

## 9 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
  - 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 Coding Atlas of Pharmaceutical Substances (CAPS) system (developed by the FMRC) from which they were mapped to the international Anatomical Therapeutic Chemical (ATC) classification (see Chapter 2).<sup>31</sup>
- Results are reported in this chapter at drug group, subgroup and generic level using ATC levels 1, 3 and 5. Individual medications are also reported at the CAPS generic level (ATC Level 5 equivalent).

### 9.1 Annual results, 2006–07

#### Source of medications

A total of 93,194 medications were recorded at rates of 102 per 100 encounters and 68 per 100 problems managed (Table 8.1).

- Four out of five medications (82.0% of all medications) were prescribed.
- Less than one in 10 (8.8%) medications were supplied to the patient by the GP.
- Almost one in 10 medications (9.2%) were recommended by the GP for OTC purchase.

If these are extrapolated to the 103 million general practice Medicare-claimed encounters in Australia in 2006–07, GPs in Australia:

- prescribed medications on more than 85 million occasions
- supplied 9.1 million medications directly to the patient
- recommended medications for OTC purchase on 9.6 million occasions.

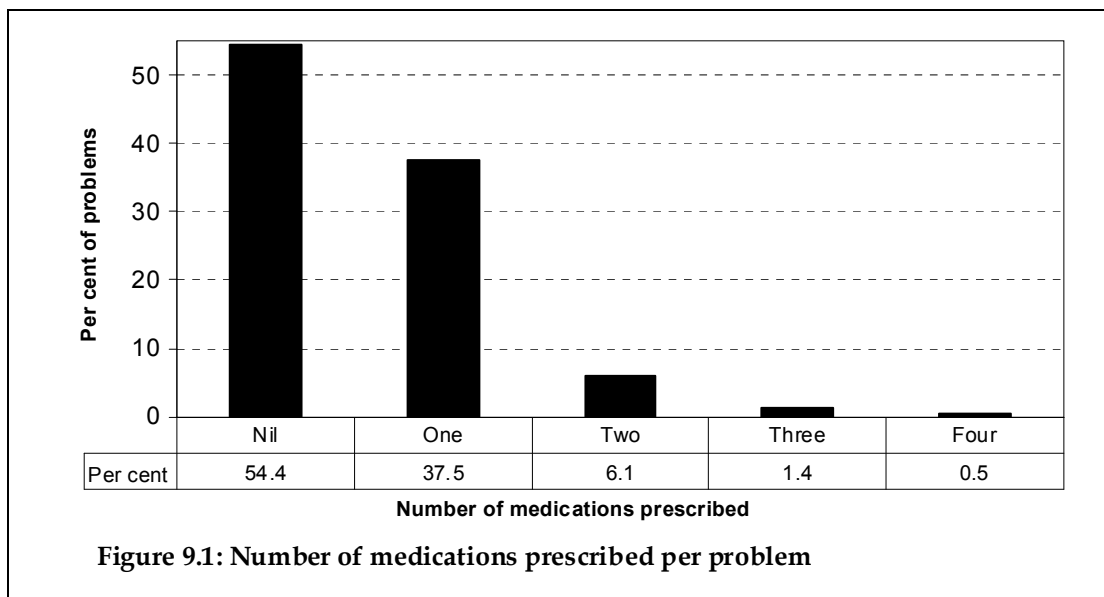
#### Prescribed medications

There were 76,430 prescriptions recorded, at rates of 83 per 100 encounters and 56 per 100 problems managed. GPs recorded 85.0% of prescribed medications by brand (proprietary) name and 15.0% by their generic (non-proprietary) name (results not shown).

On a per problem basis:

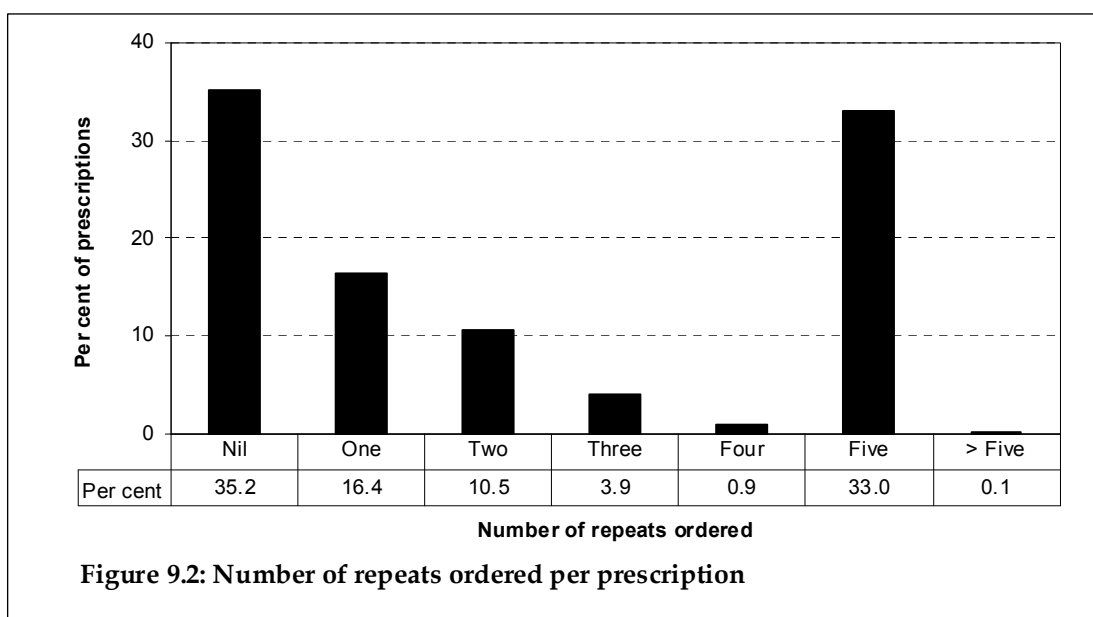
- no prescription was given for half (54.4%) of all problems managed
- one prescription was given for 37.5% of problems managed

- two prescriptions were given for 6.1% of problems managed
- three or more prescriptions were rarely given (1.9% of problems managed) (Figure 9.1).



### Number of repeats

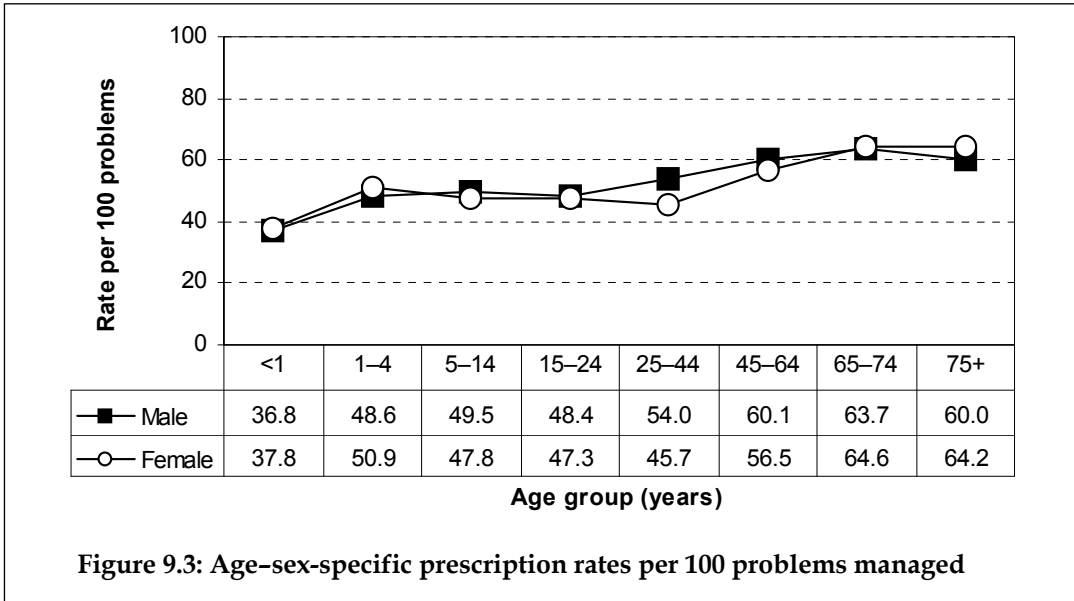
For the 58,895 prescriptions for which the GPs recorded ‘number of repeats’, the distribution of the specified number of repeats (from nil to more than five) is provided in Figure 9.2. For 35.2% of these prescriptions, the GP specified that no repeats had been prescribed, and for 33.0% five repeats were ordered. The latter proportion reflects the PBS’s 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 (16.4% and 10.5%) was also quite common.



**Age–sex-specific rates of prescribed medications**

Age–sex-specific analysis found similar prescription rates per 100 encounters for males and females (73.1 and 74.9 respectively). It also showed the well-described tendency for the number of prescriptions written at each encounter to rise with the advancing age of the patient, with a rate of about 54 per 100 encounters with patients aged less than 25 years rising to over 100 per 100 encounters for patients aged 65 years or more (results not shown).

Figure 9.3, however, demonstrates that the age-based increase lessens 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 at an encounter.



**Types of medications prescribed**

Table 9.1 shows the distribution of prescribed medications using the WHO ATC classification.<sup>31</sup> This allows comparison with other data sources such as those produced by Medicare Australia 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 9.1: Distribution of prescribed medications, by ATC Levels 1, 3 and 5, 2006–07**

ATC Level 1	ATC Level 3	ATC Level 5	Number	Per cent of scripts (n = 76,430)	Rate per 100 encs <sup>(a)</sup> (n = 91,805)	95% LCL	95% UCL
<b>Nervous system</b>			<b>16,623</b>	<b>21.8</b>	<b>18.1</b>	<b>17.3</b>	<b>18.9</b>
	Other analgesics and antipyretics		4,936	6.5	5.4	5.0	5.7
		Paracetamol	2,363	3.1	2.6	2.3	2.8
		Paracetamol, combinations excl psycholeptics	1,912	2.5	2.1	1.9	2.2
		Acetylsalicylic acid	652	0.9	0.7	0.6	0.8
	Antidepressants		3,103	4.1	3.4	3.23	3.6
		Sertraline	598	0.8	0.7	0.6	0.7
		Venlafaxine	481	0.6	0.5	0.5	0.6
	Opioids		2,711	3.6	3.0	2.7	3.2
		Tramadol	848	1.1	0.9	0.8	1.0
		Oxycodone	819	1.1	0.9	0.8	1.0
		Morphine	414	0.5	0.5	0.4	0.5
	Anxiolytics		1,831	2.4	2.0	1.8	2.2
		Diazepam	1,005	1.3	1.1	1.0	1.2
		Oxazepam	575	0.8	0.6	0.5	0.7
	Hypnotics and sedatives		1,669	2.2	1.8	1.7	2.0
		Temazepam	1,017	1.3	1.1	1.0	1.2
	Antipsychotics		947	1.2	1.0	0.9	1.1
		Prochlorperazine	483	0.6	0.5	0.5	0.6
	Anti-epileptics		561	0.7	0.6	0.5	0.7
<b>Anti-infectives for systemic use</b>			<b>14,843</b>	<b>19.4</b>	<b>16.2</b>	<b>15.6</b>	<b>16.8</b>
	Beta-lactam antibacterials, penicillins		5,604	7.3	6.1	5.7	6.5
		Amoxicillin	3,041	4.0	3.3	3.0	3.6
		Amoxicillin and enzyme inhibitor	1,558	2.0	1.7	1.5	1.9
	Other beta-lactam antibacterials		2,915	3.8	6.2	3.0	3.4
		Cefalexin	2,146	2.8	2.3	2.2	2.5
		Cefaclor	700	0.9	0.8	0.6	0.9
	Macrolides, lincosamides and streptogramins		2,189	2.9	2.4	2.2	2.6
		Roxithromycin	1,246	1.6	1.4	1.2	1.5
		Erythromycin	448	0.6	0.5	0.4	0.6
	Viral vaccines		942	1.2	1.0	0.9	1.2
		Influenza, inactivated, whole virus	571	0.8	0.6	0.5	0.7
	Tetracyclines		795	1.0	0.9	0.8	1.0
		Doxycycline	684	0.9	0.7	0.7	0.8
	Bacterial vaccines		465	0.6	0.5	0.4	0.6
	Sulfonamides and trimethoprim		597	0.8	0.7	0.6	0.7
		Trimethoprim	438	0.6	0.5	0.4	0.5

(continued)

**Table 9.1 (continued): Distribution of prescribed medications, by ATC Levels 1, 3 and 5, 2006–07**

ATC Level 1	ATC Level 3	ATC Level 5	Number	Per cent of scripts (n = 76,430)	Rate per 100 encs <sup>(a)</sup> (n = 91,805)	95% LCL	95% UCL
<b>Cardiovascular system</b>			<b>15,124</b>	<b>19.8</b>	<b>16.5</b>	<b>15.6</b>	<b>17.4</b>
	Lipid modifying agents, plain		3,112	4.1	3.4	3.2	3.6
		Atorvastatin	1,543	2.0	1.7	1.5	1.8
		Simvastatin	979	1.3	1.1	1.0	1.2
	ACE inhibitors, plain		2,496	3.3	2.7	2.5	2.9
		Perindopril	1,097	1.4	1.2	1.1	1.3
		Ramipril	723	1.0	0.8	0.7	0.9
	Angiotensin II antagonists, plain		1,890	2.5	2.1	1.9	2.2
		Irbesartan	927	1.2	1.0	0.9	1.1
		Candesartan	529	0.7	0.6	0.5	0.7
	Beta blocking agents		1,693	2.2	1.8	1.7	2.0
		Atenolol	872	1.1	1.0	0.8	1.1
		Metoprolol	440	0.6	0.5	0.4	0.5
	Selective calcium channel blockers with mainly vascular effects		1,493	2.0	1.6	1.5	1.8
		Amlodipine	698	0.9	0.8	0.7	0.8
	Angiotensin II antagonists, combinations		1,066	1.4	1.2	1.0	1.3
		Irbesartan and diuretics	690	0.9	0.8	0.7	0.8
	High-ceiling diuretics		575	0.8	0.6	0.6	0.7
		Furosemide	569	0.7	0.6	0.6	0.7
	Selective calcium channel blockers with direct cardiac effects		457	0.6	0.5	0.4	0.6
<b>Alimentary tract and metabolism</b>			<b>6,996</b>	<b>9.2</b>	<b>7.6</b>	<b>7.2</b>	<b>8.0</b>
	Drugs for peptic ulcer and GORD		2,719	3.6	3.0	2.8	3.1
		Esomeprazole	919	1.2	1.0	0.9	1.1
		Omeprazole	508	0.7	0.6	0.5	0.6
		Pantoprazole	451	0.6	0.5	0.4	0.6
	Oral blood glucose lowering drugs		1,875	2.5	2.0	1.8	2.2
		Metformin	1,042	1.4	1.1	1.0	1.2
		Gliclazide	458	0.6	0.5	0.4	0.6
	Propulsives		558	0.7	0.6	0.5	0.7
		Metoclopramide	479	0.6	0.5	0.5	0.6
<b>Respiratory system</b>			<b>4,841</b>	<b>6.3</b>	<b>5.6</b>	<b>4.9</b>	<b>5.6</b>
	Adrenergics, inhalants		2,493	3.3	2.7	2.5	2.9
		Salbutamol	1,254	1.6	1.4	1.3	1.5
		Salmeterol with other drugs for obstructive airway	789	1.0	0.9	0.8	0.9
	Other drugs for obstructive airway disease, inhalants		867	1.1	0.9	0.9	1.0
	Decongestants and other nasal preparations for topical use		577	0.8	0.6	0.6	0.7

(continued)

**Table 9.1 (continued): Distribution of prescribed medications, by ATC Levels 1, 3 and 5, 2006–07**

ATC Level 1	ATC Level 3	ATC Level 5	Number	Per cent of scripts (n = 76,430)	Rate per 100 encs <sup>(a)</sup> (n = 91,805)	95% LCL	95% UCL
<b>Musculoskeletal system</b>			<b>4,482</b>	<b>5.9</b>	<b>4.9</b>	<b>4.6</b>	<b>5.2</b>
	Anti-inflammatory and antirheumatic products, non-steroids		3,323	4.4	3.6	3.4	3.9
		Diclofenac	832	1.1	0.9	0.8	1.0
		Meloxicam	675	0.9	0.7	0.7	0.8
		Celecoxib	542	0.7	0.6	0.5	0.7
	Drugs affecting bone structure and mineralisation		557	0.7	0.6	0.5	0.7
<b>Dermatologicals</b>			<b>3,526</b>	<b>4.6</b>	<b>3.8</b>	<b>3.6</b>	<b>4.0</b>
	Corticosteroids, plain		2,222	2.9	2.4	2.3	2.6
		Betamethasone	655	0.9	0.7	0.6	0.8
		Mometasone	620	0.8	0.7	0.6	0.7
<b>Genitourinary system and sex hormones</b>			<b>3,216</b>	<b>4.2</b>	<b>3.5</b>	<b>3.2</b>	<b>3.8</b>
	Hormonal contraceptives for systemic use		1,636	2.1	1.8	1.6	1.9
		Levonorgestrel and estrogen	896	1.2	1.0	0.9	1.1
	Oestrogens		556	0.7	0.6	0.5	0.7
<b>Sensory organs</b>			<b>2,259</b>	<b>3.0</b>	<b>2.5</b>	<b>2.3</b>	<b>2.6</b>
	Anti-infectives ophthalmological		969	1.3	1.1	1.0	1.1
		Chloramphenicol	904	1.2	1.0	0.9	1.1
	Corticosteroids with anti-infectives otological		558	0.7	0.6	0.5	0.7
<b>Blood and blood-forming organs</b>			<b>1,894</b>	<b>2.5</b>	<b>2.1</b>	<b>1.9</b>	<b>2.2</b>
	Antithrombotic agents		1,353	1.8	1.5	1.3	1.6
		Warfarin	951	1.2	1.0	0.9	1.2
<b>Systemic hormonal preparations, excl sex hormones and insulins</b>			<b>1,919</b>	<b>2.5</b>	<b>2.1</b>	<b>1.9</b>	<b>2.3</b>
	Corticosteroids for systemic use, plain		1,200	1.6	1.3	1.2	1.4
		Prednisolone	706	0.9	0.8	0.7	0.9
	Thyroid preparations		638	0.8	0.7	0.6	0.8
		Levothyroxine sodium	634	0.8	0.7	0.6	0.8
<b>Antineoplastic and immunomodulating agents</b>			<b>378</b>	<b>0.5</b>	<b>0.4</b>	<b>0.3</b>	<b>0.5</b>
<b>Various</b>			<b>215</b>	<b>0.3</b>	<b>0.2</b>	<b>0.2</b>	<b>0.3</b>
<b>Antiparasitic products, insecticides and repellents</b>			<b>115</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>
<b>Total prescribed medications</b>			<b>76,430</b>	<b>100.0</b>	<b>83.3</b>	<b>81.0</b>	<b>85.5</b>

(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: ATC—Anatomical Therapeutic Chemical classification; 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 CAPS generic level (ATC Level 5 equivalent) in Table 9.2. Together, these 30 medications accounted for 44.0% of all prescribed medications. Three of the top five medications were antibiotics, and two were plain and combination paracetamol.

**Table 9.2: Most frequently prescribed medications (CAPS generic level), 2006–07**

Generic medication	Number	Per cent of scripts ( <i>n</i> = 76,430)	Rate per 100 encounters <sup>(a)</sup> ( <i>n</i> = 91,805)	95% LCL	95% UCL
Amoxicillin	3,041	4.0	3.3	3.0	3.6
Paracetamol	2,363	3.1	2.6	2.3	2.9
Cephalexin	2,146	2.8	2.3	2.2	2.5
Paracetamol–codeine	1,804	2.4	2.0	1.8	2.1
Amoxicillin–potassium clavulanate	1,558	2.0	1.7	1.5	1.9
Atorvastatin	1,543	2.0	1.7	1.5	1.8
Salbutamol	1,287	1.7	1.4	1.3	1.5
Roxithromycin	1,246	1.6	1.4	1.2	1.5
Perindopril	1,097	1.4	1.2	1.1	1.3
Metformin	1,042	1.4	1.1	1.0	1.3
Temazepam	1,017	1.3	1.1	1.0	1.2
Diazepam	1,005	1.3	1.1	1.0	1.2
Simvastatin	979	1.3	1.1	1.0	1.2
Warfarin sodium	951	1.2	1.0	0.9	1.2
Irbesartan	927	1.2	1.0	0.9	1.1
Esomeprazole	919	1.2	1.0	0.9	1.1
Chloramphenicol eye	904	1.2	1.0	0.9	1.1
Levonorgestrel–ethinylloestradiol	896	1.2	1.0	0.9	1.1
Atenolol	872	1.1	1.0	0.9	1.1
Tramadol	848	1.1	0.9	0.8	1.1
Oxycodone	819	1.1	0.9	0.8	1.0
Fluticasone–salmeterol	789	1.0	0.9	0.8	0.9
Diclofenac sodium systemic	749	1.0	0.8	0.7	0.9
Ramipril	723	0.9	0.8	0.7	0.9
Cefaclor monohydrate	700	0.9	0.8	0.6	0.9
Amlodipine	698	0.9	0.8	0.7	0.8
Irbesartan–hydrochlorothiazide	690	0.9	0.8	0.7	0.8
Doxycycline	684	0.9	0.7	0.7	0.8
Meloxicam	675	0.9	0.7	0.7	0.8
Betamethasone topical	655	0.9	0.7	0.6	0.8
<i>Subtotal</i>	33,626	44.0	—	—	—
<b>Total prescribed medications</b>	<b>76,430</b>	<b>100.0</b>	<b>83.3</b>	<b>81.0</b>	<b>85.5</b>

(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 8,160 medications in this study, at a rate of 8.9 medications per 100 encounters. At least one medication was supplied at 6.8% of encounters for 4.7% of problems. Table 9.3 shows the most commonly supplied medications at the CAPS generic level (ATC Level 5 equivalent), with vaccines accounting for over half of this group.

**Table 9.3: Medications most frequently supplied by GPs, 2006–07**

Generic medication	Number	Per cent of GP-supplied (n = 8,160)	Rate per 100 encounters <sup>(a)</sup> (n = 91,805)	95% LCL	95% UCL
Influenza virus vaccine	1,795	22.0	2.0	1.6	2.3
Pneumococcal vaccine	390	7.2	0.6	0.6	0.7
Mumps–measles–rubella vaccine	290	3.6	0.3	0.3	0.4
Vitamin B12 (cobalamin)	250	3.1	0.3	0.2	0.3
Polio vaccine oral sabin/injection	203	2.5	0.2	0.2	0.3
ADT–CDT (diphtheria–tetanus) vaccine	196	2.4	0.2	0.2	0.3
<i>Haemophilus</i> B vaccine	179	2.2	0.2	0.2	0.2
Diphtheria–pertussis–tetanus/–polio vaccine	166	2.0	0.2	0.1	0.2
Meningitis vaccine	164	2.0	0.2	0.1	0.2
Meloxicam	137	1.7	0.2	0.1	0.2
Metoclopramide	129	1.6	0.1	0.1	0.2
Diphtheria–pertussis–tetanus–hepB–polio–Hib vaccine	126	1.5	0.1	0.1	0.2
Triple antigen (diphtheria–pertussis–tetanus)	122	1.5	0.1	0.1	0.2
Diphtheria–pertussis–tetanus–hepatitis B vaccine	122	1.5	0.1	0.1	0.2
Chickenpox (varicella zoster virus) vaccine	115	1.4	0.1	0.1	0.2
Hepatitis B vaccine	111	1.4	0.1	0.1	0.2
<i>Haemophilus</i> B–hepatitis B vaccine	103	1.3	0.1	0.1	0.2
Allergen treatment	94	1.2	0.1	0.1	0.1
Hepatitis A and B vaccine	84	1.0	0.1	0.1	0.1
Hepatitis A vaccine	82	1.0	0.1	0.1	0.1
Esomeprazole	81	1.0	0.1	0.1	0.1
Typhoid vaccine ( <i>Salmonella typhi</i> )	70	0.9	0.1	0.1	0.1
Methylprednisolone	66	0.8	0.1	0.0	0.1
Medroxyprogesterone	60	0.7	0.1	0.0	0.1
Betamethasone systemic	57	0.7	0.1	0.0	0.1
Pantoprazole	57	0.7	0.1	0.0	0.1
Prochlorperazine	50	0.6	0.1	0.0	0.1
Testosterone	47	0.6	0.1	0.0	0.1
Salbutamol	47	0.6	0.1	0.0	0.1
Budesonide/eformoterol	46	0.6	0.1	0.0	0.1
<i>Subtotal</i>	5,635	69.1	—	—	—
<b>Total medications supplied</b>	<b>8,160</b>	<b>100.0</b>	<b>8.9</b>	<b>8.2</b>	<b>9.6</b>

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



## Medications advised for over-the-counter purchase

The GPs recorded 8,604 medications as recommended for OTC purchase, at rates of 9.4 per 100 encounters and 6.3 per 100 problems managed. At least one OTC medication was recorded as advised at 8.4% of encounters and for 5.8% of problems.

Table 9.4 shows the top 30 advised medications at the CAPS generic level (ATC Level 5 equivalent). Analgesics made up almost one-third of this group.

**Table 9.4: Most frequently advised over-the-counter medications, 2006–07**

Generic medication	Number	Per cent of OTC (n = 8,604)	Rate per 100 encounters <sup>(a)</sup> (n = 91,805)	95% LCL	95% UCL
Paracetamol	2,195	25.5	2.4	2.1	2.7
Ibuprofen	490	5.7	0.5	0.5	0.6
Sodium/potassium/citric/glucose	171	2.0	0.2	0.1	0.2
Loratadine	164	1.9	0.2	0.1	0.2
Clotrimazole topical	156	1.8	0.2	0.1	0.2
Diclofenac topical	149	1.7	0.2	0.1	0.2
Aspirin	140	1.6	0.2	0.1	0.2
Sodium chloride topical nasal	139	1.6	0.2	0.1	0.2
Saline bath/solution/gargle	115	1.3	0.1	0.1	0.2
Cetirzine	112	1.3	0.1	0.1	0.2
Paracetamol–codeine	111	1.3	0.1	0.1	0.2
Glucosamine	104	1.2	0.1	0.1	0.1
Cream/ointment/lotion NEC	94	1.1	0.1	0.1	0.2
Hydrocortisone/clotrimazole	83	1.0	0.1	0.1	0.1
Fexofenadine	83	1.0	0.1	0.1	0.1
Loperamide	83	1.0	0.1	0.1	0.1
Sodium bicarbonate/citrate/tartaric acid	72	0.8	0.1	0.1	0.1
Clotrimazole vaginal	71	0.8	0.1	0.1	0.1
Hyoscine butylbromide	71	0.8	0.1	0.1	0.1
Ferrous sulphate	69	0.8	0.1	0.1	0.1
Sorbolene/glycerol/cetomac	68	0.8	0.1	0.1	0.1
Folic acid	68	0.8	0.1	0.1	0.1
Chlorpheniramine/pseudoephedrine	64	0.7	0.1	0.0	0.1
Psyllium hydrophilic mucilloid	61	0.7	0.1	0.1	0.1
Bromhexine	61	0.7	0.1	0.0	0.1
Budesonide topical nasal	59	0.7	0.1	0.0	0.1
Simple analgesic	58	0.7	0.1	0.0	0.1
Cinchocaine/hydrocortisone	58	0.7	0.1	0.0	0.1
Hydrocortisone topical	57	0.7	0.1	0.0	0.1
Brompheniramine/phenylephrine	56	0.7	0.1	0.0	0.1
<i>Subtotal</i>	<i>5,283</i>	<i>61.4</i>	<i>—</i>	<i>—</i>	<i>—</i>
<b>Total medications advised</b>	<b>8,604</b>	<b>100.0</b>	<b>9.4</b>	<b>8.7</b>	<b>10.1</b>

(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: OTC—over-the-counter medication; LCL—lower confidence limit; UCL—upper confidence limit; NEC—not elsewhere classified.

## 9.2 Changes over time, 1998–99 to 2006–07

Changes in medication rates (including prescribed, GP-provided and OTC advised) demonstrate a decrease from 109.7 (95% CI: 107.4–112.0) per 100 encounters in 1998–99 to 101.5 (95% CI: 99.2–103.9) per 100 in 2006–07 (Figure 9.4 and Table 9.5).

It has already been shown that the number of problems managed at encounter did not change over the period (Table 7.9). Therefore, the decrease in medications per 100 encounters is not due to a decrease in the number of problems being managed. Figure 9.5 summarises the changes in total medication rates per 100 problems managed over time.

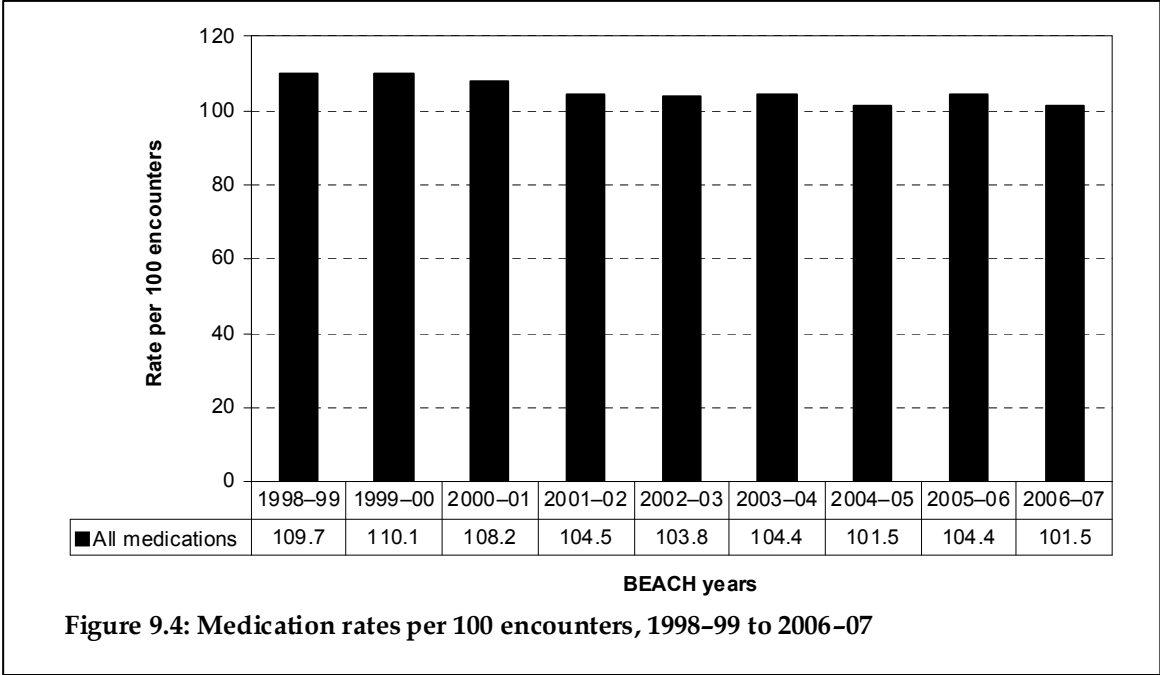


Figure 9.4: Medication rates per 100 encounters, 1998–99 to 2006–07

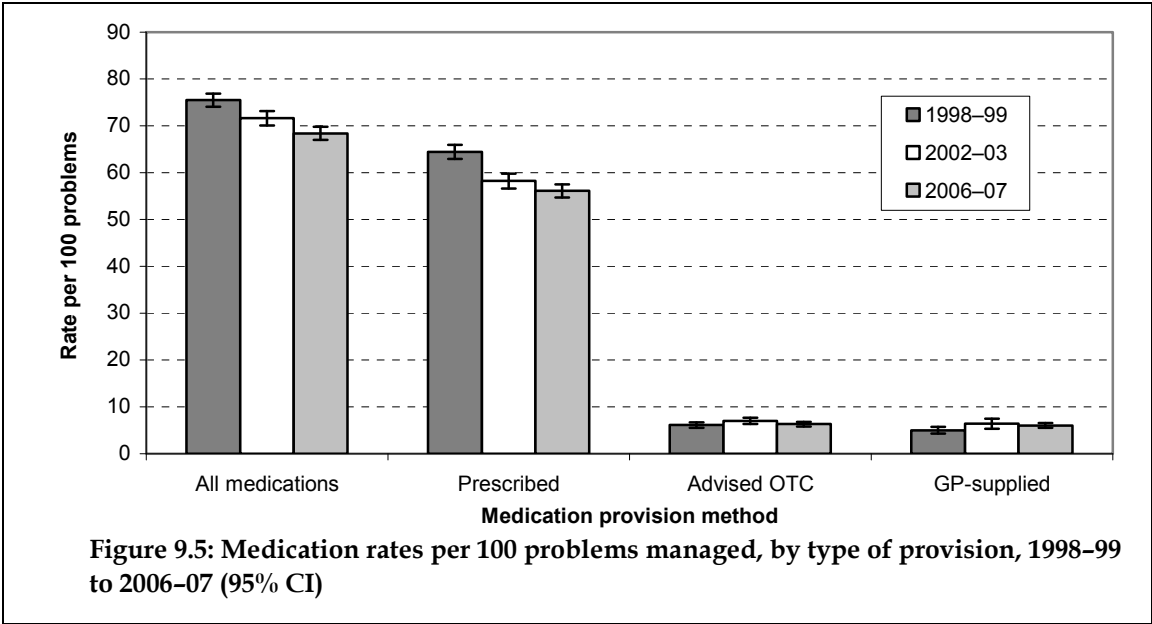
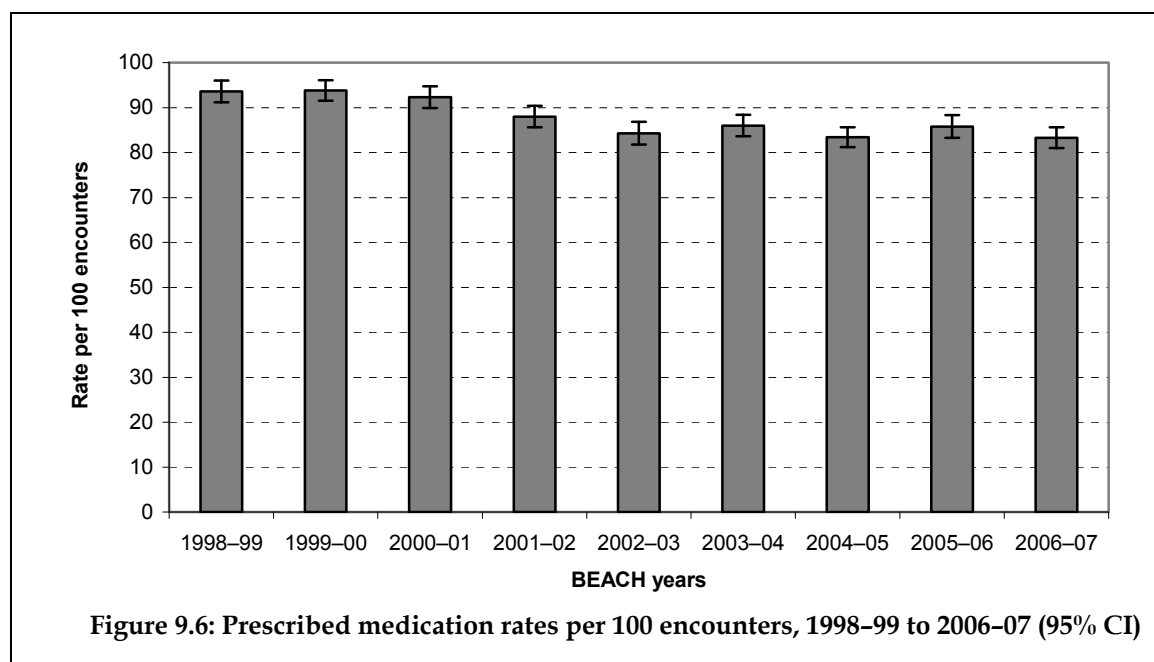


Figure 9.5: Medication rates per 100 problems managed, by type of provision, 1998–99 to 2006–07 (95% CI)

Note: CI—confidence interval; OTC—over-the-counter medication.

## Prescribed medications

The rate of prescribed medications fell from 93.6 per 100 encounters in 1998–99 to 83.3 per 100 in 2006–07. This significant decrease in prescription rate means that 10 fewer prescriptions are being written on average for every 100 GP–patient encounters in 2006–07 than 9 years earlier. The extrapolated national effect of this change is over 11 million fewer prescriptions given by GPs in 2006–07 than in 1998–99 (Table 9.5). Figure 9.6 shows the change graphically, with the 95% confidence intervals around the estimates. It suggests that the decrease in prescriptions largely occurred between 2000 and 2002, and has stayed steady since that time.



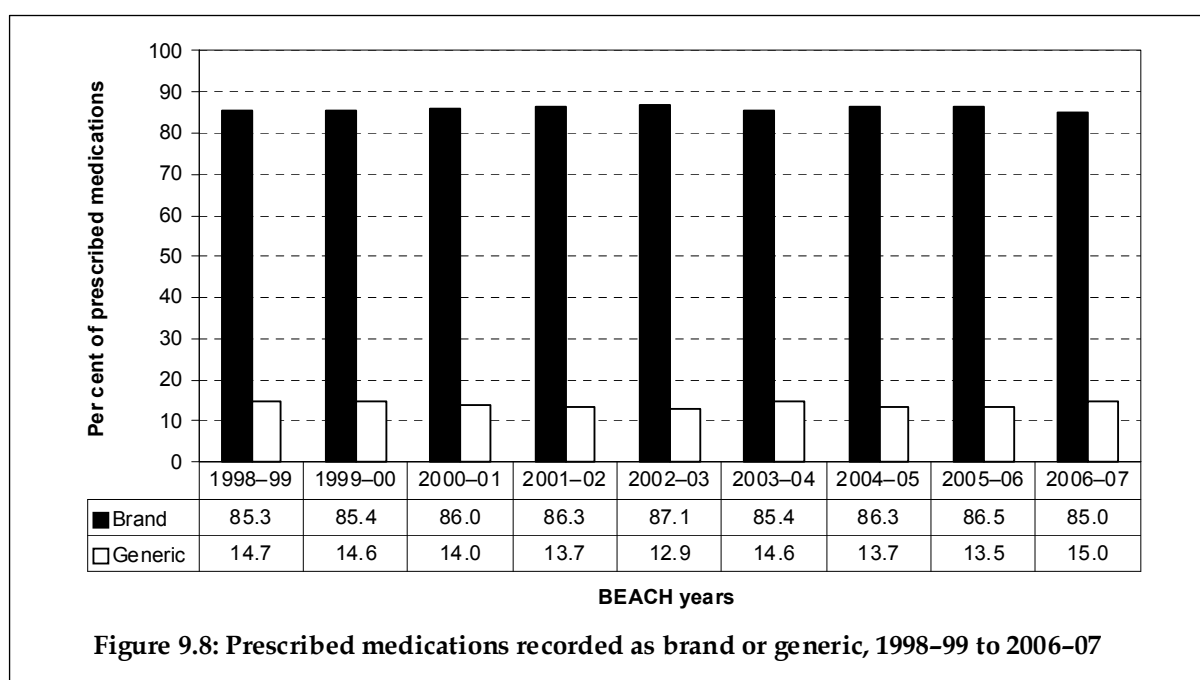
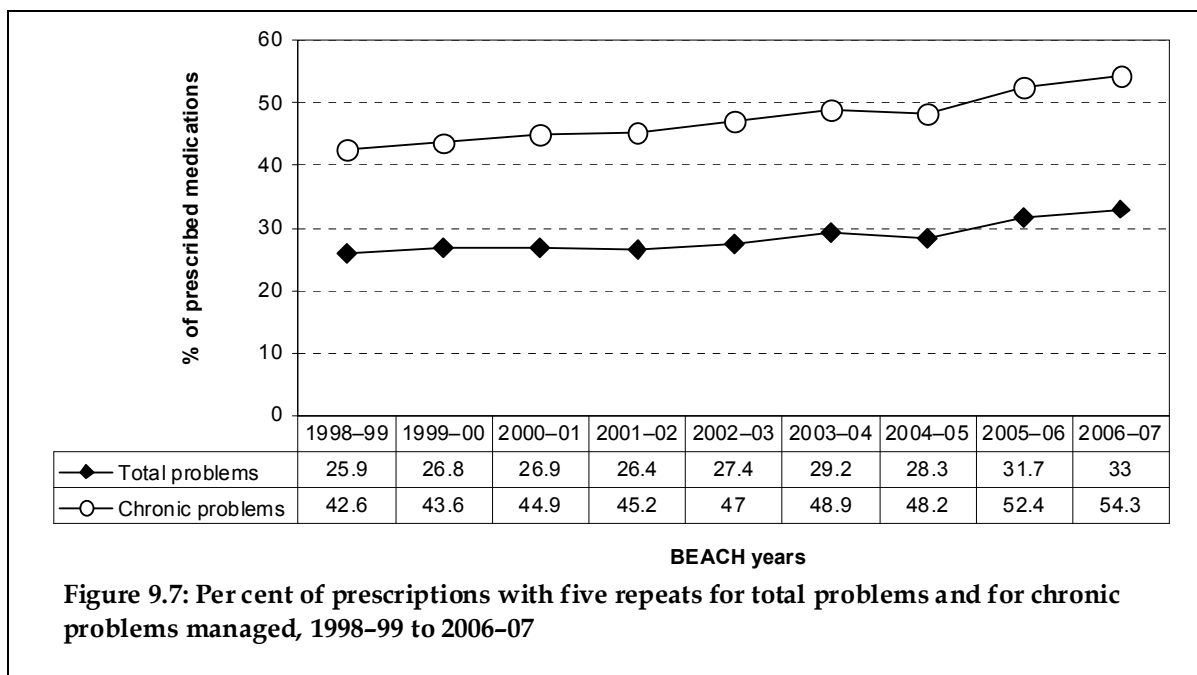
## Number of repeats ordered

The pattern of the number of repeat prescriptions recorded by GPs changed between 1998–99 and 2006–07. Table 9.6 shows that there has been a significant increase in the proportion of prescribed medications for which no repeats were ordered (from 29.6%, 95% CI: 27.4–31.9, of prescriptions to 35.2%, 95% CI: 33.7–36.7) and a significant move away from ordering one repeat (from 21.3% to 16.4%) or two repeats (from 18.4% to 16.4%).

There was a significant and large increase in the proportion of prescriptions for which five repeats were recorded. In 1998–99, 25.9% (95% CI: 24.5–27.3) of prescriptions were given five repeats whereas, in 2006–07, 33.0% (95% CI: 31.7–34.4) of prescribed medications had five repeats. This trend was apparent for all prescriptions, not just those for chronic conditions (which make up about one-third of all problems). The change in frequency of recording five repeats is presented graphically in Figure 9.7, for all medications prescribed, and for those prescribed in the management of chronic problems.

## Brand versus generic

The manner in which GPs recorded prescribed medications, whether by brand (proprietary) or by generic (non-proprietary) name, remained stable over time. From 1998–99 to 2006–07 it fluctuated by only 2%, with 85.0% to 87.0% of prescribed medications recorded by brand name (Figure 9.8).



### Prescribed medication changes over time—drug groups and generics

Table 9.7 shows prescribing rates of common drug groups from 1998-99 to 2006-07. The ATC drug group Level 2 has been chosen for the group comparisons over time because it is the most stable level. As new drugs are added to CAPS, which is used to code medications in BEACH, they sometimes have not yet entered the international ATC classification system, and are therefore mapped to a higher ATC group level. When the new ATC code becomes available, the drug is moved from the ATC group code to the new ATC generic code. This means that, in a few cases, comparisons over time at the lower levels of ATC do not give a true picture.

Individual generic medications are reported in Table 9.8 according to CAPS, to ensure the most complete and comparable data are available over time. The effects of the measured changes at a national level are also presented in the right-hand column of this table.

The following statistically significant changes in prescribing rates occurred between 1998–99 and 2006–07.

**Increases:**

- There was a significant increase in the GP prescribing rate of agents acting on the renin-angiotensin system (Table 9.7), boosted by increases in perindopril and ramipril, candesartan and irbesartan, and the introduction of the irbesartan-hydrochlorothiazide combination (Table 9.8). These increases overrode the decrease in prescriptions for enalapril maleate. We estimate there were about 2.5 million more GP prescriptions for these drugs in 2006–07 than in 1998–99.
- Psychoanaleptics, most of which are antidepressants, showed a significant increase, equating to an estimated increase of 590,000 prescriptions between 1998–99 and 2006–07.
- Rates of lipid modifying agent prescriptions increased steadily until 2004–05. Since then the increase has been marginal. This equates to 1.5 million more GP prescriptions for lipid modifying agents in 2006–07 than in 1998–99. Atorvastatin alone accounted for an increase of over 1 million prescriptions between those years. Simvastatin showed a marginal increase.
- Drugs for acid-related disorders showed a marginal increase, although there was a significant decrease in prescribing rates of ranitidine since 2001 when some brands became available over the counter.
- Rates of diabetes drugs were consistent with last year's results, which were significantly higher than in the early years of the study. The significant rise in rates of metformin would have been a factor in this result.
- Anti-thrombotic agent prescribing rates have more than doubled over the period. A significant rise in rates of warfarin prescribing contributed to this result.
- Prescribing rates of thyroid therapy, almost all of which is thyroxine, increased significantly from the rates recorded during the first 5 years of the study.
- Some individual medications have shown significant changes although the drug groups to which they belong have not demonstrated significant change. There was only marginal movement in the prescribing rates of the analgesic group, but tramadol (with the advent of slow-release presentations) and oxycodone increased significantly since the early years of the study. While drugs for acid-related disorders showed only a marginal increase, esomeprazole rose significantly since it was first recorded in BEACH in 2002–03.

**Decreases:**

- Systemic antibacterials decreased across the period, indicating that 3 million fewer prescriptions for these drugs were provided by GPs nationally in 2006–07 than in 1998–99. Cefaclor, doxycycline and erythromycin were commonly prescribed antibacterials prescribed significantly less often.
- Drugs for obstructive airway diseases showed a significant decrease in prescribing rates, with an extrapolated 2.6 million fewer prescriptions at the end of the study period than at the beginning. Decreases in salbutamol, budesonide and beclomethasone contributed

to this result, while prescriptions for the combination fluticasone-salmeterol increased significantly since its entry onto the market.

- Prescribing rates of anti-inflammatory and antirheumatic drugs acting on the musculoskeletal system were significantly lower in 2006–07 than in all other years. The peak in prescribing rates of these medications can be seen between 2000 and 2002. Prescriptions for the non-steroid anti-inflammatory drug meloxicam increased significantly since its introduction in 2001–02, although it has decreased marginally since last year. Rates of naproxen prescribing showed a significant decrease between 1998–99 and 2000–01, although rates have been stable over the past 5 years.
- Sex hormone prescription rates have levelled over the past 2 years but still show an estimated 950,000 decrease in prescriptions in 2006–07 compared with the early years of the study. The marginal decrease in rates of the levonorgestrel-ethyloestradiol combination contributed to this result.
- Calcium channel blocker prescribing rates decreased between 1998–99 and 2006–07. The significant decrease can first be seen in 2001–02.
- The decrease in vaccine rates reflects the move towards combined vaccinations, particularly in the case of childhood immunisations. However, the decline in prescribing rates of influenza vaccine has contributed to this result and is linked to an increase in the recording of influenza vaccine as a GP-supplied medication (see Medications supplied by GPs section below).
- Prescribing rates of diuretics and the most commonly recorded diuretic, frusemide, have levelled over the past 3 years. Present rates are significantly lower than they were in the early years of BEACH, before the advent of diuretic-cardiovascular drug combinations.
- Cardiac therapy (glycosides, other stimulants and anti-arrhythmics) prescribing rates follow a similar pattern to diuretics, with an estimated 940,000 fewer prescriptions in 2006–07 than in 1998–99.
- Drugs for functional gastrointestinal disorders (anti-spasmodics and propulsives) decreased significantly in prescribing rates. A number of the medications in this group are no longer on the market.
- Rates of medications from the topical nasal group halved between 1998–88 and 2006–07. Topical nasal budesonide was a factor in this change, with significantly lower rates from 2001 onwards, when a lower dose brand became available over the counter.
- Again, there were changes in individual medication rates although the corresponding drug groups did not demonstrate change. Paracetamol and paracetamol-codeine were prescribed significantly less often from the middle years of the study onwards. These decreases were balanced by the significant rise in rates of tramadol and oxycodone, resulting in overall prescribing rates for analgesics remaining fairly steady.
- Although psycholeptics did not demonstrate significant change, prescriptions for temazepam decreased significantly compared with the first 3 years of the study.

## Discussion

These data demonstrate that GPs are providing prescriptions for medications significantly less often than they did in earlier years of this study, and the decrease is considerable.

Data from the PBS suggest that, after previous annual increases in prescriptions dispensed and claimed through the PBS, a relative decrease in volume has occurred. In the 6 months

July–December 2004, there were 88.78 million dispensed medications claimed from the PBS. In the same period in 2005, 86.99 million were claimed (1.8 million fewer).<sup>59</sup>

PBS prescriptions are counted each time the medication is dispensed – but only if the medication is covered by PBS subsidy. Annual increases in patient co-payments for PBS prescriptions, (particularly the increase from \$23.70 to \$28.60 in January, 2005), mean that fewer medications ‘qualify’ for PBS payment because they fall under the payment threshold. The co-payment now stands at \$30.70. A policy was introduced in 2005 to raise the Safety Net threshold each year from 2006 to 2009 in an effort to achieve savings to the PBS. In 2006, the Safety Net allowed co-payments to be reduced or waived for families who exceeded \$960.10 (general) and \$239.20 (concession) in PBS-subsidised medications annually. In 2007, the amounts were \$1,059.00 and \$274.40 respectively.<sup>60</sup> These increases mean that fewer people will reach the Safety Net Threshold, and gain access to the PBS for medications costing less than the payment threshold (currently \$30.70).

With fewer medications qualifying for PBS coverage and the new Safety Net thresholds being harder to attain the above decrease in PBS claims is not surprising. However, changes in co-payments should not result in a decreased number of prescriptions being given by GPs, unless (as others suggest) the higher co-payment is considered a deterrent by the patient and/or GP.<sup>61,62</sup>

BEACH results show there are other factors possibly contributing to the decrease in GP prescribing rate.

- The tendency among GPs when ordering repeats to order higher numbers of them would reduce the frequency of prescriptions given to patients (see Table 9.6 and Figure 9.7), so that a new prescription is provided at fewer of the patient’s attendances through the year. This would result in fewer prescriptions per 100 encounters and could explain some of the decrease in prescription rates in BEACH. However, this in itself would not generate a decrease in the number of times the medication was dispensed and counted in the PBS. For example, two visits per year at which a patient received one prescription with five repeats, and three visits a year where the patient received one prescription with three repeats would both generate 12 dispensing occurrences.
- The increased number of combination products available, for example antihypertensives with diuretics, would reduce the number of prescriptions required for those component medications.
- The movement of medications from prescribed to over-the-counter availability could also influence total prescriptions provided. As an example, Figure 9.9 shows the decrease in prescribing rates of ranitidine after some brands became available over the counter in 2000.

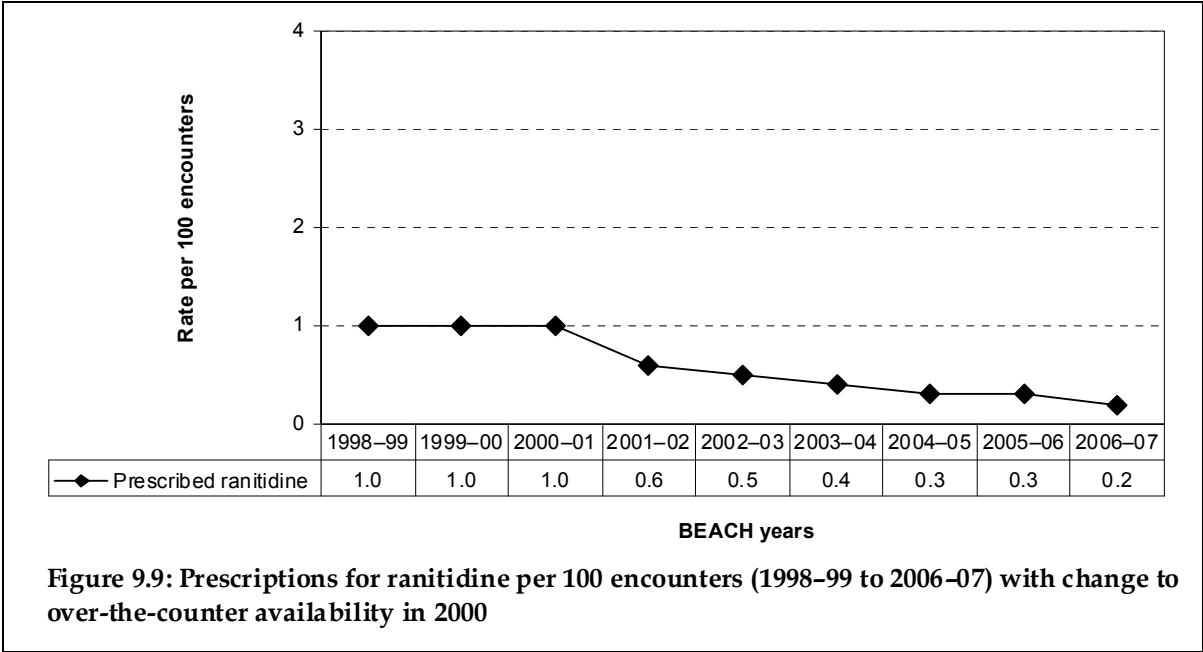


Figure 9.9: Prescriptions for ranitidine per 100 encounters (1998-99 to 2006-07) with change to over-the-counter availability in 2000



**Table 9.5: Rates of medications prescribed, advised for over-the-counter purchase, supplied, summary of annual results, BEACH, 1998–99 to 2006–07**

	Rate per 100 encounters (95% CI)									Change <sup>(a)</sup>	
	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	↑ ↓	('000)
	(n = 96,901)	(n = 104,856)	(n = 99,307)	(n = 96,973)	(n = 100,987)	(n = 98,877)	(n = 94,386)	(n = 101,993)	(n = 91,805)		
Prescribed	93.6 (91.2–96.1)	93.8 (91.5–96.2)	92.3 (89.9–94.7)	88.0 (85.6–90.4)	84.3 (81.8–86.9)	86.0 (83.6–88.5)	83.4 (81.2–85.5)	85.8 (83.3–88.4)	83.3 (81.0–85.5)	↓	-11,210
GP-supplied	7.3 (6.5–8.1)	6.9 (6.0–7.7)	6.9 (5.9–7.9)	7.6 (6.6–8.7)	9.3 (8.0–10.6)	8.6 (7.6–9.6)	8.1 (7.3–8.8)	8.8 (8.2–9.5)	8.9 (8.2–9.6)	↑	+1,590
OTC advised	8.8 (8.1–9.5)	9.4 (8.7–10.1)	9.0 (8.2–9.7)	8.9 (8.2–9.6)	10.2 (9.3–11.1)	9.8 (9.0–10.5)	10.1 (9.2–10.9)	9.8 (9.0–10.5)	9.4 (8.7–10.1)	—	—
<b>Total medications</b>	<b>109.7</b> <b>(107.4–112.0)</b>	<b>110.1</b> <b>(107.8–112.4)</b>	<b>108.2</b> <b>(105.7–110.6)</b>	<b>104.5</b> <b>(102.2–106.9)</b>	<b>103.8</b> <b>(101.4–106.2)</b>	<b>104.4</b> <b>(102.1–106.7)</b>	<b>101.5</b> <b>(99.3–103.8)</b>	<b>104.4</b> <b>(101.8–107.0)</b>	<b>101.5</b> <b>(99.2–103.9)</b>	↓	-9,200

**Table 9.6: Number of repeats for prescribed medications, summary of annual results, BEACH, 1998–99 to 2006–07**

	Rate per 100 prescriptions (95% CI)									Change <sup>(a)</sup>	
	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	↑ ↓	
	(n = 96,901)	(n = 104,856)	(n = 99,307)	(n = 96,973)	(n = 100,987)	(n = 98,877)	(n = 94,386)	(n = 101,993)	(n = 91,805)		
No repeats	29.6 (27.4–31.9)	31.9 (30.2–33.7)	33.0 (31.2–34.8)	38.3 (36.7–39.4)	38.0 (36.4–39.6)	37.8 (36.2–39.3)	38.5 (36.8–40.2)	35.9 (34.4–37.5)	35.2 (33.7–36.7)	↑	
One repeat	21.3 (20.2–22.3)	20.4 (19.5–21.3)	20.3 (19.3–21.4)	17.6 (16.8–18.3)	17.7 (16.8–18.6)	16.6 (15.8–17.3)	17.6 (16.7–18.4)	17.6 (16.8–18.4)	16.4 (15.6–17.1)	↓	
Two repeats	18.4 (17.1–19.7)	16.3 (15.2–17.4)	15.2 (14.1–16.3)	13.1 (12.3–14.0)	12.0 (11.0–13.0)	11.4 (10.6–12.1)	10.6 (10.0–11.3)	10.1 (9.4–10.9)	10.5 (9.6–11.4)	↓	
Three or four repeats	4.5 (4.0–4.9)	4.3 (3.7–4.8)	4.4 (4.0–4.8)	4.5 (4.1–4.9)	4.8 (4.4–5.1)	5.0 (4.7–5.4)	4.8 (4.4–5.2)	4.5 (3.8–5.2)	4.8 (4.3–5.3)	—	
Five repeats	25.9 (24.5–27.3)	26.8 (25.3–28.3)	26.9 (25.6–28.2)	26.4 (25.2–27.7)	27.4 (26.0–28.7)	29.2 (27.9–30.4)	28.3 (27.0–29.6)	31.7 (30.3–33.1)	33.0 (31.7–34.4)	↑	
Six or more repeats	0.3 (0.2–0.4)	0.3 (0.0–0.6)	0.1 (0.1–0.2)	0.0 (0.0–0.0)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.3)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	↓	

(a) The direction and type of change from 1998–99 to 2006–07 is indicated for each variable: ↑/↓ indicates a statistically significant change, ↑/↓ indicates a marginal change, and — indicates there was no change. Statistically significant linear changes have been extrapolated to estimate the national average annual change and are reported in thousands in the far right column.

Note: Missing data removed. Rates are reported to one decimal place, a rate of 0.0 indicates that the rate is < 0.05 per 100 prescriptions. CI—confidence interval; OTC—over the counter medication.

**Table 9.7: Distribution of prescribed medications by ATC Level 2, summary of annual results, BEACH, 1998–99 to 2006–07**

ATC Level 2	Rate per 100 encounters <sup>(a)</sup> (95% CI)									Change <sup>(b)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	↑ ↓	('000)
Antibacterials for systemic use	16.8 (16.2–17.4)	15.7 (15.2–16.3)	15.4 (14.8–16.0)	13.9 (13.4–14.4)	13.3 (12.8–13.9)	13.6 (13.1–14.2)	14.0 (13.5–14.6)	14.6 (14.0–15.2)	14.0 (13.4–14.5)	↓	–3,000
Analgesics	9.5 (9.0–10.1)	9.6 (9.1–10.2)	8.9 (8.4–9.4)	8.5 (8.1–9.0)	8.5 (8.0–9.1)	8.5 (8.0–9.0)	8.3 (7.8–8.7)	9.0 (8.4–9.5)	8.6 (8.1–9.0)	§	—
Agents acting on the renin–angiotensin system	4.0 (3.8–4.3)	4.1 (3.8–4.3)	4.6 (4.3–4.8)	5.0 (4.7–5.3)	4.9 (4.6–5.2)	5.5 (5.1–5.8)	5.5 (5.2–5.8)	6.1 (5.7–6.5)	6.5 (6.1–6.9)	↑	+2,540
Psycholeptics	5.4 (5.1–5.7)	5.4 (5.0–5.7)	5.2 (4.9–5.5)	5.1 (4.8–5.5)	4.7 (4.4–5.0)	5.0 (4.7–5.4)	4.9 (4.6–5.2)	5.0 (4.6–5.3)	4.8 (4.5–5.2)	—	—
Drugs for obstructive airway diseases	6.3 (5.9–6.6)	6.6 (6.1–7.0)	5.6 (5.2–5.9)	5.1 (4.8–5.5)	4.6 (4.3–4.9)	4.1 (3.9–4.4)	3.8 (3.6–4.1)	3.9 (3.6–4.1)	3.8 (3.5–4.0)	↓	–2,610
Anti-inflammatory and antirheumatic products	4.5 (4.3–4.8)	4.6 (4.4–4.9)	5.8 (5.5–6.0)	5.3 (5.1–5.6)	4.8 (4.6–5.1)	4.8 (4.5–5.0)	4.5 (4.2–4.7)	3.9 (3.7–4.2)	3.6 (3.3–3.7)	↓	–960
Psychoanaleptics	2.9 (2.7–3.1)	3.0 (2.8–3.1)	3.1 (2.9–3.3)	3.0 (2.8–3.2)	3.0 (2.8–3.2)	3.3 (3.1–3.5)	3.1 (3.0–3.3)	3.3 (3.1–3.5)	3.5 (3.3–3.7)	↑	+600
Serum lipid reducing agents	1.9 (1.8–2.1)	2.2 (2.0–2.4)	2.4 (2.2–2.5)	2.4 (2.3–2.6)	2.4 (2.2–2.6)	2.8 (2.6–3.0)	3.0 (2.8–3.2)	3.3 (3.0–3.6)	3.4 (3.2–3.7)	↑	+1,530
Drugs for acid-related disorders	2.6 (2.5–2.8)	2.6 (2.4–2.8)	2.4 (2.2–2.5)	2.5 (2.4–2.7)	2.5 (2.4–2.7)	2.9 (2.7–3.0)	2.7 (2.5–2.9)	3.1 (2.9–3.2)	3.0 (2.8–3.2)	↑	+390
Sex hormones and modulators of the genital system	3.9 (3.7–4.2)	3.9 (3.7–4.1)	3.9 (3.7–4.1)	3.8 (3.6–4.0)	3.7 (3.5–3.9)	3.5 (3.3–3.7)	3.1 (2.9–3.3)	3.0 (2.8–3.2)	3.0 (2.7–3.3)	↓	–950
Corticosteroids, dermatological preparations	2.8 (2.7–3.0)	2.8 (2.7–3.0)	3.1 (2.8–3.3)	2.8 (2.7–3.0)	2.6 (2.5–2.8)	2.6 (2.4–2.7)	2.8 (2.6–2.9)	2.5 (2.4–2.7)	2.6 (2.4–2.8)	—	—
Drugs used in diabetes	1.8 (1.6–2.0)	1.8 (1.6–2.0)	2.0 (1.8–2.2)	2.2 (2.0–2.4)	1.9 (1.7–2.1)	2.2 (2.0–2.4)	2.1 (1.9–2.2)	2.5 (2.2–2.7)	2.4 (2.2–2.6)	↑	+600

(continued)

**Table 9.7 (continued): Distribution of prescribed medications by ATC Level 2, summary of annual results, BEACH, 1998–99 to 2006–07**

ATC Level 2	Rate per 100 encounters <sup>(a)</sup> (95% CI)									Change <sup>(b)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	↑ ↓	('000)
Calcium channel blockers	2.7 (2.5–2.9)	2.5 (2.3–2.7)	2.3 (2.1–2.5)	2.2 (2.0–2.4)	2.0 (1.8–2.1)	2.2 (2.0–2.3)	2.0 (1.8–2.1)	2.2 (2.0–2.4)	2.1 (2.0–2.3)	↓	–640
Beta-blocking agents	1.8 (1.7–2.0)	1.9 (1.7–2.1)	1.7 (1.5–1.8)	1.8 (1.6–1.9)	1.6 (1.5–1.7)	1.8 (1.7–2.0)	1.7 (1.5–1.8)	1.9 (1.8–2.1)	1.8 (1.7–2.0)	—	—
Vaccines	3.8 (3.3–4.2)	4.2 (3.8–4.6)	3.8 (3.5–4.2)	3.9 (3.5–4.2)	4.2 (3.8–4.5)	3.3 (3.0–3.6)	2.9 (2.6–3.3)	2.5 (2.2–2.8)	1.7 (1.5–1.9)	↓	–2,190
Ophthalmologicals	1.7 (1.6–1.8)	1.7 (1.6–1.8)	1.6 (1.5–1.7)	1.5 (1.4–1.6)	1.6 (1.5–1.7)	1.7 (1.5–1.8)	1.7 (1.6–1.8)	1.9 (1.7–2.0)	1.7 (1.6–1.8)	—	—
Anti-thrombotic agents	0.7 (0.6–0.8)	0.8 (0.7–0.9)	1.0 (0.9–1.1)	1.1 (1.0–1.3)	1.1 (1.0–1.2)	1.3 (1.2–1.4)	1.3 (1.2–1.4)	1.3 (1.2–1.4)	1.5 (1.3–1.6)	↑	+820
Diuretics	2.3 (2.1–2.4)	2.1 (1.9–2.3)	1.9 (1.7–2.0)	1.7 (1.5–1.9)	1.6 (1.4–1.7)	1.5 (1.4–1.7)	1.4 (1.2–1.5)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	↓	–940
Corticosteroids for systemic use	1.2 (1.1–1.3)	1.4 (1.3–1.5)	1.2 (1.1–1.3)	1.3 (1.2–1.5)	1.1 (1.0–1.2)	1.3 (1.1–1.4)	1.2 (1.1–1.4)	1.3 (1.2–1.4)	1.3 (1.2–1.5)	—	—
Cardiac therapy	1.7 (1.6–1.9)	1.7 (1.5–1.8)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.0 (0.8–1.1)	1.0 (0.9–1.2)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	↓	–940
Drugs used for functional gastrointestinal disorders	1.0 (0.9–1.1)	1.2 (1.1–1.3)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.0 (0.9–1.0)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.8)	↓	–210
Thyroid therapy	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.7 (0.7–0.8)	↑	+200
Otologicals	1.0 (0.9–1.1)	0.9 (0.8–1.0)	1.0 (0.9–1.0)	0.9 (0.8–1.0)	0.8 (0.8–0.9)	0.8 (0.8–1.0)	0.9 (0.8–1.0)	0.8 (0.7–0.8)	0.7 (0.6–0.8)	§	—
Nasal preparations	1.4 (1.3–1.5)	1.6 (1.5–1.7)	1.5 (1.3–1.6)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	↓	–730
<b>Total prescribed medications</b>	<b>93.6</b> <b>(91.2–96.1)</b>	<b>93.8</b> <b>(91.5–96.2)</b>	<b>92.3</b> <b>(89.9–94.7)</b>	<b>88.0</b> <b>(85.6–90.4)</b>	<b>84.3</b> <b>(81.8–86.9)</b>	<b>86.0</b> <b>(83.6–88.5)</b>	<b>83.4</b> <b>(81.2–85.5)</b>	<b>85.8</b> <b>(83.3–88.4)</b>	<b>83.3</b> <b>(81.0–85.5)</b>	<b>↓</b>	<b>–11,210</b>

(a) Column will not add to 100 because multiple prescriptions could be written at each encounter. Also, only the most frequent medications are included.

(b) The direction and type of change from 1998–99 to 2006–07 is indicated for each variable: ↑/↓ indicates a statistically significant change, ↑/↓ indicates a marginal change, § indicates a non-linear significant change, and — indicates there was no change. Statistically significant linear changes have been extrapolated to estimate the national average annual change and are reported in thousands in the far right column.

Note: CI—confidence interval.

**Table 9.8: Most frequently prescribed medications (CAPS generic), summary of annual results, BEACH, 1998–99 to 2006–07**

Generic drug	Rate per 100 encounters <sup>(a)</sup> (95% CI)									Change <sup>(b)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	↑ ↓	('000)
Amoxicillin	3.2 (3.0–3.5)	3.1 (2.9–3.4)	3.2 (3.0–3.5)	2.9 (2.7–3.1)	3.1 (2.8–3.4)	3.3 (3.0–3.5)	3.5 (3.2–3.8)	3.6 (3.3–3.8)	3.3 (3.0–3.6)	—	—
Paracetamol	3.9 (3.6–4.2)	4.1 (3.7–4.4)	3.9 (3.6–4.3)	3.1 (2.8–3.4)	3.1 (2.8–3.5)	2.9 (2.5–3.2)	2.7 (2.4–2.9)	3.0 (2.7–3.3)	2.6 (2.3–2.9)	↓	-1,360
Cephalexin	2.1 (1.9–2.3)	2.1 (1.9–2.2)	2.2 (2.0–2.4)	2.0 (1.9–2.2)	1.9 (1.8–2.0)	2.0 (1.9–2.2)	2.4 (2.2–2.6)	2.5 (2.3–2.7)	2.3 (2.2–2.5)	§	—
Paracetamol–codeine	2.7 (2.4–2.9)	2.4 (2.2–2.6)	2.2 (2.0–2.4)	2.2 (2.1–2.4)	2.0 (1.8–2.2)	2.1 (1.9–2.3)	2.0 (1.8–2.2)	2.0 (1.8–2.2)	2.0 (1.8–2.1)	↓	-740
Amoxicillin–potassium clavulanate	1.8 (1.6–2.0)	1.6 (1.5–1.8)	1.7 (1.5–1.9)	1.6 (1.4–1.7)	1.6 (1.4–1.7)	1.7 (1.5–1.8)	1.7 (1.5–1.8)	1.7 (1.5–1.8)	1.7 (1.5–1.9)	—	—
Atorvastatin	0.6 (0.5–0.6)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	1.0 (1.0–1.2)	1.2 (1.1–1.3)	1.4 (1.3–1.5)	1.6 (1.4–1.8)	1.7 (1.5–1.8)	↑	+1,130
Salbutamol	2.4 (2.2–2.6)	2.4 (2.2–2.6)	2.1 (1.9–2.2)	2.0 (1.8–2.1)	1.7 (1.6–1.9)	1.5 (1.4–1.6)	1.4 (1.3–1.5)	1.5 (1.4–1.6)	1.4 (1.3–1.5)	↓	-1,040
Roxithromycin	1.8 (1.6–2.0)	1.8 (1.7–2.0)	1.6 (1.4–1.8)	1.4 (1.3–1.5)	1.3 (1.2–1.5)	1.1 (1.0–1.2)	1.1 (1.0–1.3)	1.5 (1.3–1.7)	1.4 (1.2–1.5)	§	—
Perindopril	0.6 (0.5–0.6)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	0.7 (0.7–0.8)	0.7 (0.6–0.8)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	1.0 (0.9–1.1)	1.2 (1.1–1.3)	↑	+610
Metformin	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.8 (0.8–0.9)	1.0 (0.9–1.1)	1.0 (0.9–1.0)	1.2 (1.0–1.3)	1.1 (1.0–1.3)	↑	+410
Temazepam	1.4 (1.3–1.6)	1.4 (1.3–1.6)	1.4 (1.3–1.6)	1.3 (1.2–1.5)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	↓	-320
Diazepam	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.0 (0.9–1.2)	1.0 (0.9–1.2)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	—	—
Simvastatin	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.0 (1.0–1.1)	1.1 (1.0–1.2)	1.2 (1.0–1.3)	1.1 (1.0–1.2)	↑	+200

(continued)

**Table 9.8 (continued): Most frequently prescribed medications (CAPS generic), summary of annual results, BEACH, 1998–99 to 2006–07**

Generic drug	Rate per 100 encounters <sup>(a)</sup> (95% CI)									Change <sup>(b)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	↑ ↓	('000)
Warfarin sodium	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.1)	0.9 (0.8–1.0)	1.0 (0.9–1.2)	↑	+300
Irbesartan	0.5 (0.5–0.6)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.1 (1.0–1.2)	1.0 (0.9–1.1)	↑	+510
Esomeprazole	N/A	N/A	N/A	N/A	0.3 (0.2–0.3)	0.6 (0.5–0.7)	0.7 (0.6–0.8)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	—	New medication <sup>+</sup>
Chloramphenicol eye	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–0.9)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.9–1.0)	1.1 (1.0–1.1)	1.0 (0.9–1.1)	—	—
Levonorgestrel–ethinyloestradiol	1.2 (1.1–1.4)	1.3 (1.2–1.4)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.1 (1.0–1.2)	1.2 (1.1–1.3)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	↓	–210
Atenolol	1.0 (0.9–1.1)	1.0 (0.9–1.2)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	0.8 (0.7–0.9)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	—	—
Tramadol	0.0 <sup>†</sup> (0.0–0.0)	0.1 (0.0–1.1)	0.2 (0.1–0.2)	0.7 (0.6–0.8)	1.0 (0.9–1.1)	0.9 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (0.9–1.0)	0.9 (0.8–1.1)	↑	+930
Oxycodone	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.4–0.5)	0.5 (0.5–0.6)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	↑	+720
Fluticasone–salmeterol	N/A	N/A	0.2 (0.2–0.3)	0.6 (0.5–0.7)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–0.9)	—	New medication <sup>+</sup>
Diclofenac sodium systemic	1.3 (1.2–1.4)	1.3 (1.1–1.4)	1.2 (1.0–1.3)	0.9 (0.8–1.0)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	1.0 (0.8–1.1)	1.0 (0.9–1.1)	0.8 (0.7–0.9)	§	—
Ramipril	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.4–0.5)	0.6 (0.5–0.7)	0.7 (0.6–0.7)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	↑	+510
Cefaclor monohydrate	2.2 (1.9–2.4)	1.6 (1.3–2.0)	1.6 (1.4–1.8)	1.1 (1.0–1.2)	1.0 (0.9–1.2)	0.8 (0.7–0.9)	0.8 (0.7–1.0)	0.8 (0.6–1.0)	0.8 (0.6–0.9)	↓	–1,450
Amlodipine	0.8 (0.7–0.8)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	0.6 (0.6–0.7)	0.7 (0.6–0.8)	0.8 (0.7–0.8)	—	—

(continued)

**Table 9.8 (continued): Most frequently prescribed medications (CAPS generic), summary of annual results, BEACH, 1998–99 to 2006–07**

Generic drug	Rate per 100 encounters <sup>(a)</sup> (95% CI)									Change <sup>(b)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	↑ ↓	('000)
Irbesartan–hydrochlorothiazide	N/A	N/A	0.3 (0.2–0.4)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.7 (0.7–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.8 (0.7–0.8)	↑	New medication <sup>+</sup>
Doxycycline hydrochloride	1.2 (1.1–1.3)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	0.7 (0.7–0.9)	↓	–520
Meloxicam	N/A	N/A	N/A	0.0 <sup>†</sup> (0.0–0.1)	0.3 (0.3–0.4)	0.4 (0.3–0.5)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.7 (0.7–0.8)	↑	New medication <sup>+</sup>
Betamethasone topical	0.9 (0.9–1.0)	0.9 (0.8–0.9)	1.0 (0.9–1.2)	0.9 (0.8–1.0)	0.7 (0.6–0.8)	0.8 (0.8–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	—	—
Aspirin	0.7 (0.7–0.8)	0.8 (0.8–1.0)	0.8 (0.7–0.9)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	0.7 (0.7–0.8)	0.7 (0.6–0.8)	—	—
Thyroxine	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.6–0.7)	0.7 (0.6–0.8)	↑	+200
Mometasone	0.6 (0.5–0.7)	0.6 (0.6–0.7)	0.7 (0.6–0.7)	0.8 (0.7–0.9)	0.6 (0.6–0.7)	0.5 (0.5–0.6)	0.8 (0.7–0.9)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	—	—
Sertraline	0.6 (0.5–0.7)	0.8 (0.7–0.9)	0.8 (0.7–0.8)	0.6 (0.6–0.7)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	—	—
Oxazepam	0.8 (0.7–0.9)	0.8 (0.7–1.0)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	—	—
Influenza virus vaccine	1.7 (1.4–2.1)	1.5 (1.3–1.7)	1.5 (1.3–1.8)	1.5 (1.2–1.7)	1.4 (1.2–1.7)	1.2 (1.0–1.4)	0.9 (0.7–1.1)	1.1 (0.9–1.3)	0.6 (0.5–0.8)	↓	–1,140
Furosemide (furosemide)	1.0 (0.9–1.1)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.6 (0.5–0.7)	0.6 (0.6–0.7)	0.6 (0.6–0.7)	↓	–420
Celecoxib	N/A	0.2 (0.2–0.3)	2.1 (2.0–2.3)	1.4 (1.3–1.5)	1.1 (1.0–1.2)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.5 (0.5–0.6)	0.6 (0.5–0.7)	§	New medication <sup>+</sup>
Prednisolone	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.4 (0.4–0.5)	0.6 (0.5–0.7)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.6 (0.5–0.7)	—	—

(continued)

**Table 9.8 (continued): Most frequently prescribed medications (CAPS generic), summary of annual results, BEACH, 1998–99 to 2006–07**

Generic drug	Rate per 100 encounters <sup>(a)</sup> (95% CI)									Change <sup>(b)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	↑ ↓	('000)
Candesartan cilexetil	0.0 <sup>†</sup> (0.0–0.0)	0.1 (0.1–0.1)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.4 (0.4–0.5)	0.6 (0.5–0.7)	↑	+620
Omeprazole	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.4–0.6)	0.8 (0.8–0.9)	0.8 (0.8–0.9)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	0.6 (0.6–0.7)	0.6 (0.5–0.6)	§	—
<b>Generic medication frequently prescribed in previous years</b>											
Erythromycin	1.1 (0.9–1.2)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	↓	–620
Naproxen systemic	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.6 (0.5–0.6)	0.4 (0.4–0.5)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.2–0.4)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	↓	–620
Budesonide topical nasal	0.7 (0.6–0.8)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.5 (0.4–0.5)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.3 (0.2–0.4)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	↓	–420
Ranitidine	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	0.6 (0.6–0.7)	0.5 (0.4–0.5)	0.4 (0.3–0.4)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	↓	–830
Enalapril maleate	0.7 (0.7–0.8)	0.7 (0.6–0.8)	0.5 (0.5–0.6)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	↓	–520
Budesonide	0.7 (0.6–0.8)	0.7 (0.7–0.8)	0.6 (0.5–0.6)	0.5 (0.4–0.5)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	↓	–410
Beclomethasone inhaled	0.7 (0.6–0.8)	0.6 (0.5–0.7)	0.4 (0.3–0.5)	0.3 (0.3–0.4)	0.2 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.0–0.1)	↓	–620
Rofecoxib	N/A	N/A	0.1 (0.1–0.2)	1.2 (1.0–1.4)	1.2 (1.0–1.3)	1.0 (0.9–1.1)	0.3 (0.2–0.3)	N/A	N/A	§	—
<b>Total prescribed medications</b>	<b>93.6</b> <b>(91.2–96.1)</b>	<b>93.8</b> <b>(91.5–96.2)</b>	<b>92.3</b> <b>(89.9–94.7)</b>	<b>88.0</b> <b>(85.6–90.4)</b>	<b>84.3</b> <b>(81.8–86.9)</b>	<b>86.0</b> <b>(83.6–88.5)</b>	<b>83.4</b> <b>(81.2–85.5)</b>	<b>85.8</b> <b>(83.3–88.4)</b>	<b>83.3</b> <b>(81.0–85.5)</b>	↓	–11,240

(a) Column will not add to 100 because multiple prescriptions could be written at each encounter.

(b) The direction and type of change from 1998–99 to 2006–07 is indicated for each variable: ↑/↓ indicates a statistically significant change, ↑/↓ indicates a marginal change, § indicates a non-linear significant change, and — indicates there was no change. Statistically significant linear changes have been extrapolated to estimate the national average annual change and are reported in thousands in the far right column.

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

+ Indicates that this medication was introduced during the study period, the change has not been extrapolated because the data from the year the medication was introduced may be incomplete.

Note: CI—confidence interval; N/A—not applicable (i.e. drug was not available at that time).

## Medications supplied by GPs or advised for over-the-counter purchase

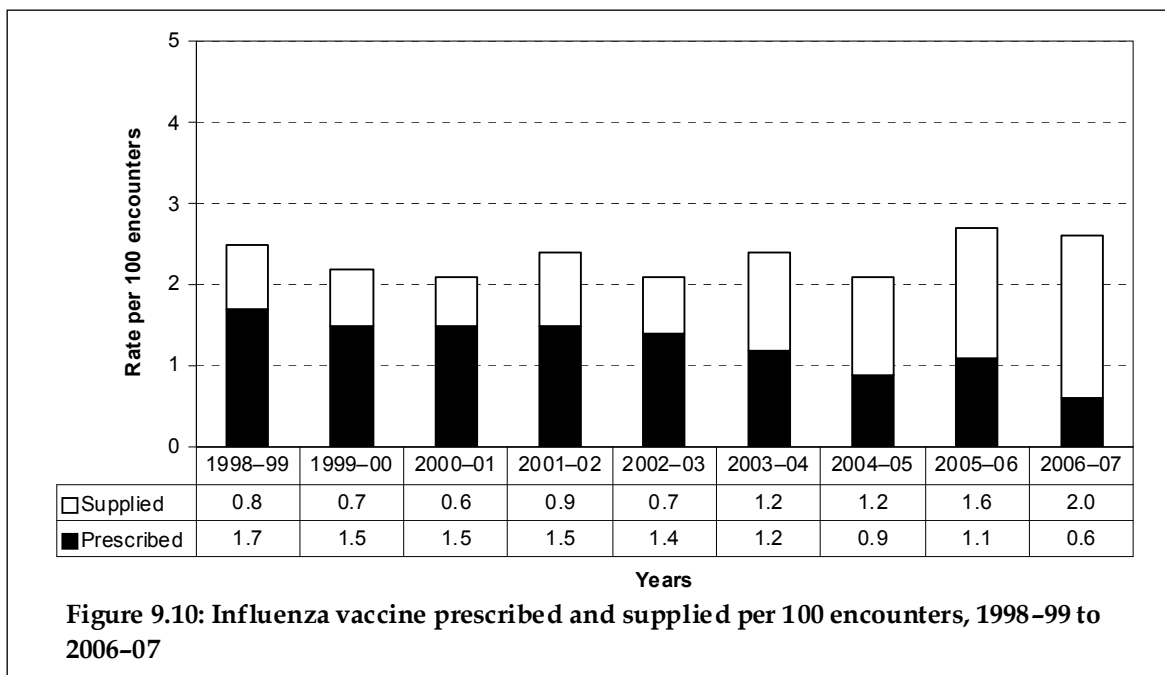
The rate of medications supplied by the GP rose significantly, from 7.3 per 100 encounters (95% CI: 6.5–8.1) in 1998–99 to 8.9 (95% CI: 8.2–9.6) in 2006–07. The rate of advised OTC medications showed no significant change over this period (Table 9.5).

A number of changes in individual medications supplied by GPs contributed to this rise.

- The move away from prescribing towards GP supply of the influenza vaccine was evident in the significant increase in its GP supply that coincided with the significant decrease in its prescribing rates. The change over time can be seen in Figure 9.10, where the total rates of influenza vaccine per 100 encounters are shown broken down into prescribed and GP-supplied.
- Supply rates of other vaccines have also contributed to the rise in GP-supplied medications. Meningitis vaccine supply rates have increased significantly compared with the first 4 years of the study, while the combination vaccine diphtheria–pertussis–tetanus–polio has increased since it was first recorded in 2004. There was a marginal increase in supply rates of the mumps–measles–rubella vaccine. Supply of poliomyelitis oral sabin/injection on its own showed a marginal decrease probably due to its incorporation in new combined vaccines.
- The rate of GP supply of Vitamin B12 has risen significantly since 1998–99.
- The supply of the non-steroid anti-inflammatory drug meloxicam rose significantly since its introduction in 2001–02.

Among medications advised for over-the-counter purchase, ibuprofen, nasal sodium chloride and cetirizine have shown significant increases since 1998–99 and there was a marginal fall in the rate of advised paracetamol–codeine.

Tables 9.9 and 9.10 show rates of generic medications most frequently supplied or advised by GPs between 1998–99 and 2006–07.





**Table 9.9: Medications most frequently supplied by GPs, summary of annual results, BEACH, 1998–99 to 2006–07**

	Rate per 100 encounters (95% CI)									Change <sup>(a)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	↑ ↓	('000)
<b>Generic medication</b>											
Influenza virus vaccine	0.8 (0.6–1.1)	0.7 (0.5–0.9)	0.6 (0.4–0.7)	0.9 (0.7–1.1)	0.7 (0.5–0.9)	1.2 (0.9–1.4)	1.2 (0.9–1.6)	1.6 (1.3–1.8)	2.0 (1.6–2.3)	↑	+1,230
Pneumococcal vaccine	0.1 (0.1–0.2)	0.1 (0.0–0.1)	0.0 <sup>‡</sup> (0.0–0.0)	0.0 <sup>‡</sup> (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.4 (0.3–0.5)	0.9 (0.8–1.0)	0.6 (0.6–0.7)	§	—
Mumps–measles–rubella vaccine	0.2 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	↑	+100
Vitamin B12 (cobalamin)	0.1 (0.1–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.0 <sup>‡</sup> (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	↑	+200
Polio vaccine oral sabin/injection	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.2–0.4)	0.3 (0.3–0.4)	0.4 (0.4–0.5)	0.5 (0.4–0.5)	0.2 (0.2–0.3)	↓	–210
ADT–CDT vaccine (diphtheria–tetanus)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	—	—
<i>Haemophilus</i> B vaccine	0.3 (0.2–0.4)	0.3 (0.3–0.4)	0.2 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.3 (0.2–0.4)	0.2 (0.2–0.2)	§	—
Diphtheria–pertussis–tetanus–polio vaccine	N/A	N/A	N/A	N/A	N/A	N/A	0.0 <sup>‡</sup> (0.0–0.0)	0.1 (0.0–0.1)	0.2 (0.1–0.2)	↑	New medication <sup>+</sup>
Meningitis vaccine	0.0 <sup>‡</sup> (0.0–0.0)	0.0 <sup>‡</sup> (0.0–0.0)	0.0 <sup>‡</sup> (0.0–0.0)	0.0 <sup>‡</sup> (0.0–0.0)	0.2 (0.1–0.2)	0.3 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	↑	+210
Meloxicam	N/A	N/A	N/A	0.0 <sup>‡</sup> (0.0–0.0)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	↑	New medication <sup>+</sup>
<b>Total GP-supplied medications</b>	<b>7.3</b> <b>(6.5–8.1)</b>	<b>6.9</b> <b>(6.0–7.7)</b>	<b>6.9</b> <b>(5.9–7.9)</b>	<b>7.6</b> <b>(6.6–8.7)</b>	<b>9.3</b> <b>(8.0–10.6)</b>	<b>8.6</b> <b>(7.6–9.6)</b>	<b>8.1</b> <b>(7.3–8.8)</b>	<b>8.8</b> <b>(8.2–9.5)</b>	<b>8.9</b> <b>(8.2–8.6)</b>	<b>↑</b>	<b>+1,590</b>

(a) The direction and type of change from 1998–99 to 2006–07 is indicated for each variable: ↑/↓ indicates a statistically significant change, ↑/↓ indicates a marginal change, and — indicates there was no change. Statistically significant linear changes have been extrapolated to estimate the national average annual change and are reported in thousands in the far right column.

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

+ Indicates that this medication was introduced during the study period, the change has not been extrapolated because the data from the year the medication was introduced may be incomplete.

Note: CI—confidence interval. N/A—not applicable (i.e. drug was not available at that time).

Table 9.10: Most frequently advised over-the-counter medications, summary of annual results, BEACH, 1998–99 to 2006–07

Generic medication	Rate per 100 encounters (95% CI)									Change <sup>(a)</sup>	
	1998–99 (n = 96,901)	1999–00 (n = 104,856)	2000–01 (n = 99,307)	2001–02 (n = 96,973)	2002–03 (n = 100,987)	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	↑ ↓	('000)
Paracetamol	2.4 (2.1–2.7)	2.5 (2.2–2.8)	2.4 (2.0–2.7)	2.1 (1.9–2.4)	2.6 (2.3–2.9)	2.5 (2.1–2.8)	2.3 (2.0–2.6)	2.5 (2.2–2.8)	2.4 (2.1–2.7)	—	—
Ibuprofen	0.2 (0.2–0.3)	0.3 (0.2–0.4)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.7 (0.5–0.8)	0.6 (0.5–0.7)	0.5 (0.4–0.6)	0.6 (0.5–0.7)	0.5 (0.5–0.6)	↑	+310
Sodium/potassium/citric/ glucose	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	—	—
Loratadine	0.2 (0.2–0.2)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	—	—
Clotrimazole topical	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	—	—
Diclofenac diethyl topical	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	—	—
Aspirin	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	—	—
Sodium chloride topical nasal	0.0 <sup>‡</sup> (0.0–0.0)	0.0 <sup>‡</sup> (0.0–0.0)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	↑	+210
Cetirizine	0.0 <sup>‡</sup> (0.0–0.0)	0.0 <sup>‡</sup> (0.0–0.0)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	↑	+100
Paracetamol–codeine	0.2 (0.2–0.3)	0.3 (0.2–0.4)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	↓	–100
<b>Total advised medications</b>	<b>8.8</b> <b>(8.1–9.5)</b>	<b>9.4</b> <b>(8.7–10.1)</b>	<b>9.0</b> <b>(8.2–9.7)</b>	<b>8.9</b> <b>(8.2–9.6)</b>	<b>10.2</b> <b>(9.3–11.1)</b>	<b>9.8</b> <b>(9.0–10.5)</b>	<b>10.1</b> <b>(9.2–10.9)</b>	<b>9.8</b> <b>(9.0–10.5)</b>	<b>9.4</b> <b>(8.7–10.1)</b>	—	—

(a) The direction and type of change from 1998–99 to 2006–07 is indicated for each variable: ↑/↓ indicates a statistically significant change, ↑/↓ indicates a marginal change, and — indicates there was no change. Statistically significant linear changes have been extrapolated to estimate the national average annual change and are reported in thousands in the far right column.

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

Note: CI—confidence interval.