

# 17 Discussion

## 17.1 Overview of results

This report has provided a picture of the current activities of general practitioners, particularly the more frequent events, which together made up a large part of the GPs workload in Australia in 2001–02. The generalist nature of their practice has been demonstrated by the breadth of problems managed and the wide variety of management techniques utilised. This report has shown that medication is the most common form of problem management, but that the management of a problem by a prescription alone only applies to 40% of all problems managed. It has demonstrated the importance of counselling and advice in a GP's working day as it is used in the management of one in four problems managed. The small number of patients admitted to hospital or referred to the emergency department or to specialists indicates the extent to which patients are cared for by GPs in the community.

These data provide other researchers with a national average against which they can compare smaller study samples. The relatively large sample size underlying these national data, and the consequent relatively accurate estimates of the frequency of more common events, also allow researchers to plan studies of specific morbidity and its management by providing better estimates of required GP sample size through a knowledge of the likely occurrence of the event of interest. They provide healthcare planners with an up-to-date view of the common issues taken to and managed by GPs, and an opportunity to relate prescribing patterns and costs to the management of specific types of morbidity.

### Changes over time

This fourth annual report of the BEACH program has provided the opportunity to further investigate changes in rates of management of selected morbidity and changes in treatments provided by GPs over the 4 years since April 1998. It has allowed us to test the extent to which changes in practice patterns suggested in the third year of the program<sup>7</sup> continued through its fourth year. Where changes identified in the third year were demonstrated to remain steady in the fourth, or in fact to continue to change, the reader can be assured that real change is occurring and that the first measure of change was not a chance statistical event.

Changes in rates of management of specific types of morbidity, changes in prescribing rates of some medications and in use of selected types of counselling were demonstrated in Chapter 14. On the basis of these findings, some topics were selected for further investigation into the relationship between changes in pharmacological management and changes in morbidity rates (Chapter 15). Some of these results are further discussed below.

Over the last few years there has been media attention given to a hypothesised increase in the prevalence of depression in the community. Last year it was shown that there had been a considerable increase in the rates of management of depression in general practice during the 1990s. However, there had been no significant increase in management rates of depression since BEACH began in April 1998. This fourth year of data supported this

finding, there being no significant increase in management rates between 1998–99 and 2001–02.

New MBS items for the management of psychological problems are being introduced during 2002 but GPs will be required to undertake some specific training in depression management prior to claiming this item. As BEACH continues, it has the potential to measure the effect of the introduction of these and other new MBS item numbers on GP practice.

The shift away from tricyclic anti-depressants and the monoamine oxidase inhibitors, towards prescription of SSRIs, identified in the third year of the BEACH program, continued through the fourth year. As SSRIs are the pharmacological treatment of first choice by Australian psychiatrists for all forms of depression,<sup>45</sup> this change can be seen as a continued improvement in quality of care. Future trends in this practice will be measurable over time.

The BEACH data also provides an opportunity to measure the impact of the listing (on the PBS) of a new pharmacological preparation and then investigate the longer term effect on prescribing practice after initial GP reaction to the listing. One type of NSAID, the Cox-2 inhibitors, were listed on the PBS in month four of the BEACH program 2000–01. In last year's report it was shown that over a decade ago GPs prescribed NSAIDs at a relative rate of 5.9 per 100 encounters.<sup>18</sup> In 1998–99 this rate had dropped to 5.0 per 100 encounters, increased to 5.7 per 100 in the second year of BEACH and then to 6.8 per 100 encounters in 2000–01. A large proportion of the increase in 2000–01 was due to a rise in prescribing of Cox-2 inhibitors, from 0.3 per 100 encounter in 1999–00 (when available on private prescription) to 2.7 per 100 encounters (when listed for 8 months of the data year, on the PBS).<sup>7</sup>

In 2001–02 the rate of NSAID prescribing levelled off to 6.4 per 100 encounters. However, this was not due to any levelling of prescribing rates for the Cox-2 inhibitors. These rose again from 2.7 medications per 100 encounters to 3.0 per 100. Some substitution of Cox-2 inhibitors for other NSAIDs was apparent.

There are two medications in the Cox-2 inhibitor group: celecoxib, which was first listed in late 2000 and rofecoxib, which was first listed in early 2001. In 2000–01 it was reported that 11% of the celecoxib medications recorded in BEACH had been supplied by the GP directly to the patient. In 2001–02 this distribution between supplied and prescribed remained constant for celecoxib. However, while last year celecoxib was the medication in second place of those drugs supplied by the GP, it took fourth place in 2001–02. In contrast, rofecoxib entered the PBS list in only the last 3 months of the third year of the BEACH program, having little impact on the third year prescribing results. However, in the 2001–02 BEACH year, rofecoxib was the eleventh most frequently prescribed medication and the second most frequently supplied by the GP. GP supply of rofecoxib accounted for 15.1% of its total provision in the current BEACH year.

In Chapter 15 it was found that total NSAID prescribing for arthritic conditions (for which prescription of Cox-2s is approved) increased significantly in 2001–02 and this was almost entirely due to increased prescribing of the Cox-2 inhibitors, with some shift from other NSAIDs to the Cox-2s. In the management of other musculoskeletal conditions the NSAID prescribing rate remained constant in 2001–02 but there was evidence of increasing substitution of Cox-2 inhibitors for other NSAIDs, as was the case in the management of arthritis.

BEACH is the only data source that provides an indication of GP use of non-pharmacological management. With increasing attention being paid to the need for improved health preventive behaviour in the overall population, it is encouraging to see that GP provision of lifestyle counselling and advice has increased significantly since 1998–99, from a rate of 6.4 per 100 encounters to 8.1 per 100 in 2001–02, equivalent to an increase of about 600,000 encounters in which patients are receiving such advice across the country over the year.

The effect of GP and patient educational interventions on practice patterns can less easily be measured. Often, multiple interventions occur in parallel to system changes. For example, Chapter 14 showed a measured increase in the relative rate of management of diabetes since 1998–99, from 2.6 per 100 encounters to 3.1 per 100 encounters in 2001–02. This may be reflecting the early effect of the new Medicare incentive item number for completion of annual diabetes programs.<sup>1</sup> It may also be the result of the many programs being operated by Divisions of General Practice to effect improvement in the diagnosis and ongoing management of diabetes. These results suggest there has been a small but consistent impact of such measures on management rates of diabetes in general practice. It will be interesting to further investigate the management rates of diabetes next year, when the Medicare incentive payment will have been available for the full 12 months of the BEACH data year.

Last year a decrease in GP contacts for the management of asthma was noted from the previous year. This change was quite sudden, no suggestion of a decrease in management rates being made by earlier BEACH data. It was interesting to note that this lower management rate remained in the fourth year of BEACH but it did not decrease further. Since November 2001 GPs have been able to claim from Medicare for completion of the Asthma 3+Visit Plan.<sup>1</sup> To date its introduction appears not to have effected a change in management rates for asthma, as the decrease in management rates occurred before its introduction. However, there were other types of asthma plans being promoted prior to the Asthma 3+Visit Plan and these may have caused the measured decrease in management rates. The extent to which such plans have improved patient education in self-management of this problem and in turn led to this decrease in management rate is not known. However, management rates of asthma will continue to be monitored in the coming years, when the MBS incentive item for asthma management will have been available for the full BEACH data year.

Changes in pathology order rates are currently being investigated in detail and will be reported elsewhere.

## **Encounters with Indigenous people**

This report includes an overview of encounters at which the patient identified themselves as being an Aboriginal person or a Torres Strait Islander. This subject has not been reported since the first BEACH report.<sup>46</sup>

The 916 patients who stated they identified as Aboriginal or Torres Strait Islander people (1.0% of all encounters) were significantly younger than the total sample and more likely to hold a health care card. Their encounters represented 0.5% of those in capital cities but 13.0% of those in remote centres and 7.5% of those in other remote areas. The issues surrounding sample size and geographic distribution are discussed later in this chapter (see 'Methodological issues').

While there were no statistically significant differences between encounters with these Indigenous people and the total data set, this was probably due to a large extent to the size

of the sample. Certainly there were many trends of clinical significance, including higher rates of management of diabetes and acute bronchitis which should be investigated further in private general practice (see 'Methodological issues' in this chapter).

## **Patient health risk factors**

The fourth year of measurement of the risk behaviours of adults attending general practice provided interesting results. The extent to which patients in the sample smoked on a regular basis and the proportion of the population who reported at-risk alcohol consumption remained reasonably constant at about 19% and 25% respectively. While the proportion of patients who were overweight increased significantly between 1998–99 and 2001–02, the change was only about 1% over the 4-year period. In contrast, the proportion classed as obese increased steadily each year, providing an overall increase between 1998–99 and 2001–02 of 3%, from 18.4% to 21.4% (a 16% increase in obesity prevalence in patients encountered in general practice). At this rate of increase it could be expected that, by 2010, almost 30% of patients encountered by GPs in their normal working day will be obese.

For the first time in the BEACH program all three risk behaviour questions were asked of the same subsample of patients. The results indicated that only 27.8% of these patients had normal BMI, did not smoke and did not consume alcohol at at-risk levels. One in five patients were found to carry two of these three risk behaviours and 3.7% responded positively to all three.

These results demonstrate that their patients provide GPs with ample reason to give them better education of the potential harm of such risk behaviours. The significant increase in provision of lifestyle counselling and advice to patients over the past 4 years (noted above) suggest increased GP awareness of the need for many of their patients to alter their current health risk behaviours.

## **17.2 Methodological issues**

### **Cluster sampling**

The statistical techniques applied in BEACH recognise that the sampling is based on GPs and that for each GP there is a cluster of encounters. Each cluster may have its own characteristics, being influenced by the characteristics of the GP. While ideally the sample should be a random sample of GP-patient encounters, such a sampling method is impractical in the Australian health care system. The reader should, however, be aware that the larger the GP sample and the smaller the cluster, the better. The sample size of 100,000 encounters from a random sample of 1,000 GPs has been demonstrated to be the most suitable balance between cost and statistical power and validity.<sup>25</sup>

### **GP participation rates**

The participation rate of GPs in this fourth year of BEACH was 32.3% of those with whom contact could be established. This was a little higher than the response rate for the third BEACH year (29.8%)<sup>7</sup> but far lower than that gained in the first (38.4%)<sup>46</sup> and second (39.1%) BEACH years.<sup>6</sup> The participating GPs were found to be older and less busy than those who

declined to participate, and post-stratification weighting was applied to the encounter data to deal with these differences.

Nevertheless, the continuation of this lower response rate is of concern and the research team believes that a number of system factors have contributed to it.

- One of the main reasons many GPs agree to participate in BEACH is because they receive audit points towards their Quality Assurance requirements. It was hypothesised in BEACH 2000–01 that the decrease in response rate in the third BEACH year was due to some extent to the phase in the QA cycle. It was suggested that the fourth year may show improvement in response because the data collection period covered the last 9 months of the QA cycle and the first 3 months of a new cycle. It was thought that GPs who had not yet gained their audit points for the last triennium would be keen to participate and that the new triennium would provide a new incentive for participation. This did not prove to be the case and other reasons for the decreased participation rate must be considered.
- In 2001, a wide range of new options were offered to GPs through the Quality Assurance Program. When refusing to participate many GPs have voiced the opinion that there are many other options 'easier' than BEACH but which gain a similar number of points. This may well have influenced GPs to complete an alternative option.
- There are increasing demands being made on GPs to participate in a wide range of non-clinical activities such as divisional projects and programs and other audits (such as those offered by the National Prescribing Service), and this may influence the extent to which they are willing to participate in BEACH. In fact, there is widespread concern about the extent of the demands being made on GPs for such activities. In response to this concern, the DoHA has recently established the Statistical Clearing House in which all projects funded by the department will be registered. This may provide an opportunity to unify some programs and decrease the demands on GPs for their time.
- As in previous BEACH years, GPs aged less than 35 years were under-represented in the final GP sample and this could be due to the fact that general practice registrars are not required to undertake QA activities during training and during the QA triennium of completion of training. Some incentives need to be introduced to encourage participation of these younger GPs in BEACH.
- A similar issue is arising with recruitment of the increasing number of unrecognised GPs now allowed to practice in needy rural areas, who by special arrangement can claim A1 Medicare items of service but who are not required to undertake QA activities. The majority of these practitioners work in rural and remote areas, and these are areas in which more detailed information about clinical activity is currently needed. Incentives are also needed to encourage the participation of these practitioners to ensure sufficient representation of general practice in the more remote areas.
- Sampling issues also affect recruitment levels but these have been reasonably constant influences over the period of the BEACH program.

Eight per cent of the GPs in the sample provided by the DoHA from the HIC records could not be contacted. A large proportion of these were not practising at the time of recruitment, having retired, died, gone overseas or taken maternity leave since their selection from the HIC records. As the aim is to represent active, practising GPs the exclusion of these GPs from the sample is a valid and necessary action. However, there were also some GPs who had left the practice to which the BEACH approach letter was sent, and could not be traced. In many of these cases the practice informed recruiting staff that the GP selected had not been at the practice for some years. The number of

GPs for whom the current address and/or phone number (provided by the HIC for this study) is out of date is increasing very quickly. This may reflect a change in processes of address recording with increased use by GPs of electronic payment mechanisms. In any case, these problems suggest that the HIC system of practice address registration is not error-free.

The increasing impact of these issues on recruitment of GPs to BEACH cannot be ignored. The research team is currently investigating means by which future BEACH participating GPs could be better rewarded for the considerable investment of their time and effort in undertaking the program.

## **Sample sizes for Indigenous patients and remote areas**

The small sample of Indigenous persons identified in this study ( $n=916$ ) clearly reflects the extent to which remote areas are sampled in a total national sample. Indigenous people represent about 2% of the Australian population and it could be expected that the number identified in BEACH should represent approximately the same proportion of patients encountered. It must be remembered that many Indigenous persons are being seen in Aboriginal Community Controlled Health Services, and this may account for some of the difference. However, currently we do not know if encounters with Indigenous people are actually under-estimated in BEACH or whether, in fact, Indigenous people attend GPs far less than the rest of the community. The GPSCU is conducting a substudy in the current BEACH year to investigate the extent to which encounters with Indigenous persons are being under-estimated (if this is indeed the case).

A number of factors impact on this subject. The issues surrounding the extent to which GPs actually ask their patients whether they do or do not identify as an Indigenous person and the extent to which patient preference may impact on such self-identification were discussed in Chapter 13. However, there is an overall methodological issue in sampling that must also be considered. Quite rightly, the number of GPs participating in BEACH from remote centres and other remote areas is small, reflecting the small proportion of practising recognised GPs working in these areas. The result indicated far higher proportions of encounters with Indigenous persons in these regions than in metropolitan areas. The small number of GPs in the sample working in remote centres and other remote areas must therefore impact on the likelihood of Indigenous persons being encountered by the sampled GPs.

If we want a true picture of the provision of private general practice services to Indigenous people over-sampling of these areas is essential. The cooperation of this small group of practitioners would first need to be established. As they number only about 140 a very high response rate would be required from them if sufficient numbers of GPs are to be recruited. Further, as discussed above, with increasing numbers of non-recognised GPs working in these areas (GPs who are not required to complete the Quality Assurance Program), efforts would need to be made to include them in the over-sample. Not only would this provide a more reliable picture of Indigenous health services provided by private general practice but it would provide both the Government and the profession with a far better understanding of the health needs of these communities and the type of work being undertaken by these providers. In turn this may assist in planning of educational programs for practitioners intending to work in these areas.

## Response rates to specific variables

In the second year of the BEACH study some changes were made to the layout of the forms based on the experience gained in the first year of the program. The second annual report raised some methodological issues regarding the effect of these changes on GP completion rates for some variables, including some patient characteristics and the number of repeat prescriptions.<sup>6</sup> These effects were noted only during analysis of the Year 2 data which was conducted in parallel with the Year 3 data collection. Therefore changes could not be made for the third year.

Changes in layout were made at the end of the third year in an effort to improve completion rates for some variables. These included changes to the layout of the patient characteristic questions and more-specific instructions regarding number of repeats.

This year's results indicate that these changes improved response rates in a number of areas. The proportion of missing data in responses to each of the patient characteristic questions improved, as did the recording of the number of medication repeats prescribed.

## Electronic BEACH data collection: a controlled trial

The BEACH program is currently a paper-based data collection program. Many people have suggested that with the increased GP uptake of electronic prescribing systems or full clinical systems (electronic health records, EHRs), national data could soon be drawn passively directly from the GPs' computers. Although an attractive proposition, there are many barriers to its implementation:

- To obtain a national random sample of practising GPs each GP must have an equal chance of selection. Until all GPs are using EHRs this would not be the case. Further, with the recognised variance between GPs<sup>47</sup> it is likely that those who do not have EHRs differ from those who do. Sampling of only GPs with EHRs would therefore give a biased national result.
- Many GPs currently use electronic prescribing systems rather than full EHRs. The extent to which data are entered at encounters that do not involve a prescription is not known. Further, this report has demonstrated that drug prescription is only one of many management techniques used by GPs. The measurement of GP clinical activity should not be confined to the measurement of prescribing behaviour any more than it should be limited to activities claimed only through the MBS.
- The structure of electronic clinical systems varies, as do the coding and classification systems used. Drawing reliable and representative data from electronic clinical systems is likely to require the introduction of a standardised minimum data set and use of standard coding and classification systems in all electronic clinical systems. Such coding systems will be required for each of the data elements within the minimum data set (i.e. such variables as patient cultural background, pathology orders, clinical services, procedures etc.) as well as the problems under management.
- Issues of privacy and confidentiality also need to be resolved.

It may therefore be many years before data collection programs aiming to describe national general practice activity will be able to rely on passive data collection directly from EHRs.

Another possibility is for data to be actively collected on computer, either as the sole method of data collection (when all GPs have EHRs), or in parallel with paper-based data collection.

The GPSCU is currently undertaking a longitudinal matched controlled trial of active computerised data collection compared with paper-based data collection, in the western, northwestern and southwestern areas of Sydney. Interactive software was developed that reflects the data elements collected in BEACH. This initial trial software does not interact with any clinical system being used by the GP so that s/he is required to actively complete each field covered by the recording form. However, the system does include the ICPC-2 PLUS coding system and the CAPS pharmaceutical coding system with their search engines. This will ensure that on term selection or entry, the data will be coded and classified automatically in the background.

The trial is being conducted with a sample of GPs who participated in BEACH during 2000–01 and, apart from the method of data collection, the process is the same as that normally used in the BEACH program. The results of the two data sets will be compared after statistical adjustment for differences in the age–sex distribution of the patients seen. Management patterns will be compared after adjustment for the morbidity managed in the two time frames. If this trial demonstrates that the data collected by active computerised methods are not significantly different from those collected on paper and the method is found to be acceptable to the participating GPs, future participants in BEACH could be offered the option of paper- or computer-based methods. A separate report on the findings of this study will be made in the future.

## **Other BEACH applications**

Under DoHA funding, the National Consortium for Education in Primary Medical Care (NCEPMC) has recently established an alternative pathway to general practice recognition. Practitioners who wish to take this pathway to the FRACGP examination must complete 400 hours of education prior to sitting the examination. They first must assess their educational needs so that the educational program can be planned around the individual practitioner. The general practitioners complete the BEACH process as a tool to assist in the identification of specific educational needs. Currently these practitioners complete BEACH on paper. However, if the trial of active computerised collection described above proves valid and acceptable to the GPs, participants in the Alternative Pathway program will be offered this method.

## **17.3 Comparing BEACH data with those from other sources**

Users of the data reported in this publication might wish to compare the results with those from other sources, such as that from the HIC.<sup>30</sup> Although integration of data from multiple sources can provide a more comprehensive picture of the health of the Australian community, the user must keep in mind the limitations of each data set and the differences between them. Some examples are presented below.



## The Pharmaceutical Benefits Scheme (PBS)

If comparing BEACH prescribing data with data from the PBS, the reader should be aware of the following:

- Total medications in BEACH include those prescribed, supplied to the patient directly by the GP, and those advised for over-the-counter purchase.
- Each prescription recorded in the BEACH program reflects the GP's intent that the patient receives the prescribed medication and the specified number of repeats. The prescription, irrespective of the number of repeats ordered, is counted only once.
- Prescriptions are counted in BEACH irrespective of whether or not the medication is covered by the PBS for all patients, for those holding a health care card or for those who have reached the safety net threshold.
- The BEACH data do not provide information on the number of prescriptions not filled by the patient (and neither does the PBS).

In contrast, the PBS data:

- count the prescription each time it crosses the pharmacist's counter;
- count only prescribed medications subsidised by the PBS and costing more than the minimum subsidy and which are therefore covered by the PBS for all patients, or are prescribed for those holding a health care card or for those who have reached the safety net threshold.

These differences will influence not only the numbers of prescriptions counted but also their distribution. For example, the majority of hormone replacement therapies (HRTs) fall under the PBS minimum subsidy level and would not be counted in the PBS data unless patients receive the medication under the PBS because they are a health care card holder or have reached the annual safety net threshold. The PBS would therefore under-estimate the number of HRT prescriptions filled and the proportion of total medications accounted for by HRTs.

## The Medicare Benefits Schedule (MBS) items

If comparing the BEACH data with Medicare data, remember that

- the MBS data provided by the DoHA does not usually include data about patients and encounters funded through the Department of Veterans' Affairs. The effect of this on comparisons between data sets was demonstrated in Chapter 4 (Section 4.3) in the comparison of the age-sex distribution of patients at A1 encounters in BEACH with those of the MBS A1 items of service;
- the BEACH participants have the opportunity to record only one Medicare item number on each encounter form. They are instructed to select the more general item number where two item numbers apply to the consultation because additional services attracting their own item number (e.g. 30026 – repair of wound) are counted as actions in other parts of the form. This results in a lesser number of 'other' Medicare items than would be counted in the Medicare data; and

- The BEACH database includes data about all clinical activities, not only those billed to the MBS. Both direct (patient seen) and indirect (patient not seen but a clinical activity undertaken) consultations are recorded. Some of these are paid by other funding sources (such as State health departments, private insurance companies, workers compensation, etc.) and some are provided free of charge by the GP (see Chapter 5). In contrast, the MBS data include only those GP services that have been billed to Medicare.

## Pathology data from the MBS

The BEACH database includes details of pathology tests ordered by the participating GPs. When comparing these data with those in the MBS, remember that

- BEACH reflects the GP's intent that the patient have the pathology test(s) done and information as to the extent to which patients do not have the test done is not available;
- each pathology company can respond differently to a specific test order label recorded by the GP. Further, the pathology companies can charge through the MBS only for the three most expensive tests undertaken even where more were actually undertaken. This is called 'coning' and is part of the DoHA pathology payment system; and
- pathology MBS items contain pathology tests grouped on the basis of cost. An item may therefore not give a clear picture of the precise tests performed.

The effect of these factors is that the MBS pathology data includes only those tests billed to the MBS after interpretation of the order by the pathologist and after selection of the three most expensive tests. This effect will not be random. For example, in an order for four tests to review the status of a patient with diabetes it is likely that the HbA1c will be the least expensive and will 'drop' off the billing process due to coning. This would result in an under-estimate of the number of HbA1cs being ordered by GPs.

The distributions of the two data sets will differ, reflecting on the one hand the GP order and on the other the MBS-billed services after coning and assignment of MBS item number.

Those interested in GP pathology ordering will find more detailed information from the BEACH program in *Pathology Ordering by General Practitioners in Australia 1998*.<sup>29</sup> A study of changes in pathology ordering patterns between 1998-99 and 2000-01 is currently being undertaken and will be reported elsewhere.

## Imaging data from the MBS

Some of the issues discussed regarding pathology data also apply to imaging data. Although coning is not an issue for imaging, radiologists are free to decide whether or not the test ordered by the GP is the most suitable and whether to undertake other tests of their choosing. The MBS data therefore reflect the tests that are actually undertaken by the radiologist whereas the BEACH data reflect those ordered by the GP. Those interested in GP imaging ordering will find more detailed information from the BEACH program in *Imaging Orders by General Practitioners in Australia 1999-00*.<sup>31</sup>