4)	1.4 (1.2–1.5)	1.5 (1.2–1.7)	1.2 (0.8–1.5)	1.4 (0.4–2.4)	1.4 (1.3–1.4)
Pap smear*	1.3 (1.3–1.4)	1.3 (1.2–1.5)	1.4 (1.2–1.7)	1.1 (0.8–1.5)	1.4 (0.4–2.4)	1.4 (1.3–1.4)
Other NEC	0.5 (0.5–0.6)	0.4 (0.4–0.5)	0.6 (0.4–0.7)	0.9 (0.5–1.3)	1.2 (0.5–1.9)	0.5 (0.5–0.6)
Infertility/pregnancy	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.3 (0.1–0.4)	0.3 (0.1–0.5)	0.2 (0.2–0.2)
Tissue pathology	0.3 (0.2–0.3)	**0.5 (0.5–0.6)**	**0.7 (0.6–0.8)**	0.7 (0.4–1.0)	0.3 (0.1–0.6)	0.4 (0.3–0.4)
Immunology	0.3 (0.3–0.3)	0.4 (0.3–0.5)	0.4 (0.3–0.4)	0.4 (0.2–0.5)	0.5 (0.1–0.8)	0.4 (0.3–0.4)
Simple basic tests	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.0–0.1)	0.2 (0.1–0.2)	0.1[Ŧ]	0.1 (0.0–0.1)
Total pathology tests	**22.3 (21.8–22.9)**	**24.7 (23.9–25.5)**	**27.4 (25.9–28.8)**	**28.8 (24.8–32.9)**	**31.8 (23.7–39.9)**	**23.4 (23.0–23.9)**

(a) Figures do not total 100 as more than one pathology test can be ordered at each encounter and for each problem.

* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 3, <http://www.aihw.gov.au/publications/index.cfm/title/10171>).

† Indicates that the pathology test is among the most frequently managed conditions in this ASGC, but not among the most frequent for the average.

Ŧ Rates are reported to one decimal place, there is not enough variance to calculate confidence intervals (n=2).

Note: Limited to April 2000 to March 2004 inclusive due to older pathology codes in Years 1 and 2. Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result. EUC—electrolytes, urea & creatinine; MC&S—microscopy, culture & sensitivity; NEC—not elsewhere classified.

10.3 Distribution of imaging tests across MBS groups

The top two most frequently ordered imaging tests—chest X-ray and pelvis ultrasound—were the basis for selection for individual test reporting in this section. The top two ordered by all GPs were mainly reflected in the orders by region; however, there were some differences in the order of frequency. Obstetric ultrasound entered the top two in RRMA Remote Centres and ASGC Remote Australia, and knee X-ray entered the top two in RRMA Other Rural Areas and Other Remote Areas, and in ASGC Outer Regional Australia and Very Remote Australia, and were therefore added to the list for comparison.

RRMA

Table 10.3(a) shows the distribution of imaging tests across MBS groups and the most common tests in each group by RRMA categories. Compared with the national average:

- chest X-rays were ordered at significantly higher rates in Other Rural Areas, Remote Centres and Other Remote Areas
- ultrasound ordering rates were significantly higher in Small Rural and Remote Centres and obstetric ultrasound was ordered at significantly higher rates in Small Rural Centres, Other Rural Areas and Remote Centres.

ASGC Remoteness

Table 10.3(b) shows the distribution of imaging tests across MBS groups and the most common tests in each group by ASGC categories. Compared with the national average:

- chest X-rays were ordered at significantly higher rates in Outer Regional Australia and Remote Australia
- obstetric ultrasounds were ordered at significantly higher rates in Inner Regional, Outer Regional and Remote Australia.

Table 10.3(a): Most frequent imaging tests ordered, by MBS group and most frequent tests, by RRMA

Imaging test ordered	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific							
	Capital City (*n*=490,244)	**Other Metropolitan (*n*=55,517)**	**Large Rural Centre (*n*=48,071)**	**Small Rural Centre (*n*=47,525)**	**Other Rural Area (*n*=93,497)**	**Remote Centre (*n*=4,850)**	**Other Remote Area (*n*=8,436)**	**Australia (*n*=748,140)**
Diagnostic radiology	3.2 (3.1–3.2)	3.8 (3.3–4.2)	3.2 (2.8–3.6)	3.4 (3.2–3.6)	3.6 (3.4–3.8)	4.5 (3.2–5.7)	3.8 (3.2–4.4)	3.3 (3.2–3.4)
X-ray; chest	0.6 (0.6–0.7)	0.9 (0.7–1.1)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	**0.9 (0.8–1.0)**	**1.2 (0.8–1.6)**	**1.1 (0.8–1.3)**	0.7 (0.7–0.7)
X-ray; knee	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.3–0.4)†	0.2 (0.0–0.4)	0.3 (0.1–0.4)†	0.3 (0.3–0.3)
Ultrasound	1.6 (1.6–1.7)	1.9 (1.7–2.0)	1.8 (1.4–2.1)	**2.0 (1.8–2.2)**	1.8 (1.6–1.9)	**2.3 (1.8–2.9)**	1.5 (1.1–1.8)	1.7 (1.6–1.7)
Ultrasound; pelvis	0.3 (0.3–0.4)	0.4 (0.3–0.5)	0.3 (0.2–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.3)	0.5 (0.2–0.7)	0.2 (0.1–0.3)	0.3 (0.3–0.4)
Ultrasound; obstetric	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	**0.3 (0.2–0.4)**	**0.2 (0.2–0.3)**	**0.5 (0.2–0.8)†**	0.2 (0.1–0.4)	0.1 (0.1–0.1)
Computerised tomography	0.5 (0.5–0.5)	0.6 (0.5–0.7)	0.5 (0.4–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.6)	0.3 (0.0–0.6)	0.4 (0.3–0.6)	0.5 (0.5–0.5)
Total imaging tests	**5.3 (5.2–5.5)**	**6.3 (5.8–6.9)**	**5.6 (4.9–6.4)**	**6.1 (5.8–6.5)**	**6.0 (5.7–6.3)**	**7.2 (5.8–8.7)**	**5.8 (4.9–6.6)**	**5.6 (5.5–5.7)**

(a) Figures do not total 100 as more than one imaging test can be ordered at each encounter and for each problem.

† Indicates that the imaging test is among the most frequently ordered tests in this RRMA, but not among the most frequent for the average.

Note: Limited to April 1999 to March 2004 inclusive due to older imaging codes in Year 1. Shading indicates a significant difference between a RRMA and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

Table 10.3(b): Most frequent imaging tests ordered, by MBS group and most frequent tests, by ASGC Remoteness

	Rate per 100 problems managed,[(a)] 95% confidence interval, column specific					
Imaging test ordered	**Major Cities (*n*=513,614)**	**Inner Regional Australia (*n*=149,745)**	**Outer Regional Australia (*n*=71,073)**	**Remote Australia (*n*=10,122)**	**Very Remote Australia (*n*=3,586)**	**Australia (*n*=748,140)**
Diagnostic radiology	3.2 (3.1–3.3)	3.3 (3.2–3.5)	3.6 (3.3–3.8)	3.9 (3.2–4.6)	3.2 (2.3–4.1)	3.3 (3.2–3.4)
X-ray; chest	0.7 (0.6–0.7)	0.8 (0.7–0.9)	**1.0** **(0.8–1.1)**	**1.1** **(0.8–1.3)**	0.7 (0.4–1.1)	0.7 (0.7–0.7)
X-ray; knee	0.3 (0.3–0.3)	0.3 (0.3–0.3)	0.3 (0.3–0.4)†	0.2 (0.1–0.3)	0.3 (0.1–0.6)†	0.3 (0.3–0.3)
Ultrasound	1.6 (1.6–1.7)	1.9 (1.7–2.0)	1.8 (1.7–2.0)	1.6 (1.3–2.0)	1.7 (1.0–2.3)	1.7 (1.6–1.7)
Ultrasound; pelvis	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.3 (0.1–0.4)	0.3 (0.0–0.6)	0.3 (0.3–0.4)
Ultrasound; obstetric	0.1 (0.1–0.1)	**0.2** **(0.2–0.2)**	**0.3** **(0.2–0.3)**	**0.3** **(0.2–0.5)†**	0.3 (0.1–0.5)	0.1 (0.1–0.1)
Computerised tomography	0.5 (0.5–0.5)	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.4 (0.2–0.5)	0.3 (0.1–0.6)	0.5 (0.5–0.5)
Total imaging tests	**5.4** **(5.3–5.6)**	**5.9** **(5.6–6.2)**	**6.0** **(5.7–6.3)**	**6.0** **(5.1–6.9)**	**5.2** **(3.8–6.5)**	**5.6** **(5.5–5.7)**

(a) Figures do not total 100 as more than one imaging test can be ordered at each encounter and for each problem.

† Indicates that the imaging test is among the most frequently ordered in this ASGC but not among the most frequent for the average.

Note: Limited to April 1999 to March 2004 inclusive due to older imaging codes in Year 1. Shading indicates a significant difference between an ASGC and Australia (total sample). Darker shading indicates a higher than average result and lighter shading indicates a lower than average result.

11 Summary of results

11.1 RRMA

The differences identified in Chapters 4–10 are summarised below for each RRMA category according to chapter. For more detail, refer to the relevant chapter. Each RRMA category has been compared against the Australian national average. Rates and proportions in each RRMA category that were higher or lower than the national average are reported below. Reported differences were significant ($p<0.05$) unless otherwise stated.

Capital Cities

The participating GPs

- Capital Cities had the largest percentage of female GPs.
- A smaller proportion of GPs worked in practices that provided their own after-hours patient care.
- A smaller proportion of GPs worked in practices where computers were used for prescribing, medical records or internet/email.

The encounters

- A larger percentage of encounters were claimed as Medicare Benefits Schedule (MBS) items of service.
- Larger proportions of encounters were long surgery consultations and home visits.
- A smaller proportion of encounters were hospital consultations.

The patients

- A larger proportion of patients at encounter were aged 25–44 years and a larger proportion were from a non-English-speaking background.
- A smaller proportion of patients at encounter were aged 65–74 years, a smaller proportion held a Commonwealth concession card or a Repatriation health card and encounters were less likely to be with Indigenous persons.
- Patients described RFEs in terms of symptoms and complaints significantly more often, and presented with fever and with respiratory issues more often, particularly cough, throat complaints and upper respiratory tract infections.
- Patients presented significantly less often with RFEs associated with pregnancy/family planning.

Problems managed

- There was a higher management rate of respiratory problems (particularly URTI), and of discussion of test results.
- There was a lower management rate of pregnancy and family planning problems, solar keratosis/sunburn and malignant skin neoplasms.

Treatments

- The rate of OTC advised medications was higher.
- Clinical treatments were given more often, particularly counselling/advice about nutrition/weight.
- Problems were less likely to be managed with a procedural treatment.

Referrals

- There were no differences in referral rates.

Tests and investigations

- There were lower rates of pathology test ordering and lower percentage of problems for which at least one pathology test was ordered.
- Haematology (particularly full blood count, ESRs) and EUC were ordered at lower rates.

Other Metropolitan Centres

The participating GPs

- There was a smaller proportion of younger GPs (<35 years) and a larger proportion of GPs who have been in practice for more than 20 years.

The encounters

- No differences from the national average were found.

The patients

- Patients were more often new to the practice, and more often holders of a Commonwealth concession card.
- Patients were less often aged between 24 and 45 years, less often from a non-English-speaking background and were rarely Indigenous persons.
- Patients presented significantly less often with a RFE of throat complaints.

Problems managed

- There was a significantly higher management rate of ischaemic heart disease.
- URTI was managed significantly less often.

Treatments

- There was a higher rate of overall medications—particularly prescribed medications.
- The rate of central nervous system medications prescribed/supplied was higher.

Referrals

- There were no differences in referral rates.

Tests and investigations

- There were higher rates of ordering of multi-biochemical analysis and lower ordering of coagulation studies.
- There was a higher overall rate of imaging tests ordered.

Large Rural Centres

The participating GPs

- There was a larger proportion of GPs aged 35–44 years and a larger proportion had been practising for 11–19 years, a larger proportion worked 6–10 sessions per week, a larger proportion were Fellows of the RACGP, and a larger proportion provided their own or cooperative after-hours arrangements.
- There was a smaller proportion of GPs aged 55+ years and a smaller proportion who work 11+ sessions per week.
- There was a larger proportion of GPs in practices using the computer for all five purposes (billing, prescribing, medical records, other administrative procedures, internet and/or email).
- There was a smaller proportion in practices where computers were not used at all.

The encounters

- There was a larger proportion of indirect consultations.
- There was a smaller proportion of direct consultations and consultations that were claimable through Medicare.
- For Medicare claimable items, there was a larger proportion of encounters that were standard surgery consultations.
- There was a smaller proportion of home visits.

The patients

- There was a larger proportion of infants (aged <1 year) and a larger proportion of patients who held a Commonwealth concession card or a Repatriation health card.
- Patients were less often from a non-English-speaking background.
- RFEs were described less often in terms of symptoms and complaints, and fewer RFEs presented that were related to the respiratory system, particularly cough, throat complaints and sneeze/nasal congestion.
- Requests for check-ups and skin RFEs (particularly unspecified skin complaints) were the only RFEs that occurred at a higher rate, and the rate of skin RFEs was the highest of all RRMA categories.

Problems managed

- Large Rural Centres had the highest rate of problems managed at the encounter, with fewer encounters where only one problem was managed.
- There were higher rates of management of skin problems (especially solar keratosis/sunburn and malignant skin neoplasms) and a higher management rate of depression.
- There were lower rates of management of respiratory problems (particularly URTI), lipid disorders and gastroenteritis infections.

Treatments

- The percentage of problems managed with any medication was lower.
- Advised OTC medications were less common.

- Psychological medications were prescribed/supplied more often.
- Procedural treatments were performed more frequently.
- Excision/removal tissue/biopsy/cauterisation were performed more frequently.

Referrals

- There were lower than average rates of total medical specialist referrals, in particular lower referrals to dermatologists, cardiologists and gastroenterologists.

Tests and investigations

- There was a higher overall rate of pathology ordering, a higher percentage of problems with at least one pathology test and a higher ordering rate of tissue pathology.

Small Rural Centres

The participating GPs

- There was a larger proportion of male GPs and the proportion of GPs who had been in practice 5 years or less was twice the national average. A larger proportion of GPs worked 6–10 sessions per week. GPs were more likely to provide their own or cooperative after-hours patient care.
- There was a smaller proportion of GPs aged 55+ years, and a smaller proportion who had been in practice for more than 20 years.
- The proportion of GPs currently in a GP training program was twice the average.
- There was a larger proportion of GPs in practices where computers were used for all five purposes (billing, prescribing, medical records, other administration or internet and/or email).
- A smaller proportion of GPs were in practices where a computer was not used at all.

The encounters

- A smaller proportion of encounters was claimable through a MBS item of service. There was a smaller proportion of long surgery consultations, home visits and consultations at residential aged care facilities.
- There was a larger proportion of encounters claimable as other items of Medicare.

The patients

- The patients were somewhat older—there were fewer children aged 1–4 years and adults of 25–44 years, with a larger proportion of patients aged 65 and over.
- The patients encountered more often held a Commonwealth concession card or a Repatriation health card.
- Encounters were less likely to be with patients from a non-English-speaking background
- The rate of encounters with Indigenous persons was double the national average (2.8% compared with 1.3%).
- Patients presented with fewer RFEs per encounter, more frequently describing only one RFE and less often two or three RFEs.

- RFEs were more often those related to pregnancy/family planning, requests for check-ups, skin complaints and were more often associated with a need for a referral or other service.
- RFEs were less often described in symptomatic terms.
- RFEs were less often associated with the eye, the blood/blood-forming organs, the respiratory system (particularly cough, upper respiratory tract infections, throat complaints, and sneezing/nasal congestion), neurological system (particularly headaches) or digestive system (particularly diarrhoea).

Problems managed

- New problems were managed less often.
- Chronic problems were managed more often.
- The rates of management of pregnancy and family planning (particularly pre/postnatal check-up), heart failure, solar keratosis/sunburn and malignant skin neoplasms were higher than average.
- There were lower management rates of respiratory problems (particularly URTI), and lower management rates of lipid disorders and gastroenteritis infections.

Treatments

- The percentage of problems managed with any medication was lower.
- Advised OTC medications were less common.
- The rate of skin medications prescribed or supplied was lower.
- Total other treatments were performed less frequently overall.
- Clinical treatments were provided less often, particularly advice/education on treatment of the problem and counselling/advice on nutrition/weight.
- Sickness certificates were provided less often.

Referrals

- Rates of referrals to a surgeon were higher, while referrals to a dermatologist or gastroenterologist were lower.
- There was a higher rate of total referrals to allied health professionals.

Tests and investigations

- There was a higher overall rate of pathology test ordering and higher ordering rate of EUC and haematology (particularly full blood counts).
- There was a higher overall rate of ordering of imaging tests and higher ordering of ultrasound (particularly obstetric ultrasound).

Other Rural Areas

The participating GPs

- There was a larger proportion of male GPs, the proportion of GPs in practice for less than 2 years was three times the average and there was a larger proportion of GPs who worked 6–10 sessions per week.

- A larger proportion of GPs were currently undertaking vocational training and a much larger proportion of GPs provided their own or cooperative after-hours patient care.
- A smaller percentage of GPs worked less than 6 sessions per week.
- There was a larger proportion of GPs in practices where computers were used for billing, prescribing, medical records, other administrative purposes or internet and/or email and the practices were more likely to use the computer for all five purposes than to use them for selected purposes.

The encounters

- There was a smaller proportion of direct consultations, home visits and consultations at residential aged care facilities.
- There was a larger proportion of indirect consultations, hospital consultations and consultations where other Medicare items were claimable.
- For Medicare claimable items, there was a larger proportion of short surgery consultations, and a smaller proportion of long surgery consultations.

The patients

- Males accounted for a significantly larger than average proportion of patients encountered and patients were older, with a larger proportion of patients aged 45 years and above.
- Patients more often held a Commonwealth concession card or a Repatriation health card and there was almost double the average proportion of encounters with Indigenous persons.
- Patients were less often new to the practice and less often from a non-English-speaking background.
- Overall there were fewer RFEs given at the encounter, and a larger proportion of encounters for which only one RFE was given by the patient.
- RFEs related to the need for medications, treatments and therapeutics, and those associated with referrals, occurred at a significantly higher rate.
- RFEs associated with the skin and with pregnancy/family planning (except oral contraception) were presented at significantly higher rates, as were presentations for diabetes and requests for check-ups.
- RFEs described in terms of symptoms and complaints and requests for results were presented at a significantly lower rate.
- RFEs presented less often included rash, fever, headache and weakness/tiredness, and those associated with the respiratory system (particularly cough, throat complaints, sneezing/nasal congestion, upper respiratory tract infections), psychological issues (particularly sleep disturbance and anxiety), those related to the female genital system, and the digestive system (diarrhoea and vomiting).

Problems managed

- New problems and problems described in terms of symptoms were managed less often.
- Chronic problems were managed more often.
- Higher management rates occurred for musculoskeletal problems (especially fracture), circulatory problems (especially hypertension and ischaemic heart disease), pregnancy

and family planning (particularly pre/postnatal check-up), heart failure, oesophageal disease, solar keratosis/sunburn and malignant neoplasms.

- There were lower rates of respiratory problems (especially URTI), gastroenteritis infections and oral contraception.

Treatments

- Advised OTC medications were less common.
- The prescription/supply rates of cardiovascular medications, central nervous system medications, urogenital medications, hormones and musculoskeletal medications were higher.
- The prescription/supply rates of allergy/immune system medications, topical ear and nose products, skin medications and medications for nutrition/metabolism were lower.
- Total other treatments were performed less frequently overall.
- Clinical treatments were provided less often, particularly general advice and education, and advice about treatment, counselling about nutrition/weight and psychological counselling.
- Sickness certificates were provided less often.
- Procedural treatments were performed more often, in particular excision/removal tissue/biopsy/cauterisation and repair/fixation of suture/cast/prosthetic device.

Referrals

- The total rate of referral to medical specialists was lower than average, with fewer referrals to a dermatologist, gastroenterologist or psychiatrist.
- There were more referrals to a surgeon and more referrals to a dietitian/nutritionist.
- There was a higher than average rate of referral/admission to hospital, but a lower rate of referral to accident & emergency departments.

Tests and investigations

- Order rates of pathology tests were higher overall and there was a higher percentage of problems with at least one pathology test ordered.
- There were higher ordering rates of chemistry tests (particularly EUC, HbA1c) and haematology tests (particularly FBCs, ESR, coagulation studies) and tissue pathology.
- There was a higher percentage of problems for which one imaging test was ordered and higher order rates for chest X-ray and obstetric ultrasound.

Remote Centres

The participating GPs

- There was a larger proportion of younger GPs aged less than 45 years, GPs were more likely to have practised for less than 10 years, and a larger proportion were currently undertaking vocational training.
- There was a much larger proportion of GPs who provided their own or cooperative after-hours patient care, and a larger proportion of GPS who worked 6–10 sessions or 11+ sessions per week.

- All GPs were in practices that had computers available and a larger proportion were in practices where computers were used for billing or other administrative purposes.

The encounters

- There was a smaller proportion of home visits.
- There was a larger proportion of consultations claimable as other Medicare items.

The patients

- The patients were somewhat younger, with a larger proportion of encounters with infants and a larger proportion with patients in the 25–44 years age group.
- New patients were encountered at twice the average rate and Indigenous patients were encountered at 10 times the average rate.
- Patients were less likely to hold a Commonwealth concession card and patients from a non-English-speaking background were encountered at half the average rate.
- Patients described RFEs related to pregnancy/family planning at almost double the average rate, the highest rate in the country.
- Patients described RFEs related to respiratory and circulatory systems less often, and presented for immunisation or vaccination at one-third the average rate, the lowest for all RRMA categories.
- The rate of presentation for diabetes as an RFE was the highest all RRMA categories, but this was not significant, perhaps due to the smaller sample size from Remote Centres.

Problems managed

- Fewer chronic problems were managed compared with the national average.
- There were higher management rates of ear problems (particularly acute otitis media/myringitis and otitis externa), pregnancy and family planning issues, problems related to the male genital system and general check-ups.
- Management rates were lower than average for respiratory problems (especially URTI), circulatory problems (including hypertension and ischaemic heart disease), immunisation/vaccination, viral disease, lipid disorders, menopausal symptoms and female genital check-ups.

Treatments

- Advised OTC medications were less common.
- Antibiotics were prescribed/supplied at a significantly higher rate.
- Rates of prescription/supply of cardiovascular and allergy/immune system medications were lower.
- The recording of observe/wait as a clinical treatment was lower.
- Physical medicine/rehabilitation was less common.
- Other (unspecified) therapeutic procedures and surgery were performed less often.

Referrals

- The rates of referrals to a dermatologist, gastroenterologist or urologist were lower.
- There was a higher than average rate of referral to allied health professionals.

Tests and investigations

- The rate of pathology ordering was the highest of all RRMA categories, including a higher percentage of problems with at least one pathology order.
- The order rates of chemistry tests, haematology (especially full blood count) and microbiology were all higher than average.
- The overall order rate of imaging tests was higher and there was a higher percentage of problems with at least one imaging order.
- There were higher order rates of chest X-rays and ultrasound tests (particularly obstetric ultrasound).

Other Remote Areas

The participating GPs

- There was a larger proportion of GPs who were aged <35 years, a larger proportion of those aged 55+ years and a larger proportion of GPs who had practised for 5 years or less.
- There was a smaller proportion of GPs who worked less than 6 sessions per week.
- There was a much larger proportion of GPs who provided their own or cooperative after-hours patient care.
- The proportion of GPs who were in a vocational training program was three times the average and a larger proportion of GPs held Fellowship of the RACGP.
- There was a much smaller proportion of GPs in practices where computers were used for billing purposes.
- These GPs were in practices that were less likely to use computers for all purposes.

The encounters

- There was a larger proportion of consultations that resulted in no charge, and a larger proportion that were claimable as other Medicare items.
- There was a smaller proportion of consultations that took place at a residential aged care facility.

The patients

- There was a higher than average percentage of encounters with male patients.
- The patients were younger, with a larger proportion of children aged 1–14 years, and a larger proportion of encounters with patients aged 25–44 years.
- The patients encountered less often held a Repatriation health card.
- Encounters with Indigenous patients occurred at 14 times the national average.
- Overall there were fewer RFEs given at the encounter.
- RFEs related to pregnancy/family planning were described at higher rates, and contraception (other than oral) was described as an RFE at twice the average rate.
- Undifferentiated chest pain presented at almost twice the national average, and at the highest rate of all RRMA categories.
- RFEs of a psychological nature (particularly depression), those associated with the female genital system and the respiratory system (particularly throat complaints, upper

respiratory tract infections and sneeze/nasal congestion), requests for immunisation/vaccination and for tests results each occurred at the lowest rate of all RRMA categories.

- Patients presented about their diabetes at a rate which was the highest of all RRMA categories, but this did not prove significant, possibly due to the smaller sample of encounters from Other Remote Areas.

Problems managed

- The percentage encounters involving only one problem managed was higher than average.
- There were higher management rates of skin problems, pregnancy and family planning issues, eye problems, diabetes, general check-up and fracture.
- There were lower management rates of respiratory problems (especially URTI), problems of a general or unspecified nature (especially non-specified viral disease), psychological problems (especially anxiety), problems related to the female genital system (especially Pap smear and menopausal complaints), test results, immunisation/vaccination and contact/allergic dermatitis.

Treatments

- Advised OTC medications were less common.
- The rate of medications supplied by the GP was higher.
- The prescription/supply rates of antibiotics, musculoskeletal medications, hormones and eye medications were higher.
- The prescription/supply rates of psychological medications and allergy/immune system medications were lower.
- Sickness certificates were provided less often.
- Procedural treatments were performed more often, particularly repair/fixation of suture/cast/prosthetic device.

Referrals

- Total allied health referrals did not differ from the national average; however, referrals to a dentist were higher than average.
- There was a higher than average rate of referral to hospital.

Tests and investigations

- The overall rate of pathology ordering was higher, including a higher percentage of problems with at least one pathology order.
- Order rates of HbA1c and microbiology were higher.
- The order rate for chest X-rays was higher.

11.2 ASGC Remoteness

Further differences across the ASGC Remoteness Structure are reported below, summarised according to chapter headings. ASGC categories form an ordinal scale of remoteness, therefore, the summary emphasises trends with increasing remoteness rather than describing each category alone.

The participating GPs

- Major cities had a much smaller proportion of GPs who provide their own after-hours arrangement, or in cooperation with other practices, compared with the rest of Australia.
- Outer Regional Australia had the smallest proportion of female GPs.

Trends with increasing remoteness included:

- an increase in the proportion of GPs who were aged less than 35 years
- an increase in the proportion of GPs who had worked in general practice for less than 6 years
- an increase in the proportion of GPs who were in a vocational training program or who were RACGP Fellows.

The encounters

- Inner and Outer Regional Australia had more short surgery consultations, fewer long surgery consultations and fewer home visits compared with the rest of Australia.
- Inner Regional Australia had more indirect consultations, more problems managed but fewer medications prescribed/supplied or advised at the encounter compared with the rest of Australia.

Trends with increasing remoteness included:

- an increase in hospital visits across Inner Regional, Outer Regional and Remote Australia, but no hospital visits were recorded for Very Remote Australia
- a decrease in encounters at aged care facilities
- a general increase in consultations with no charge or paid by methods other than MBS item claims.

The patients

- The patients encountered in Inner Regional Australia were older than average, less often new to the practice, more often holding a Commonwealth health card or Repatriation health card, and were much less often from a non-English-speaking background than average.
- Very Remote Australia had the highest proportion of patients who spoke a language other than English (although not statistically significant due perhaps to the sample size).

Trends with increasing remoteness included:

- an increase in the proportion of encounters with males across Outer Regional, Remote and Very Remote Australia
- a decrease in the age of patients at encounter across Outer Regional, Remote and Very Remote Australia
- a marked increase in the proportion of encounters with Indigenous patients
- a decrease in the proportion of patients who held a Repatriation health card

- an increase in the proportion of encounters with only one RFE
- a decreasing trend in test results given as RFEs
- an increasing trend in diabetes RFEs
- a decreasing trend in neurological RFEs
- a marked increase in the rate of RFEs for pregnancy and family planning (but a slight decrease in Very Remote Australia relative to Remote Australia)
- RFEs related to the eye were lowest in Inner Regional Australia but increased with increasing remoteness across Outer Regional, Remote and Very Remote Australia.

Problems managed

- The management rate of eye problems, diabetes and general check-up increased linearly with increasing remoteness.
- The management of total psychological problems decreased with increasing remoteness.
- The management of respiratory problems decreased across Inner Regional, Outer Regional and Remote Australia, with a slight increase in Very Remote Australia.
- Skin problems were managed at significantly higher rates than the national average in Inner Regional, Outer Regional and Remote Australia, but not in Very Remote Australia.
- Inner Regional Australia was distinct from either Major Cities or Outer Regional Australia in terms of the higher management rates of chronic conditions, including depression, back complaint, all arthritis, oesophageal disease, and circulatory problems.
- Urological problems were managed significantly more often than average in Very Remote Australia.

Treatments

- Inner Regional Australia was distinct from the rest of Australia with lower rates of antibiotics, respiratory, skin and topical ear/nose medications prescribed or supplied. Inner Regional Australia had the highest rate of psychological medications prescribed or supplied.
- There was a decreasing trend in psychological medications prescribed or supplied with increasing remoteness across Outer Regional, Remote and Very Remote Australia.
- The prescribing or supply of musculoskeletal and hormonal medications increased with increasing remoteness. Forty per cent of hormone medications were hypoglycaemics, reflecting the increased management of diabetes with increasing remoteness reported in Chapter 7.
- Allergy/immune system medications (including childhood vaccinations and influenza vaccinations) decreased with remoteness.
- GP-supplied medication rates were higher in Remote and Very Remote Australia.
- Antibiotics and eye medication prescribing was highest in Very Remote Australia.
- There was a trend towards more procedural treatments with increasing remoteness.
- There was a decreasing trend in the provision of sickness certificates with increasing remoteness.
- There was an increasing trend in smoking advice with increasing remoteness.
- Excision procedures were undertaken at a higher than average rate in Inner Regional, Outer Regional and Remote Australia.

- Psychological counselling was lowest in Outer Regional Australia.
- Advice about medication was lowest in Very Remote Australia.

Referrals

- Total referral rates increased with increasing remoteness.
- Referral rates to hospital increased with increasing remoteness.
- Referral rates to surgeons were higher outside the Major Cities.

Tests and investigations

- Total pathology test order rates increased with increasing remoteness.
- There was an increase in order rates for chemistry tests with increasing remoteness, particularly EUC, liver function and HbA1c tests.
- Order rates for haematology were generally higher outside the Major Cities.
- Order rates for microbiology tests increased with increasing remoteness.
- Order rates for obstetric ultrasound increased with increasing remoteness.

12 Discussion

This is the first time that general practice activity in Australia has been examined across each of the 7 categories of RRMA. The first three years of these data were described in the previous report '*It's different in the bush': a comparison of general practice activity in metropolitan and rural areas of Australia 1998–2000*.[2] However, due to sample size constraints, the earlier report aggregated the RRMA categories into three strata (metropolitan, large rural and small rural) based on population size (e.g. Large Rural Centres and Remote Centres were combined into the large rural strata). This grouping may have confounded some aspects of geographic remoteness with population density. The current report incorporates an extra three years of data to increase the sample size in each RRMA category and allows each to be examined individually. The analysis has also made use of the ASGC Remoteness Structure to further illuminate differences due to geographic remoteness. Therefore the findings of the current report provide more detail and some conclusions may be somewhat different from those in the earlier report.

In the broadest terms there were many similarities across geographical regions in general practice activity and many observed differences between regional locations were those of degree. The most common reasons patients gave for the encounters were similar across geographical regions and in general most of the common problems GPs managed were also similar. However, there were a number of salient differences in terms of the order and the frequency of particular problems managed and the treatments given by GPs, indicating differences in priorities and in practise patterns that were related to the geographical location of the practice. Some of these differences are discussed below in the context of comparing the two classifications.

RRMA versus ASGC

The comparison of general practice activity both by RRMA and ASGC Remoteness revealed some important differences between the two classifications. The ASGC Remoteness Structure was able to identify some salient differences related to geographical remoteness from services that were not evident in the RRMA classification. Three main themes emerged from the application of the ASGC Remoteness Structure to the data.

- There were a number of observed increasing or decreasing trends in general practice activity with increasing geographical remoteness from services.
- There were differences between Remote and Very Remote Australia.
- Inner Regional Australia demonstrated quite distinctive patterns of general practice activity.

Trends with increasing remoteness

The ASGC Remoteness Structure classifies localities using the Accessibility and Remoteness Index of Australia (ARIA). ARIA is a continuous measure of geographical remoteness calculated from a single dimension, road distance to services,[14] and therefore ASGC Remoteness areas are truly ordinal categories of increasing remoteness. The ASGC Remoteness Structure was able to clarify those differences that were related to geographical remoteness from services in a more systematic way than RRMA.

New patients, check-ups and pathology test orders

There was a strong trend towards more frequent general check-ups with increasing remoteness. This was accompanied by an increase in pathology ordering rates. Previous work by Britt et al.[26] has shown an inverse relationship between encounter frequency and pathology ordering at each encounter. In the current study, less frequent visits per patient and an increasing proportion of encounters with new patients indicates that there was less continuity of care for patients as remoteness from service increases. This could explain the increasing frequency of check-ups at encounters in more remote locations as GPs take the opportunity to provide a complete health check for their patients at each (infrequent) visit. The introduction of Medicare items to encourage check-ups as an early intervention to detect health problems among Indigenous patients could also account for some of the increase in check-ups undertaken in more remote locations.[11] In addition, difficulties with access to GP services with increasing remoteness may lead to delayed presentation and more severe morbidity, which could also explain the higher rates of test orders with increasing remoteness. All the above factors may alert GPs in remote locations to the potential need to thoroughly check their patients at all possible opportunities.

Increased EUC, HbA1c and haematology tests with increasing remoteness may reflect increasing management rates of diabetes and an increasing proportion of Aboriginal patients and Torres Strait Islander patients with increasing remoteness. Increased use of coagulation studies in Outer Regional Australia and Remote Australia may reflect the broader scope of patient management by regional and remote GPs in the absence of specialist clinics which may otherwise manage these patients.

Diabetes and URTI

Diabetes was the second or third most frequently managed problem in Remote and Very Remote Australia compared with the fifth most common in Major Cities. There are higher death rates and hospitalisation rates for diabetes in rural and remote Australia.[27] Therefore the management rate of diabetes in general practice could reflect an increase in the prevalence of diabetes with increasing remoteness, especially among Indigenous patients. Another factor contributing to the increase in diabetes management however, is the decreasing frequency of patient visits to a GP with increasing remoteness. With less access to GPs, patients may have continued to visit the GP for the regular management of important health problems such as diabetes, but were less likely to visit for other common but more transient health problems, such as URTI. This may have resulted in diabetes becoming a relatively greater part of the workload for GPs in more remote practices.

Pregnancy and female genital check-ups

GPs in more remote locations played a greater role in the management of pregnancy and obstetric issues, including placing orders for obstetric ultrasounds more frequently. This is to be expected as tertiary obstetric services are relatively unavailable outside large population centres.[27,28]

However, higher management rates of obstetrics did not translate into more preventive care for women in remote locations. A decreasing rate of Pap smears with increasing remoteness was not entirely explained by fewer female encounters, and may indicate that less continuity of care created a barrier to regular genital check-ups for women in remote locations.

Referrals

Previously published research from BEACH has indicated that lack of a nearby specialist surgeon does not reduce the referral rate to surgeons by GPs in rural and remote areas.[29] The lack of specialists in private practice may explain the increasing rate of hospital

referrals/admissions with remoteness as GPs referred patients to hospital-based specialists. In more remote locations GPs may also have referred patients to local hospitals, where the same GP provides ongoing care. This is a likely scenario in Remote Australia, where GPs recorded undertaking a large number of hospital consultations. A third factor affecting hospital referral rates may be the referral of some patients to a hospital outside the area for major episodes of in-patient care which could explain the higher rate of hospital referrals in Very Remote Australia, where GPs very rarely recorded doing any hospital consultations themselves.

Overall the increasing rates of procedural treatments, test orders, and management of pregnancy/obstetrics indicated that as remoteness increased so did the scope of the GP's management of problems at the encounter.

Very Remote Australia

The ASGC Remoteness Structure has more sensitivity at the remote end of the scale than RRMA and allows extreme remoteness to be examined in the category of Very Remote Australia. Although the sample of encounters from the ASGC category Very Remote Australia was small relative to the total BEACH sample of encounters, the inclusion of this category in the analysis illuminates the some of the unique aspects of general practice in Australia's most remote locations. ASGC Remoteness Structure divides Remote and Very Remote Australia and revealed some qualitative differences in general practice activity between Very Remote Australia and Remote Australia that were concealed by the broader RRMA category Other Remote Areas.

One salient difference between Very Remote Australia and Remote Australia was the very large proportion of encounters with Indigenous patients in Very Remote Australia, especially those who spoke a language other than English. Very Remote Australia also had the greatest proportion of encounters with male patients and the smallest proportion of encounters with patients aged 65 years and older. These demographic differences were reflected in some observed differences in morbidity and management between Very Remote Australia and other ASGC Remoteness categories.

The higher rates of solar keratosis and skin neoplasms managed in Inner Regional, Outer Regional and Remote Australia, were accompanied by higher rates of excision procedures in these locations, and may indicate the high levels of occupational sun exposure in these areas. However, solar keratosis/sunburn and skin neoplasms were less common in Very Remote Australia, perhaps because such sun-related skin problems are less common among Indigenous people.

Other distinctive aspects of general practice activity in Very Remote Australia compared with Remote Australia were the higher management rates of urological problems, more new presentations of lipid disorders, and lower management rates of psychological problems, including depression and sleep disturbance. Remote Australia on the other hand had the highest management rates of otitis externa, while the management rate for otitis externa in Very Remote Australia was similar to the rest of Australia.

Long and prolonged consultations were twice as common in Very Remote Australia compared with Remote Australia. This could reflect the extremely low GP visit rate per head of population in Very Remote Australia, coupled with more complex morbidity managed in more remote locations. Hospital consultations by the GP, which were common in Remote Australia, were almost non-existent in Very Remote Australia where local facilities may be limited.

Inner Regional Australia

Sixty-six per cent of the GP sample from the RRMA rural zone (Large Rural Centres, Small Rural Centres and Other Rural Areas) were classified into ASGC Inner Regional Australia, 32% as Outer Regional Australia and 2% as Remote Australia. This re-classification using the ASGC Remoteness Structure showed that Inner Regional Australia had certain characteristics that distinguished these locations from those in Major Cities and Outer Regional Australia.

Patients seen at encounters in Inner Regional Australia were older than the national average. GPs in Inner Regional Australia were seeing fewer new patients, a greater proportion of concession card holders, fewer NESB patients and fewer Indigenous patients than GPs in other parts of Australia. This patient profile was reflected in the problems managed at encounters in Inner Regional Australia.

The ASGC Remoteness Structure revealed that the higher rates of chronic problems seen in the RRMA rural zone were in fact concentrated in Inner Regional Australia. Patients seen at encounters in Inner Regional Australia had more chronic problems and fewer new or acute problems managed. The management rates of depression, back complaint, osteoarthritis, oesophageal disease and ischaemic heart disease were all significantly higher in Inner Regional Australia than the national average. These higher rates of chronic problems managed were not seen in either Major Cities or Outer Regional Australia, and marks Inner Regional Australia as distinct from its neighbouring categories in terms of the patterns of morbidity managed.

The ASGC Remoteness category 'Inner Regional Australia' includes satellite areas around the Major Cities of Australia and large sections of the coastal areas of south-east Australia. These areas are undergoing major demographic change as people migrate from the large cities to coastal and other satellite areas. In addition older Australians from more remote areas may move into Inner Regional Australia for better access to health services. The ASGC Remoteness category of Inner Regional Australia captured the effect of this social phenomenon on general practice, an effect which was obscured by the rural categories of the RRMA classification. The results for Inner Regional Australia also indicate that not all aspects of demographics and health care have a simple linear relationship to remoteness.

National Health Priority Areas

The National Health Survey (NHS) 2001 provides population prevalence estimates of health problems based on a community survey of self-reported health.[30] The NHS 2001 used the ASGC Remoteness Structure to report the prevalence of health problems across geographical regions. Therefore the NHS 2001 can be used to compare differences in estimated population prevalence across geographical regions with encounter rates seen in general practice, especially long-term conditions defined as National Health Priority Areas.[23] In the NHS 2001 the estimated prevalence of ischaemic and other heart disease was higher in Inner Regional Australia (2.2%) than in Major Cities (1.9%) or Outer Regional, Remote and Very Remote Australia (1.9%).[30] This was reflected in the current study by the higher than average rate of management of circulatory problems, including ischaemic heart disease in general practice in Inner Regional Australia. Similarly for arthritis, in the NHS 2001 the self-reported prevalence of arthritis and rheumatism in Inner Regional Australia (17.5%) was higher than that in either Major Cities (14.0%) or Outer Regional, Remote and Very Remote Australia (15.6%). In the current study this pattern of arthritis prevalence was reflected in the significantly higher management rate of arthritis problems in Inner Regional Australia. The NHS 2001 also

estimated higher prevalence of mental and behavioural problems in Inner Regional Australia, which in the current study was reflected in the higher management rates of psychological problems in Inner Regional Australia.

The National Health Survey was based on respondent's self-report and had relatively small sample sizes outside the Major Cities. Therefore the NHS may not detect all differences in prevalence across ASGC categories, especially for rarer events. However, not all differences in management rates across regions are explained simply by differences in underlying prevalence. Accessibility to a GPs and other health services, the relative importance of a health problem and the role of the GP in managing the problem are all factors that interact with prevalence to affect the rate with which a problem is managed in general practice across geographical categories.

GP visit rates per head of population

General practice consultations (MBS A1 item claims) per head of population

Medicare Benefits Schedule (MBS) claims data show that the mean number of GP visits per head of population decreases with increasing remoteness (see Chapter 1, Figures 1.3 and 1.4). In 2001, the mean number of visits per head of population in Capital Cities was 5.8 visits per year, almost double the rate in Other Remote Areas (2.8 visits per year). Therefore, where management rates per 100 patient encounters are equivalent between two geographical categories, this may indicate a relatively lower management rate per head of population for the more remote category. The decreasing visit rate per head of population with increasing remoteness may indicate a lack of services available in more remote locations. The issue of work force availability was reflected in the smaller proportions of sampled GPs who worked part-time in the RRMA remote zone.

This report, however, describes how location affects general practice in terms of the morbidity and treatment of those patients seen by GPs. This is a separate question to whether or not GP services are meeting the underlying health needs of the population in each region or area. The relative infrequency of GP visits together with underlying differences in prevalence of particular problems and differences in patient demographics, all contribute to the distinct profile of general practice in remote locations. As discussed above, difficulties of access may mean that transient health problems are seen less often in remote general practice, while certain chronic problems form an increasingly greater proportion of GP workload as remoteness increases.

GP services through other payment methods/other services

Not all GP services are provided at consultations claimed through Medicare. GP consultations funded through state-based and community health services become increasingly important with increasing remoteness.[11] GPs who were substantially remunerated through sources other than Medicare may not be sampled in BEACH as the sampling frame was defined on a minimum number of MBS claims. Therefore there may be a sector of general practice activity in more remote locations that is not described by BEACH. It remains to be demonstrated, however, whether GPs who are not MBS funded differ appreciably from their regional counterparts who do claim through Medicare, in terms of patient demographics, morbidity and management.

Vaccinations are an example of services that are usually supplied by GPs in more accessible locations but are supplied through other health services or professionals in more remote locations. The rate of allergy/immune system medications (vaccinations) given by the GP decreased with remoteness. Allergy/immune system medications include childhood vaccinations and influenza vaccinations in the elderly. However, only 61% of childhood vaccinations in Australia are given by GPs at consultations claimed through Medicare.[31] In the Northern Territory, which is entirely classified as Outer Regional, Remote or Very Remote Australia, the share of vaccinations given in general practice is only 3.3%. However, in 2003 the vaccination coverage for 2 year old children in the Northern Territory was nearly 95%, the highest in Australia. [31] Therefore the decreasing rates of vaccinations seen in general practice with increasing remoteness appears to be an artefact of the lesser role played by GPs in administering vaccinations in remote locations rather than an indicator of any decrease in vaccination coverage across regions.

12.1 Methodological issues

Combining and analysing 6 years of continuous general practice data has provided large enough subsamples to allow comparisons between remote areas and the rest of Australia. Other reports on regional health differences have not been able to examine differences within remote areas of Australia due to sample size constraints.[2,30]

Even though there was a small sample of GPs recruited from Very Remote Australia, the recruitment rate was proportional to the number of GPs in these locations (see Chapter 3, Figures 3.2 and 3.3). Therefore encounters from Remote and Very Remote Australia were well represented in the BEACH sample. However, the small subsample sizes achieved by random sampling made some findings of potential differences between Very Remote Australia and the rest of Australia inconclusive. This is particularly so for a cluster sample where a GP with very different practice profile can have a large influence on the intra-cluster correlation and the width of 95% confidence intervals.

Stratification sampling to increase the numbers of GPs recruited from Remote and Very Remote Australia would theoretically provide more power to detect real differences between Remote and Very Remote Australia. In practice however, over-sampling is limited by the absolute numbers of eligible GPs in Very Remote Australia. The sampling frame in BEACH is based on a threshold of Medicare A1 item claims (the equivalent of 1,500 per year). Over 6 years BEACH recruited 27 GPs from Very Remote Australia. In 2001, there were around 46 FWE GPs practising in Very Remote Australia (based on MBS claims activity). However, primary care practitioners in Very Remote Australia are often remunerated through sources other than the MBS.[11] Therefore broadening the sampling frame for Very Remote Australia to include those medical practitioners who are working in primary care but claiming fewer A1 MBS items may potentially increase the sample size in Very Remote Australia and allow a fuller comparison with the rest of Australia.[5]

Combining 6 years of data may mask any changes that were happening in general practice activity across regions over time. In particular the recent focus on incentives for attracting and retaining GPs in rural and remote areas may have promoted some changes in rural and remote practice that may have modified the differences between regions over the 6 years of the study.[32] However, while changes over time cannot be assessed in this large aggregated sample, it does allow more power to assess average differences between regions.

13 Conclusion

This report aimed to describe general practice activity across each of the 7 categories of the Rural, Remote and Metropolitan Areas (RRMA) classification, using 6 continuous years of data from the BEACH program. Although many differences were detected between general practice activity across remote, rural and metropolitan areas, it was difficult to detect systematic differences that distinctly defined each RRMA category from its neighbours. The ASGC Remoteness Structure is based on the Accessibility and Remoteness Index of Australia, a measure of distance to services, and was more successful in defining trends in general practice activity in terms of increasing remoteness.

The ASGC Remoteness Structure was also more sensitive than RRMA at the very remote tail and was able to illustrate some unique aspects of general practice activity in Very Remote Australia, in particular the large proportion of Indigenous patients who spoke a language other than English. Although sample size constraints in Very Remote Australia remain an issue in achieving sufficient power to detect all differences, the inclusion of Very Remote Australia as a separate category from Remote Australia is important for properly describing general practice in more remote locations.

The ASGC Remoteness Structure divided rural Australia into Inner Regional and Outer Regional Australia. Inner Regional Australia was distinct from its neighbouring categories (Major Cities and Outer Regional Australia) in terms of patient demographics and morbidity managed. Inner Regional Australia captured the demographic of older Australians who have moved from Major Cities and Outer Regional Australia into satellite areas and to coastal areas in striking distance of the Major Cities. Outer Regional Australia, on the other hand, represented the more traditional definition of 'rural' Australia separate from the satellite areas and coastal communities of Inner Regional Australia.

The greater effectiveness of the ASGC Remoteness Structure in describing general practice activity in terms of geographical location indicates that RRMA may no longer be the best geographical classification system to use as the standard for describing health care statistics or for health service policy development.

Reference list

1. National key centre for the social applications of geographical information systems (GISCA) 2000. ARIA vs RRMA: a comparison of the ARIA and RRMA methodologies for measuring remoteness in Australia. Viewed 25-5-2005, http://www.gisca.adelaide.edu.au/web_aria/Rural_Health/aria_rrma/ARIA_RRMA.html
2. Britt H, Miller GC, Valenti L 2001. 'It's different in the bush': a comparison of general practice activity in metropolitan and rural areas of Australia 1998–2000. AIHW Cat. No. GEP 6. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 6).
3. Wakerman J 2004. Defining remote health. Australian Journal of Rural Health 12(5):210–4.
4. Strasser R 1995. Rural general practice: is it a distinct discipline? [see comments]. Australian Family Physician 24(5):870–6.
5. Smith J, Hays R 2004. Is rural medicine a separate discipline? Australian Journal of Rural Health 12:67–72.
6. Australian Institute of Health and Welfare (AIHW) 2004. Rural, regional and remote health: a guide to remoteness classifications. AIHW Cat. No. PHE 53. Canberra: AIHW.
7. Limprecht E 2005. City fringe practices lose out under RRMA system. Australian Doctor May 27.
8. Australian Government Department of Health and Ageing (DoHA) 2005. Review of the Rural, Remote, and Metropolitan Areas (RRMA) classification: discussion paper (without prejudice). Canberra: Australian Government Department of Health and Ageing, viewed 28-6-2005, http://www.health.gov.au/internet/wcms/Publishing.nsf/Content/pcd-pub-rrmareview.htm/$FILE/rrmareview0305.pdf
9. Australian Bureau of Statistics (ABS) 2004. Australian Standard Geographical Classification (ASGC). Canberra: ABS.
10. Commonwealth Department of Health and Aged Care (DHAC) 2001. Medicare Benefits Schedule Book. Canberra: DHAC.
11. Australian Government Department of Health and Ageing (DoHA) 2005. General practice in Australia: 2004. Canberra: DOHA.
12. Australian Bureau of Statistics (ABS) 2001. ABS views on remoteness. Canberra: ABS.
13. Australian Bureau of Statistics (ABS) 2003. ASGC Remoteness Classification: purpose and use. Canberra: ABS (Census Paper 03/01).

14. National key centre for the social applications of geographical information systems (GISCA) 2005. ARIA+ Version 2—national data product. Viewed 25-5-2005, http://www.gisca.adelaide.edu.au/products_services/ariav2.html

15. Britt H, Sayer GP, Miller GC, Charles J, Scahill S, Horn F et al. 1999. BEACH Bettering the Evaluation and Care of Health: a study of general practice activity, six-month interim report. AIHW Cat. No. GEP 1. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 1).

16. Britt H, Miller GC, Charles J, Knox S, Sayer GP, Valenti L et al. 2000. General practice activity in Australia 1999–2000. AIHW Cat. No. GEP 5. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 5).

17. Britt H, Miller GC, Knox S, Charles J, Valenti L, Henderson J et al. 2001. General practice activity in Australia 2000–2001. AIHW Cat. No. GEP 8. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 8).

18. SAS Proprietary Software Release 8.2 2001. Cary: SAS Institute Inc.

19. Sayer GP 1999. Estimating and generalising with clustered sampling in general practice. Australian Family Physician 28(Suppl1):S32–S34.

20. Britt H 1997. A new coding tool for computerised clinical systems in primary care-ICPC plus [see comments]. Australian Family Physician 26(Suppl 2):S79–S82.

21. Classification Committee of the World Organization of Family Doctors (WICC) 1998. ICPC-2: International Classification of Primary Care. 2nd ed. Oxford: Oxford University Press.

22. McWhinney IR 1986. Are we on the brink of a major transformation of clinical method? Canadian Medical Association Journal 135:873–8.

23. Australian Institute of Health and Welfare (AIHW) 2004. Australia's health 2004: the ninth biennial health report of the Australian Institute of Health and Welfare. AIHW Cat. No. AUS 44. Canberra: AIHW.

24. Britt H, Miller GC, Knox S, Charles J, Valenti L, Pan Y et al. 2004. General practice activity in Australia 2003–04. AIHW Cat. No. GEP 16. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 16).

25. Australian Institute of Health and Welfare (AIHW) 2001. Residential aged care in Australia 1999–00: a statistical overview. AIHW Cat. No. AGE 19. Canberra: AIHW.

26. Britt H, Miller G, Sayer GP, Sedgwick D 1999. Comparison of practice patterns using Health Insurance Commission data for GPs who have completed the RACGP Training Program and those who have not. Melbourne: The Royal Australian College of General Practitioners.

27. Australian Institute of Health and Welfare (AIHW) 1998. Health in rural and remote Australia. AIHW Cat. No. PHE 6. Canberra: AIHW.

28. Wiegers TA 2003. General practitioners and their role in maternity care. Health Policy 66(1):51–59.

29. Gruen RL, Knox S, Britt H 2002. Where there is no surgeon: the effect of specialist proximity on general practitioners' referral rates. Medical Journal of Australia 177(2):111–115.

30. Australian Bureau of Statistics (ABS) 2002. National health survey: summary of results, Australia, 2001. Canberra: ABS.

31. Health Insurance Commission (HIC) 2005. Australian Childhood Immunisation Register statistics. Viewed 28-6-2005, http://www.hic.gov.au/providers/health_statistics/statistical_reporting/acir.htm

32. Humphreys J, Jones J, Jones M, Hugo G, Bamford E, Taylor D 2001. A critical review of rural and medical workforce retention in Australia. Australian Health Review 24(4): 91–102.

Glossary

A1 Medicare items: Medicare item numbers 1, 2, 3, 4, 13, 19, 20, 23, 24, 25, 33, 35, 36, 37, 38, 40, 43, 44, 47, 48, 50, 51, 601, 602, 720, 722, 724, 726, 728, 730, 734, 738, 740, 742, 744, 746, 749, 757, 759, 762, 765, 768, 771, 773, 775, 778, 779, 801, 803, 805, 807, 809, 811, 813, 815.

Aboriginal: The patient identifies himself or herself as an Aboriginal person.

Activity level: The number of general practice A1 Medicare items claimed during the previous 3 months by a participating GP.

Allied and other health professionals: Those who provide clinical and other specialised services in the management of patients, including physiotherapists, occupational therapists, dietitians, dentists and pharmacists.

Chapters (ICPC-2): The main divisions within ICPC-2. There are 17 chapters primarily representing the body systems.

Complaint: A symptom or disorder expressed by the patient when seeking care.

Component (ICPC-2): In ICPC-2 there are seven components which act as a second axis across all chapters.

Consultation: See *Encounter.*

Diagnosis/problem: A statement of the provider's understanding of a health problem presented by a patient, family or community. GPs are instructed to record at the most specific level possible from the information available at the time. It may be limited to the level of symptoms.

- *New problem:* The first presentation of a problem, including the first presentation of a recurrence of a previously resolved problem but excluding the presentation of a problem first assessed by another provider.
- *Old problem:* A previously assessed problem that requires ongoing care. Includes follow-up for a problem or an initial presentation of a problem previously assessed by another provider.

Encounter (enc): Any professional interchange between a patient and a GP.

- *Indirect:* Encounter where there is no face-to-face meeting between the patient and the GP but a service is provided (e.g. prescription, referral).
- *Direct:* Encounter where there is a face-to-face meeting of the patient and the GP.

Direct encounters can be further divided into:

Medicare-claimable

- A1 items of service: See *A1 Medicare items*
  - *Surgery consultations:* Encounters identified by any one of MBS item numbers 3, 23, 36, 44.
  - *Home visits:* Encounters identified by any one of MBS item numbers 4, 24, 37, 47.
  - *Hospital encounters:* Encounters identified by any one of MBS item numbers 19, 33, 40, 50.
  - *Residential aged care facility:* Encounters identified by any one of MBS item numbers 20, 35, 43, 51.

  - O*ther institutional visits:* Encounters identified by any one of MBS item numbers 13, 25, 38, 40.
  - O*ther MBS encounters:* Encounters identified by an MBS item number that does not identify place of encounter (see *A1 Medicare items*).
- *Workers compensation:* Encounters paid by workers compensation insurance.
- *Other paid:* Encounters paid from another source (e.g. state).

General practitioner (GP): A medical practitioner who provides primary comprehensive and continuing care to patients and their families within the community (Royal Australian College of General Practitioners).

Medication: Medication that is prescribed, advised for over-the-counter purchase or provided by the GP at the encounter.

Medication rates: The rate of use of all medications including medications that were prescribed, supplied by the GP and advised for over-the-counter purchase.

Medication status:

- *New:* The medication prescribed/advised/provided at the encounter is being used for the management of the problem for the first time.
- *Continuation:* The medication prescribed/advised/provided at the encounter is a continuation or repeat of previous therapy for this problem.
- *Old:* see *Continuation.*

Metropolitan zone: see *Zones.*

Morbidity: Any departure, subjective or objective, from a state of physiological wellbeing. In this sense, sickness, illness and morbid conditions are synonymous.

Patient status: The status of the patient to the practice.

- *New patient*: The patient has not been seen before in the practice.
- *Old patient:* The patient has attended the practice before.

Prescribed rates: The rate of use of prescribed medications (i.e. does not include medications that were GP-supplied or advised for over-the-counter purchase).

Problem managed: See *Diagnosis/problem.*

Provider: A person to whom a patient has access when contacting the health care system.

Reasons for encounter (RFEs): The subjective reasons given by the patient for seeing or contacting the general practitioner. These can be expressed in terms of symptoms, diagnoses or the need for a service.

Recognised GP: A medical practitioner who is:

- vocationally recognised under Section 3F of the Health Insurance Act, ***or***
- a holder of the Fellowship of the Royal Australian College of General Practitioners who participates in, and meets the requirements for, quality assurance and continuing medical education as defined in the RACGP Quality Assurance and Continuing Medical Education Program, ***or***

- undertaking an approved placement in general practice as part of a training program for general practice leading to the award of the Fellowship of the Royal Australian College of General Practitioners or undertaking an approved placement in general practice as part of some other training program recognised by the RACGP as being of equivalent standard.[10]

Referral: The process by which the responsibility for part or all of the care of a patient is temporarily transferred to another health care provider. Only new referrals to specialists and allied health professionals, and for hospital and residential aged care facility admissions arising at a recorded encounter, are included. Continuation referrals are not included. Multiple referrals can be recorded at any one encounter.

Remote zone: see *Zones.*

Rubric: The title of an individual code in ICPC-2.

Rural zone: see *Zones.*

Torres Strait Islander: The patient identifies himself or herself as a Torres Strait Islander person.

Zones:

- *Metropolitan zone:* refers to the 2 metropolitan categories of the RRMA classification: Capital Cities and Other Metropolitan Centres.
- *Remote zone:* refers to the 2 remote categories of the RRMA classification: Remote Centres and Other Remote Areas.
- *Rural zone:* refers to the 3 rural categories of the RRMA classification: Large Rural Centres, Small Rural Centres and Other Rural Areas.

Abbreviations

AGPSCC	Australian General Practice Statistics and Classification Centre, University of Sydney, a collaborating centre of the Australian Institute of Health and Welfare
AIHW	Australian Institute of Health and Welfare
ASGC	Australian Standard Geographical Classification
BEACH	Bettering the Evaluation and Care of Health
CAPS	Coding Atlas for Pharmaceutical Substances
EUC	Electrolytes, urea and creatinine
FWE	Full-time workload equivalent
GP	General practitioner
HbA1c	Haemoglobin, type A1c
HIC	Health Insurance Commission
ICPC	International Classification of Primary Care
ICPC-2	International Classification of Primary Care (Version 2)
ICPC-2 PLUS	An extended vocabulary of terms classified according to ICPC-2
MBS	Medicare Benefits Schedule
MC&S	Microscopy, culture and sensitivity
NHPA	National Health Priority Area
NHS	National Health Survey
NEC	Not elsewhere classified
NESB	Non-English-speaking background (i.e. a language other than English is spoken at home)
NOS	Not otherwise specified
OMP	Other medical practitioner
OTCs	Over-the-counter (i.e. medications advised for over-the-counter purchase)
QA	Quality assurance (in this case the Quality Assurance Program of the Royal Australian College of General Practitioners)
RACGP	Royal Australian College of General Practitioners
RFE(s)	Reason(s) for encounter (see Glossary)
RRMA	Rural, Remote and Metropolitan Areas (classification)
SAS	Statistical Analysis System
SLA	Statistical local area
SRS	Simple random sample
URTI	Upper respiratory tract infection

Appendices

Appendix 1: Example of a 2003–04 recording form

BEACH (Bettering the Evaluation And Care of Health) - Morbidity and Treatment Survey - National DOC ID

Encounter Number

Date of encounter ___/___/___

Date of Birth ___/___/_ _ _ _

Sex M ☐ F ☐

Patient Postcode

	Yes / No
New Patient	☐ ☐
Health Care/Benefits Card	☐ ☐
Veterans Affairs Card	☐ ☐
NESB	☐ ☐
Aboriginal	☐ ☐
Torres Strait Islander	☐ ☐

PATIENT SEEN ☐
PATIENT NOT SEEN ☐

Item No: (if applicable)

VA paid ☐
Workers comp paid ☐
State Govt/Other paid ☐
No charge ☐

START Time ___:___ AM / PM (please circle)

Patient Reasons for Encounter
1.
2.
3.

Diagnosis/ Problem ① : Problem Status New ☐ Old ☐

Drug Name AND Form for this problem	Strength of product	Dose	Frequency	No. of Rpts	OTC	GP Supply	Drug status New	Drug status Cont.
1.								
2.								
3.								
4.								

Procedures, other treatments, counselling this consult for this problem
1. 2.

Diagnosis/ Problem ② : Problem Status New ☐ Old ☐

Drug Name AND Form for this problem	Strength of product	Dose	Frequency	No. of Rpts	OTC	GP Supply	Drug status New	Drug status Cont.
1.								
2.								
3.								
4.								

Procedures, other treatments, counselling this consult for this problem
1. 2.

Diagnosis/ Problem ③: Problem Status New ☐ Old ☐

Drug Name AND Form for this problem	Strength of product	Dose	Frequency	No. of Rpts	OTC	GP Supply	Drug status New	Drug status Cont.
1.								
2.								
3.								
4.								

Procedures, other treatments, counselling this consult for this problem
1. 2.

Diagnosis/ Problem ④ : Problem Status New ☐ Old ☐

Drug Name AND Form for this problem	Strength of product	Dose	Frequency	No. of Rpts	OTC	GP Supply	Drug status New	Drug status Cont.
1.								
2.								
3.								
4.								

Procedures, other treatments, counselling this consult for this problem
1. 2.

NEW REFERRALS, ADMISSIONS Problem(s)
1. _____ 1 2 3 4
2. _____ 1 2 3 4

IMAGING/Other tests Body site Problem(s)
1. _____ - _____ 1 2 3 4
2. _____ - _____ 1 2 3 4

PATHOLOGY Problem(s)
1. _____ 1 2 3 4
2. _____ 1 2 3 4
3. _____ 1 2 3 4

PATHOLOGY(cont) Problem(s)
4. _____ 1 2 3 4
5. _____ 1 2 3 4

Patient reported
Height: ___ cm
Weight: ___ kg

To the patient if 18+:
Which best describes your smoking status?
Smoke daily ☐
Smoke occasionally ☐
Previous smoker ☐
Never smoked ☐

To the patient if 18+:
How often do you have a drink containing alcohol?
Never ☐
Monthly or less ☐
Once a week/fortnight ☐
2-3 times a week ☐
4+ times a week ☐

How many 'standard' drinks do you have on a typical day when you are drinking?
___

How often do you have 6 or more standard drinks on one occasion?
Never ☐
Less than monthly ☐
Monthly ☐
Weekly ☐
Daily or almost daily ☐

FINISH Time ___:___ AM / PM (please circle)

BA6

Appendix 2: GP characteristics questionnaire for 2003–04

The University of Sydney
at Westmead Hospital

General Practice Statistics and Classification Unit
Family Medicine Research Centre

a collaborating unit of the **Australian Institute of Health and Welfare** AIHW

Doctor Identification Number | **Please write your QA No. here**

Please fill in boxes or circle answers where appropriate

1. Sex ..... **Male / Female**
2. Age .....
3. How many years have you spent in general practice? .....
4. How many GPs work with you at this practice? .. *(Practice = shared medical records)*
5. Postcode of major practice address ..
6. Year of graduation .....
7. Place of graduation *(primary medical degree)*:
   - Aust 1
   - NZ 2
   - Asia 3
   - UK / Ireland 4
   - Other:(specify) 5
8. Do you conduct any of your consultations in a language other than English?
   - No 1
   - Yes - <25% 2
   - Yes - 25 to 50% 3
   - Yes - >50% 4
9. Are you currently a GP registrar? ..... **Yes / No**
10. Are you DVA registered? ..... **Yes / No**
11. Do you hold FRACGP ? ..... **Yes / No**
12. Is this practice accredited ? ..... **Yes / No**
13. Number of general practice sessions you usually work per week? *(1 session = ~4 hrs eg a morning session)* ....
14. Do you bulk bill?
    - Yes - all patients 1
    - Yes - Pension/Healthcare Card only 2
    - Yes - selected mixture of patients 3
    - No 4

15. Direct patient care hours worked per week? (Include hours of direct patient care, instructions, counselling etc and other services such as referrals, prescriptions, phone calls etc.) .....
16. Over the past four weeks have you provided any patient care .... *(Please circle as many as apply)*
    - As a locum 1
    - In a deputising service 2
    - In a residential aged care facility 3
    - As a salaried/sessional hospital medical officer..... 4
17. To what extent are computers used at your major practice address? (*Circle as many as apply)*
    - Not at all 1
    - Billing 2
    - Prescribing 3
    - Medical Records 4
    - Other Admin 5
    - Internet / Email 6
18. What are the normal after-hours arrangements for your practice? *(Circle as many as apply)*
    - Practice does its own 1
    - Co-operative with other practices 2
    - Deputising service 3
    - Referral to other service (eg A&E) 4
    - Other 5
    - None 6
19. Is your major practice site a teaching practice?
    - for undergraduates 1
    - for GP registrars 2
    - No 3
20. Is there a practice nurse at your major practice?
    - No 1
    - Yes - full time 2
    - Yes - part time - _____days per week 3
21. Did any of your BEACH consultations take place in an Aboriginal Community Controlled Health Service (ACCHS)?
    - No 1
    - Yes - all 2
    - Yes - some (which dates?) _____ 3

*Thank you for participating in the **BEACH PROGRAM**.*

Appendix 3: Code groups from ICPC-2 and ICPC-2 PLUS

Available from:
<http://www.aihw.gov.au/publications/index.cfm/title/10171>

Appendix 4: Chronic code groups from ICPC-2 and ICPC-2 PLUS

Available from:
<http://www.aihw.gov.au/publications/index.cfm/title/10171>