

4 Annual results BEACH 2004–05

This chapter provides a summary of the annual results from the seventh year of the BEACH program, data collected between April 2004 and March 2005. 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 5.

4.1 The sample

The sample frame

A random sample of general practitioners (GPs) who claimed at least 375 general practice Medicare items of service in the previous 3 months is regularly drawn from Health Insurance Commission (HIC) data by the Primary Care Division of the Australian Government Department of Health and Ageing (AGDHA) (see Chapter 5 – Methods).

Response rate

Contact was attempted with 3,963 GPs – 14.3% could not be contacted, the majority of whom had moved, retired or died and were untraceable. The final participating sample consisted of 953 practitioners, representing 28.1% of those who were contacted and available, and 24.0% of those with whom contact was attempted (Table 4.1).

Methodological issues related to response rate are discussed in Chapter 5 – Methods, Section 5.10.

Table 4.1: Recruitment and participation rates

	Number	Per cent of approached (n=3,963)	Per cent of contacts established (n=3,395)
Letter sent and phone contact attempted	3,963	100.0	—
No contact	568	14.3	—
No phone number	51	1.3	—
Moved/retired/deceased	328	8.3	—
Unavailable	45	1.1	—
No contact after five calls	144	3.6	—
Telephone contact established	3,395	85.7	100.0
Declined to participate	2,148	54.2	63.3
Agreed but withdrew	293	7.4	8.6
Agreed and completed	953	24.0	28.1

Comparison of participating and non-participating GPs

The AGDHA provided some information from HIC data about each of the GPs drawn in the sample. This allowed us to determine the extent to which the final participating GPs were representative of the random sample of practitioners drawn. These data included the number of general practice A1 Medicare items claimed in the previous quarter, referred to in this analysis as 'activity level'.

Table 4.2 compares the characteristics of the final participants with those of all other GPs drawn in the initial sample. Differences between participants and non-participants were tested with the chi-square statistic (significance at the 5% level), using AGDHA GP characteristic data for both groups.

There were no significant differences between participants and non-participants in:

- sex
- place of graduation
- location of practice in terms of the Rural, Remote and Metropolitan Area (RRMA) classification
- GP activity level in the previous quarter.

There were some significant differences between the groups. In the participating sample:

- there was a lesser proportion of GPs aged 35–44 years
- there was a greater proportion of GPs aged 55 years and over
- a greater proportion of GPs were from New South Wales and the Northern Territory.

Table 4.2: Comparison of characteristics of participating and non-participating GPs

GP characteristics	Participants ^(a) (n=953)		Non-participants ^(a) (n=2,442)	
	Number	Per cent of GPs ^(b)	Number	Per cent of GPs ^(b)
Sex ($\chi^2=0.57$, $p=0.45$)				
Male	649	68.1	1,630	66.7
Female	304	31.9	812	33.3
Missing	—	—	—	—
Age ($\chi^2=13.07$, $p=0.004$)				
< 35 years	87	9.4	252	10.6
35–44 years	226	24.4	675	28.4
45–54 years	298	32.2	786	33.0
55+ years	315	34.0	666	28.0
Missing	27	—	63	—
Place of graduation ($\chi^2=0.155$, $p=0.69$)				
Australia	669	70.2	1,731	70.9
Overseas	284	29.8	711	29.1
Missing	—	—	—	—

(continued)

Table 4.2 (continued): Comparison of characteristics of participating and non-participating GPs

GP characteristics	Participants ^(a) (n=953)		Non-participants ^(a) (n=2,442)	
	Number	Per cent of GPs ^(b)	Number	Per cent of GPs ^(b)
State ($\chi^2=19.964$, $p=0.005$)				
New South Wales	336	35.3	779	31.9
Victoria	221	23.2	644	26.4
Queensland	187	19.6	440	18.0
South Australia	78	8.2	241	9.9
Western Australia	82	8.6	218	8.9
Tasmania	23	2.4	80	3.3
Australian Capital Territory	11	1.2	28	1.1
Northern Territory	15	1.6	12	0.5
Missing	—	—	—	—
RRMA ($\chi^2=8.23$, $p=0.22$)				
Capital	622	65.3	1,598	65.4
Other metropolitan	65	6.8	176	7.2
Large rural	52	5.5	149	6.1
Small rural	61	6.4	173	7.1
Other rural	125	13.1	306	12.5
Remote centre	12	1.3	22	0.9
Other remote	16	1.7	18	0.7
Missing	—	—	—	—
Activity ($\chi^2=2.35$, $p<0.3$)				
375–750 services in previous quarter	236	24.8	545	22.3
751–1,500 services in previous quarter	431	45.2	1,148	47.0
> 1,500 services in previous quarter	286	30.0	749	30.7
Mean activity level ($t=0.47$, $p<0.6389$)				
Median activity level	1,277.1	—	1,289.8	—
Standard deviation	1,098.0	—	1,149.0	—
	719.7	—	675.7	—

(a) Data drawn from that provided by the AGDHA.

(b) Missing data removed.

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

Representativeness of the GPs

Whenever possible, the final 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 have an impact on the findings of the study.

Statistical comparisons, using the chi-square statistic (χ^2), were made between BEACH participants and all recognised GPs in the sample frame during the study period (Table 4.3). The GP characteristics data for BEACH participants were drawn from the GP profile questionnaire to ensure highest reliability. The AGDHA provided the data for all GPs in the sample frame.

Table 4.3 demonstrates that there were no significant differences in GP characteristics between the final sample and all GPs in the sample frame, with the exception of their state/territory distribution.

Table 4.3: Comparison of BEACH participants and all active recognised GPs in Australia

Variable	BEACH ^{(a)(b)}		Australia ^{(a)(c)}	
	Number	Per cent of GPs	Number	Per cent of GPs
Sex ($\chi^2=1.37, p=0.24$)				
Males	647	67.9	11,963	66.0
Females	306	32.1	6,149	34.0
Age ($\chi^2=3.9, p=0.27$)				
< 35	86	9.0	1,859	10.3
35–44	243	25.5	4,564	25.2
45–54	303	31.8	6,071	33.5
55+	320	33.6	5,638	31.1
Place of graduation ($\chi^2=1.04, p=0.30$)				
Australia	665	69.9	12,961	71.5
Overseas	286	30.1	5,171	28.5
State ($\chi^2=25.4, p<0.001$)				
New South Wales	334	35.1	6,103	33.7
Victoria	219	23.0	4,489	24.8
Queensland	188	19.8	3,416	18.8
South Australia	78	8.2	1,523	8.4
Western Australia	82	8.6	1,692	9.3
Tasmania	23	2.4	505	2.8
Australian Capital Territory	12	1.3	269	1.5
Northern Territory	16	1.7	135	0.7
RRMA ($\chi^2=6.38, p=0.38$)				
Capital	618	64.9	11,802	65.1
Other metropolitan	64	6.7	1,358	7.5
Large rural	51	5.4	1,088	6.0
Small rural	66	6.9	1,272	7.0
Other rural	124	13.0	2,245	12.4
Remote centre	12	1.3	164	0.9
Other remote	17	1.8	203	1.1

(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 Health Insurance Commission 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.

Weighting the data

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 the busyness of the recording GP. GP activity level was measured as the number of Medicare A1 items claimed by the GP in the previous 12 months (data supplied by the AGDHA).

Age-sex weights: In all previous years, BEACH has had an under-representation of young GPs. In order to achieve comparable estimates and precision we applied GP age-sex and activity level weights to the 2004–05 data in post-stratification weighting, as we did 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 4.4 shows the precision ratio calculated before and after weighting the data.

Representativeness of the final encounter sample

BEACH aims to gain a representative sample of GP–patient encounters. To assess the representativeness of the final weighted sample of encounters we compared the age-sex distribution of patients at BEACH A1 Medicare-claimable encounters with that of all encounters claimed in 2004 (data provided by the AGDHA) as Medicare A1 items of service.

Table 4.4: Age-sex distribution of patients at BEACH and MBS A1 services

Variable	BEACH ^(a)		Australia ^(b)	Precision ratios	
	Number	Per cent	Per cent	Raw ^(a)	Weighted ^(c)
Male					
< 1 year	928	1.2	1.2	1.0	1.0
1–4 years	1,933	2.5	2.8	1.1	1.1
5–14 years	2,292	2.9	3.5	1.2	1.1
15–24 years	2,467	3.2	3.4	1.1	1.1
25–44 years	6,922	8.9	9.1	1.0	1.0
45–64 years	8,941	11.5	11.7	1.0	1.0
65–74 years	4,267	5.5	5.7	1.1	1.0
75+ years	3,284	4.2	4.6	1.1	1.1
Female					
< 1 year	747	1.0	1.0	1.0	1.1
1–4 years	1,686	2.2	2.5	1.2	1.2
5–14 years	2,258	2.9	3.3	1.1	1.1
15–24 years	4,669	6.0	5.9	1.0	1.0
25–44 years	12,017	15.4	14.9	1.0	1.0
45–64 years	12,420	15.9	15.4	1.0	1.0
65–74 years	5,404	6.9	6.7	1.0	1.0
75+ years	5,809	7.4	8.2	1.1	1.2

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

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

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

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

As shown in Table 4.4, there is a good 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 (1.0–1.2) indicate that the BEACH sample of encounters is a good representation of Australian general practice patient encounters. After weighting, the precision ratios improved slightly in some aspects, but remained within the 1.0–1.2 range.

The weighted data set

The final unweighted data set from the seventh year of collection contained encounters, reasons for encounters, problems and management/treatments. The apparent number of encounters, reasons for encounter, medications, problems managed, the numbers of referrals, imaging and pathology all decreased after weighting. Raw and weighted totals for each data element are shown in Table 4.5.

Table 4.5: The BEACH data set

Variable	Raw	Weighted
General practitioners	953	954
Encounters	95,300	94,386
Reasons for encounter	143,116	141,215
Problems managed	141,489	137,330
Medications	95,672	95,816
Other treatments	56,415	53,630
Referrals	11,589	10,881
Imaging	8,200	7,840
Pathology	38,019	34,652

4.2 The general practitioners

All participants returned a GP profile questionnaire although some were incomplete. The results are provided in Table 4.6. Of the 953 participants:

- more than two-thirds were male and two-thirds were 45 years of age or older
- three-quarters had been in general practice for more than 10 years
- just over one in ten were in solo practice
- seven in ten GPs had graduated in Australia, and two-thirds practised in capital cities
- more than one-quarter conducted some consultations in a language other than English
- nine in ten were registered with the Department of Veterans' Affairs
- two in five were Fellows of the Royal Australian College of General Practitioners
- four in five worked in accredited practices
- nearly two-thirds worked in practices that employed practice nurses
- two in five spent more than 40 hours each week on direct patient care services
- about half had provided care in a residential aged care facility in the previous month
- one in ten worked as a salaried/sessional hospital medical officer in the previous month

- nearly half employed a deputising service for after-hours patient care, and one-third provided their own or co-operative after-hours care
- more than one-quarter bulk-billed Medicare for all patients and nearly one in five bulk-billed for pensioner/Commonwealth concession card holders only
- half worked in a teaching practice for undergraduates, for registrars, or both.

Table 4.6: Characteristics of participating GPs

GP characteristic		Number ^(a)	Per cent of GPs ^(a) (n=953)
Sex	Male	647	67.9
	Female	306	32.1
Age (missing=1)			
	< 35 years	86	8.9
	35–44 years	243	25.5
	45–54 years	303	31.8
	55+ years	320	33.6
Years in general practice (missing=5)			
	< 2 years	4	0.4
	2–5 years	98	10.3
	6–10 years	119	12.6
	11–19 years	241	25.4
	20+ years	486	51.3
Size of practice (missing=6)			
	Solo	116	12.2
	2–4 GPs	345	36.4
	5+ GPs	486	51.3
Practice location (missing=1)			
	Capital	618	64.9
	Other metropolitan	64	6.7
	Large rural	51	5.4
	Small rural	66	6.9
	Other rural	124	13.0
	Remote central	12	1.3
	Other remote, offshore	17	1.8
Place of graduation (missing=1)			
	Australia	665	69.8
	United Kingdom	72	7.6
	Asia	104	10.9
	Europe	36	3.8
	Africa	51	5.4
	New Zealand	12	1.3
	Other	12	1.3

(continued)

Table 4.6 (continued): Characteristics of participating GPs

GP characteristic	Number^(a)	Per cent of GPs^(a) (n=953)
Consultations in languages other than English (missing=1)		
< 25%	207	21.7
25–50%	23	2.4
> 50%	32	3.4
Currently in general practice training program (missing=10)	33	3.5
DVA registered (missing=29)	829	87.0
Fellow of RACGP (missing=9)	399	42.3
Accredited practice (missing=10)	767	81.3
Practice nurse at major practice address (missing=9)	567	60.2
Sessions per week (missing=8)		
< 6 per week	136	14.4
6–10 per week	701	71.2
11+ per week	108	11.4
Direct patient care hours (worked) per week (missing=29)		
< 10 hours	2	0.2
10–20 hours	81	8.8
21–40 hours	455	49.2
41–60 hours	350	37.9
60+ hours	36	3.9
Patient care provided in previous month		
As a locum	55	5.8
In a deputising service	22	2.3
In a residential aged care facility	456	47.8
As a salaried/sessional hospital medical officer	107	11.2
After-hours arrangements (missing=8)		
Own or co-operative	492	52.1
Deputing service	433	45.8
Bulk-billing (missing=6)		
All patients	272	28.7
Pension/Commonwealth concession card holders	437	46.1
Children	239	25.2
Selected other patients	427	45.1
Major practice a teaching practice (missing=12)		
For undergraduates only	202	21.5
For GP registrars only	79	8.4
For both undergraduates and registrars	193	20.5
Aboriginal Community Controlled Health Service consultations (missing=9)	14	1.5

(a) Missing data removed.

Note: GP—general practitioner; RACGP—Royal Australian College of General Practitioners; DVA—Australian Department of Veterans' Affairs.

Computer use at GP practices

Table 4.7 shows the proportion of participating GPs who worked in a practice that had the computer capacity to provide each of five listed activities.

- Less than one in fifteen GPs worked in a non-computerised practice.
- Computers were mainly used for prescribing and billing purposes.
- Almost three-quarters had computers available for other administrative processes.
- More than two-thirds had computers available for medical records.
- Two-thirds of GPs had internet and/or email available.

Table 4.7: GP computer use

Computer use	Number	Per cent of GPs (<i>n</i> =953) ^(a)	Per cent of GPs with computers (<i>n</i> =880) ^(a)
Not at all	59	6.2	—
Billing	754	80.3	85.7
Prescribing	788	83.9	89.5
Medical records	672	71.6	76.4
Other administrative	702	74.8	79.8
Internet/email	642	68.4	72.9
Missing	14	—	—

(a) Missing data removed.

Table 4.8 lists the top ten combinations of computer use by participants' practices.

- Nearly half the GPs indicated that their practice used computers for all five listed purposes – billing, prescribing, medical records, other administrative purposes and internet/email.
- Nearly 60% of the GPs reported computer use for both medical records and internet/email purposes.
- Prescribing was the only usage included in all of the top ten combinations.
- Within other top ten combinations of purposes for computer use, billing was the second most frequently available function, with medical records and internet/email usage ranking equal third.

It must be remembered that these results refer to computer use at practice level. We are currently undertaking further research involving the extent of individual computer use by GPs for clinical activity.

Table 4.8: Top ten combinations of computer use for GPs

Combination	Number	Per cent of GPs (n=953) ^(a)	Per cent of GPs with computers (n=894) ^(a)
All five uses	450	47.9	51.1
Billing + prescribing + medical records + other administrative	68	7.2	7.7
Billing + prescribing + other admin + internet/email	42	4.5	4.8
Billing + prescribing + medical records + internet/email	38	4.0	4.3
Billing + prescribing + medical records	34	3.6	3.9
Prescribing + medical records + other admin + internet/email	29	3.1	3.3
Billing + prescribing + other administrative	28	3.0	3.2
Billing + prescribing	28	3.0	3.2
Billing + prescribing + internet/email	20	2.1	2.3
Prescribing + medical records + internet/email	8	1.1	0.9

(a) Missing data removed.

4.3 The encounters

Using weighted data, in 2004–05 there were 94,386 encounters from 954 GPs. The content of these encounters is summarised in Table 4.9. Reasons for encounter and problems managed are expressed as rates per 100 encounters. Each management action is presented in terms of both a rate per 100 encounters and a rate per 100 problems managed, with 95% confidence limits.

- On average, patients described 1.5 RFEs and GPs managed 1.5 problems per encounter (150 per 100 encounters).
- New problems accounted for about one-third of all problems, being managed at a rate of 55 per 100 encounters.
- Chronic problems accounted for 35% of all problems managed at encounter.
- Medications were the most common treatment choice (70 per 100 problems managed) followed by clinical treatments (such as advice and counselling), 26 per 100 problems.
- The patient was referred elsewhere for care on 8 occasions per 100 problems managed.
- Twenty-five pathology tests orders were placed for every 100 problems managed.

Encounter type

The breakdown of BEACH encounters by payment source, place and type (where appropriate) is provided in Table 4.10.

- Indirect encounters (patient not seen by the GP) were provided on average at one in every 40 encounters
- Direct encounters where no charge was made arose on average once per 200 encounters
- Direct encounters (patient was seen by the GP) accounted for 97.4% of all encounters.
- Almost 94% of all direct encounters were claimable either through Medicare or the Australian Department of Veterans' Affairs (DVA).

- Standard surgery consultations accounted for the majority (82.3%) of Medicare/DVA claimable consultations.
- One in ten Medicare/DVA encounters were long surgery consultations.
- Short and prolonged surgery consultations, home visits and residential aged care consultations were relatively rare, and those in hospitals were negligible
- Encounters payable through workers' compensation arose once per 40 encounters.
- Enhanced primary care items accounted for less than one in 250 encounters.

Note that other types of encounters, such as health assessments, care plans, case conferences and encounters listed as 'other items' may also have taken place either at the GPs' consulting rooms, or at the consulting rooms of other health professionals, at residential aged care facilities, or at the patient's home.

Table 4.9: Summary of morbidity and management

Variable	Number	Rate per 100 encounters (n=94,386)	95% LCL	95% UCL	Rate per 100 problems (n=137,330)	95% LCL	95% UCL
General practitioners	954	—	—	—	—	—	—
Encounters	94,386	—	—	—	—	—	—
Reasons for encounter	141,215	149.6	147.8	151.5	—	—	—
Problems managed	137,330	145.5	143.6	147.4	100.0	—	—
New problems	52,080	55.2	53.8	56.5	37.9	37.0	38.9
Work-related	2,972	3.1	2.8	3.5	2.2	1.9	2.4
Chronic problems	47,921	50.8	49.1	52.5	34.9	34.0	35.8
Medications	95,816	101.5	99.3	103.8	69.8	68.3	71.2
Prescribed	78,711	83.4	81.2	85.5	57.3	55.9	58.7
GP-supplied	7,613	8.1	7.3	8.9	5.5	5.0	6.1
Advised OTC	9,492	10.1	9.1	11.0	6.9	6.3	7.5
Other treatments	51,632	54.7	52.1	57.3	37.6	36.0	39.2
Clinical*	37,016	39.2	37.1	41.4	27.0	25.6	28.3
Procedural*	14,616	15.5	14.6	16.4	10.6	10.0	11.3
Referrals	10,881	11.5	11.1	12.0	7.9	7.6	8.2
Specialist*	7,291	7.7	7.4	8.0	5.3	5.1	5.5
Allied health services*	2,569	2.7	2.5	2.9	1.9	1.7	2.0
Hospital*	451	0.5	0.3	0.7	0.3	0.2	0.5
Emergency department*	152	0.2	0.0	0.4	0.1	0.0	0.3
Other medical services*	103	0.1	0.0	0.6	0.1	0.0	0.4
Other referrals*	315	0.3	0.1	0.6	0.2	0.1	0.4
Pathology	34,652	36.7	35.2	38.2	25.2	24.3	26.2
Imaging	7,840	8.3	8.0	8.6	5.7	5.5	5.9
Other investigations	1,040	1.1	0.9	1.3	0.8	0.6	0.9

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

Note: LCL—lower confidence limit; UCL—upper confidence limit; OTC—over-the-counter.

Table 4.10: Type of encounter

Variable	Number	Rate per 100 encounters ^(a) (n=87,030)	95% LCL	95% UCL	Per cent of direct encounters (n=84,775)	Per cent of Medicare-paid (n=81,582)
General practitioners	954	—	—	—	—	—
Direct encounters	84,775	97.4	97.1	97.7	100.0	—
No charge	457	0.5	0.2	0.9	0.5	—
MBS items of service ^(b)	81,582	93.7	93.3	94.2	96.2	100.0
Short surgery consultations	850	1.0	0.3	1.6	—	1.0
Standard surgery consultations	67,140	77.2	76.0	78.2	—	82.3
Long surgery consultations	8,614	9.9	9.2	10.6	—	10.6
Prolonged surgery consultations	627	0.7	0.1	1.3	—	0.8
Home visits	790	0.9	0.2	1.6	—	1.0
Hospital	193	0.2	0.0	2.0	—	0.2
Residential aged care facility	979	1.1	0.0	3.2	—	1.2
Enhanced Primary Care items	311	0.4	0.0	0.9	—	0.4
Case conference	3	0.0 [‡]	0.0	1.4	—	0.0
Care plan	159	0.2	0.0	0.9	—	0.2
Health assessments	150	0.2	0.0	0.7	—	0.2
Other items	2,076	2.4	0.6	4.2	—	2.5
Workers compensation	2,132	2.5	2.1	2.8	2.5	—
Other paid (hospital, state, etc.)	605	0.7	0.1	1.3	0.7	—
Indirect encounters	2,256	2.6	2.1	3.1	—	—
Missing	7,355	—	—	—	—	—
Total encounters	94,386	—	—	—	—	—

(a) Missing data removed from analysis. Per cent base n=91,965.

(b) Includes 2,983 encounters that were recorded with patients who held an Australian Repatriation health card.

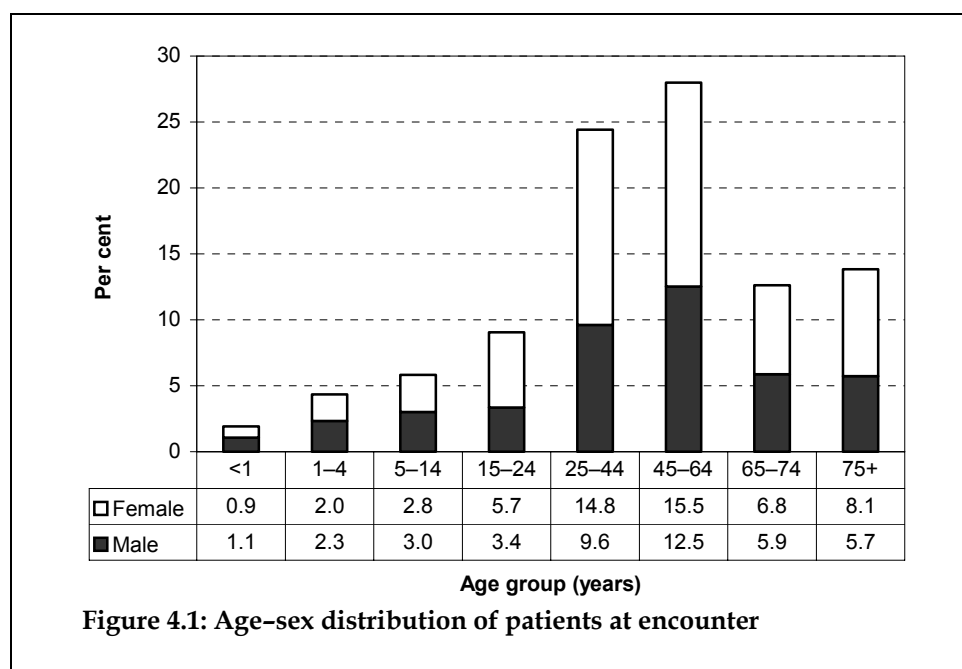
‡ Rates are reported to one decimal place. This indicates that the rate is <0.05 per 100 encounters.

Note: LCL—lower confidence limit; UCL—upper confidence limit; MBS—Medicare Benefits Schedule.

4.4 The patients

Age–sex distribution of patients at encounter

The age–sex distribution of patients at the 94,386 encounters is shown in Figure 4.1. Females accounted for the greater proportion of encounters (56.5%). This was reflected across all age groups except for children aged less than 15 years, and was greatest among the younger adults (15–24 years and 25–44 years) (Figure 4.1).



Note: Missing data removed. The distributions will not agree perfectly with those in Table 4.11 due to missing data in either age or sex fields.

Other patient characteristics

Table 4.11 provides a view of other characteristics of the patients. In summary:

- the patient was new to the practice at one in ten encounters (9.1%)
- almost half the encounters were with patients who held a Commonwealth concession card and 3.2% were with persons who held a Repatriation health card
- at one in ten encounters, the patient was from a non-English-speaking background
- at 1.4% of encounters the patient was an Indigenous person.

Table 4.11: Characteristics of the patients at encounters

Patient variable	Number	Per cent of encounters (n=94,386) ^(a)	95% UCL	95% UCL
Sex (Missing=809)				
Males	40,687	43.5	42.7	44.3
Females	52,890	56.5	55.7	57.3
Age group (Missing=925)				
< 1 year	1,789	1.9	1.7	2.1
1-4 years	4,059	4.3	4.0	4.7
5-14 years	5,442	5.8	5.5	6.1
15-24 years	8,442	9.0	8.6	9.4
25-44 years	22,810	24.4	23.7	25.1
45-64 years	26,167	28.0	27.4	28.6
65-74 years	11,797	12.6	12.1	13.2
75+ years	12,955	13.9	13.1	14.7

(continued)

Table 4.11 (continued): Characteristics of the patients at encounters

Patient variable	Number	Per cent of encounters (n=94,386) ^(a)	95% UCL	95% UCL
Other characteristics				
New patient to practice	8,386	9.1	8.3	9.9
Commonwealth concession card	40,814	43.2	41.8	44.7
Repatriation health card	2,983	3.2	2.8	3.5
Non-English-speaking background	10,185	10.8	7.2	14.4
Aboriginal person	1,073	1.1	0.0	3.0
Torres Strait Islander	159	0.2	0.0	1.8
Aboriginal person and Torres Strait Islander	39	0.0 [‡]	—	—

(a) Missing data removed.

‡ Rates are reported to one decimal place. This indicates that the rate is <0.05 per 100 encounters. The confidence interval could not be calculated due to the small sample size.

Note: LCL—lower confidence limit; UCL—upper confidence limit.

Patient reasons for encounter

International interest in reasons for encounter (RFEs) has been developing over the past three decades. RFEs 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.³⁴

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 reasons for encounter

Table 4.12 shows the number of RFEs presented by patients at encounters. At almost two-thirds of encounters only one RFE was recorded. Patients presented on average with 149.6 RFEs per 100 encounters (Table 4.13). Females presented with significantly more RFEs (152.2 per 100 encounters, 95% CI: 150.3–154.4) than did males (146.5 per 100, 95% CI: 144.4–148.5) (results not tabulated).

Table 4.12: Number of patient reasons for encounter

Number of RFEs at encounter	Number of encounters (n=94,386)	Per cent of encounters	95% LCL	95% UCL
One RFE	57,967	61.4	60.2	62.6
Two RFEs	26,009	27.6	26.9	28.3
Three RFEs	10,410	11.0	10.3	11.7
Total	94,386	100.0	—	—

Note: RFEs—reasons for encounter; LCL—lower confidence limit; UCL—upper confidence limit.

Reasons for encounter by ICPC-2 chapter

The distribution of patient RFEs by ICPC-2 chapter and the most common RFEs within each chapter are presented in Table 4.13. Each chapter and individual RFE is expressed as a percentage of all RFEs and as a rate per 100 encounters with 95% confidence limits.

Table 4.13: Distribution of patient reasons for encounter, by ICPC-2 chapter and most frequent individual reasons for encounter within chapter

Reasons for encounter	Number	Per cent of total RFEs ^(a) (n=141,215)	Rate per 100 encounters ^(a) (n=94,386)	95% LCL	95% UCL
General & unspecified	34,461	24.4	36.5	35.5	37.6
Prescription NOS	7,562	5.4	8.0	7.5	8.5
Results tests/procedures NOS	5,079	3.6	5.4	5.1	5.7
Check-up—general*	3,294	2.3	3.5	3.2	3.8
Immunisation/vaccination—general	2,043	1.5	2.2	1.8	2.6
Fever	1,678	1.2	1.8	1.5	2.1
Weakness/tiredness	1,564	1.1	1.7	1.4	1.9
Administrative procedure NOS	1,338	1.0	1.4	1.3	1.6
Blood test NOS	1,062	0.8	1.1	0.8	1.4
Chest pain NOS	1,033	0.7	1.1	1.0	1.2
Other reason for encounter NEC	971	0.7	1.0	0.7	1.4
Clarify/discuss patient RFE NOS	866	0.6	0.9	0.6	1.3
Trauma/injury NOS	762	0.5	0.8	0.7	1.0
Respiratory	19,423	13.8	20.6	19.8	21.4
Cough	5,555	3.9	5.9	5.5	6.2
Throat complaint	3,336	2.4	3.5	3.2	3.9
Immunisation/vaccination—respiratory	1,760	1.3	1.9	0.9	2.9
Upper respiratory tract infection	1,652	1.2	1.8	1.4	2.1
Nasal congestion/sneezing	1,302	0.9	1.4	1.0	1.8
Shortness of breath, dyspnoea	779	0.6	0.8	0.6	1.0
Asthma	771	0.6	0.8	0.7	1.0
Musculoskeletal	15,727	11.1	16.7	16.0	17.3
Back complaint*	3,217	2.3	3.4	3.2	3.6
Knee complaint	1,299	0.9	1.4	1.3	1.5
Shoulder complaint	1,193	0.8	1.3	1.1	1.5
Foot/toe complaint	1,086	0.8	1.2	1.0	1.3
Leg/thigh complaint	1,023	0.7	1.1	1.0	1.2
Neck complaint	964	0.7	1.0	0.8	1.3
Skin	14,702	10.4	15.6	15.0	16.2
Rash*	2,720	1.9	2.9	2.7	3.1
Skin complaint	1,394	1.0	1.5	1.3	1.7
Check-up—skin*	1,170	0.8	1.2	0.7	1.8
Swelling*	1,038	0.7	1.1	1.0	1.2

(continued)

Table 4.13 (continued): Distribution of patient reasons for encounter, by ICPC-2 chapter and most frequent individual reasons for encounter within chapter

Reasons for encounter	Number	Per cent of total RFEs ^(a) (n=141,215)	Rate per 100 encounters ^(b) (n=94,386)	95% LCL	95% UCL
Circulatory	9,892	7.0	10.5	10.0	11.0
Check-up—cardiovascular*	4,483	3.2	4.8	4.4	5.1
Hypertension/high blood pressure*	1,587	1.1	1.7	1.3	2.1
Prescription—cardiovascular	851	0.6	0.9	0.5	1.3
Digestive	9,364	6.6	9.9	9.5	10.3
Abdominal pain*	1,776	1.3	1.9	1.7	2.0
Diarrhoea	1,311	0.9	1.4	1.2	1.5
Vomiting	884	0.6	0.9	0.8	1.1
Psychological	7,178	5.1	7.6	7.2	8.0
Depression*	1,773	1.3	1.9	1.7	2.1
Sleep disturbance	1,180	0.8	1.3	1.0	1.5
Anxiety*	916	0.7	1.0	0.8	1.1
Endocrine & metabolic	5,816	4.1	6.2	5.8	6.5
Prescription—endocrine/metabolic	916	0.7	1.0	0.7	1.2
Diabetes (non-gestational)*	722	0.5	0.8	0.6	1.0
Check-up—endocrine/metabolic*	699	0.5	0.7	0.5	1.0
Neurological	4,855	3.4	5.1	4.9	5.4
Headache	1,594	1.1	1.7	1.5	1.9
Vertigo/dizziness	1,136	0.8	1.2	1.1	1.3
Female genital system	4,720	3.3	5.0	4.6	5.4
Check-up/Pap smear*	1,707	1.2	1.8	1.5	2.1
Menstrual problems*	745	0.5	0.8	0.6	1.0
Ear	3,701	2.6	3.9	3.7	4.1
Ear pain	1,487	1.1	1.6	1.4	1.7
Pregnancy & family planning	3,214	2.3	3.4	3.1	3.7
Oral contraception*	904	0.6	1.0	0.8	1.1
Pre/postnatal check-up*	722	0.5	0.8	0.5	1.1
Eye	2,567	1.8	2.7	2.6	2.9
Urology	2,376	1.7	2.5	2.4	2.7
Male genital system	1,156	0.8	1.2	1.1	1.4
Blood	1,142	0.8	1.2	1.0	1.5
Social	920	0.7	1.0	0.8	1.1
Total RFEs	141,215	100.0	149.6	147.8	151.5

(a) Only those individual RFEs accounting for $\geq 0.5\%$ of total RFEs are included.

(b) 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, <www.aihw.gov.au/publications/index.cfm>).

Note: RFEs—reasons for encounter; LCL—lower confidence limit; UCL—upper confidence limit; NOS—not otherwise specified; NEC—not elsewhere classified.

Distribution of RFEs by ICPC-2 component

The distribution of patient RFEs by ICPC-2 component is presented in Table 4.14 expressed as a percentage of all RFEs and as a rate per 100 encounters with 95% confidence limits.

Table 4.14: Distribution of RFEs by ICPC-2 component

ICPC-2 component	Number	Per cent of total RFEs (n=141,215)	Rate per 100 encounters ^(a) (n=94,386)	95% LCL	95% UCL
Symptoms & complaints	67,323	47.7	71.3	69.4	73.2
Diagnoses, diseases	23,150	16.4	24.5	23.3	25.7
Diagnostic & preventive procedures	22,106	15.7	23.4	22.5	24.3
Medications, treatments & therapeutics	13,715	9.7	14.5	13.8	15.3
Referral & other RFE	6,940	4.9	7.4	6.9	7.9
Results	6,417	4.5	6.8	6.4	7.2
Administrative	1,564	1.1	1.7	1.5	1.8
Total RFEs	141,215	100.0	149.6	147.8	151.5

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

Note: RFEs—reasons for encounter; LCL—lower confidence limit; UCL—upper confidence limit.

Most frequent patient reasons for encounter

The 30 most commonly recorded RFEs, listed in order of frequency in Table 4.15, accounted for more than half of all RFEs. In this analysis the specific ICPC-2 chapter to which an across-chapter RFE belongs is disregarded, such that, for example, 'check-up—all' includes all check-ups from all body systems irrespective of whether the type was specified.

Table 4.15: Most frequent patient reasons for encounter

Patient reason for encounter	Number	Per cent of total RFEs (n=141,215)	Rate per 100 encounters ^(a) (n=94,386)	95% LCL	95% UCL
Check-up—all*	12,648	9.0	13.4	12.8	14.0
Prescription—all*	11,484	8.1	12.2	11.5	12.9
Test results*	6,417	4.5	6.8	6.4	7.2
Cough	5,555	3.9	5.9	5.5	6.2
Immunisation/vaccination—all*	4,088	2.9	4.3	3.8	4.9
Throat complaint	3,336	2.4	3.5	3.2	3.8
Back complaint*	3,217	2.3	3.4	3.2	3.6
Rash*	2,720	1.9	2.9	2.7	3.1
Abdominal pain*	1,776	1.3	1.9	1.7	2.0
Depression*	1,773	1.3	1.9	1.7	2.1
Fever	1,678	1.2	1.8	1.5	2.1
Upper respiratory tract infection	1,652	1.2	1.8	1.4	2.1
Headache	1,594	1.1	1.7	1.5	1.9
Hypertension/high blood pressure*	1,587	1.1	1.7	1.3	2.1

(continued)

Table 4.15 (continued): Most frequent patient reasons for encounter

Patient reason for encounter	Number	Per cent of total RFEs (n=141,215)	Rate per 100 encounters ^(a) (n=94,386)	95% LCL	95% UCL
Weakness/tiredness	1,564	1.1	1.7	1.4	1.9
Ear pain	1,487	1.1	1.6	1.4	1.7
Skin complaint	1,394	1.0	1.5	1.3	1.7
Administrative procedure NOS	1,338	1.0	1.4	1.2	1.6
Diarrhoea	1,311	0.9	1.4	1.2	1.5
Nasal congestion/sneezing	1,302	0.9	1.4	1.0	1.8
Knee complaint	1,299	0.9	1.4	1.3	1.5
Shoulder complaint	1,193	0.8	1.3	1.1	1.5
Sleep disturbance	1,180	0.8	1.3	1.0	1.5
Vertigo/dizziness	1,136	0.8	1.2	1.1	1.3
Foot/toe complaint	1,086	0.8	1.2	1.0	1.3
Blood test NOS	1,062	0.8	1.1	0.8	1.4
Swelling*	1,038	0.7	1.1	1.0	1.2
Chest pain NOS	1,033	0.7	1.1	1.0	1.2
Leg/thigh complaint	1,023	0.7	1.1	0.9	1.2
Other reason for encounter NEC	971	0.7	1.0	0.7	1.4
<i>Subtotal</i>	<i>78,942</i>	<i>55.9</i>	<i>–</i>	<i>–</i>	<i>–</i>
Total RFEs	141,215	100.0	149.6	147.8	151.5

(a) Figures do not total 100 as more than one RFE can be recorded at each encounter. Also, only the most frequent RFEs are included.

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

Note: RFEs—reasons for encounter; LCL—lower confidence limit; UCL—upper confidence limit; NOS—not otherwise specified; NEC—not elsewhere classified.

4.5 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, and 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 significant.

There are two ways to describe the relative frequency of problems managed: 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 heart failure) 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 (ICPC-2 chapters and those marked with an asterisk in the tables).

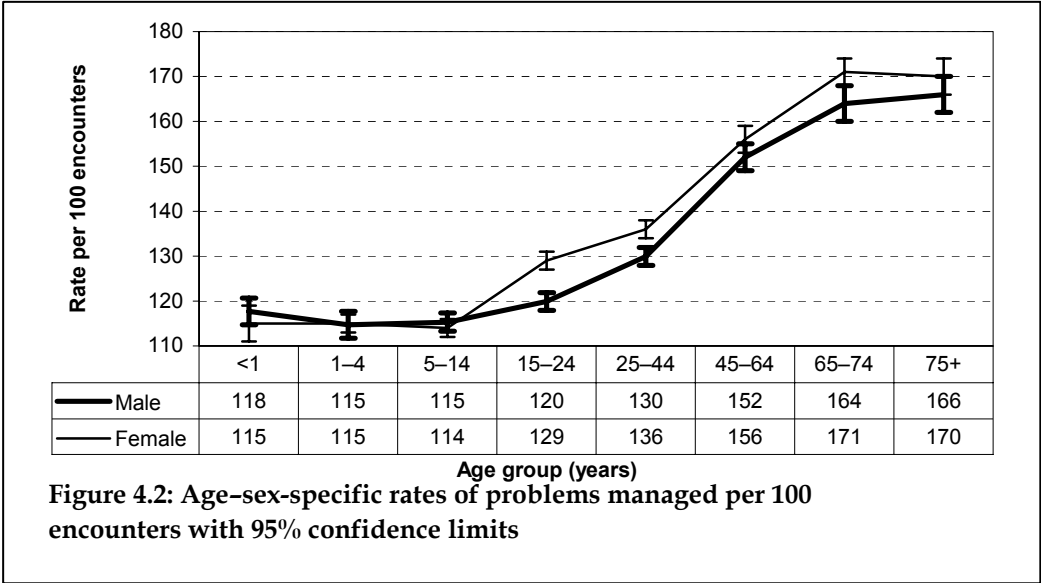
Number of problems managed at encounter

Table 4.16 shows the number of problems managed at each encounter. At two-thirds of encounters only one problem was managed.

Table 4.16: Number of problems managed at an encounter

Number of problems managed at encounter	Number of encounters	Per cent	95% LCL	95% UCL
One problem	62,803	66.5	65.3	67.7
Two problems	22,263	23.6	22.9	24.3
Three problems	7,277	7.7	7.3	8.2
Four problems	2,042	2.2	1.8	2.5
Total	94,386	100.0	—	—

Note: LCL—lower confidence limit; UCL—upper confidence limit.



Age-sex-specific rates of problems managed

The number of problems managed at encounters increased steadily with the age of the patient. Significantly more problems were managed overall at encounters with female patients (148.0 per 100 encounters, 95% CI: 146.0-150.0) than at those with male patients (143.0 per 100 encounters, 95% CI: 141.0-145.0). Figure 4.2 shows the age-sex-specific rates of problems managed, and demonstrates that this difference was particularly evident in the 15-24 and 25-44 years age groups.

Nature of morbidity

Problems managed by ICPC-2 chapter

The frequency and the distribution of problems managed, by ICPC-2 chapter, are represented in Table 4.17. Rates per 100 encounters and the proportion of total problems are provided at the ICPC-2 chapter level and for individual problems. Only those problems accounting for at least 0.5% of all problems managed are listed in the table, in decreasing order of frequency within chapter.

Table 4.17: Distribution of problems managed, by ICPC-2 chapter and most frequent individual problems within chapter

Problem managed	Number	Per cent total problems ^(a) (n=137,330)	Rate per 100 encounters ^(b) (n=94,386)	95% LCL	95% UCL
Respiratory	18,134	13.2	19.2	18.6	19.9
Upper respiratory tract infection	5,241	3.8	5.6	5.1	6.0
Acute bronchitis/bronchiolitis	2,268	1.7	2.4	2.1	2.7
Asthma	2,206	1.6	2.3	2.2	2.5
Immunisation/vaccination—respiratory	2,062	1.5	2.2	1.1	3.2
Sinusitis	1,093	0.8	1.2	1.0	1.3
Tonsillitis*	991	0.7	1.1	0.9	1.2
Chronic obstructive pulmonary disease	716	0.5	0.8	0.6	1.0
Musculoskeletal	16,676	12.1	17.7	17.1	18.3
Back complaint*	2,673	2.0	2.8	2.6	3.0
Osteoarthritis*	2,614	1.9	2.8	2.6	3.0
Sprain/strain*	1,603	1.2	1.7	1.5	1.9
Fracture*	927	0.7	1.0	0.9	1.1
Osteoporosis	839	0.6	0.9	0.7	1.1
Injury musculoskeletal NOS	822	0.6	0.9	0.7	1.1
Bursitis/tendonitis/synovitis NOS	724	0.5	0.8	0.7	0.9
Skin	16,267	11.8	17.2	16.6	17.9
Contact dermatitis	1,798	1.3	1.9	1.7	2.1
Solar keratosis/sunburn	1,263	0.9	1.3	0.9	1.7
Malignant neoplasm skin	1,113	0.8	1.2	0.8	1.5
Skin disease, other	823	0.6	0.9	0.7	1.1
Circulatory	15,301	11.1	16.2	15.5	16.9
Hypertension*	8,406	6.1	8.9	8.4	9.4
Ischaemic heart disease*	1,116	0.8	1.2	1.0	1.4
Cardiac check-up*	924	0.7	1.0	0.7	1.2
Atrial fibrillation/flutter	778	0.6	0.8	0.6	1.0
Heart failure	654	0.5	0.7	0.5	0.9

(continued)

Table 4.17(continued): Distribution of problems managed, by ICPC-2 chapter and most frequent individual problems within chapter

Problem managed	Number	Per cent total problems^(a) (n=137,330)	Rate per 100 encounters^(b) (n=94,386)	95% LCL	95% UCL
General & unspecified	14,279	10.4	15.1	14.5	15.7
General check-up*	1,948	1.4	2.1	1.8	2.3
General immunisation/vaccination	1,914	1.4	2.0	1.7	2.4
Viral disease, other/NOS	1,144	0.8	1.2	0.9	1.5
Medication/request/renew/inject NOS	1,107	0.8	1.2	0.8	1.5
Results tests/procedures NOS	841	0.6	0.9	0.7	1.1
Endocrine & metabolic	11,093	8.1	11.8	11.2	12.3
Lipid disorder	3,148	2.3	3.3	3.1	3.6
Diabetes, non-gestational*	3,022	2.2	3.2	3.0	3.4
Psychological	10,743	7.8	11.4	10.8	12.0
Depression*	3,511	2.6	3.7	3.5	3.9
Anxiety*	1,639	1.2	1.7	1.5	1.9
Sleep disturbance	1,589	1.2	1.7	1.4	1.9
Digestive	9,320	6.8	9.9	9.6	10.2
Oesophageal disease	1,973	1.4	2.1	1.9	2.3
Gastroenteritis, presumed infection	999	0.7	1.1	0.9	1.2
Female genital system	5,386	3.9	5.7	5.3	6.1
Female genital check-up/Pap smear*	1,659	1.2	1.8	1.4	2.1
Menopausal complaint	879	0.6	0.9	0.8	1.1
Pregnancy & family planning	3,601	2.6	3.8	3.5	4.1
Oral contraception*	1,205	0.9	1.3	1.1	1.4
Pregnancy*	713	0.5	0.8	0.6	0.9
Ear	3,829	2.8	4.1	3.9	4.2
Acute otitis media/myringitis	1,098	0.8	1.2	1.0	1.3
Neurological	3,427	2.5	3.6	3.5	3.8
Migraine	669	0.5	0.7	0.6	0.8
Urology	2,843	2.1	3.0	2.9	3.2
Urinary tract infection*	1,622	1.2	1.7	1.6	1.8
Eye	2,544	1.9	2.7	2.5	2.9
Infectious conjunctivitis	686	0.5	0.7	0.6	0.9
Blood	1,502	1.1	1.6	1.4	1.8
Male genital system	1,667	1.2	1.8	1.6	1.9
Social	720	0.5	0.8	0.6	1.0
Total problems	137,329.9	100.0	145.5	143.6	147.4

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

(b) Only those individual problems accounting for $\geq 0.5\%$ of total problems are included.

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

Note: LCL—lower confidence limit; UCL—upper confidence limit; NOS—not otherwise specified.

Problems managed by ICPC-2 component

Problems managed in general practice may also be examined using the components of the ICPC-2 classification to provide a more thorough understanding of the types of problems managed during general practice encounters. Table 4.18 lists the distribution of problems managed by ICPC-2 component.

In the BEACH program, participating GPs are instructed to record the problem being managed at the encounter at the highest diagnostic level possible using the currently available evidence. As such, almost two-thirds of problems were expressed as diagnoses or diseases, with the majority of other problems expressed as symptoms or complaints, or as diagnostic or preventive procedures (such as check-ups). However, in some situations, rather than providing clinical details about the problem under management, a 'process' was recorded. That is, the problem was described in terms of a test result, an administrative procedure, or as a prescription.

Table 4.18: Distribution of problems managed, by ICPC-2 component

ICPC-2 component	Number	Per cent of total problems (n=137,330)	Rate per 100 encounters ^(a) (n=94,386)	95% LCL	95% UCL
Diagnosis, diseases	88,928	64.8	94.2	92.4	96.0
Symptoms & complaints	29,324	21.4	31.1	30.2	31.9
Diagnostic & preventive procedures	12,515	9.1	13.3	12.5	14.0
Medications, treatments & therapeutics	3,443	2.5	3.7	3.3	4.0
Referral & other RFE	1,316	1.0	1.4	1.2	1.6
Results	1,272	0.9	1.4	1.0	1.7
Administrative	531	0.4	0.6	0.4	0.7
Total problems	137,330	100.0	145.5	143.6	147.4

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

Note: LCL—lower confidence limit; UCL—upper confidence limit, RFE—reason for encounter.

Most frequently managed problems

Overall, GPs managed 145.5 problems per 100 encounters. Table 4.19 shows the most frequently managed individual problems in general practice, in decreasing order of frequency. These 30 problems accounted for almost half of all problems managed.

In this analysis, the specific chapter to which 'across chapter concepts' (check-ups, immunisation/vaccination, and prescriptions) apply is ignored and the concept is grouped with all similar concepts. For example, immunisation/vaccination includes influenza vaccinations, along with immunisations for childhood diseases, and vaccinations for hepatitis.

The far right-hand column in Table 4.19 lists the percentage of a problem that was new to the patient, indicating the first presentation of a problem to a medical practitioner. This can provide a measure of general practice incidence. For example, only 5.6% of all contacts with hypertension were new problems to the patient. In contrast, more than three-quarters of URTI problems were new to the patient.

Table 4.19: Most frequently managed problems

Problem managed	Number	Per cent of total problems (n=137,330)	Rate per 100 encounters ^(a) (n=94,386)	95% LCL	95% UCL	Per cent new problems ^(b)
Hypertension*	8,406	6.1	8.9	8.4	9.4	5.6
Upper respiratory tract infection	5,241	3.8	5.6	5.1	6.0	77.5
Immunisation/vaccination—all*	4,382	3.2	4.6	4.1	5.2	58.9
Depression*	3,511	2.6	3.7	3.5	3.9	18.2
Lipid disorders*	3,148	2.3	3.3	3.1	3.6	12.1
Diabetes—all*	3,042	2.2	3.2	3.0	3.4	6.2
Back complaint*	2,673	2.0	2.8	2.6	3.0	24.5
Osteoarthritis*	2,613	1.9	2.8	2.6	3.0	17.6
Acute bronchitis/bronchiolitis	2,268	1.7	2.4	2.1	2.7	70.6
Asthma	2,206	1.6	2.3	2.2	2.5	19.3
Oesophageal disease	1,973	1.4	2.1	1.9	2.3	21.2
Prescription—all*	1,961	1.4	2.1	1.7	2.5	5.4
General check-up*	1,948	1.4	2.1	1.8	2.3	47.1
Contact dermatitis	1,798	1.3	1.9	1.7	2.1	44.5
Female genital check-up/Pap smear*	1,659	1.2	1.8	1.4	2.1	39.7
Anxiety*	1,639	1.2	1.7	1.5	1.9	20.0
Urinary tract infection*	1,622	1.2	1.7	1.6	1.8	61.4
Sprain/strain*	1,603	1.2	1.7	1.5	1.9	58.0
Sleep disturbance	1,589	1.2	1.7	1.4	1.9	18.0
Test results*	1,316	1.0	1.4	1.2	1.6	25.6
Solar keratosis/sunburn	1,263	0.9	1.3	0.9	1.7	45.2
Oral contraception*	1,205	0.9	1.3	1.1	1.4	17.5
Viral disease, other/NOS	1,144	0.8	1.2	0.9	1.5	76.1
Ischaemic heart disease*	1,116	0.8	1.2	1.0	1.4	9.5
Malignant neoplasm, skin	1,113	0.8	1.2	0.8	1.5	55.0
Acute otitis media/myringitis	1,098	0.8	1.2	1.0	1.3	72.2
Sinusitis acute/chronic	1,093	0.8	1.2	1.0	1.3	64.2
Gastroenteritis, presumed infection	999	0.7	1.1	0.9	1.2	74.8
Tonsillitis*	991	0.7	1.1	0.9	1.2	74.9
Fracture*	927	0.7	1.0	0.9	1.1	46.7
<i>Subtotal</i>	<i>65,548</i>	<i>47.7</i>	—	—	—	—
Total problems	137,330	100.0	145.5	143.6	147.4	37.9

(a) Figures do not total 100 as more than one problem can be recorded at each encounter. Also, only more frequently managed problems are included.

(b) The proportion of problems of this type that were new problems (the first presentation of a problem, including the first presentations of a recurrence of a previously resolved problem, but excluding the presentation of a problem first assessed by another provider).

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

Note: UCL—upper confidence limit; LCL—lower confidence limit; NOS—not otherwise specified.

Most common new problems

For each problem managed, participating GPs are asked to indicate whether the problem under management is a new problem for the patient, or a problem that has been managed previously by any medical practitioner. Table 4.20 lists the most common new problems managed in general practice in 2004–05, in decreasing order of frequency. Overall, in 2004–05, 52,080 problems were specified as being ‘new’, being managed at a rate of 55.2 per 100 encounters.

The far right-hand column of this table shows the proportion of total contacts with this problem that were reported as being new problems to the patient. For example the 638 new cases of depression represented only 18% of all GP contacts with diagnosed depression. In contrast, almost three-quarters of the acute otitis media cases were first consultations to medical practitioners for this episode of acute otitis media. The balance (almost 30%) would have been follow-up consultations for this episode of this problem.

Most frequently managed chronic problems

Table 4.21 shows the most frequently managed chronic problems in Australian general practice in decreasing order of frequency. To identify chronic conditions, a chronic condition list classified according to ICPC-2 was applied to the BEACH data set.³⁵ One-third of the problems managed in general practice were chronic in nature in 2004–05. At least one chronic problem was managed at 39.2% of encounters (95% CI: 38.2–40.2), and chronic problems were managed at an average rate of 50.8 per 100 encounters.

In other parts of this chapter, both chronic and non-chronic conditions (e.g. hypertension and gestational hypertension) may be found in the groups reported (e.g. hypertension*, Table 4.19). However, in this section, only problems regarded as ‘chronic’ have been included in the analysis. Where the group used for the chronic analysis differs from that used in other analyses in this report, they are marked with a double asterisk. Codes included in the group may be found in Appendix 4, <www.aihw.gov.au/publications/index.cfm>. It is important to note that the condition labels and figures in this analysis may differ from those in Table 4.19 for this reason.

Table 4.20: Most frequently managed new problems

New problem managed	Number	Per cent of total new problems (n=52,080)	Rate per 100 encounters^(a) (n=94,386)	95% LCL	95% UCL	Per cent of this problem^(b)
Upper respiratory tract infection	4,061	7.8	4.3	3.9	4.7	77.5
Immunisation/vaccination—all*	2,581	5.0	2.7	2.2	3.3	58.9
Acute bronchitis/bronchiolitis	1,601	3.1	1.7	1.5	1.9	70.6
Urinary tract infection*	997	1.9	1.1	0.9	1.2	61.4
Sprain/strain*	929	1.8	1.0	0.8	1.2	58.0
General check-up*	918	1.8	1.0	0.8	1.2	47.1
Viral disease, other/NOS	871	1.7	0.9	0.7	1.2	76.1
Contact dermatitis	801	1.5	0.9	0.7	1.0	44.5
Acute otitis media/myringitis	793	1.5	0.8	0.7	1.0	72.2
Gastroenteritis, presumed infection	747	1.4	0.8	0.6	1.0	74.8
Tonsillitis*	742	1.4	0.8	0.6	1.0	74.9
Sinusitis acute/chronic	702	1.4	0.7	0.6	0.9	64.2
Female genital check-up*	658	1.3	0.7	0.3	1.1	39.7
Back complaint*	655	1.3	0.7	0.6	0.8	24.5
Depression*	638	1.2	0.7	0.5	0.8	18.2
Malignant neoplasm skin	612	1.2	0.7	0.3	1.0	55.0
Solar keratosis/sunburn	571	1.1	0.6	0.3	0.9	45.2
Infectious conjunctivitis	554	1.1	0.6	0.4	0.7	80.7
Hypertension*	469	0.9	0.5	0.4	0.6	5.6
Osteoarthritis*	460	0.9	0.5	0.3	0.7	17.6
Skin disease, other	459	0.9	0.5	0.3	0.7	55.8
Excessive ear wax	443	0.9	0.5	0.3	0.6	62.8
Fracture*	433	0.8	0.5	0.3	0.6	46.7
Bursitis/tendonitis/synovitis NOS	425	0.8	0.5	0.3	0.6	58.7
Asthma	425	0.8	0.5	0.3	0.6	19.3
Oesophageal disease	418	0.8	0.4	0.3	0.6	21.2
Otitis externa	420	0.8	0.4	0.3	0.6	61.9
Skin injury, other	402	0.8	0.4	0.2	0.7	61.1
Dermatophytosis	389	0.8	0.4	0.3	0.6	64.7
Lipid disorders*	381	0.7	0.4	0.2	0.6	12.1
<i>Subtotal</i>	<i>24,555</i>	<i>47.1</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>
Total new problems	52,080	100.0	55.2	53.8	56.5	—

(a) Figures do not total 100 as more than one new problem can be recorded at each encounter. Also, only the most frequently managed new problems are included.

(b) The proportion of total contacts with this problem that were accounted for by new problems.

* Includes multiple ICD-10 or ICD-10 PLUS codes (see Appendix 3, <www.aihw.gov.au/publications/index.cfm>).

Note: LCL—lower confidence limit; UCL—upper confidence limit; NOS—not otherwise specified.

Table 4.21: Most frequently managed chronic problems

Chronic problem managed	Number	Per cent of total chronic problems (n=47,291)	Rate per 100 encounters ^(a) (n=94,386)	95% LCL	95% UCL
Hypertension (non-gestational)**	8,391	17.5	8.9	8.4	9.4
Depressive disorder	3,489	7.3	3.7	3.5	3.9
Lipid disorders*	3,148	6.6	3.3	3.1	3.6
Diabetes (non-gestational)**	3,022	6.3	3.2	3.0	3.4
Osteoarthritis*	2,613	5.5	2.8	2.6	3.0
Asthma	2,206	4.6	2.3	2.2	2.5
Oesophageal disease	1,973	4.1	2.1	1.9	2.3
Ischaemic heart disease*	1,116	2.3	1.2	1.0	1.4
Malignant neoplasm, skin	1,113	2.3	1.2	0.8	1.5
Back syndrome with radiating pain	896	1.9	1.0	0.8	1.1
Osteoporosis	839	1.8	0.9	0.7	1.1
Atrial fibrillation/flutter	778	1.6	0.8	0.6	1.0
Obesity	732	1.5	0.8	0.5	1.1
Chronic obstructive pulmonary disease	716	1.5	0.8	0.6	1.0
Migraine	668	1.4	0.7	0.6	0.8
Arthritis**	668	1.4	0.7	0.4	1.0
Heart failure	654	1.4	0.7	0.5	0.9
Hypothyroidism/myxoedema	588	1.2	0.6	0.5	0.8
Gout	583	1.2	0.6	0.5	0.8
Schizophrenia	468	1.0	0.5	0.1	0.9
Anxiety disorder	452	0.9	0.5	0.2	0.8
Anaemia (chronic)**	444	0.9	0.5	0.3	0.6
Dementia	436	0.9	0.5	0.0	1.0
Shoulder syndrome	421	0.9	0.5	0.2	0.6
Rheumatoid arthritis	417	0.9	0.4	0.3	0.6
Acne (chronic)**	410	0.9	0.4	0.3	0.6
Neck syndrome	355	0.7	0.4	0.1	0.6
Overweight	355	0.7	0.4	0.0	0.9
Sprain/strain**	346	0.7	0.4	0.1	0.6
Vertiginous syndromes	337	0.7	0.4	0.2	0.5
Back syndrome without radiating pain	333	0.7	0.4	0.0	0.7
Epilepsy	316	0.7	0.3	0.2	0.5
<i>Subtotal</i>	39,283	83.1	—	—	—
Total chronic problems	47,921	100.0	50.8	49.1	52.5

(a) Figures do not total 100 as more than one chronic problem can be recorded at each encounter. Also, only the most frequently managed chronic problems are included.

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

** Indicates that this group differs from that used for analysis in other sections of this chapter, as only chronic conditions have been included in this analysis (see Appendix 4 <www.aihw.gov.au/publications/index.cfm> for codes included in analysis of chronic conditions).

Note: LCL—lower confidence limit; UCL—upper confidence limit.

4.6 Overview of management

The BEACH survey form allowed GPs to record several aspects of patient management for each problem managed at each encounter. Pharmaceutical management was recorded in detail. Other modes of treatment, including clinical treatments (e.g. counselling) and procedures recorded briefly in the GP's own words, were also related to a single problem. Provision was made on the form for referrals and hospital admissions, and for pathology and imaging orders to be related to multiple problems.

GPs undertook 201,861 management activities in total. Of these:

- the most common management activity was medication, either prescribed, GP-supplied, or advised for over-the-counter purchase
- other treatments were the second most common management activity, with clinical treatments occurring more frequently than procedural treatments (Table 4.22).

Table 4.22: Summary of management

Management type	Number	Rate per 100 encounters (n=94,386)	95% LCL	95% UCL	Rate per 100 problems (n=137,330)	95% LCL	95% UCL
Medications	95,816	101.5	99.3	103.8	69.8	68.9	71.2
Prescribed	78,711	83.4	81.2	85.5	57.3	55.9	58.7
GP-supplied	7,613	8.1	7.3	8.9	5.5	5.0	6.1
Advised OTC	9,492	10.1	9.1	11.0	6.9	6.3	7.5
Other treatments	51,632	54.7	52.1	57.3	37.6	36.0	39.2
Clinical	37,016	39.2	37.1	41.4	27.0	25.6	28.3
Procedural	14,616	15.5	14.6	16.4	10.6	10.0	11.3
Referrals	10,881	11.5	11.1	12.0	7.9	7.6	8.2
Specialist	7,291	7.7	7.4	8.0	5.3	5.1	5.5
Allied health	2,569	2.7	2.5	2.9	1.9	1.7	2.0
Hospital	451	0.5	0.3	0.7	0.3	0.2	0.5
Emergency dept	152	0.2	0.0	0.4	0.1	0.0	0.3
Other medical services	103	0.1	0.0	0.6	0.1	0.0	0.4
Other referral	315	0.3	0.1	0.6	0.2	0.1	0.4
Pathology	34,652	36.7	35.2	38.2	25.2	24.3	26.2
Imaging	7,840	8.3	8.0	8.6	5.7	5.5	5.9
Other investigations	1,040	1.1	0.9	1.3	0.8	0.6	0.9
Total management activities	201,861	213.9	—	—	147.0	—	—

Note: LCL—lower confidence limit; UCL—upper confidence limit; OTC—over-the-counter.

Another perspective emerges in analysis of the number of encounters or problems for which at least one form of management was recorded by the GP. At least one management action was recorded at 91.9% of encounters and for 87.1% of problems managed.

- At least one medication or other treatment was given for three-quarters of the problems managed.
- At least one medication (most commonly prescribed) was prescribed/supplied or advised for over half the problems managed.

- At least one other treatment (most commonly clinical) was provided for one-third of problems managed.
- At least one referral (most commonly to a specialist) was made for one in twelve problems managed.
- At least one investigation (most commonly pathology) was requested for one in six problems managed (Table 4.23).

Table 4.23: Encounters and problems for which management was recorded

Management type	Number of encounters	Per cent of total encs ^(a) (n=94,386)	Number of problems	Per cent of total probs ^(a) (n=137,330)
At least one management type	86,742	91.9	119,591	87.1
At least one medication or other treatment	77,797	82.4	102,887	74.9
At least one medication	60,693	64.3	75,796	55.2
At least one prescription	51,718	54.8	64,166	46.7
At least one GP-supplied	5,828	6.2	6,002	4.4
At least one OTC advised	8,244	8.7	8,508	6.2
At least one other treatment	38,916	41.2	44,450	32.4
At least one clinical treatment	28,808	30.5	32,505	23.7
At least one procedural treatment	13,060	13.8	13,470	9.8
At least one referral	10,325	10.9	10,893	7.9
At least one referral to a specialist	7,052	7.5	7,389	5.4
At least one referral to allied health	2,481	2.6	2,561	1.9
At least one referral to hospital	451	0.5	473	0.3
At least one referral to emergency department	152	0.2	157	0.1
At least one referral to other medical services	103	0.1	105	0.1
At least one referral NOS	315	0.3	335	0.2
At least one investigation	20,533	21.8	23,191	16.9
At least one pathology order	14,840	15.7	16,735	12.2
At least one imaging order	6,886	7.3	7,116	5.2
At least one other investigation	975	1.0	993	0.7

(a) Figures will not total 100 as multiple events may occur in one encounter or in the management of one problem at encounter.

Note: Encs—encounters; probs—problems; OTC—over-the-counter; NOS—not otherwise specified.

The combinations of management types related to each problem were then investigated. The majority of treatments occurred either as a single component or in combination with one other component. Management was provided:

- as a single component for almost two-thirds of the problems managed
- as a double component for just under one in five problems managed
- rarely with more than two components.

Table 4.24 lists the most common management combinations. Medication alone was the most common management, followed by the combination of medication and a clinical treatment.

Table 4.24: Most common management combinations

1+ medication	1+ clinical treatment	1+ procedural treatment	1+ referral	1+ imaging order	1+ pathology order	Per cent of total encs (n=94,386)	Per cent of total probs (n=137,330)
No recorded management						8.1	12.9
1+ management recorded						91.9	87.1
✓						31.7	37.0
✓	✓					12.1	7.9
	✓					8.0	10.8
✓					✓	4.0	2.8
✓		✓				3.9	2.5
		✓				3.7	4.3
			✓			3.3	4.1
					✓	2.9	4.7
✓			✓			2.5	1.3
✓	✓				✓	1.7	0.6
				✓		1.6	1.0
✓				✓		1.6	2.0
	✓				✓	1.4	1.3
✓	✓	✓				1.2	0.4
✓	✓		✓			1.1	0.3

Note: 1+—at least one specified management type; encs—encounters; probs—problems.

4.7 Medications

- GPs could record up to four medications for each of four problems—a maximum of 16 medications per encounter.
- Each medication could be recorded as prescribed (the default), supplied by the GP or recommended for over-the-counter (OTC) purchase.
- GPs were asked to:
 - enter the generic or brand name, the strength, regimen and number of repeats ordered for each medication
 - to designate this as a new or continued medication for that patient for this problem.
- Generic or brand names were entered into the database in the form recorded by the GP.
- Medications were coded using the CAPS system (developed by the Family Medicine Research Centre) from which they were classified to the international ATC classification (see Chapter 5—Methods).³¹
- Results are reported in this chapter at drug group and generic level using ATC Levels 3 and 5.

Source of medications

A total of 95,816 medications were recorded at rates of 102 per 100 encounters and 70 per 100 problems managed (Table 4.22).

- Four out of five medications (82.1%) were prescribed.
- Less than one in ten (8.0%) medications were supplied to the patient by the GP.
- One in ten medications (9.9%) were recommended by the GP for OTC purchase.

If we extrapolate to the 95 million A1 and A2 Medicare-claimed encounters in Australia in 2004, GPs in Australia:

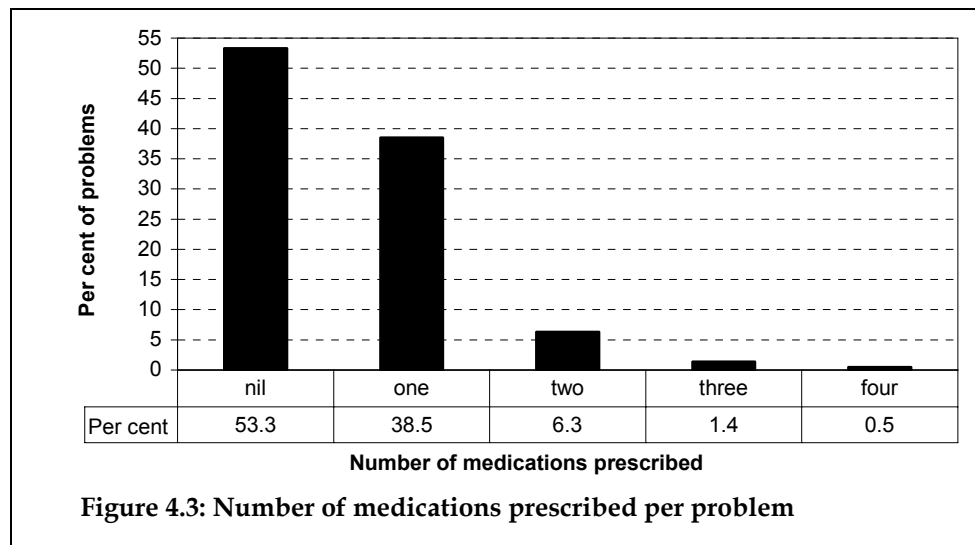
- prescribed almost 79 million medications (not counting repeats)
- supplied almost eight million medications directly to the patient
- recommended almost 10 million medications for OTC purchase.

Prescribed medications

There were 78,711 prescriptions recorded, at rates of 83 per 100 encounters and 57 per 100 problems managed.

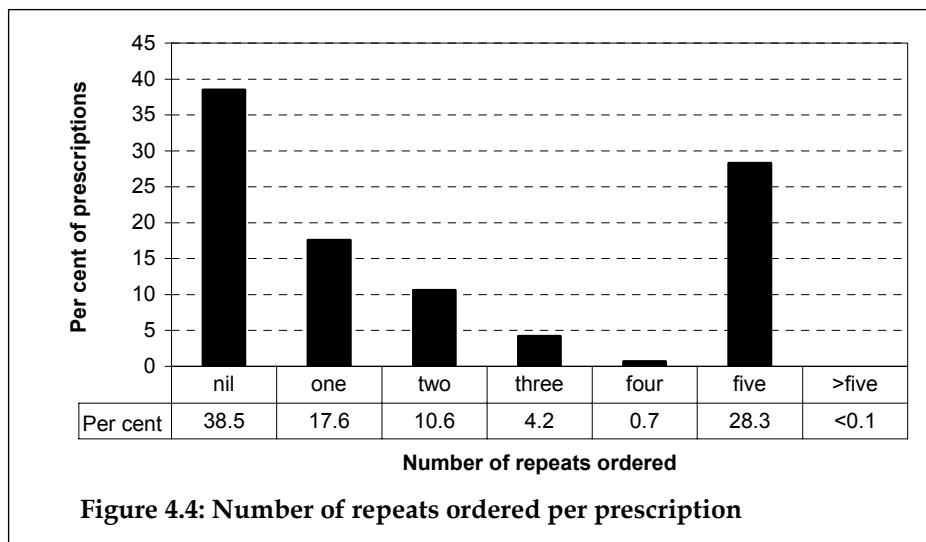
On a per problem basis:

- no prescription was given for half (53.3%) of all problems managed
- one prescription was given for almost 40% of problems managed
- two prescriptions were given for 6% of problems managed
- three or more prescriptions were rarely given (1.9% of problems managed) (Figure 4.3).



Number of repeats

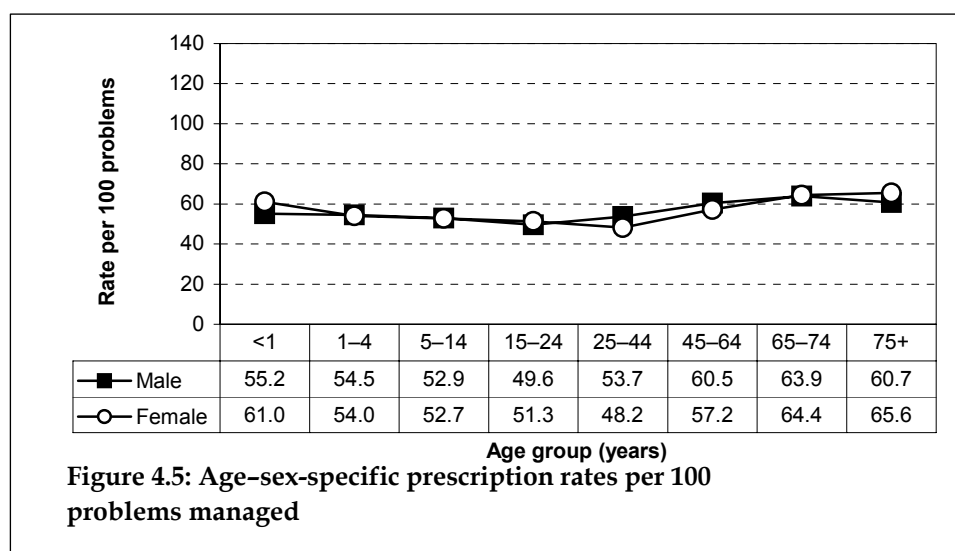
For the 57,625 prescriptions for which data were available, the distribution of the specified number of repeats (from zero to 6+) is provided in Figure 4.4. For 38.5% of these prescriptions, the GP specified that no repeats had been prescribed and for 28.3%, five repeats were ordered. The latter proportion reflects the Pharmaceutical Benefits Scheme (PBS) provision of one month's supply and five repeats for many medications used for chronic conditions such as hypertension. The ordering of one or two repeats (17.6% and 10.6%) was also common.



Age-sex-specific rates of prescribed medications

Age-sex-specific analysis found similar prescription rates per 100 encounters for males and females (results not shown). It also showed the well-described tendency for the number of prescriptions written at each encounter to rise with advancing age of the patient, with a rate of about 60 per 100 encounters with patients aged less than 25 years rising to over 100 per 100 encounters for patients aged 65 year or more (results not shown).

Figure 4.5, however, demonstrates that the age-based increase almost disappears if the prescription rate is related to problems. This suggests that the increased prescription rate in older patients is largely accounted for by the increased number of health problems they have managed in general practice.



Types of medications prescribed

Table 4.25 shows the distribution of prescribed medications using the WHO ATC classification.³¹ This allows comparison with other data sources such as those produced by the HIC for PBS data. The table lists medications in frequency order within ATC Levels 1, 3 and 5. Prescriptions are presented as a percentage of total prescriptions and as a rate per 100 encounters with 95% confidence intervals.

Table 4.25: Distribution of prescribed medications, by ATC Levels 1, 3 and 5

ATC Level 1	ATC Level 3	ATC Level 5	Number	Per cent of scripts (n=78,711)	Rate per 100 encls ^(a) (n=94,386)	95% LCL	95% UCL
Nervous system			16,580	21.1	17.6	16.8	18.3
	Other analgesics and anti-pyretics		5,157	6.6	5.5	5.1	5.8
		Paracetamol	2,540	3.2	2.7	2.4	3.0
		Paracetamol, combinations excl. psycholeptics	1,975	2.5	2.1	1.9	2.3
		Acetylsalicylic acid	622	0.8	0.7	0.5	0.8
	Anti-depressants		2,891	3.7	3.1	2.9	3.2
		Sertraline	558	0.7	0.6	0.5	0.7
	Opioids		2,380	3.0	2.5	2.3	2.8
		Tramadol	958	1.2	1.0	0.8	1.2
		Oxycodone	491	0.6	0.5	0.3	0.7
		Morphine	440	0.6	0.5	0.2	0.8
	Anxiolytics		1,843	2.3	2.0	1.7	2.2
		Diazepam	1,028	1.3	1.1	0.9	1.3
		Oxazepam	596	0.8	0.6	0.4	0.8
	Hypnotics and sedatives		1,743	2.2	1.8	1.7	2.0
		Temazepam	1,074	1.4	1.1	1.0	1.3
	Anti-psychotics		1,034	1.3	1.1	0.9	1.3
		Prochlorperazine	504	0.6	0.5	0.4	0.7
	Anti-epileptics		513	0.7	0.5	0.3	0.8
	Drugs used in addictive disorders		424	0.5	0.4	0.0	1.3
Anti-infectives for systemic use			16,427	20.9	17.4	16.8	18.1
	Beta-lactam antibacterials, penicillins		5,901	7.5	6.3	5.9	6.6
		Amoxicillin	3,317	4.2	3.5	3.2	3.8
		Amoxicillin and enzyme inhibitor	1,592	2.0	1.7	1.5	1.9
	Other beta-lactam antibacterials		3,107	3.9	3.3	3.0	3.6
		Cephalexin	2,260	2.9	2.4	2.2	2.6
		Cefaclor	764	1.0	0.8	0.4	1.2
	Macrolides, lincosamides and streptogramins		2,061	2.6	2.2	2.0	2.4
		Roxithromycin	1,069	1.4	1.1	0.9	1.4
		Erythromycin	473	0.6	0.5	0.3	0.7
		Clarithromycin	441	0.6	0.5	0.1	0.8
	Viral vaccines		1,595	2.0	1.7	1.2	2.1
		Influenza, inactivated, whole virus	820	1.0	0.9	0.0	1.8
	Bacterial vaccines		953	1.2	1.0	0.7	1.3
	Tetracyclines		861	1.1	0.9	0.8	1.1
		Doxycycline	696	0.9	0.7	0.6	0.9
	Sulfonamides and trimethoprim		636	0.8	0.7	0.5	0.8

(continued)

Table 4.25 (continued): Distribution of prescribed medications, by ATC Levels 1, 3 and 5

ATC Level 1	ATC Level 3	ATC Level 5	Number	Per cent of scripts (n=78,711)	Rate per 100 encs ^(a) (n=94,386)	95% LCL	95% UCL
		Trimethoprim	414	0.5	0.4	0.2	0.6
	Other antibacterials		457	0.6	0.5	0.3	0.6
Cardiovascular system			13,899	17.7	14.7	13.9	15.5
	Cholesterol and triglyceride reducers		2,860	3.6	3.0	2.8	3.2
		Atorvastatin	1,314	1.7	1.4	1.2	1.5
		Simvastatin	1,016	1.3	1.1	0.9	1.3
	ACE inhibitors, plain		2,300	2.9	2.4	2.2	2.6
		Perindopril	775	1.0	0.8	0.7	1.0
		Ramipril	746	0.9	0.8	0.6	1.0
	Angiotensin II antagonists, plain		1,463	1.9	1.6	1.4	1.7
	Beta-blocking agents		1,572	2.0	1.7	1.5	1.8
		Irbesartan	828	1.1	0.9	0.7	1.0
	Selective calcium channel blockers with mainly vascular effects		1,271	1.6	1.3	1.2	1.5
		Amlodipine	603	0.8	0.6	0.5	0.8
	Angiotensin II antagonists, combinations		899	1.1	1.0	0.8	1.1
		Irbesartan and diuretics	643	0.8	0.7	0.5	0.9
	Selective calcium channel blockers with direct cardiac effects		594	0.8	0.6	0.5	0.8
	High-ceiling diuretics		584	0.7	0.6	0.5	0.8
		Furosemide	579	0.7	0.6	0.4	0.8
	ACE inhibitors, combinations		542	0.7	0.6	0.4	0.7
	Vasodilators used in cardiac disease		441	0.6	0.5	0.3	0.7
	Low-ceiling diuretics, excl. thiazides		412	0.5	0.4	0.2	0.7
		Indapamide	398	0.5	0.4	0.2	0.7
Alimentary tract and metabolism			6,912	8.8	7.3	7.0	7.7
	Drugs for peptic ulcer and GORD		2,496	3.2	2.6	2.5	2.8
		Esomeprazole	673	0.9	0.7	0.6	0.8
		Omeprazole	600	0.8	0.6	0.5	0.8
	Oral blood glucose lowering drugs		1,630	2.1	1.7	1.5	1.9
		Metformin	899	1.1	1.0	0.8	1.1
		Gliclazide	415	0.5	0.4	0.2	0.6
	Propulsives		554	0.7	0.6	0.4	0.7
		Metoclopramide	467	0.6	0.5	0.3	0.7
Musculoskeletal system			5,430	6.9	5.8	5.5	6.0
	Anti-inflammatory and antirheumatic products, non-steroids		4,214	5.4	4.5	4.2	4.7
		Diclofenac	1,026	1.3	1.1	0.9	1.3
		Celecoxib	877	1.1	0.9	0.7	1.1
		Meloxicam	768	1.0	0.8	0.6	1.0

(continued)

Table 4.25 (continued): Distribution of prescribed medications, by ATC Levels 1, 3 and 5

ATC Level 1	ATC Level 3	ATC Level 5	Number	Per cent of scripts (n=78,711)	Rate per 100 encs ^(a) (n=94,386)	95% LCL	95% UCL
		Ibuprofen	447	0.6	0.5	0.3	0.6
	Anti-gout preparations		470	0.6	0.5	0.3	0.7
	Drugs affecting bone structure and mineralisation		443	0.6	0.5	0.3	0.6
	Respiratory system		5,108	6.5	5.4	5.1	5.8
	Adrenergics, inhalants		2,583	3.3	2.7	2.5	2.9
		Salbutamol	1,309	1.7	1.4	1.2	1.5
		Salmeterol with other drugs for obstructive airways disease	813	1.0	0.9	0.7	1.0
	Other drugs for obstructive airway disease, inhalants		901	1.1	1.0	0.8	1.1
	Decongestants and other nasal preparations for topical use		700	0.9	0.7	0.5	1.0
	Antihistamines for systemic use		400	0.5	0.4	0.2	0.7
	Dermatologicals		3,896	4.9	4.1	3.9	4.4
	Corticosteroids, plain		2,406	3.1	2.5	2.4	2.7
		Mometasone	761	1.0	0.8	0.7	1.0
		Betamethasone	678	0.9	0.7	0.6	0.9
	Genitourinary system and sex hormones		3,375	4.3	3.6	3.4	3.8
	Hormonal contraceptives for systemic use		1,828	2.3	1.9	1.8	2.1
		Levonorgestrel and oestrogen	973	1.2	1.0	0.9	1.2
	Oestrogens		527	0.7	0.6	0.4	0.7
	Sensory organs		2,480	3.2	2.6	2.4	2.8
	Anti-infectives ophthalmological		980	1.2	1.0	0.9	1.2
		Chloramphenicol	889	1.1	0.9	0.8	1.1
	Corticosteroids with anti-infectives otological		660	0.8	0.7	0.5	0.9
		Dexamethasone with anti-infectives	432	0.5	0.5	0.3	0.6
	Blood and blood-forming organs		1,987	2.5	2.1	1.9	2.3
	Anti-thrombotic agents		1,225	1.6	1.3	1.1	1.5
		Warfarin	887	1.1	0.9	0.7	1.2
	Vitamin B12 and folic acid		434	0.6	0.5	0.2	0.7
	Systemic hormonal preparations, excl. sex hormones and insulins		1,815	2.3	1.9	1.7	2.1
	Corticosteroids for systemic use, plain		1,156	1.5	1.2	1.0	1.4
		Prednisolone	650	0.8	0.7	0.5	0.9
	Thyroid preparations		583	0.7	0.6	0.4	0.8
		Levothyroxine sodium	573	0.7	0.6	0.4	0.8
	Anti-neoplastic and immunomodulating agents		355	0.5	0.4	0.1	0.7
	Various		315	0.4	0.3	0.2	0.5
	Anti-parasitic products, insecticides and repellents		132	0.2	0.1	0.0	0.4

(a) Column will not add to 100 because multiple prescriptions could be written at each encounter and only the most frequent Level 3 and Level 5 drugs are included.

Note: Scripts—prescriptions; encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit; excl—excluding; ACE—angiotensin converting enzyme; GORD—gastro-oesophageal reflux disease.

Most frequently prescribed medications

The most frequently prescribed individual medications are reported at the generic level in Table 4.26. Together, these 30 medications accounted for 43.2% of all prescribed medications.

Table 4.26: Most frequently prescribed medications (CAPS generic level)

Generic medication	Number	Per cent of scripts (n=78,711)	Rate per 100 encs ^(a) (n=94,386)	95% LCL	95% UCL
Amoxicillin	3,317	4.2	3.5	3.2	3.8
Paracetamol	2,540	3.2	2.7	2.4	3.0
Cephalexin	2,260	2.9	2.4	2.2	2.6
Paracetamol/codeine	1,875	2.4	2.0	1.8	2.2
Amoxicillin/potassium clavulanate	1,592	2.0	1.7	1.5	1.9
Salbutamol	1,346	1.7	1.4	1.3	1.6
Atorvastatin	1,314	1.7	1.4	1.2	1.5
Temazepam	1,074	1.4	1.1	1.0	1.3
Roxithromycin	1,069	1.4	1.1	0.9	1.4
Diazepam	1,028	1.3	1.1	0.9	1.3
Simvastatin	1,016	1.3	1.1	0.9	1.3
Levonorgestrel/ethinylloestradiol	973	1.2	1.0	0.9	1.2
Tramadol	958	1.2	1.0	0.8	1.2
Metformin	899	1.1	1.0	0.8	1.1
Diclofenac sodium systemic	897	1.1	1.0	0.8	1.1
Chloramphenicol eye	889	1.1	0.9	0.8	1.1
Warfarin sodium	887	1.1	0.9	0.7	1.2
Celecoxib	877	1.1	0.9	0.7	1.1
Atenolol	851	1.1	0.9	0.7	1.1
Irbesartan	828	1.1	0.9	0.7	1.0
Influenza virus vaccine	820	1.0	0.9	0.0	1.8
Fluticasone/salmeterol	813	1.0	0.9	0.7	1.0
Perindopril	775	1.0	0.8	0.7	1.0
Meloxicam	768	1.0	0.8	0.6	1.0
Cefaclor monohydrate	764	1.0	0.8	0.4	1.2
Mometasone	761	1.0	0.8	0.7	1.0
Ramipril	746	0.9	0.8	0.6	1.0
Doxycycline	696	0.9	0.7	0.6	0.9
Betamethasone topical	678	0.9	0.7	0.6	0.9
Esomeprazole	673	0.9	0.7	0.6	0.8
<i>Subtotal</i>	<i>33,984</i>	<i>43.2</i>	—	—	—
Total prescribed medications	78,711	100.0	83.4	81.2	85.5

(a) Column will not add to 100 because multiple prescriptions could be written at each encounter and only the most frequently prescribed medications are included in this table.

Note: Scripts—prescriptions; encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit.

Medications supplied by GPs

GPs supplied their patients with a total of 7,613 medications in this study, at a rate of 8.1 medications per 100 encounters and 5.5 per 100 problems. At least one medication was supplied at 6.2% of encounters for 4.4% of problems.

The distribution of supplied medications by group showed that those acting on the allergy/immune system constituted 50.4% of all medications supplied. Hormones made up 5.7%, and central nervous system medications accounted for 5.4% of GP-supplied medications (results not presented). Table 4.27 shows the wide range of the most commonly supplied medications.

Table 4.27: Medications most frequently supplied by GPs

Generic medication	Number	Per cent of GP-supplied (n=7,613)	Rate per 100 encounters ^(a) (n=94,386)	95% LCL	95% UCL
Influenza virus vaccine	1,171	15.4	1.2	0.0	2.9
Pneumococcal vaccine	413	5.4	0.4	0.0	1.0
Polio vaccine oral sabin/injection	407	5.3	0.4	0.2	0.7
Triple antigen (diphtheria/pertussis/tetanus)	241	3.2	0.3	0.0	0.7
Mumps/measles/rubella vaccine	237	3.1	0.3	0.0	0.5
Haemophilus B vaccine	192	2.5	0.2	0.0	0.5
Vitamin B12 (cobalamin)	184	2.4	0.2	0.0	0.6
ADT/CDT (diphtheria/tetanus) vaccine	181	2.4	0.2	0.0	0.4
Meloxicam	177	2.3	0.2	0.0	0.6
Diphtheria/pertussis/tetanus/hepatitis B	177	2.3	0.2	0.0	0.5
Meningitis vaccine	161	2.1	0.2	0.0	0.5
Celecoxib	108	1.4	0.1	0.0	0.4
Hepatitis B vaccine	107	1.4	0.1	0.0	0.6
Metoclopramide	80	1.1	0.1	0.0	0.4
Allergen treatment	79	1.0	0.1	0.0	0.4
Amoxicillin	78	1.0	0.1	0.0	1.1
Esomeprazole	75	1.0	0.1	0.0	0.4
Betamethasone systemic	75	1.0	0.1	0.0	1.1
Rabeprazole	70	0.9	0.1	0.0	0.4
Tetanus toxoid vaccine	62	0.8	0.1	0.0	0.4
Hepatitis A and B vaccine	61	0.8	0.1	0.0	0.4
Sertraline	57	0.8	0.1	0.0	0.4
Salbutamol	57	0.8	0.1	0.0	0.4
Dressings other	57	0.8	0.1	0.0	0.7
Budesonide/eformoterol	57	0.7	0.1	0.0	0.4
Haemophilus B/hepatitis B vaccine	56	0.7	0.1	0.0	1.0
Chickenpox (Varicella zoster) vaccine	53	0.7	0.1	0.0	0.7

(continued)

Table 4.27 (continued): Medications most frequently supplied by GPs

Generic medication	Number	Per cent of GP-supplied (n=7,613)	Rate per 100 encs ^(a) (n=94,386)	95% LCL	95% UCL
Hepatitis A vaccine	52	0.7	0.1	0.0	0.5
Pantoprazole	52	0.7	0.1	0.0	0.5
Paracetamol/codeine	51	0.7	0.1	0.0	0.6
<i>Subtotal</i>	4,828	63.4	—	—	—
Total medications supplied	7,613	100.0	8.1	7.3	8.9

(a) Column will not add to 100 because multiple medications could be given at each encounter and only the medications most frequently supplied by GPs are included.

Note: Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit.

Medications advised for over-the-counter purchase

The GPs recorded 9,492 medications as recommended for OTC purchase, at rates of 10.1 per 100 encounters and 6.9 per 100 problems managed. At least one OTC medication was recorded as advised at 8.7% of encounters and for 6.2% of problems.

Central nervous system medications predominated in those advised to patients, with almost 30% being in that group, followed by skin medications and digestive medications (results not presented).

Table 4.28 shows the wide range of advised medications. It includes analgesics, and cold and skin preparations. The 30 listed medications accounted for over 60% of all OTC medications.

Table 4.28: Most frequently advised over-the-counter medications

Generic medication	Number	Per cent of OTCs (n=9,492)	Rate per 100 encs ^(a) (n=94,386)	95% LCL	95% UCL
Paracetamol	2,197	23.1	2.3	1.8	2.8
Ibuprofen	506	5.3	0.5	0.2	0.9
Loratadine	212	2.2	0.2	0.0	0.6
Saline bath/solution/gargle	207	2.2	0.2	0.0	0.7
Diclofenac topical	198	2.1	0.2	0.0	0.5
Fexofenadine	175	1.8	0.2	0.0	0.5
Simple analgesics	147	1.5	0.2	0.0	0.8
Clotrimazole topical	146	1.5	0.2	0.0	0.4
Sodium chloride topical nasal	136	1.4	0.1	0.0	0.5
Mouthwash/gargle other	123	1.3	0.1	0.0	0.9
Paracetamol/codeine	120	1.3	0.1	0.0	0.6
Cetirizine	115	1.2	0.1	0.0	0.4
Sodium/potassium/citric/glucose	114	1.2	0.1	0.0	0.5
Glucosamine	113	1.2	0.1	0.0	0.4
Aspirin	109	1.1	0.1	0.0	0.5

(continued)

Table 4.28 (continued): Most frequently advised over-the-counter medications

Generic medication	Number	Per cent of OTCs (n=9,492)	Rate per 100 encs ^(a) (n=94,386)	95% LCL	95% UCL
Cream/ointment/lotion NEC	100	1.0	0.1	0.0	0.4
Sod bicarb/citrate/tartaric/citric	97	1.0	0.1	0.0	0.4
Loperamide	87	0.9	0.1	0.0	0.5
Hyoscine butylbromide	86	0.9	0.1	0.0	0.4
Vitamin C (ascorbic acid)	81	0.9	0.1	0.0	2.2
Sorbolene/glycerol/cetomac	78	0.8	0.1	0.0	0.4
Bromhexine	76	0.8	0.1	0.0	0.8
Chlorpheniramine/pseudoephedrine	72	0.8	0.1	0.0	1.0
Povidone-iodine topical	68	0.7	0.1	0.0	0.5
Cold and flu medication NEC	68	0.7	0.1	0.0	1.2
Calamine lotion	66	0.7	0.1	0.0	0.5
Brompheniramine/phenylephrine	65	0.7	0.1	0.0	0.7
Clotrimazole vaginal	64	0.7	0.1	0.0	0.4
Cinchocaine and hydrocortisone	63	0.7	0.1	0.0	0.4
Budesonide topical nasal	62	0.7	0.1	0.0	1.0
<i>Subtotal</i>	5,751	60.4	—	—	—
Total medications advised	9,492	100.0	10.1	9.1	11.0

(a) Column will not add to 100 because multiple medications could be given at each encounter and only the medications most frequently advised for over-the-counter purchase are included.

Note: OTCs—over-the-counter medications; encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit; NEC—not elsewhere classified.

4.8 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, <www.aihw.gov.au/publications/index.cfm>.

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

Number of other treatments

Other treatments were frequently provided by GPs to manage patient morbidity. A total of 51,632 were recorded for the year, at a rate of 54.7 per 100 encounters. More than two-thirds of these were clinical treatments (Table 4.29).

Table 4.29: Summary of other treatments

	Number	Rate per 100 encs (n=94,386)	95% LCL	95% UCL	Rate per 100 problems (n=137,330)	95% LCL	95% UCL
Other treatments	51,632	54.7	52.1	57.3	37.6	36.0	39.2
Clinical treatments	37,016	39.2	37.1	41.4	27.0	25.6	28.3
Procedural treatments	14,616	15.5	14.6	16.4	10.6	10.0	11.3

Note: Encs—encounters; UCL—upper confidence limit; LCL—lower confidence limit.

Table 4.30 shows the proportion of problems for which at least one other treatment was given. In summary:

- for two-thirds of the problems that were managed with another treatment, no pharmacological treatment was provided
- almost one in four problems were managed with a clinical treatment, and for more than half of these, no medications were given
- GPs undertook a procedure in the management of one in ten problems, and for two-thirds of these no medications were provided
- problems managed with a procedure were less likely to involve concomitant pharmacological treatment than those managed with a clinical treatment.

Table 4.30: Relationship of other treatments with pharmacological treatments

Co-management of problems with other treatments	Number of problems	Per cent within class	Per cent of problems (n=137,330)	95% LCL	95% UCL
At least one other treatment	44,450	100.0	32.4	31.1	33.6
Without pharmacological treatment	27,091	60.9	19.7	19.0	20.5
At least one clinical treatment	32,505	100.0	23.7	22.5	24.8
Without pharmacological treatment	19,250	59.2	14.0	13.3	14.7
At least one procedural treatment	13,470	100.0	9.8	9.3	10.3
Without pharmacological treatment	8,655	59.8	6.3	5.9	6.7

Note: LCL—lower confidence limit; UCL—upper confidence limit.

Clinical treatments

Clinical treatments include general and specific advice, counselling or education, family planning, and administrative processes. There were 37,016 clinical treatments provided by GPs during the study year (Table 4.29).

Most frequent clinical treatments

Table 4.31 lists the most common clinical treatments provided by GPs. Each treatment is expressed as a percentage of all other treatments and as a rate per 100 encounters with 95% confidence limits.

Table 4.31: Most frequent clinical treatments

Treatment	Number	Per cent of other treatments (n=51,632)	Rate per 100 encounters (n=94,386)	95% LCL	95% UCL
Advice/education*	6,589	12.8	7.0	6.2	7.8
Counselling/advice—nutrition/weight*	5,022	9.7	5.3	4.7	5.9
Advice/education—treatment*	4,323	8.4	4.6	4.0	5.1
Counselling—problem*	3,935	7.6	4.2	3.3	5.0
Advice/education—medication*	3,166	6.1	3.4	2.9	3.8
Counselling—psychological*	3,036	5.9	3.2	2.9	3.5
Counselling/advice—exercise*	1,771	3.4	1.9	1.4	2.3
Sickness certificate	1,584	3.1	1.7	1.3	2.1
Reassurance, support	1,474	2.9	1.6	1.2	1.9
Other admin/document*	1,234	2.4	1.3	1.1	1.5
Counselling/advice—smoking*	756	1.5	0.8	0.6	1.0
Counselling/advice—alcohol*	437	0.9	0.5	0.2	0.7
Counselling/advice—lifestyle*	415	0.8	0.4	0.0	0.1
Counselling/advice—prevention*	413	0.8	0.4	0.1	0.8
Observe/wait*	365	0.7	0.4	0.0	0.7
Family planning*	357	0.7	0.4	0.2	0.6
Counselling/advice—health/body*	337	0.7	0.4	0.1	0.6
<i>Subtotal</i>	<i>35,214</i>	<i>68.2</i>	—	—	—
Total clinical treatments	37,016	71.7	39.2	37.1	41.4

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

Note: LCL—lower confidence limit; UCL—upper confidence limit.

Problems managed with clinical treatments

Table 4.32 lists the top ten problems managed with a clinical treatment. It also shows the extent to which a clinical treatment was used for that problem and the relationship between the use of a clinical treatment and a medication.

- A total of 32,505 problems included a clinical treatment as part of their management.
- The ten most common problems managed with a clinical treatment accounted for almost one-third of all problems for which a clinical treatment was provided.
- Two-thirds of all obesity problems were managed with a clinical treatment, with over four-fifths of these not managed with a medication.
- Almost half of the depression contacts were managed with a clinical treatment, and of these, less than half were not given a prescription as part of the treatment.
- Less than one in five hypertension contacts were managed with a clinical treatment, with almost half of these not managed with a medication.
- A third of all lipid disorder and diabetes contacts were managed with a clinical treatment and two-thirds of these did not involve a medication.

- Asthma was less likely to be managed with a clinical treatment and less likely to be managed without medication when a clinical treatment was given than, for example, depression.

Table 4.32: The ten most common problems managed with a clinical treatment

Problem managed	Number	Per cent of problems with clinical treatment	Rate per 100 encounters ^(a) (n=94,386)	95% LCL	95% UCL	Per cent of this problem ^(b)	Per cent of treated problems no meds ^(c)
Depression*	1,707	5.3	1.8	1.6	2.0	48.6	46.9
Acute upper respiratory infection	1,655	5.1	1.8	1.4	2.1	31.6	47.4
Hypertension*	1,261	3.9	1.3	1.0	1.7	15.0	47.0
Lipid disorder	930	2.9	1.0	0.7	1.2	29.6	63.9
Diabetes*	905	2.8	1.0	0.8	1.1	29.8	64.4
Anxiety*	765	2.4	0.8	0.6	1.0	46.7	64.3
Back complaint*	585	1.8	0.6	0.5	0.8	21.9	48.6
Gastroenteritis, presumed infection	541	1.7	0.6	0.3	0.8	54.2	57.3
Asthma	492	1.5	0.5	0.3	0.7	22.3	29.6
Obesity	491	1.5	0.5	0.2	0.9	67.0	88.4
<i>Subtotal</i>	9,334	28.7	—	—	—	—	—
Total problems	32,505	100.0	34.4	32.6	36.2	—	—

(a) Rate of provision of clinical treatment for selected problem per 100 total encounters.

(b) Per cent of contacts with this problem that generated at least one clinical treatment.

(c) The numerator is the number of cases of this problem that generated at least one clinical treatment but generated no medications. The denominator is the total number of contacts for this problem that generated at least one clinical treatment (with or without medications).

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

Note: LCL—lower confidence limit; UCL—upper confidence limit; meds—medications.

Procedural treatments

Procedural treatments included therapeutic actions and diagnostic procedures undertaken by the GP at the encounter. There was a total number of 14,616 procedural treatments provided by GPs during the study year (Table 4.29).

Most frequent procedures

Table 4.33 lists the most common procedural treatments provided by GPs. Each treatment is expressed as a percentage of all other treatments and as a rate per 100 encounters with 95% confidence limits. To find the total number of diagnostic procedures ordered or performed by the GP, the numbers of investigations in Table 4.33 need to be added to those in Table 4.45 which reports the most common other investigations ordered by GPs.

Table 4.33: Most frequent procedural treatments

Treatment	Number	Per cent of other treatments ^(a) (n=51,632)	Rate per 100 encounters (n=94,386)	95% LCL	95% UCL
Excision/removal tissue/biopsy/destruction/debridement/cauterisation*	3,118	6.0	3.3	2.9	3.7
Physical medicine/rehabilitation*	1,885	3.7	2.0	1.5	2.5
Dressing/pressure/compression/tamponade*	1,864	3.6	2.0	1.8	2.2
Local injection/infiltration*+	1,857	3.6	2.0	1.6	2.3
Other therapeutic procedures/surgery NEC*	1,126	2.2	1.2	0.3	2.1
Incision/drainage/flushing/aspiration/removal body fluid*	983	1.9	1.0	0.9	1.2
Pap smear*	920	1.8	1.0	0.6	1.3
Repair/fixation—suture/cast/prosthetic device (apply/remove)*	851	1.7	0.9	0.8	1.0
Physical function test*	370	0.7	0.4	0.1	0.7
Other preventive procedures/high-risk medication, condition*	310	0.6	0.3	0.0	0.7
Electrical tracings*	293	0.6	0.3	0.1	0.6
Urine test*	285	0.6	0.3	0.0	0.6
<i>Subtotal</i>	<i>13,862</i>	<i>26.9</i>	—	—	—
Total procedural treatments	14,616	28.3	15.5	14.6	16.4

(a) Only the most common procedural treatments are included, those accounting for >0.5% of all other treatments.

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

+ Excludes all local injection/infiltrations performed for immunisations.

Note: LCL—lower confidence limit; UCL—upper confidence limit; NEC—not elsewhere classified.

Problems managed with a procedural treatment

Table 4.34 lists the top ten problems managed with a procedural treatment. It also demonstrates the proportion of contacts with each problem that was managed with a procedure and the proportion of problems being managed with a procedure without a concomitant medication.

- A total of 13,470 problems involved a procedural treatment in their management.
- The top ten problems accounted for less than two-fifths of all problems for which a procedure was used.
- Solar keratosis/sunburn was the most common problem managed with a procedure; for more than two-thirds of all solar keratosis/sunburn contacts, a procedure was undertaken.
- Almost half of malignant skin neoplasms were managed with a procedural treatment, and the vast majority of these did not have a medication prescribed/supplied or advised.
- Excessive ear wax was the problem most likely to result in a procedure, with more than 3 out of 4 contacts involving a procedural treatment.

Table 4.34: The ten most common problems managed with a procedural treatment

Problem managed	Number	Per cent of problems with procedure	Rate per 100 encs ^(a) (n=94,386)	95% LCL	95% UCL	Per cent of this problem ^(b)	Per cent of treated problems no meds ^(c)
Solar keratosis/sunburn	843	6.3	0.9	0.5	1.3	66.8	95.0
Female genital check-up*	777	5.8	0.8	0.5	1.2	46.8	97.5
Excessive ear wax	537	4.0	0.6	0.4	0.7	76.2	91.4
Malignant neoplasm skin	515	3.8	0.6	0.1	1.0	46.3	95.0
Laceration/cut	511	3.8	0.5	0.4	0.7	72.9	69.3
Back complaint*	461	3.4	0.5	0.1	0.9	17.2	49.3
Warts	456	3.4	0.5	0.3	0.7	74.8	93.9
Sprain/strain*	430	3.2	0.5	0.1	0.8	26.8	53.2
Chronic ulcer skin (incl varicose ulcer)	329	2.4	0.4	0.1	0.6	63.6	77.7
Skin disease, other	281	2.1	0.3	0.1	0.5	34.2	92.9
<i>Subtotal</i>	<i>5,140</i>	<i>38.2</i>	—	—	—	—	—
Total problems	13,470	100.0	14.3	13.5	15.0	—	—

(a) Rate of provision of procedural treatment for selected problem per 100 total encounters.

(b) Percentage of contacts with this problem that generated at least one procedural treatment.

(c) The numerator is the number of cases of this problem that generated at least one procedural treatment but generated no medications. The denominator is the total number of contacts (for this problem) that generated at least one procedural treatment (with or without medications).

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

Note: Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit; meds—medications; incl—including.

4.9 Referrals and admissions

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 for admission, emergency departments or other medical services. Referrals to hospital outpatient clinics and other GPs were classified as referrals to other medical services.

Number of referrals and admissions

Table 4.35 provides a summary of referrals and admissions, the rates per 100 encounters and per 100 problems that referrals were provided. The patient was given at least one referral at 10.9% of all encounters, and for 7.9% of all problems managed. The most frequent referrals were to specialists, followed by referrals to allied health services. Very few patients were referred to hospitals, to the hospital emergency department, or to other medical services.

Table 4.35: Summary of referrals and admissions

Variable	Number	Rate per 100 encounters (n=94,386)	95% LCL	95% UCL	Rate per 100 problems (n=137,330)	95% LCL	95% UCL
At least one referral	10,325	10.9	10.5	11.3	7.9	7.7	8.2
Referrals	10,881	11.5	11.1	12.0	7.9	7.6	8.2
Specialist	7,291	7.7	7.4	8.0	5.3	5.1	5.5
Allied health service	2,569	2.7	2.5	2.9	1.9	1.7	2.0
Hospital	451	0.5	0.3	0.7	0.3	0.2	0.5
Emergency department	152	0.2	0.0	0.4	0.1	0.0	0.3
Other medical services	103	0.1	0.0	0.6	0.1	0.0	0.4
Other referrals	315	0.3	0.1	0.6	0.2	0.1	0.4

Note: LCL—lower confidence limit; UCL—upper confidence limit.

Most frequent referrals

Table 4.36 shows the specialists and allied health service group to whom GPs most often refer. The most common referrals were to ophthalmologists, surgeons and orthopaedic surgeons. Almost 40% of referrals to allied health services were to physiotherapists. Referrals to other medical services (including to other GPs and hospital outpatient departments) were relatively rare.

Problems most often referred

A referral to a specialist was provided in the management of 7,441 problems. The ten problems most commonly referred to a specialist accounted for 18.7% of all problems referred to a specialist. The problems most often referred were malignant skin neoplasms (2.8% of all problems referred to a specialist), diabetes and osteoarthritis (Table 4.37).

Table 4.36: The most frequent referrals by type

Professional/organisation	Number	Per cent of referrals	Per cent of referral group	Rate per 100 encounters (n=94,386)	95% LCL	95% UCL
Medical specialist	7,291	73.2	100.0	7.7	7.4	8.0
Ophthalmologist	764	7.7	10.5	0.8	0.7	0.9
Surgeon	761	7.6	10.4	0.8	0.7	0.9
Orthopaedic surgeon	652	6.5	8.9	0.7	0.6	0.8
Dermatologist	646	6.5	8.9	0.7	0.5	0.8
Ear, nose and throat	485	4.9	6.7	0.5	0.4	0.6
Cardiologist	482	4.8	6.6	0.5	0.4	0.7
Gynaecologist	480	4.8	6.6	0.5	0.4	0.6
Gastroenterologist	361	3.6	5.0	0.4	0.2	0.6
Psychiatrist	265	2.7	3.6	0.3	0.1	0.5
Urologist	262	2.6	3.6	0.3	0.1	0.4
<i>Subtotal: top ten specialist referrals</i>	<i>5,159</i>	<i>51.8</i>	<i>70.8</i>	—	—	—

(continued)

Table 4.36 (continued): The most frequent referrals by type

Professional/organisation	Number	Per cent of referrals	Per cent of referral group	Rate per 100 encounters (n=94,386)	95% LCL	95% UCL
Allied health and other professionals	2,569	25.8	100.0	2.7	2.5	2.9
Physiotherapy	989	9.9	38.5	1.1	0.9	1.2
Podiatrist/chiropracist	213	2.1	8.3	0.2	0.0	0.4
Psychologist	208	2.1	8.1	0.2	0.0	0.5
Dietitian/nutritionist	180	1.8	7.0	0.2	0.0	0.5
Dentist	166	1.7	6.5	0.2	0.0	0.4
Acoustic testing	89	0.9	3.5	0.1	0.0	0.4
Counsellor	70	0.7	2.7	0.1	0.0	0.4
Diabetes education	64	0.6	2.5	0.1	0.0	0.5
Optometrist	54	0.5	2.1	0.1	0.0	0.4
Drug and alcohol	49	0.5	1.9	0.1	0.0	0.6
<i>Subtotal: top ten allied health referrals</i>	<i>2,083</i>	<i>20.9</i>	<i>81.1</i>	—	—	—
Other medical services	103	1.0	100.0	0.1	0.0	0.6
Total specialist, allied health & other medical service referrals	9,963	100.0	—	10.6	10.1	11.0

Note: LCL—lower confidence limit; UCL—upper confidence limit.

Table 4.37 also shows the rate of referral per 100 contacts for each problem. Although malignant skin neoplasms accounted for the greatest proportion of problems referred, the problem most likely to result in a referral to a specialist was cataract with GPs referring at two out of every three contacts with a cataract problem.

Table 4.37: The ten problems most frequently referred to a medical specialist

Problem managed	Number	Per cent of problems referred	Rate per 100 contacts of this problem ^(a)	Rate per 100 encs (n=94,386)	95% LCL	95% UCL
Malignant skin neoplasm	206	2.8	18.5	0.2	0.0	0.4
Diabetes*	197	2.7	6.5	0.2	0.0	0.4
Osteoarthritis*	168	2.3	6.4	0.2	0.0	0.4
Pregnancy*	166	2.2	23.3	0.2	0.0	0.4
Depression*	163	2.2	4.6	0.2	0.0	0.4
Back complaint*	126	1.7	4.7	0.1	0.0	0.4
Ischaemic heart disease*	121	1.6	10.8	0.1	0.0	0.4
Abnormal test results*	87	1.2	11.2	0.1	0.0	0.3
Cataract	81	1.1	70.6	0.1	0.0	0.4
Skin symptom/complaint	80	1.1	20.1	0.1	0.0	0.4
<i>Subtotal: top ten problems referred to a specialist</i>	<i>1,395</i>	<i>18.7</i>	—	—	—	—
Total problems referred to specialist	7,441	100.0	—	7.9	7.6	8.2

(a) The percentage of total contacts with the problem that generated at least one order for pathology.

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

Note: Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit.

There were 2,627 problems referred to an allied health professional or service. Table 4.38 shows the ten most common of these, which together accounted for 44.9% of all problems referred. Table 4.38 also shows the rate of referral per 100 contacts for each problem. One in three teeth/gum disease problems resulted in a referral to allied health services.

The ten problems most commonly associated with hospital admission referrals are shown in Table 4.39.

Table 4.38: The ten problems most frequently referred to allied health services

Problem managed	Number	Per cent of problems referred	Rate per 100 contacts of this problem ^(a)	Rate per 100 encs (n=94,386)	95% LCL	95% UCL
Back complaint*	273	10.4	10.2	0.3	0.1	0.5
Sprain/strain*	171	6.5	10.7	0.2	0.0	0.4
Depression*	160	6.1	4.6	0.2	0.0	0.4
Diabetes*	132	5.0	4.4	0.1	0.0	0.4
Teeth/gum disease	126	4.8	32.4	0.1	0.0	0.4
Osteoarthritis*	97	3.7	3.7	0.1	0.0	0.4
Musculoskeletal disease, other	58	2.2	9.1	0.1	0.0	0.4
Bursitis/tendonitis/synovitis NOS	57	2.2	7.9	0.1	0.0	0.5
Obesity (BMI > 30)	56	2.1	7.6	0.1	0.0	0.4
Musculoskeletal injury NOS	51	1.9	6.2	0.1	0.0	0.4
<i>Subtotal: top ten problems referred to AHS</i>	<i>1,180</i>	<i>44.9</i>	—	—	—	—
Total problems referred to AHS	2,627	100.0	—	2.8	2.6	3.0

(a) The percentage of total contacts with the problem that generated at least one order for pathology.

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

Note: Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit; NOS—not otherwise specified; BMI—body mass index; AHS—allied health service.

Table 4.39: The ten problems most frequently referred to hospital

Problem managed	Number	Per cent of problems referred	Rate per 100 contacts of this problem ^(a)	Rate per 100 encs (n=94,386)	95% LCL	95% UCL
Fracture*	17	3.7	1.8	0.02	0.0	0.6
Ischaemic heart disease*	17	3.6	1.5	0.02	0.0	0.5
Digestive system disease, other	16	3.5	6.2	0.02	0.0	0.7
Pregnancy*	14	3.0	1.9	0.02	0.0	0.6
Pre/postnatal check-up	11	2.4	1.9	0.01	0.0	0.8
Abdominal pain*	11	2.3	2.1	0.01	0.0	0.6
Appendicitis	10	2.2	30.9	0.01	0.0	0.7
Pneumonia	10	2.1	3.9	0.01	0.0	0.6
Depression*	9	1.9	0.3	0.01	0.0	0.7
Chronic obstructive pulmonary disease	9	1.9	1.3	0.01	0.0	0.7
<i>Subtotal: top ten problems referred for admission</i>	<i>125</i>	<i>26.6</i>	—	—	—	—
Total problems referred to hospital	473	100.0	—	0.5	0.3	0.7

(a) The percentage of total contacts with the problem that generated at least one order for pathology.

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

Note: Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit.

4.10 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).

Numbers of investigations

Table 4.40 shows the number of encounters and problems at which a pathology or imaging test was ordered. There were no tests recorded at the vast majority (78.8%) of encounters.

At least one pathology test order was recorded at 15.7% of encounters (for 12.2% of problems managed) and at least one imaging test was ordered at 7.3% of encounters (for 5.2% of problems managed).

Table 4.40: Number of encounters and problems for which pathology or imaging ordered

Variable	Number of encs	Per cent of encs (n=94,385)	95% LCL	95% UCL	Number of problems	Per cent of problems (n=137,330)	95% LCL	95% UCL
Pathology and imaging ordered	1,751	1.9	1.7	2.0	1,316	1.0	0.9	1.1
Pathology only ordered	13,090	13.9	13.4	14.4	15,419	11.2	10.9	11.6
Imaging only ordered	5,135	5.4	5.2	5.7	5,800	4.2	4.1	4.4
No tests ordered	74,410	78.8	78.2	79.5	114,795	83.6	83.1	84.0
At least one pathology ordered	14,840	15.7	15.2	16.3	16,735	12.2	11.8	12.6
At least one imaging ordered	6,886	7.3	7.0	7.6	7,116	5.2	5.0	5.4

Note: Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit.

Pathology ordering

A comprehensive report on pathology ordering by GPs in Australia in 1998, written by the General Practice Statistics and Classification Unit (GPSCU) using BEACH data, was published on the internet by the Diagnostics and Technology Branch of the Department of Health and Aged Care during 2000.¹⁵ For a more detailed study of pathology ordering, consult that publication. A report on changes in pathology ordering by GPs from 1998 to 2001 was also published by the GPSCU in 2003.⁹ Readers may wish to compare those results with the information presented below.

Nature of pathology orders at encounter

The distribution of pathology tests by MBS group and the most common tests within each group are presented in Table 4.41. Each group and individual test is expressed as a percentage of all pathology tests, as a percentage of the group and as a rate per 100 encounters with 95% confidence limits.

The pathology tests recorded were grouped according to the categories set out in Appendix 3, <www.aihw.gov.au/publications/index.cfm>. The main pathology groups reflect those used in previous analyses of pathology tests recorded by the HIC.³⁶

Table 4.41: Distribution of pathology orders across MBS pathology groups and most frequent individual test orders within group

Pathology test ordered	Number	Per cent of all pathology	Per cent of group	Rate per 100 encs (n=94,385)	95% LCL	95% UCL
Chemistry	19,283	55.7	100.0	20.4	19.5	21.4
Lipids	3,378	9.8	17.5	3.6	3.3	3.8
EUC	2,493	7.2	12.9	2.6	2.3	3.0
Liver function	2,347	6.8	12.2	2.5	2.2	2.8
Glucose/tolerance	2,087	6.0	10.8	2.2	2.0	2.4
Thyroid function	2,044	5.9	10.6	2.2	2.0	2.4
Multibiochemical analysis	1,394	4.0	7.2	1.5	0.9	2.1
Chemistry; other	886	2.6	4.6	0.9	0.7	1.2
HbA1c	860	2.5	4.5	0.9	0.8	1.1
Ferritin	835	2.4	4.3	0.9	0.7	1.0
Hormone assay	647	1.9	3.4	0.7	0.5	0.9
Prostate specific antigen	566	1.6	2.9	0.6	0.4	0.8
C reactive protein	400	1.2	2.1	0.4	0.2	0.6
Haematology	6,569	19.0	100.0	7.0	6.6	7.3
Full blood count	4,561	13.2	69.4	4.8	4.6	5.1
ESR	903	2.6	13.7	1.0	0.7	1.2
Coagulation	827	2.4	12.6	0.9	0.7	1.1
Microbiology	4,934	14.2	100.0	5.2	4.8	5.6
Urine MC&S	1,607	4.6	32.6	1.7	1.6	1.8
Microbiology; other	670	1.9	13.6	0.7	0.5	0.9
Hepatitis serology	479	1.4	9.7	0.5	0.2	0.8
HIV	307	0.9	6.2	0.3	0.0	0.7
Chlamydia	294	0.9	6.0	0.3	0.0	0.6
Faeces MC&S	278	0.8	5.6	0.3	0.0	0.6
Vaginal swab and C&S	270	0.8	5.5	0.3	0.1	0.5
Cytology	1,551	4.5	100.0	1.6	1.3	2.0
Pap smear	1,531	4.4	98.7	1.6	1.3	2.0

(continued)

Table 4.41 (continued): Distribution of pathology orders across MBS pathology groups and most frequent individual test orders within group

Pathology test ordered	Number	Per cent of all pathology	Per cent of group	Rate per 100 encs (n=94,385)	95% LCL	95% UCL
Other NEC	787	2.3	100.0	0.8	0.5	1.2
Blood test	330	1.0	41.9	0.4	0.0	1.1
Other test NEC	263	0.8	33.4	0.3	0.0	0.5
Infertility/pregnancy	251	0.7	100.0	0.3	0.0	0.6
Tissue pathology	713	2.1	100.0	0.8	0.3	1.2
Histology, skin	668	1.9	93.8	0.7	0.2	1.2
Immunology	487	1.4	100.0	0.5	0.3	0.8
Anti-nuclear antibodies	106	0.3	21.8	0.1	0.0	0.4
Simple basic tests	78	0.2	100.0	0.1	0.0	0.4
Total pathology tests	34,652	100.0	—	36.7	35.2	38.2

Note: Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit; NEC—not elsewhere classified.

Problems for which pathology tests were ordered

Table 4.42 describes, in decreasing frequency order of problem–pathology combinations, the most common problems for which pathology was ordered.

Table 4.42: The ten problems for which pathology was most frequently ordered

Problem managed	Number of problems	Number of problem–path combinations ^(a)	Per cent of problem–path combinations ^(a)	Per cent of problems with test ^(b)	Rate of path orders per 100 problems with pathology ^(c)
Diabetes*	3,042	2,293	6.4	29.2	258.6
Hypertension*	8,406	2,111	5.9	9.6	260.6
Lipid disorders*	3,148	1,851	5.2	29.6	198.8
General check-up*	1,948	1,532	4.3	26.0	302.6
Female genital check-up*	1,659	1,419	4.0	69.5	123.0
Weakness/tiredness general	658	1,357	3.8	56.1	367.7
Urinary tract infection*	1,622	948	2.7	51.6	113.2
Blood test NOS	273	763	2.1	85.8	325.2
Abnormal test results*	773	574	1.6	45.7	162.3
Pregnancy*	713	571	1.6	37.5	213.2
<i>Subtotal</i>	<i>22,242</i>	<i>13,419</i>	<i>37.6</i>	<i>—</i>	<i>—</i>
Total	137,330	39,144	100.0	12.2	207.1

(a) A test was counted more than once if it was ordered for the management of more than one problem at an encounter. There were 34,652 pathology test orders and 39,144 problem–pathology combinations.

(b) The percentage of total contacts with the problem that generated at least one order for pathology.

(c) The rate of pathology orders placed per 100 contacts with that problem generating at least one order for pathology.

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

Note: Path—pathology; NOS—not otherwise specified.

Imaging ordering

Readers wanting a more detailed study of imaging orders should consult a comprehensive report on imaging orders by GPs in Australia in 1999–00, written by the General Practice Statistics and Classification Unit using BEACH data, published by the AIHW in 2001.¹⁶

Nature of imaging orders at encounter

The distribution of imaging tests by MBS group and the most common tests within each group are presented in Table 4.43. Each group and individual test is expressed as a percentage of all imaging tests, as a percentage of the group and as a rate per 100 encounters with 95% confidence limits.

Table 4.43: The most frequent imaging tests ordered, by MBS group

Imaging test ordered	Number	Per cent of tests	Per cent of group	Rate per 100 encounters (n=94,385)	95% LCL	95% UCL
Diagnostic radiology	4,237	54.1	100	4.5	4.3	4.7
X-ray; chest	971	12.4	22.9	1.0	0.9	1.1
X-ray; knee	434	5.5	10.2	0.5	0.3	0.6
Mammography; female	312	4.0	7.4	0.3	0.1	0.5
X-ray; foot/feet	225	2.9	5.3	0.2	0.1	0.4
X-ray; ankle	212	2.7	5.0	0.2	0.0	0.4
X-ray; shoulder	206	2.6	4.9	0.2	0.0	0.4
Test; densitometry	177	2.3	4.2	0.2	0.0	0.4
X-ray; hip	174	2.2	4.1	0.2	0.0	0.4
X-ray; wrist	156	2.0	3.7	0.2	0.0	0.4
X-ray; spine; lumbosacral	136	1.7	3.2	0.1	0.0	0.4
X-ray; spine; cervical	117	1.5	2.8	0.1	0.0	0.4
X-ray; hand	110	1.4	2.6	0.1	0.0	0.4
X-ray; spine; lumbar	96	1.2	2.3	0.1	0.0	0.4
X-ray; finger(s)/thumb	78	1.0	1.8	0.1	0.0	0.4
X-ray; abdomen	76	1.0	1.8	0.1	0.0	0.4
Ultrasound	2,513	32.1	100.0	2.7	2.5	2.8
Ultrasound; pelvis	431	5.5	17.1	0.5	0.3	0.6
Ultrasound; abdomen	297	3.8	11.8	0.3	0.1	0.5
Ultrasound; shoulder	242	3.1	9.6	0.3	0.1	0.4
Ultrasound; obstetric	204	2.6	8.1	0.2	0.0	0.4
Ultrasound; breast; female	200	2.6	8.0	0.2	0.0	0.4
Echocardiography	107	1.4	4.3	0.1	0.0	0.4
Test; doppler	106	1.4	4.2	0.1	0.0	0.3
Ultrasound; renal tract	85	1.1	3.4	0.1	0.0	0.4
Ultrasound; abdomen upper	82	1.0	3.3	0.1	0.0	0.4
Ultrasound; scrotum	80	1.0	3.2	0.1	0.0	0.4

(continued)

Table 4.43 (continued): The most frequent imaging tests ordered, by MBS group

Imaging test ordered	Number	Per cent of tests	Per cent of group	Rate per 100 encounters (n=94,385)	95% LCL	95% UCL
Computerised tomography	964	12.3	100.0	1.0	0.9	1.2
CT scan; brain	184	2.4	19.1	0.2	0.0	0.4
CT scan; abdomen	106	1.4	11.0	0.1	0.0	0.3
CT scan; head	105	1.3	10.9	0.1	0.0	0.4
CT scan; spine; lumbar	96	1.2	10.0	0.1	0.0	0.4
Nuclear medicine imaging	94	1.2	100.0	0.1	0.0	0.3
Scan; bone(s)	65	0.8	69.5	0.1	0.0	0.4
Magnetic resonance imaging	31	0.4	100.0	0.0^F	0.0	0.5
Total imaging tests	7,840	100.0	—	8.3	8.0	8.6

^F Rates are reported to one decimal place. This indicates that the rate is <0.05 per 100 encounters.

Note: LCL—lower confidence limit; UCL—upper confidence limit; CT—computerised tomography.

Problems for which imaging tests were ordered

Table 4.44 describes, in decreasing frequency order of problem–imaging combinations, the most common problems for which imaging was ordered.

Table 4.44: The ten problems for which an imaging test was most frequently ordered

Problem managed	Number of problems	Number of problem–imaging combinations ^(a)	Per cent of problem–imaging combinations	Per cent of problems with test ^(b)	Rate of imaging orders per 100 tested problems ^(c)
Back complaint*	2,673	445.8	5.6	14.4	115.9
Osteoarthritis*	2,613	383.0	4.9	13.0	113.2
Fracture*	927	379.1	4.8	38.2	107.0
Sprain/strain*	1,603	323.3	4.1	17.2	117.5
Injury musculoskeletal NOS	822	234.5	3.0	25.7	110.8
Abdominal pain*	524	202.9	2.6	33.1	117.0
Injury skin, other	658	172.7	2.2	23.3	112.6
Pregnancy*	713	139.1	1.8	19.5	100.0
Bursitis/tendonitis/synovitis NOS	724	138.6	1.8	16.8	113.7
Breast lump/mass (female)	146	138.1	1.8	63.6	148.6
<i>Subtotal</i>	<i>11,403</i>	<i>2,557</i>	<i>32.6</i>	<i>—</i>	<i>—</i>
Total	137,340	8,286	100.0	5.2	110.2

(a) A test was counted more than once if it was ordered for the management of more than one problem at an encounter. There were 7,840 imaging test orders and 8,286 problem–imaging combinations.

(b) The percentage of total contacts with the problem that generated at least one order for imaging.

(c) The rate of imaging orders placed per 100 contacts with that problem generating at least one order for imaging.

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

Note: NOS—not otherwise specified.

Other investigations ordered

Other investigations include diagnostic procedures ordered by the GP at the encounter. There were a total of 1,040 other investigations ordered by GPs during the study year (Table 4.9).

Most frequent procedures

Table 4.45 lists the most common other investigations provided by GPs. Each investigation is expressed as a percentage of all 'other investigations' and as a rate per 100 encounters with 95% confidence limits.

To find the total number of these investigations ordered or performed by the GP, the numbers of investigations in Table 4.45 need to be added to those in Table 4.33 which reports the diagnostic procedures performed by the GP at the encounter.

Table 4.45: Most frequent other investigations

Treatment	Number	Per cent of other investigations	Rate per 100 encounters (n=94,386)	95% LCL	95% UCL
Electrical tracings*	515	49.5	0.55	0.4	0.7
Diagnostic endoscopy*	306	29.4	0.32	0.1	0.5
Physical function test*	136	13.1	0.22	0.0	0.9
<i>Subtotal</i>	<i>957</i>	<i>92.0</i>	—	—	—
Total other investigations	1040	100.0	1.1	0.9	1.3

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

Note: LCL—lower confidence limit; UCL—upper confidence limit.

4.11 Patient risk factors

General practice is commonly identified as a significant intervention point for health care and health promotion because GPs have considerable exposure to the health of the population.

Since April 1998, a section on the bottom of each encounter form has been used to investigate aspects of patient health or health care delivery not covered by general practice consultation-based information. These additional substudies are referred to as SAND (Supplementary Analysis of Nominated Data). The SAND methods and the methods used in the substudies reported here are described in Chapter 5 – Methods, Section 5.7)

Body mass index

Overweight and obesity have been estimated to account for more than 4% of the total burden of disease in Australia.³⁷ The 1999–00 Australian diabetes, obesity and lifestyle study (AusDiab) estimated that 60% of Australians aged over 25 years were overweight or obese (BMI > 25). Men were more likely to be overweight or obese than women (67% compared with 52%).³⁸

Body mass index of adults

The sample size was 30,476 patients aged 18 years and over at encounters with 948 GPs.

- More than half (57.0%) of patients were overweight or obese – 22.4% being obese and 34.6% overweight.
- One in fifteen (7.2%) patients were underweight.
- Approximately a third (35.8%) of patients had a BMI that was in the normal range (Table 4.46).
- Males were more likely to be overweight or obese (63.3%, 95% CI: 62.2–64.0) than females (52.6%, 95% CI: 51.5–53.6).
- Overweight/obesity was most prevalent in male patients aged 45–64 years (Figure 4.6).
- In the 18–24 years age group, 20.2% of women and 9.0% of men were underweight, as were 12.8% of women and 5.4% of men aged 75 years or more (Figure 4.7).

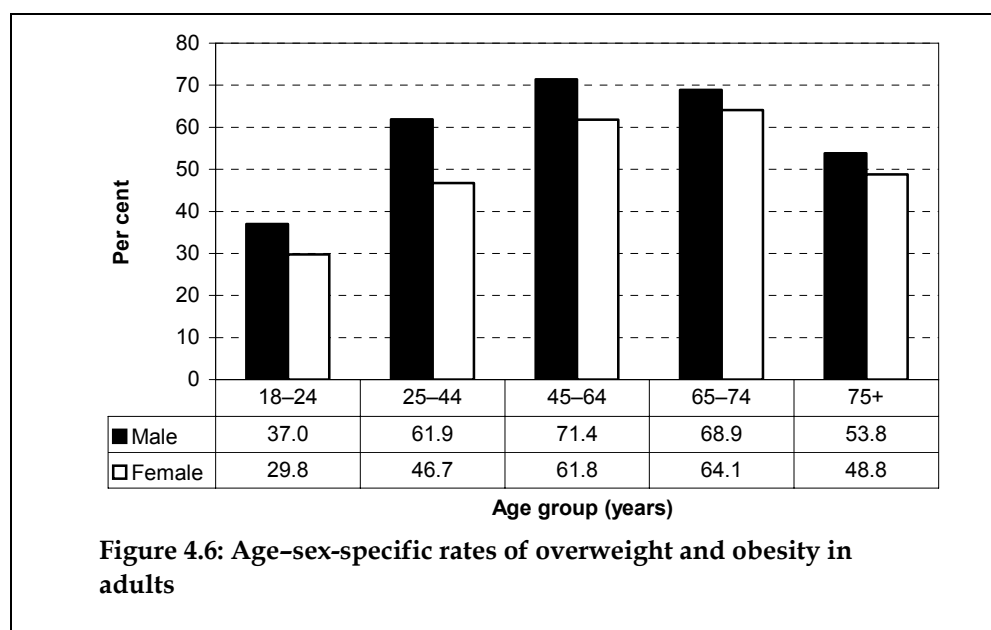
These results are consistent with those of the 1999–00 AusDiab study³⁸ and the results reported for each BEACH year from 2000–01 onward.³⁹ They are also broadly consistent with the Australian Bureau of Statistics 2001 figures from the National Health Survey of 58% of adults aged 18 or more being overweight or obese.⁴⁰

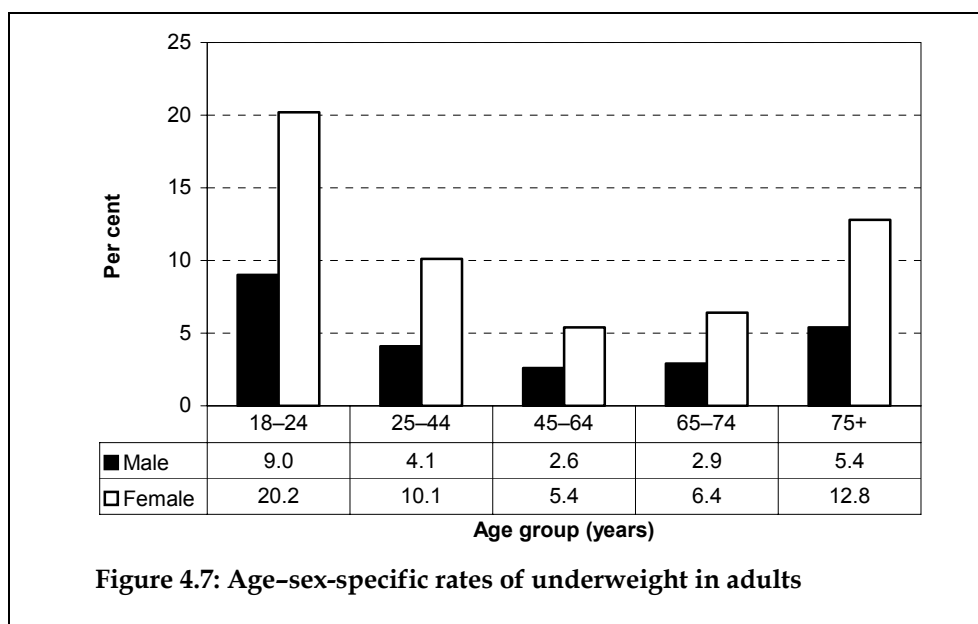
Table 4.46: Patient body mass index (aged 18 years and over)

BMI class	Male ^(a)			Female ^(a)			Total respondents		
	Per cent	95% LCL	95% UCL	Per cent	95% LCL	95% UCL	Per cent	95% LCL	95% UCL
Obese	21.3	20.4	22.3	23.2	22.4	24.1	22.4	21.7	23.1
Overweight	42.0	41.0	43.0	29.4	28.6	30.1	34.6	33.9	35.2
Normal	32.8	31.7	33.8	37.9	37.0	38.9	35.8	35.0	36.6
Underweight	3.9	3.5	4.3	9.5	9.0	10.0	7.2	6.9	7.6
Total (n, %)	12,288	100.0	—	17,976	100.0	—	30,476	100.0	—

(a) Patient sex was unknown for 212 respondents.

Note: BMI—body mass index; LCL—lower confidence limit; UCL—upper confidence limit.

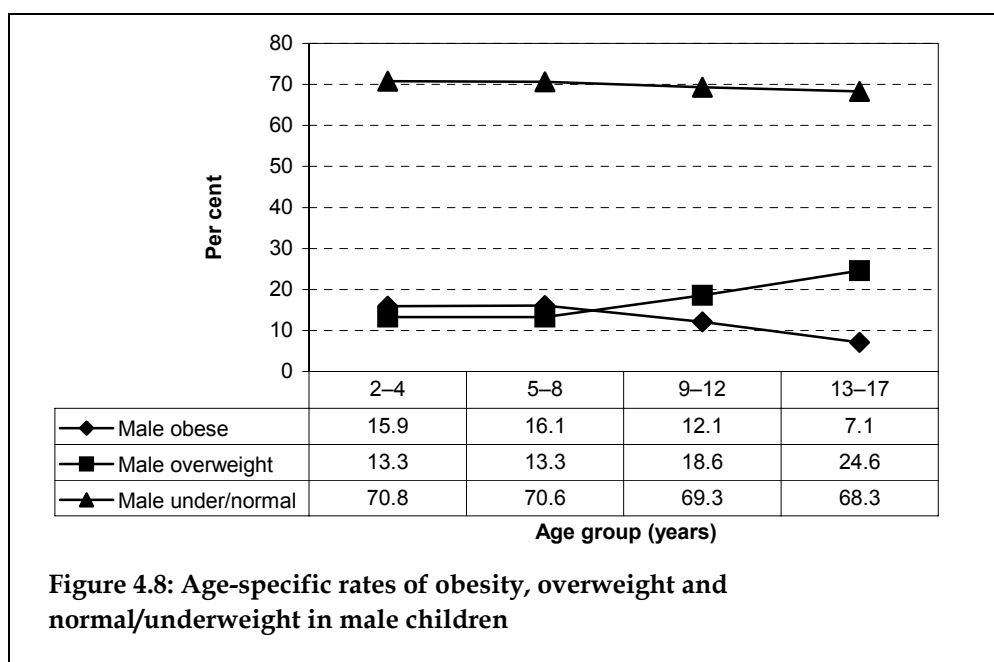


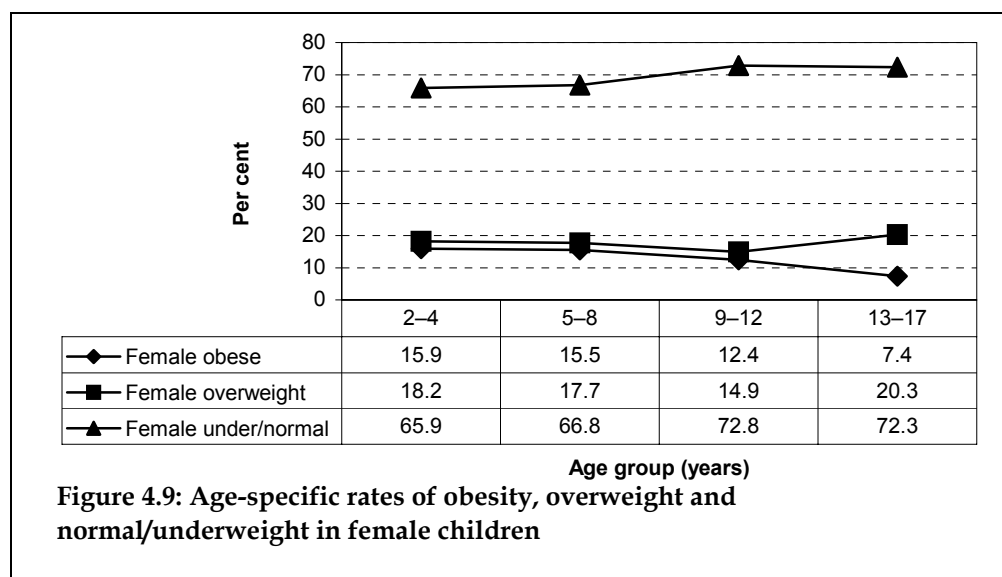


Body mass index of children

BMI was calculated for 3,148 patients aged 2-17 years at encounters with 860 GPs.

- Three in ten children (30.2%, 95% CI: 28.3-32.1) were considered overweight or obese; 12.1% (95% CI: 10.7-13.6) of all children were considered obese (results not tabulated).
- One in five (18.1%, 95% CI: 16.7-19.4) children were defined as overweight (results not tabulated).
- There was no difference in prevalence of overweight/obesity between males (30.4%, 95% CI: 27.8-32.9) and female children (30.1%, 95% CI: 27.7-32.5).
- The age-specific rates of being obese follow very similar patterns for both sexes (Figures 4.8 and 4.9).





Smoking

Tobacco smoking is the leading cause of drug-related death and hospital separations in Australia.⁴¹ It has been identified as the risk factor associated with the greatest disease burden, accounting for 9.7% of the total burden of disease in Australia.³⁷ According to the 2001 National Drug Strategy Household Survey (NDSHS), 19.5% of Australians aged 14 years and over smoked daily, 21.1% of males and 18.0% of females.⁴²

The smoking status of 31,295 adult patients was established at encounters with 949 GPs.

- One in five (18.0%) adult patients were daily smokers.
- Significantly more male (21.2%) than female patients (15.7%) reported being daily smokers (Table 4.47).
- Daily smoking was most prevalent among young adult patients (aged 18–24 and 25–44) with one in four of these patients reporting daily smoking.
- Only 3.7% of adult patients were occasional smokers.
- More than a quarter of the adults (28.0%) were previous smokers.
- Almost two-thirds of male and one-quarter of the female patients aged 75 years and over stated they were previous smokers but only one in twenty patients in this age group were current smokers (Figures 4.10 and 4.11).

Table 4.47: Patient smoking status (aged 18 years and over)

Smoking status	Male ^(a)			Female ^(a)			Total respondents		
	Per cent	95% LCL	95% UCL	Per cent	95% LCL	95% UCL	Per cent	95% LCL	95% UCL
Daily	21.2	20.2	22.3	15.7	15.0	16.5	18.0	17.2	18.7
Occasional	4.3	3.9	4.7	3.3	3.0	3.7	3.7	3.4	4.0
Previous	36.5	35.3	37.7	22.2	21.3	23.0	28.0	27.2	28.8
Never	38.0	36.8	39.2	58.8	57.7	59.9	50.3	49.4	51.3
Total (n, %)	12,6913	100.0	—	18,468	100.0	—	31,295	100.0	—

(a) Patient sex was unknown for 214 respondents.

Note: LCL—lower confidence limit; UCL—upper confidence limit.

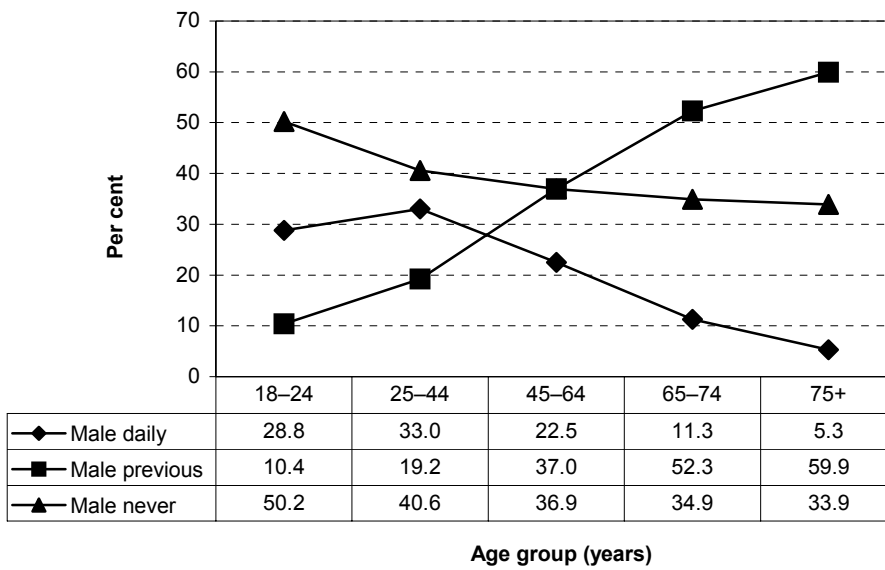


Figure 4.10: Smoking status – male age-specific rates

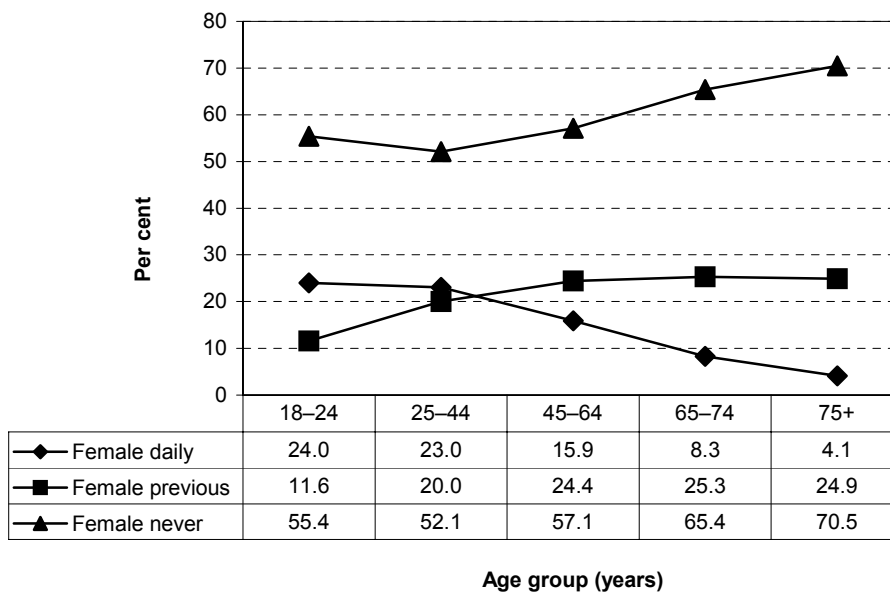


Figure 4.11: Smoking status – female age-specific rates

Alcohol consumption

In people aged 65 years and over, low to moderate consumption of alcohol has been found to have a preventive effect against selected causes of morbidity and mortality (e.g. cardiovascular disease).⁴¹ The beneficial impact of low alcohol consumption has been found to prevent more mortality than is caused by harmful alcohol consumption.⁴¹ Alcohol consumption accounted for 4.9% of the total burden of disease in Australia; however, after taking into account the benefit derived from low to moderate alcohol consumption, this fell to 2.2%.³⁷

The 2001 NDSHS found that 9.9% of people aged 14 years and over (10.2% of males and 9.4% of females) drank at levels considered to be risky or high risk for their health in the long term.⁴² This risk level of alcohol consumption was based on the National Health and Medical Research Council 2001 Guidelines.⁴³ The NDSHS also found that 34.4% of people aged 14 years and above (39.3% of males and 29.6% of females) drank alcohol at levels which put their health at risk in the short term during the preceding 12 months.⁴²

The questions asked of the patients and the methods used to classify at-risk levels of alcohol consumption are described in Chapter 5 – Methods, Section 5.7. Patient self-reported alcohol consumption was recorded at 30,414 adult patient (18 years and over) encounters with 949 GPs.

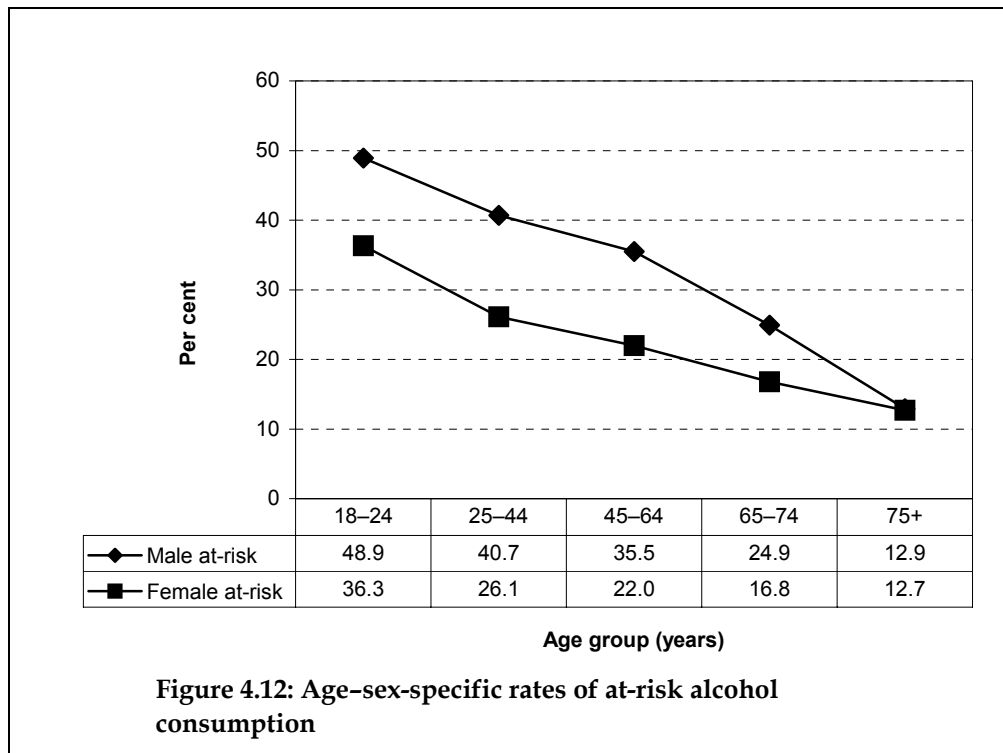
- One in four patients reported drinking alcohol at at-risk levels.
- At-risk drinking was more prevalent in male (32.6% than in female patients 22.2%) (Table 4.48).
- At-risk drinking was most prevalent in the 18–24 age group, where almost half of the males and more than a third of females reported at-risk alcohol consumption.
- The proportion of patients who were at-risk drinkers decreased with age for both males and females (Figure 4.12).

These estimates are a little lower than those made from the NDSHS.⁴² This is likely to be due to the difference in the age ranges studied (14 and over in NDSHS and 18 and over in BEACH), and to differences in the age–sex distributions of the study populations. As older people attend the GP more frequently than young adults, they have a greater chance of being selected in the subsample and this leads to a greater proportion of older people, the group least likely to report drinking alcohol at at-risk levels.

Table 4.48: Patient alcohol consumption (aged 18 years and over)

Alcohol consumption	Male			Female			Total respondents		
	Per cent	95% LCL	95% UCL	Per cent	95% LCL	95% UCL	Per cent	95% LCL	95% UCL
At-risk drinker	32.6	31.3	33.8	22.2	21.3	23.2	26.4	25.5	27.3
Responsible drinker	47.7	46.4	48.9	43.0	41.9	44.0	44.9	44.0	45.8
Non-drinker	19.8	18.7	20.9	34.8	33.5	36.2	28.7	27.7	29.8
Total (n, %)	12,294	100.0	—	18,120	100.0	—	30,414	100.0	—

Note: LCL—lower confidence limit; UCL—upper confidence limit.



Risk factor profile of adult patients

From 2001-02 onwards, all patient risk factor questions (BMI, smoking and alcohol consumption) were asked of the same subsample of patients. This allows us to build a risk profile of this sample of adult patients. For the purposes of this analysis, being overweight or obese, a daily smoker or an at-risk drinker are considered risk factors. A risk factor profile was prepared for 29,418 adult patients (aged 18 or more). Results are provided in Table 4.49.

- Almost half of adult patients had one risk factor. Being overweight or obese accounted for three-quarters of these patients.
- One in five patients had two risk factors, the most common combinations being:
 - at-risk alcohol consumption + being overweight – 7.2% of surveyed patients
 - at-risk alcohol consumption + daily smoking – 3.9% of surveyed patients
 - at-risk alcohol consumption + obesity – 3.8% of surveyed patients.
- A small minority (4.0%) of patients reported having all three risk factors.

Table 4.50 shows the number of risk factors by patient sex. Female patients reported significantly lower levels of risk factors than males:

- only one in five males compared with almost a third of females reported none of the measured risk factors
- one in four males compared with one in seven females reported two risk factors.

Table 4.49: Risk factor profile of patients (aged 18 years and over)

Number of risk factors	Number	Per cent of patients (n=29,418)	95% LCL	95% UCL
None	7,927	27.0	26.1	27.8
One	14,367	48.8	48.1	49.6
Overweight only	6,320	21.5	20.9	22.1
Obese only	4,367	14.8	14.3	15.4
At-risk alcohol level only	2,313	7.9	7.4	8.3
Current daily smoker only	1,367	4.7	4.3	5.0
Two	5,958	20.3	19.6	20.9
Overweight and at-risk alcohol level	2,112	7.2	6.8	7.6
Daily smoker and at-risk alcohol level	1,136	3.9	3.6	4.2
Obese and at-risk alcohol level	1,113	3.8	3.5	4.0
Overweight and current daily smoker	929	3.2	2.9	3.4
Obese and current daily smoker	668	2.3	2.1	2.42.5
Three	1,166	4.0	3.7	4.2
Overweight and current daily smoker and 'at-risk' alcohol level	713	2.4	2.2	2.6
Obese and current daily smoker and 'at-risk' alcohol level	453	1.5	1.4	1.7

Note: LCL—lower confidence limit; UCL—upper confidence limit.

Table 4.50: Number of risk factors, by patient sex

Number of risk factors	Number	Per cent of patients	95% LCL	95% UCL
Male patients	11,900	100.0	—	—
Zero	2,464	20.7	19.8	21.6
One	5,596	47.0	46.0	48.1
Two	3,171	26.7	25.7	27.6
Three	669	5.6	5.1	6.1
Female patients	17,518	100.0	—	—
Zero	5,463	31.2	30.2	32.2
One	8,771	50.1	49.2	50.9
Two	2,787	15.9	15.3	16.6
Three	497	2.8	2.6	3.1
Total patients	29,418	—	—	—

Note: LCL—lower confidence limit; UCL—upper confidence limit.