

# Summary

## 1 Introduction

This is the third major study of general practice activity in Australia that allows a comparison of rural and metropolitan general practice. The first was a major national survey of general practice in 1969–74 conducted by the Royal Australian College of General Practitioners (Bridges-Webb & RACGP 1976) from which a small secondary comparison of rural and metropolitan general practice was made. The second was a specific comparative study of practice patterns in rural and metropolitan areas in the three eastern states of Australia in 1990–91 (Britt et al. 1993). In order to measure the effectiveness of programs designed to improve the plight of both patients and practitioners from rural and remote areas, data are needed on service provision and the care provided by general practitioners.

### *Aims*

The aims of this study were to determine the extent to which rural and metropolitan general practice differed in 1998–2000 in terms of GP and patient characteristics, the type of work undertaken, the characteristics of the patients at encounter, the patients' reasons for encounter, the morbidity managed, treatments provided including pharmacological, clinical and procedural management, tests ordered/undertaken and referrals.

## 2 Methods

This comparison of practice patterns of GPs in metropolitan, large rural areas and small rural areas uses data from the first two years of the BEACH program (April 1998 to March 2000). The GP's postcode of practice was classified according to the Rural, Remote and Metropolitan Area (RRMA) classification (DPIE & DSHS 1994). The seven RRMA classes were grouped to provide three strata. The metropolitan stratum included RRMA groups 1 and 2 (1,495 GPs); the large rural stratum included RRMA groups 3 and 6 (148 GPs); the small rural stratum included groups 4, 5 and 7 (371 GPs).

## 3 The GPs

GPs practising in rural areas were more likely to be male and the age distribution of the three samples was significantly different. However, there has been a significant increase over the last decade in the proportion of rural GPs who are female. GPs in rural areas were significantly younger than those practising in metropolitan areas, a far higher proportion of whom were aged 55 years or more.

GPs in small rural areas were less likely to practise part time or to work more than 10 sessions per week than GPs in metropolitan areas. Graduates from Asian countries were more common in metropolitan areas and those from the United Kingdom more common in both rural categories than in the metropolitan stratum.

The distribution of the GPs across activity levels (measured by the number of A1 Medicare items claimed in the previous quarter) differed significantly across the three strata. Fewer GPs in small rural areas had high activity levels than those in large rural and metropolitan areas. Comparison of the mean number of A1 Medicare items claimed in the previous three months also demonstrated a significantly lower activity level in small rural areas. However, this is likely to be due to the measure itself as it ignores other work (not claimable for Medicare) undertaken by GPs, and A1 Medicare items account for a lower proportion of the GPs' workload in rural areas (see Chapter 4).

#### **4 The encounters**

GPs provided details of 149,500 encounters in metropolitan areas, 14,800 in the large rural stratum and 37,100 in the small rural stratum. The proportion of encounters that were claimable through Medicare was significantly lower in both rural strata. This difference was reflected in significantly higher rates of indirect encounters (patient not seen) in both rural strata, particularly those for provision of prescriptions.

Long consultations were significantly more common in metropolitan areas than in rural practice. Medicare item numbers outside the A1 range were significantly more often recorded in small rural areas than in the metropolitan stratum. There was an apparent trend for increasing rates of item numbers for obstetrics and anaesthetics with rurality. However, the small sample sizes for these item numbers rendered the differences of no statistical significance. An apparent trend for higher rates of Medicare-claimable hospital visits in rural areas also failed to reach statistical significance. The 1990-91 study demonstrated significantly higher rates of provision of services claimable from other sources (hospital, State etc.) in rural areas. This difference was not significant in the current study though a trend was apparent.

#### **5 The patients**

##### *Patient characteristics*

There were no significant differences between strata in the gender distribution of the patients at encounter. However, patients in small rural areas tended to be older than those in metropolitan areas. Encounters with patients holding a health care card were more likely in both rural strata than in metropolitan areas. Encounters with patients holding a Veterans Affairs gold card were also relatively more common in small rural areas than in the metropolitan stratum. In contrast, encounters with patients from a non-English-speaking background were more likely in the metropolitan stratum than in both rural strata. Although there was an apparent trend for higher rates of encounters with Indigenous people in rural areas, the small sample size rendered this difference of no statistical significance.

##### *Patient reasons for encounter (RFEs)*

GPs practising in the small rural areas recorded fewer patient RFEs than those in metropolitan areas. Patient RFEs related to the respiratory system were significantly more common in metropolitan areas than in either rural strata. RFEs related to the digestive system and those of a psychological nature were less frequently recorded in small rural areas than in metropolitan areas. In contrast, those related to pregnancy and family planning were more often recorded in the small rural stratum than in metropolitan areas.

In both rural strata, throat complaints were less commonly described as a RFE than in metropolitan areas. The small rural stratum, when compared with the metropolitan stratum, also demonstrated significantly lower rates of the following RFEs: cough, rash, URTI, headache, fever, and test results. In contrast, small rural areas reported significantly higher rates for pre/postnatal care.

## **6 Problems managed**

There were no significant differences between the two rural strata in the number of problems managed at encounter. However, new problems were less frequently managed in small rural practice than in metropolitan areas. In both rural categories, skin problems were managed significantly more often than in the metropolitan stratum. Respiratory and circulatory problems were less frequently managed in small rural areas and management of problems associated with pregnancy and family planning was more frequent than in the metropolitan stratum. The large rural stratum demonstrated significantly higher rates of ear problems than the metropolitan stratum. URTI was significantly less often managed in both rural strata than in metropolitan areas.

When compared with the metropolitan stratum, depression was significantly more often managed and lipid disorders were less commonly managed in large rural areas. Oesophageal disease and solar keratosis were more commonly managed in both rural strata than in metropolitan areas. In small rural areas, contact dermatitis was less frequently managed, but malignant skin neoplasms and pre/postnatal care were more frequently managed than in metropolitan areas.

## **7 Medications**

The consistency in prescribing rates for the most frequent medication groups and sub-groups was quite remarkable. In 141 comparisons across the three strata, only 11 differences emerged and these were relatively small. Seven of these 11 differences could well be Type 1 errors resulting from multiple comparisons.

Simple analgesics and other cardiovascular medications were prescribed significantly less often in large rural areas than in metropolitan areas. Psychological medications, particular anti-depressants, were more frequently prescribed in large rural areas than in metropolitan areas. Hormones (particularly corticosteroids), anti-ulcerants and urogenital medications (particularly diuretics) were prescribed more frequently in small rural areas than in metropolitan areas. The prescribing rate of skin medications and more specifically topical steroids were significantly lower in small rural areas than in metropolitan areas. There were no significant differences among the strata in the relative prescribing rate of any of the top 30 individual generic medications.

## **8 Other (non-pharmacological) treatments**

The relative rate of other (non-pharmacological) treatments provided by GPs was significantly lower in small rural areas than in the metropolitan stratum.

### *Clinical treatments*

GPs in the small rural stratum recorded significantly fewer clinical treatments relative to their total number of encounters than those in the metropolitan stratum. There was an apparent trend for rates of each clinical treatment to decrease with increasing rurality. However, possibly due to the small numbers involved, the only statistically significant difference was that counselling and advice about nutrition or weight was less often provided in the small rural areas.

### *Therapeutic procedures*

Rates of procedural treatments were significantly higher in both rural strata than in metropolitan areas. In particular there were significantly higher rates of excisions/removal in both the rural strata and a significantly higher rate of repair/fixation in the small rural stratum than in metropolitan areas.

### **9 Referrals and admissions**

Referral rates to medical specialists did not differ across the strata but the referral rate to surgeons was significantly higher in small rural areas than in the metropolitan areas. Patients were also more often referred to an allied health professional in small rural areas than in both the other strata. The patterns of morbidity associated with referrals to specialists, referrals to an allied health professional and hospital admissions appeared to differ markedly between strata. However, due to the small samples involved in these events, lack of statistical power rendered none of these differences significant.

### **10 Test ordering**

There was a steady increase in the relative rate of pathology ordering per 100 encounters with increased levels of rurality. The total pathology ordering rate and order rates for blood chemistry tests, and in particular for electrolytes, urea, creatinine and full blood counts, were significantly higher in small rural areas than in the metropolitan stratum. Order rates for haematology were significantly higher in both rural strata than in metropolitan areas.

There were no significant differences between the strata in total ordering rates for imaging nor for any specific imaging test type.

### **11 Patient wellbeing and risk factors**

Since BEACH began in April 1998, a section on the bottom of each encounter form has been allocated to investigate aspects of patient health or health care delivery not covered by general practice consultation based information. These additional sub-studies are referred to as SAND (Supplementary analysis of nominated data).

#### *Wellbeing*

Sample size: 45,515 encounters in metropolitan areas, 4,314 in large rural areas, 19,915 in small rural areas. There were no significant differences between the strata in the distribution of patient-reported health status, approximately 6% of each population assessing their health as poor and 13% as excellent.

#### *Body mass*

Sample size: 47,294 metropolitan, 4,488 large rural, 11,272 in small rural. Respondents were more likely to be obese in both rural strata than in the metropolitan stratum. There was also a significantly higher proportion of patients classified as overweight in the small rural stratum than in metropolitan areas. Patients classified as underweight were more often encountered in metropolitan areas and decreased significantly with each level of rurality. Investigation of management rates for obesity/overweight demonstrated no significant differences between the strata, even though these weight problems were more common in the patient populations of rural areas.

#### *Smoking*

Sample size (adults only): 46,406 metropolitan, 4,519 large rural, 11,357 small rural. There were no significant differences in the proportion of responding adults who were currently smoking daily. Respondents in small rural areas were significantly more likely to be past smokers than those in either the metropolitan or the large rural stratum.

### *Alcohol consumption*

Sample size (adults only): 27,959 metropolitan, 2,646 large rural, 6,600 small rural. The proportion of patients assessed as consuming at-risk levels of alcohol was significantly higher in both rural strata than in metropolitan areas. However, this was due to higher proportions of males in rural areas drinking at-risk levels of alcohol, there being no difference in the proportion of women at-risk drinkers among the strata.

### **12 Level of computer usage in the practice**

A question on computer usage in the practice was introduced to the GP characteristic questionnaire in mid 1999. Sample size (July 1999 to March 2000): 598 metropolitan GPs, 64 large rural GPs, 163 small rural GPs. Overall reported usage of computers in the practice was significantly higher in the small rural stratum than in the metropolitan stratum. Use of computers in the practice for either administrative or clinical purposes increased with rurality.

However, the proportion of practices said to be using computers for clinical purposes was highest in the large rural stratum and this was followed by usage in the small rural stratum. Both these clinical usage rates were significantly higher than in metropolitan practices.

### **13 After-hours arrangements of the practice**

A question on normal after-hours arrangements provided in the practice was introduced to the GP characteristic questionnaire in mid 1999. Samples size:(mid 1999 to March 2000): 598 metropolitan, 64 large rural and 163 small rural GPs. The pattern of after-hours arrangements was significantly different across the strata. Total reliance on practice coverage of after-hours care was described by almost half of the GPs in small rural areas and by 39.1% of those in large rural areas. Only one in five metropolitan GPs provided all of their own after-hours services. More than half the practices in metropolitan areas used deputising services at some time and by far the majority of these (40.8% of all metropolitan practices) used them for all their after-hours patient care. Use of deputising services was almost non-existent in both rural strata. The proportion of practices relying only on referral to a hospital Emergency Department for after-hours care was less than 10% in all strata.

### **14 Summary of differences between strata**

This section provides a summary in table form of the significant differences found between the strata in the current study and provides the parallel results from the 1990 91 comparative study of rural and metropolitan general practice.

### **15 Discussion**

Specific differences between the three strata in GP and patient characteristics, morbidity managed and treatments provided are discussed and possible reasons for these differences put forward. Some changes in rural and metropolitan practice over the past decade are also considered. Methodological issues arising from this study which may influence this and future studies of rural general practice are raised.

### **16 Conclusion**

This study has demonstrated that in many ways it is different in the bush but that, in the main, the differences in practice patterns are between small rural and remote areas when compared with metropolitan areas. With only a few exceptions, the activities of GPs in the rural and remote centres parallel those of metropolitan GPs. Differences identified between rural and metropolitan general practice are somewhat fewer than were identified ten years ago.