

3 The sample

This chapter provides a summary of the annual results from the ninth year of the BEACH program – data collected between April 2006 and March 2007. The methods are only summarised in this chapter. For those wanting more detailed explanation, a full description of the BEACH methods and a discussion of methodological issues are provided in Chapter 2.

3.1 Annual results, 2006–07

Response rate

A random sample of GPs who claimed at least 375 general practice Medicare items of service in the previous 3 months is regularly drawn from Medicare Australia data by the Primary and Ambulatory Care Division of DoHA (see Chapter 2).

Contact was attempted with 4,576 GPs – 11.3% could not be contacted. The majority of these had moved, retired or died, and were untraceable (Table 3.1). It is notable that of GPs approached who were aged less than 35 years, 27.0% were no longer at that practice and could not be traced. These would largely be registrars moving through practices during training. In contrast, 9.8% of GPs aged 35 years and over were not traceable (results not tabulated).

The final participating sample consisted of 930 practitioners, representing 22.9% of those who were contacted and available, and 20.3% of those with whom contact was attempted (Table 3.1). Methodological issues related to the response rate are discussed in Section 2.10.

Table 3.1: Recruitment and participation rates, 2006–07

	Number	Per cent of approached (<i>n</i> = 4,576)	Per cent of contacts established (<i>n</i> = 4,057)
Letter sent and phone contact attempted	4,576	100.0	—
No contact	519	11.3	—
No phone number	57	1.3	—
Moved/retired/deceased	347	7.6	—
Unavailable	40	0.9	—
No contact after five calls	75	1.6	—
Telephone contact established	4,057	88.7	100.0
Declined to participate	2,810	61.4	69.3
Agreed but withdrew	317	6.9	7.8
Agreed and completed	930	20.3	22.9

Representativeness of the GP sample

Whenever possible, the study group of GPs should be compared with the population from which the GPs were drawn in order to identify and, if necessary, adjust for any sample bias that may affect the findings of the study.

Statistical comparisons, using the chi-square statistic (χ^2) (significant at the 5% level), were made between BEACH participants and all recognised GPs in the sample frame during the study period (Table 3.2). The GP characteristics data for BEACH participants were drawn from the GP profile questionnaire. The DoHA provided the data for all GPs in the sample frame, drawn from Medicare claims data.

Table 3.2 demonstrates that there were no significant differences in GP characteristics between the final sample and all GPs in the sample frame, in terms of sex, place of graduation and distribution across Rural, Remote and Metropolitan Area classes, and the differences in their state distribution were negligible. However, participants were significantly older when compared with the total sample. The under-representation of young GPs has been experienced through most years of the BEACH program and could largely be due to the fact that 27.0% of the young GPs drawn in the sample were not traceable, having moved on to other practices, without leaving contact details, since the sample draw.

Data on the number of Medicare A1 items of service claimed in the previous quarter were also provided by DoHA for each GP in the original sample, but not for all GPs in the sample frame. A greater proportion of GPs with an activity level of 375–750 services in the previous quarter participated, and fewer GPs in the > 1,500 services category participated, compared with non-participants. There was no difference between the proportions of participants and non-participants in the 751–1,500 services group. There was a significant difference ($p = 0.013$) in the mean number of A1 items claimed by participants (1,230 claims for the quarter) compared with those GPs who declined to participate (1,291 for the quarter) (Table 3.3). Comparisons of the median scores for each group showed a difference of approximately five consultations per week. It is possible that the time required to participate in BEACH may be a greater issue for busier GPs. BEACH also may offer an avenue for fulfilling RACGP Clinical Audit requirements to part-time GPs who may not be as able to take up other avenues. It cannot be assumed, however, that a GP seeing 15 patients per day on 3 days per week is any less ‘busy’ than a GP seeing 15 patients per day over 5 days per week.

Table 3.2: Comparison of BEACH participants and all active recognised GPs in Australia (the sample frame), 2006–07

Variable	BEACH ^{(a)(b)}		Australia ^{(a)(c)}	
	Number	Per cent of GPs (<i>n</i> = 930)	Number	Per cent of GPs
Sex ($\chi^2 = 0.54, p = 0.46$)				
Males	613	65.9	11,585	64.7
Females	317	34.1	6,312	35.3
Age ($\chi^2 = 9.63, p = 0.02$)				
< 35 years	62	6.7	1,618	9.0
35–44 years	208	22.6	4,356	24.3
45–54 years	327	35.6	6,276	35.1
> 54 years	322	35.0	5,646	31.5

(continued)

Table 3.2 (continued): Comparison of BEACH participants and all active recognised GPs in Australia (the sample frame), 2006–07

Variable	BEACH ^{(a)(b)}		Australia ^{(a)(c)}	
	Number	Per cent of GPs (n = 930)	Number	Per cent of GPs
Place of graduation ($\chi^2 = 3.47, p = 0.06$)				
Australia	684	73.6	12,668	70.8
Overseas	245	26.4	5,229	29.2
State ($\chi^2 = 6.93, p = 0.436$)				
New South Wales	321	34.5	6,082	34.0
Victoria	220	23.7	4,431	24.8
Queensland	159	17.1	3,330	18.6
South Australia	82	8.8	1,517	8.5
Western Australia	87	9.4	1,648	9.2
Tasmania	31	3.3	489	2.7
Australian Capital Territory	22	2.4	279	1.6
Northern Territory	8	0.9	121	0.7
RRMA ($\chi^2 = 10.9, p = 0.09$)				
Capital	594	63.9	11,849	66.2
Other metropolitan	68	7.3	1,385	7.7
Large rural	73	7.8	1,117	6.2
Small rural	50	5.4	1,197	6.7
Other rural	126	13.5	2,044	11.4
Remote centre	9	1.0	144	0.8
Other remote	10	1.1	161	0.9

(a) Missing data removed.

(b) Data drawn from the BEACH GP profile completed by each participating GP.

(c) All GPs who claimed at least 375 A1 Medicare items during the most recent 3-month Medicare Australia data period. Data provided by the Primary Care Division of the Australian Government Department of Health and Ageing.

Note: RRMA—Rural, Remote and Metropolitan Area classification.

Table 3.3: Activity level of participating and non-participating GPs, 2006–07

Variable	Participants ^(a) (n = 930)		Non-participants ^(a) (n = 3,127)	
	Number of claims	Per cent of GPs	Number of claims	Per cent of GPs
Activity ($\chi^2 = 6.34, p = 0.042$)				
374–750 services in previous quarter	249	26.8	721	23.1
750–1,500 services in previous quarter	424	45.6	1,449	46.3
> 1,500 services in previous quarter	257	27.6	957	30.6
Mean activity level ($t = 2.48, p = 0.0132$)	1,230.0	—	1,291.2	—
Median activity level	1,104.5	—	1,169.0	—
Standard deviation	655.08	—	665.15	—

(a) Missing data removed.

Weighting the data, 2006–07

Activity weights: In BEACH each GP provides details of 100 consecutive encounters. There is considerable variation in the number of services provided by different GPs in a given year. Encounters were therefore assigned an additional weight that was directly proportional to how busy the recording GP was. GP activity level was measured as the number of Medicare A1 items claimed by the GP in the previous 12 months (data supplied by DoHA).

Age-sex weights: In most years, including 2006–07, BEACH has had an under-representation of young GPs. In order to achieve comparable estimates and precision, GP age-sex weights were applied to the 2006–07 data in post-stratification weighting, as was done in previous years.

Total weights: The final weighted estimates were calculated by multiplying raw rates by the GP age-sex weight and the GP sampling fraction of services in the previous 12 months. Table 3.4 shows the precision ratio calculated before and after weighting the data.

Representativeness of the final encounter sample, 2006–07

BEACH aims to gain a representative sample of GP–patient encounters. To assess the representativeness of the final weighted sample of encounters, the age–sex distribution of patients at BEACH A1 Medicare/DVA-claimable encounters was compared with that of patients at all encounters claimed as Medicare A1 items of service in the 2006–07 study period (data provided by DoHA).

As shown in Table 3.4, there is an excellent fit of the MBS and BEACH age and sex distribution both with and without weighting, with no age–sex category varying by more than 20% from the population distribution. The range of raw precision ratios (0.90–1.15) indicates that the BEACH sample of encounters is a good representation of Australian GP–patient encounters. After weighting, the precision ratios improved slightly in some aspects, but within the 0.92–1.17 range.

Table 3.4: Age–sex distribution of patients at BEACH and MBS A1 services, 2006–07

Variable	BEACH				Australia ^(c) Per cent	Precision ratios	
	Raw ^(a)		Weighted ^(b)			Raw ^(a)	Weighted ^(c)
	Number	Per cent	Number	Per cent			
Male							
< 1 year	798	1.1	743	1.0	1.2	1.09	1.17
1–4 years	1,723	2.3	1,765	2.4	2.6	1.14	1.11
5–14 years	2,119	2.9	2,328	3.2	3.3	1.15	1.04
15–24 years	2,433	3.3	2,582	3.5	3.4	1.03	0.97
25–44 years	6,066	8.2	6,518	8.8	8.7	1.07	0.99
45–64 years	8,651	11.7	9,332	12.7	11.8	1.01	0.93
65–74 years	4,097	5.5	4,397	6.0	5.8	1.05	0.97
75+ years	3,902	5.3	3,990	5.4	5.2	0.98	0.95

(continued)

Table 3.4 (continued): Age-sex distribution of patients at BEACH and MBS A1 services, 2006–07

Variable	BEACH				Australia ^(c) Per cent	Precision ratios	
	Raw ^(a)		Weighted ^(b)			Raw ^(a)	Weighted ^(c)
	Number	Per cent	Number	Per cent			
Female							
< 1 year	732	1.0	692	0.9	1.0	1.03	1.09
1–4 years	1,598	2.2	1,592	2.2	2.3	1.08	1.08
5–14 years	2,030	2.7	2,134	2.9	3.2	1.15	1.09
15–24 years	4,552	6.1	4,232	5.7	5.9	0.96	1.03
25–44 years	11,243	15.2	10,489	14.2	14.7	0.97	1.03
45–64 years	12,305	16.6	11,542	15.7	15.7	0.94	1.00
65–74 years	5,498	7.4	5,354	7.3	6.7	0.90	0.92
75+ years	6,312	8.5	5,995	8.1	8.5	1.00	1.04

(a) Unweighted data, A1 items only, excluding encounters with patients who hold a DVA Repatriation health card.

(b) Calculated from BEACH weighted data, excluding encounters with patients who hold a DVA Repatriation health card.

(c) Data provided by the Primary Care Division of the Australian Government Department of Health and Ageing.

Note: A1 Medicare services—see Glossary. Only encounters with a valid age and sex are included in the comparison.

The weighted data set

The final unweighted data set from the ninth year of collection contained encounters, reasons for encounters, problems and management/treatments. The apparent number of encounters, reasons for encounter, problems managed, and the numbers of other treatments, referrals, imaging and pathology all decreased after weighting, and the number of medications increased after weighting. Raw and weighted totals for each data element are shown in Table 3.5.

Table 3.5: The BEACH data set, 2006–07

Variable	Raw	Weighted
General practitioners	930	930
Encounters	93,000	91,805
Reasons for encounter	140,676	138,434
Problems managed	140,886	136,333
Medications	93,140	93,193
Other treatments	47,361	44,035
Referrals	12,941	12,195
Imaging	8,690	8,229
Pathology	41,847	38,963

3.2 The total data set, 1998–2007

Table 3.6 shows the number of encounters contained in each year of the BEACH program since it began in April 1998, and the size of the total 9-year database for each variable (weighted), upon which all comparisons over time reported in this report are based.

Table 3.6: Annual summary of data sets, 1998–2007 (final weighted data)

Variable	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	Total all years
General practitioners	984	1,047	999	983	1,008	1,000	954	1,017	930	8,922
Encounters	96,901	104,856	99,307	96,973	100,987	98,877	94,386	101,993	91,805	794,280
Reasons for encounter	141,766	155,690	149,962	144,654	152,352	144,674	141,215	153,309	138,434	1,322,056
Problems managed	140,824	153,857	143,528	139,092	146,336	148,521	137,330	149,088	136,333	1,294,909
Medications	106,320	115,432	107,400	101,350	104,813	103,210	95,816	106,493	93,193	934,027
Other treatments	41,839	48,194	49,072	51,130	53,676	52,315	53,630	47,847	44,035	441,738
Referrals	10,866	11,760	10,366	7,761	12,265	11,794	10,881	12,235	12,195	100,123
Imaging	6,844	7,841	8,227	7,642	8,678	8,121	7,840	9,003	8,229	72,425
Pathology	23,872	27,613	29,225	30,086	33,234	34,831	34,652	39,357	38,963	291,833