

## 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 this 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.<sup>56</sup>
- The reporting of results at drug group, subgroup and generic level uses ATC levels 1, 3 and 5. The most frequently prescribed, supplied or advised individual medications are reported at the CAPS generic level, the equivalent of ATC Level 5, because ATC does not include many OTC and some GP-supplied medications which arise in BEACH. Further, some ATC level 5 labels are not specific enough for clarity.

Data on medications are reported for each year from 1999–00 to 2008–09 in the 10-year summary report *General practice activity in Australia 1999–00 to 2008–09: 10 year data tables*.<sup>1</sup>

Readers interested in adverse drug events will find more detailed information from the BEACH program in Miller et al. (2006) *Adverse drug events in general practice patients in Australia*.<sup>57</sup>

### 9.1 Source of medications

As reported in Chapter 8, a total of 102,737 medications were recorded, at rates of 106 per 100 encounters and 69 per 100 problems managed.

- Four out of five medications (81.3% of all medications) were prescribed.
- One in ten (10.4%) medications was supplied to the patient by the GP.
- There were 8.3% of medications recommended by the GP for OTC purchase.

If these results are extrapolated to the 112.3 million general practice Medicare-claimed encounters in Australia in 2008–09, GPs in Australia:

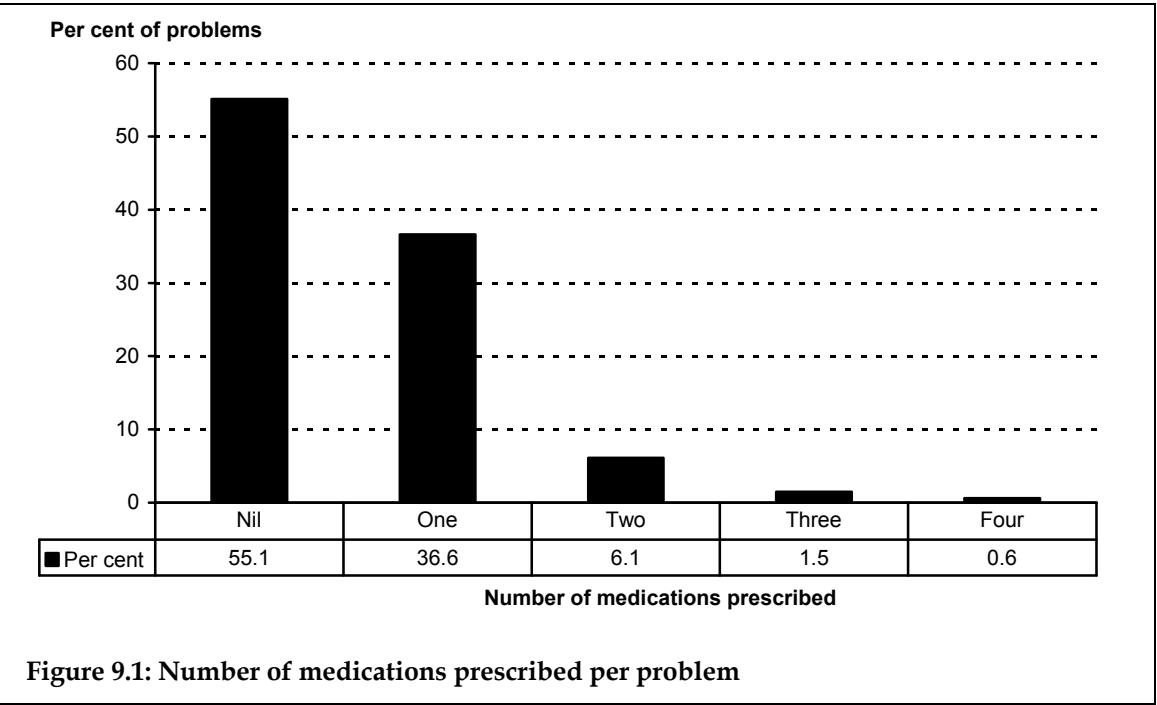
- prescribed medications on more than 97 million occasions
- supplied 12.4 million medications directly to the patient
- recommended medications for OTC purchase on 10.0 million occasions.

## 9.2 Prescribed medications

There were 83,509 prescriptions recorded, at rates of 86 per 100 encounters and 56 per 100 problems managed. GPs recorded 85.6% of prescribed medications by brand (proprietary) name and 14.4% by their generic (non-proprietary) name (results not tabled).

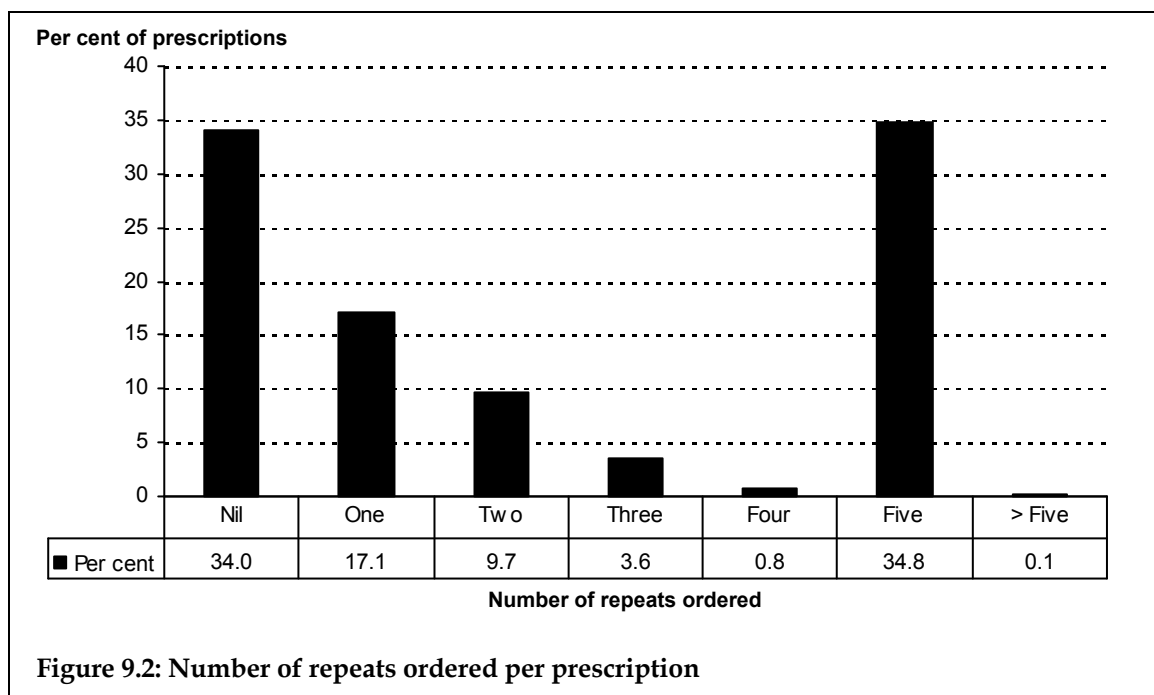
On a per problem basis:

- no prescription was given for 55.1% of all problems managed
- one prescription was given for 36.6% of problems managed
- two prescriptions were given for 6.1% of problems managed
- three or four prescriptions were given less often (2.1% of problems managed) (Figure 9.1).



### Number of repeats

For 65,104 prescriptions (78.0% of all prescriptions) 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 34.0% of these prescriptions, the GP specified that no repeats had been prescribed, and for 34.8% five repeats were ordered. The latter proportion reflects the PBS provision of one month’s supply and five repeats for many medications used for chronic conditions such as hypertension. The ordering of one and two repeats (17.1% and 9.7%) 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 (87.1 and 86.0 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 the rate of 58 per 100 encounters with patients aged less than 25 years almost doubling to 112 per 100 encounters for patients aged 65 years and over (results not tabled).

Figure 9.3, however, demonstrates that this age-based increase lessens if the prescription rate is considered in terms of the number of problems being managed in each age group. This suggests that a substantial part of the increase in prescription rate for older patients is due to the increased number of health problems they have managed at an encounter. The remaining increase in prescription rate associated with patient age is a reflection of the problems under management, which are more likely to be chronic at encounters with older patients.

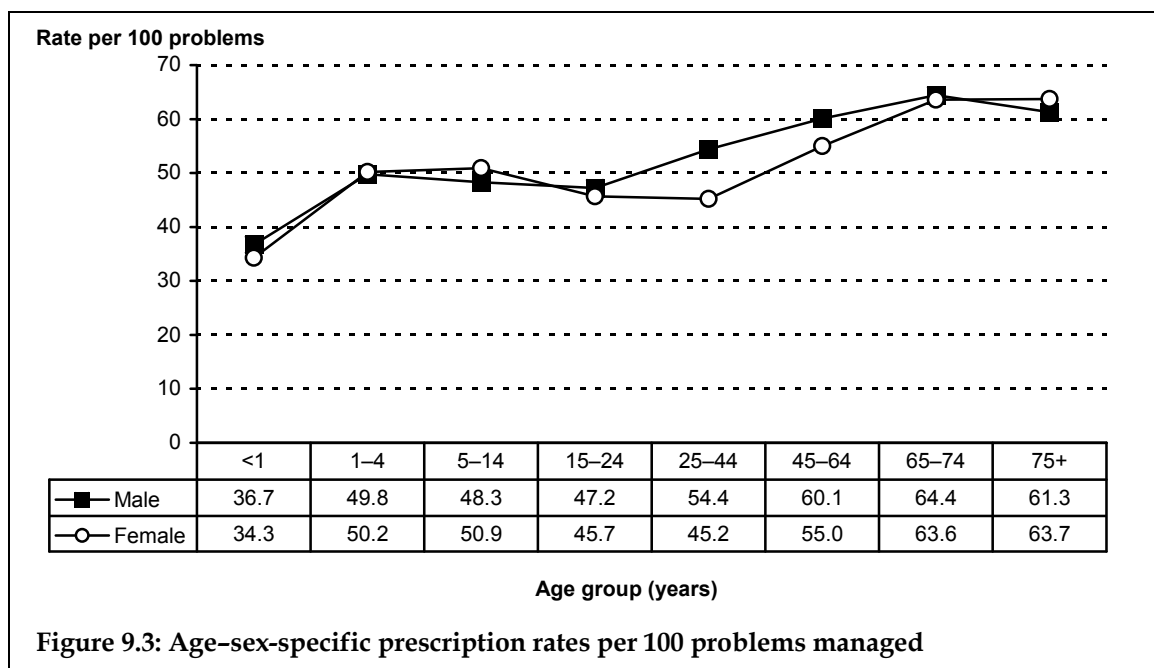


Figure 9.3: Age-sex-specific prescription rates per 100 problems managed

## Types of medications prescribed

Table 9.1 shows the distribution of prescribed medications using the WHO ATC classification.<sup>56</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

ATC Level 1	ATC Level 3	ATC Level 5	Number	Per cent of scripts (n = 83,509)	Rate per 100 encs <sup>(a)</sup> (n = 96,688)	95% LCL	95% UCL
<b>Nervous system</b>			<b>18,208</b>	<b>21.8</b>	<b>18.8</b>	<b>18.1</b>	<b>19.6</b>
	Other analgesics and antipyretics		4,869	5.8	5.0	4.7	5.3
	Paracetamol		2,258	2.7	2.3	2.1	2.5
	Paracetamol, combinations excl. psycholeptics		1,956	2.3	2.0	1.9	2.2
	Acetylsalicylic acid		651	0.8	0.7	0.6	0.8
	Antidepressants		3,495	4.2	3.6	3.4	3.8
	Venlafaxine		619	0.7	0.6	0.6	0.7
	Sertraline		589	0.7	0.6	0.5	0.7
	Opioids		3,103	3.7	3.2	3.0	3.4
	Oxycodone		1,139	1.4	1.2	1.1	1.3
	Tramadol		765	0.9	0.8	0.7	0.9
	Anxiolytics		1,989	2.4	2.1	1.9	2.2
	Diazepam		1,108	1.3	1.2	1.0	1.3
	Oxazepam		603	0.7	0.6	0.5	0.7

(continued)

**Table 9.1 (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 = 83,509)	Rate per 100 encs <sup>(a)</sup> (n = 96,688)	95% LCL	95% UCL
	Hypnotics and sedatives		1,687	2.0	1.7	1.6	1.9
		Temazepam	1,133	1.4	1.2	1.1	1.3
	Antipsychotics		1,171	1.4	1.2	1.1	1.3
		Prochlorperazine	505	0.6	0.5	0.5	0.6
	Drugs used in addictive disorders		695	0.8	0.7	0.6	0.9
	Antiepileptics		665	0.8	0.7	0.6	0.8
	<b>Cardiovascular system</b>		<b>17,340</b>	<b>20.8</b>	<b>17.9</b>	<b>17.0</b>	<b>18.9</b>
	Lipid modifying agents, plain		3,718	4.5	3.9	3.6	4.1
		Atorvastatin	1,791	2.1	1.9	1.7	2.0
		Simvastatin	861	1.0	0.9	0.8	1.0
		Rosuvastatin	553	0.7	0.6	0.5	0.6
	ACE inhibitors, plain		2,652	3.2	2.7	2.6	2.9
		Perindopril	1,305	1.6	1.4	1.2	1.5
		Ramipril	764	0.9	0.8	0.7	0.9
	Angiotensin II antagonists, plain		2,190	2.6	2.3	2.1	2.4
		Irbesartan	973	1.2	1.0	0.9	1.1
		Candesartan	588	0.7	0.6	0.5	0.7
		Telmisartan	525	0.6	0.5	0.5	0.6
	Beta blocking agents		1,916	2.3	2.0	1.8	2.1
		Atenolol	932	1.1	1.0	0.9	1.1
		Metoprolol	532	0.6	0.6	0.5	0.6
	Selective calcium channel blockers with mainly vascular effects		1,649	2.0	1.7	1.6	1.8
		Amlodipine	668	0.8	0.7	0.6	0.8
	Angiotensin II antagonists, combinations		1,336	1.6	1.4	1.3	1.5
		Irbesartan and diuretics	744	0.9	0.8	0.7	0.8
	ACE inhibitors, combinations		644	0.8	0.7	0.6	0.7
	High-ceiling diuretics		605	0.7	0.6	0.6	0.7
		Furosemide	597	0.7	0.6	0.6	0.7
	Selective calcium channel blockers with direct cardiac effects		528	0.6	0.6	0.5	0.6
	Vasodilators used in cardiac diseases		480	0.6	0.5	0.4	0.6
	<b>Antiinfectives for systemic use</b>		<b>16,117</b>	<b>19.3</b>	<b>16.7</b>	<b>16.1</b>	<b>17.2</b>
	Beta-lactam antibacterials, penicillins		6,097	7.3	6.3	6.0	6.6
		Amoxicillin	3,405	4.1	3.5	3.3	3.8
		Amoxicillin and enzyme inhibitor	1,773	2.1	1.8	1.7	2.0
	Other beta-lactam antibacterials		3,248	3.9	3.4	3.2	3.6
		Cefalexin	2,392	2.9	2.5	2.3	2.6
		Cefaclor	765	0.9	0.8	0.7	0.9

(continued)

Table 9.1 (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 = 83,509)	Rate per 100 encs <sup>(a)</sup> (n = 96,688)	95% LCL	95% UCL
	Macrolides, lincosamides and streptogramins		2,538	3.0	2.6	2.4	2.8
		Roxithromycin	1,359	1.6	1.4	1.3	1.5
		Clarithromycin	520	0.6	0.5	0.4	0.6
	Viral vaccines		961	1.2	1.0	0.8	1.1
		Influenza, inactivated, whole virus	533	0.6	0.6	0.4	0.7
	Tetracyclines		836	1.0	0.9	0.8	1.0
		Doxycycline	764	0.9	0.8	0.7	0.9
	Sulfonamides and trimethoprim		670	0.8	0.7	0.6	0.8
	<b>Alimentary tract and metabolism</b>		<b>8,107</b>	<b>9.7</b>	<b>8.4</b>	<b>8.0</b>	<b>8.8</b>
	Drugs for peptic ulcer and gastro-oesophageal reflux		3,121	3.7	3.2	3.1	3.4
		Esomeprazole	1,260	1.5	1.3	1.2	1.4
		Pantoprazole	578	0.7	0.6	0.5	0.7
	Blood glucose lowering drugs, excluding insulins		2,361	2.8	2.4	2.2	2.7
		Metformin	1,341	1.6	1.4	1.2	1.5
		Gliclazide	607	0.7	0.6	0.5	0.7
	Propulsives		590	0.7	0.6	0.5	0.7
		Metoclopramide	503	0.6	0.5	0.5	0.6
	<b>Respiratory system</b>		<b>5,018</b>	<b>6.0</b>	<b>5.2</b>	<b>4.9</b>	<b>5.5</b>
	Adrenergics, inhalants		2,776	3.3	2.9	2.7	3.0
		Salbutamol	1,316	1.6	1.4	1.3	1.5
		Salmeterol and other drugs for obstructive airways disease	855	1.0	0.9	0.8	1.0
	Other drugs for obstructive airway diseases, inhalants		817	1.0	0.8	0.8	0.9
	Decongestants and other nasal preparations for topical use		734	0.9	0.8	0.7	0.8
	<b>Musculoskeletal system</b>		<b>4,404</b>	<b>5.3</b>	<b>4.6</b>	<b>4.3</b>	<b>4.8</b>
	Antiinflammatory and antirheumatic products, non-steroid		3,231	3.9	3.3	3.1	3.5
		Meloxicam	901	1.1	0.9	0.8	1.0
		Diclofenac	781	0.9	0.8	0.7	0.9
		Celecoxib	504	0.6	0.5	0.5	0.6
	Drugs affecting bone structure and mineralisation		557	0.7	0.6	0.5	0.6
	<b>Dermatologicals</b>		<b>3,665</b>	<b>4.4</b>	<b>3.8</b>	<b>3.6</b>	<b>4.0</b>
	Corticosteroids, plain		2,339	2.8	2.4	2.3	2.6
		Betamethasone	717	0.9	0.7	0.7	0.8
		Mometasone	651	0.8	0.7	0.6	0.7

(continued)

Table 9.1 (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 = 83,509)	Rate per 100 encs <sup>(a)</sup> (n = 96,688)	95% LCL	95% UCL
<b>Genitourinary system and sex hormones</b>			<b>3,207</b>	<b>3.8</b>	<b>3.3</b>	<b>3.1</b>	<b>3.5</b>
	Hormonal contraceptives for systemic use		1,559	1.9	1.6	1.5	1.7
		Levonorgestrel and oestrogen	817	1.0	0.8	0.8	0.9
	Oestrogens		584	0.7	0.6	0.5	0.7
<b>Sensory organs</b>			<b>2,398</b>	<b>2.9</b>	<b>2.5</b>	<b>2.3</b>	<b>2.6</b>
	Anti-infectives		1,019	1.2	1.1	1.0	1.1
		Chloramphenicol	961	1.2	1.0	0.9	1.1
	Corticosteroids and anti-infectives in combination		614	0.7	0.6	0.6	0.7
<b>Blood and blood forming organs</b>			<b>2,250</b>	<b>2.7</b>	<b>2.3</b>	<b>2.2</b>	<b>2.5</b>
	Antithrombotic agents		1,703	2.0	1.8	1.6	1.9
		Warfarin	1,201	1.4	1.2	1.1	1.4
<b>Systemic hormonal preparations, excl sex hormones</b>			<b>2,049</b>	<b>2.5</b>	<b>2.1</b>	<b>2.0</b>	<b>2.3</b>
	Corticosteroids for systemic use, plain		1,205	1.4	1.3	1.1	1.3
		Prednisolone	777	0.9	0.8	0.7	0.9
	Thyroid preparations		726	0.9	0.8	0.7	0.8
		Levothyroxine sodium	720	0.9	0.7	0.7	0.8
<b>Antineoplastic and immunomodulating agents</b>			<b>375</b>	<b>0.5</b>	<b>0.4</b>	<b>0.3</b>	<b>0.4</b>
<b>Various</b>			<b>234</b>	<b>0.3</b>	<b>0.2</b>	<b>0.2</b>	<b>0.3</b>
<b>Antiparasitic products, insecticides and repellent</b>			<b>139</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>
<b>Total prescribed medications</b>			<b>83,509</b>	<b>100.0</b>	<b>86.4</b>	<b>84.1</b>	<b>88.6</b>

(a) Column will not add to 100 as multiple prescriptions could be written at each encounter and only common Level 3 and 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.

## 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 made up 44.1% of all prescribed medications.

## 9.3 Medications supplied by GPs

GPs supplied their patients with 10,670 medications in this study, at a rate of 11.0 medications supplied per 100 encounters. At least one medication was supplied at 8.5% of encounters for 5.7% 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 two-thirds of this group.

**Table 9.2: Most frequently prescribed medications**

<b>Generic medication</b>	<b>Number</b>	<b>Per cent of scripts (n = 83,509)</b>	<b>Rate per 100 encounters<sup>(a)</sup> (n = 96,688)</b>	<b>95% LCL</b>	<b>95% UCL</b>
Amoxicillin	3,405	4.1	3.5	3.3	3.8
Cephalexin	2,392	2.9	2.5	2.3	2.6
Paracetamol	2,258	2.7	2.3	2.1	2.5
Paracetamol/Codeine	1,833	2.2	1.9	1.8	2.0
Atorvastatin	1,791	2.1	1.9	1.7	2.0
Amoxicillin/potassium clavulanate	1,773	2.1	1.8	1.7	2.0
Roxithromycin	1,359	1.6	1.4	1.3	1.5
Metformin	1,341	1.6	1.4	1.3	1.5
Salbutamol	1,329	1.6	1.4	1.3	1.5
Perindopril	1,305	1.6	1.4	1.2	1.5
Esomeprazole	1,260	1.5	1.3	1.2	1.4
Warfarin sodium	1,201	1.4	1.2	1.1	1.4
Oxycodone	1,139	1.4	1.2	1.1	1.3
Temazepam	1,133	1.4	1.2	1.1	1.3
Diazepam	1,108	1.3	1.2	1.0	1.3
Irbesartan	973	1.2	1.0	0.9	1.1
Chloramphenicol eye	961	1.2	1.0	0.9	1.1
Atenolol	932	1.1	1.0	0.9	1.1
Meloxicam	901	1.1	0.9	0.8	1.0
Simvastatin	861	1.0	0.9	0.8	1.0
Fluticasone/salmeterol	855	1.0	0.9	0.8	1.0
Levonorgestrel/ethinylloestradiol	813	1.0	0.8	0.8	0.9
Cefaclor monohydrate	765	0.9	0.8	0.7	0.9
Tramadol	765	0.9	0.8	0.7	0.9
Doxycycline	764	0.9	0.8	0.7	0.9
Ramipril	764	0.9	0.8	0.7	0.9
Irbesartan/hydrochlorothiazide	744	0.9	0.8	0.7	0.8
Thyroxine	720	0.9	0.7	0.7	0.8
Betamethasone topical	717	0.9	0.7	0.7	0.8
Diclofenac sodium systemic	676	0.8	0.7	0.6	0.8
<i>Subtotal</i>	<i>36,835</i>	<i>44.1</i>	—	—	—
<b>Total prescribed medications</b>	<b>83,509</b>	<b>100.0</b>	<b>86.4</b>	<b>84.1</b>	<b>88.6</b>

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

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

**Table 9.3: Medications most frequently supplied by GPs**

<b>Generic medication</b>	<b>Number</b>	<b>Per cent of supplied meds (n = 10,670)</b>	<b>Rate per 100 encounters<sup>(a)</sup> (n = 96,688)</b>	<b>95% LCL</b>	<b>95% UCL</b>
Influenza virus vaccine	2,258	21.2	2.3	2.0	2.7
Pneumococcal vaccine	661	6.2	0.7	0.6	0.8
Papillomavirus (HPV) vaccine	610	5.7	0.6	0.6	0.7
Vitamin B12 (cobalamin)	392	3.7	0.4	0.4	0.5
Mumps/measles/rubella vaccine	322	3.0	0.3	0.3	0.4
Diphtheria/pertussis/tetanus/hepatitis B/ polio/Hib vaccine	314	2.9	0.3	0.3	0.4
Rotavirus vaccine	252	2.4	0.3	0.2	0.3
Haemophilus B vaccine	228	2.1	0.2	0.2	0.3
ADT/CDT (diphtheria/tetanus) vaccine	223	2.1	0.2	0.2	0.3
Polio vaccine oral sabin/injection	190	1.8	0.2	0.2	0.2
Meningitis vaccine	158	1.5	0.2	0.1	0.2
Chickenpox (varicella zoster) vaccine	151	1.4	0.2	0.1	0.2
Diphtheria/pertussis/tetanus/hep B vaccine	138	1.3	0.1	0.1	0.2
Triple antigen (diphtheria/pertussis/tetanus)	133	1.3	0.1	0.1	0.2
Diphtheria/pertussis/tetanus/polio vaccine	132	1.2	0.1	0.1	0.2
Esomeprazole	117	1.1	0.1	0.1	0.2
Metoclopramide	110	1.0	0.1	0.1	0.1
Allergen treatment injection	108	1.0	0.1	0.1	0.1
Meloxicam	107	1.0	0.1	0.1	0.1
Hepatitis B vaccine	97	0.9	0.1	0.1	0.1
Hepatitis A and B vaccine	97	0.9	0.1	0.1	0.1
Betamethasone systemic	95	0.9	0.1	0.1	0.1
Local anaesthetic injection	90	0.8	0.1	0.1	0.1
Typhoid vaccine (salmonella typhi)	80	0.8	0.1	0.1	0.1
Hepatitis A vaccine	73	0.7	0.1	0.1	0.1
Hydrocortisone injection	73	0.7	0.1	0.0	0.1
Medroxyprogesterone	72	0.7	0.1	0.1	0.1
Hepatitis A/salmonella typhi	68	0.6	0.1	0.1	0.1
Salbutamol	63	0.6	0.1	0.0	0.1
Budesonide/eformoterol	61	0.6	0.1	0.0	0.1
<i>Subtotal</i>	<i>7,473</i>	<i>70.0</i>	<i>.</i>	<i>.</i>	<i>.</i>
<b>Total medications supplied</b>	<b>10,670</b>	<b>100.0</b>	<b>11.0</b>	<b>10.3</b>	<b>11.8</b>

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

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

## 9.4 Medications advised for over-the-counter purchase

The GPs recorded 8,557 medications as recommended for OTC purchase, at rates of 8.9 per 100 encounters and 5.7 per 100 problems managed. At least one OTC medication was recorded as advised at 8.0% of encounters and for 5.3% of problems. Table 9.4 shows the top 30 advised medications at the CAPS generic level (ATC Level 5 equivalent). A wide range of medications were recorded in this group, the most common being paracetamol (26.2%).

**Table 9.4: Most frequently advised over-the-counter medications**

Generic medication	Number	Per cent of OTC (n = 8,557)	Rate per 100 encounters <sup>(a)</sup> (n = 96,688)	95% LCL	95% UCL
Paracetamol	2,243	26.2	2.3	2.0	2.6
Ibuprofen	498	5.8	0.5	0.4	0.6
Diclofenac topical	184	2.2	0.2	0.2	0.2
Sodium chloride topical nasal	166	1.9	0.2	0.1	0.2
Aspirin	145	1.7	0.2	0.1	0.2
Sodium/potassium/citric/glucose	140	1.6	0.1	0.1	0.2
Clotrimazole topical	139	1.6	0.1	0.1	0.2
Cetirizine	136	1.6	0.1	0.1	0.2
Paracetamol/Codeine	132	1.5	0.1	0.1	0.2
Loratadine	125	1.5	0.1	0.1	0.2
Fexofenadine	123	1.4	0.1	0.1	0.2
Ergocalciferol (Vit D analogue)	118	1.4	0.1	0.1	0.2
Folic acid	104	1.2	0.1	0.1	0.2
Saline bath/Solution/Gargle	96	1.1	0.1	0.1	0.1
Clotrimazole vaginal	86	1.0	0.1	0.1	0.1
Hydrocortisone/clotrimazole	103	1.2	0.1	0.1	0.1
Glucosamine	82	1.0	0.1	0.1	0.1
Simple analgesics	79	0.9	0.1	0.1	0.1
Cream/Ointment/Lotion NEC	77	0.9	0.1	0.0	0.1
Bromhexine	75	0.9	0.1	0.1	0.1
Sorbolene/glycerol/cetomacrogol	75	0.9	0.1	0.1	0.1
Sodium bicarbonate/citrate/tartaric acid	72	0.8	0.1	0.1	0.1
Hyoscine butylbromide	70	0.8	0.1	0.1	0.1
Ducosate otic	70	0.8	0.1	0.1	0.1
Loperamide	68	0.8	0.1	0.1	0.1
Cold and flu medication NEC	68	0.8	0.1	0.0	0.1
Hydrocortisone topical	60	0.7	0.1	0.0	0.1
Codeine phosphate/Ibuprofen	60	0.7	0.1	0.0	0.1

(continued)

**Table 9.4 (continued): Most frequently advised over-the-counter medications**

<b>Generic medication</b>	<b>Number</b>	<b>Per cent of OTC (n = 8,557)</b>	<b>Rate per 100 encounters<sup>(a)</sup> (n = 96,688)</b>	<b>95% LCL</b>	<b>95% UCL</b>
Ferrous sulphate	59	0.7	0.1	0.0	0.1
Budesonide topical nasal	59	0.7	0.1	0.0	0.1
<i>Subtotal</i>	<i>5,510</i>	<i>64.4</i>	—	—	—
<b>Total medications advised</b>	<b>8,557</b>	<b>100.0</b>	<b>8.9</b>	<b>8.3</b>	<b>9.5</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.

## 9.5 Opioids prescribed or supplied in 2008–09

Medications from the opioid group (ATC code N02A) were prescribed or supplied by GPs in BEACH 2008–09 at a rate of 3.3 per 100 encounters, and 2.2 per 100 problems managed. For every 100 problems managed with an opioid, 113 opioids were prescribed and four were supplied by GPs. The relationships between patients, their reasons for encounter and the problems managed with an opioid are presented in Figure 9.4.

### Patient age and sex

Patients aged < 25 years rarely received opioids from the GP. Patients aged 75+ years were most likely to be prescribed or supplied an opioid, at a rate of 4.2 per 100 encounters, followed by patients aged 45–64 years (3.8 per 100 encounters). There was no difference in the sex-specific opioid medication rates for males and females (2.8 per 100 encounters).

### Reasons for encounter

The reason for encounter most often given by patients at encounters where an opioid was prescribed or supplied was a request for a prescription (31.9 per 100 opioid encounters). The second most common reason was back complaint (21.2 per 100 opioid encounters).

### Problems managed with an opioid

Problems managed with an opioid were significantly less likely to be a new problem under management (14.3%, 95% CI: 12.6–15.9) compared with the average for BEACH (37.1%, 95% CI: 36.2–38.0). They were also more likely to be work-related (7.2%, 95% CI: 6.0–8.4 compared with the average of 1.8%, 95% CI: 1.7–2.0).

Of problems managed with an opioid, 60% were musculoskeletal. Back complaint was the most common problem, accounting for 23.0% of all problems managed with an opioid. Osteoarthritis and generalised/multiple site pain were also common, making up 10.8% and 6.4% of these problems respectively.

## Opioid medications prescribed or supplied

The most common individual opioid was oxycodone, which accounted for 35.8 of all opioids recorded. The second most common opioid was tramadol, accounting for 24.9% of the opioids. It is interesting to note that the prescribing of both these medications has increased significantly over the 10 years to 2008–09. Chapter 9 of the web-based 10-year summary entitled *General practice activity in Australia 1999–00 to 2008–09: 10 year data tables*<sup>1</sup> shows that the prescribing of oxycodone increased sixfold, and tramadol increased eightfold over the decade 1999–00 to 2008–09.

Buprenorphine was also frequently prescribed/supplied, accounting for 11.9% of the opioids, as was morphine sulphate, which made up 11.3% of all opioids recorded.

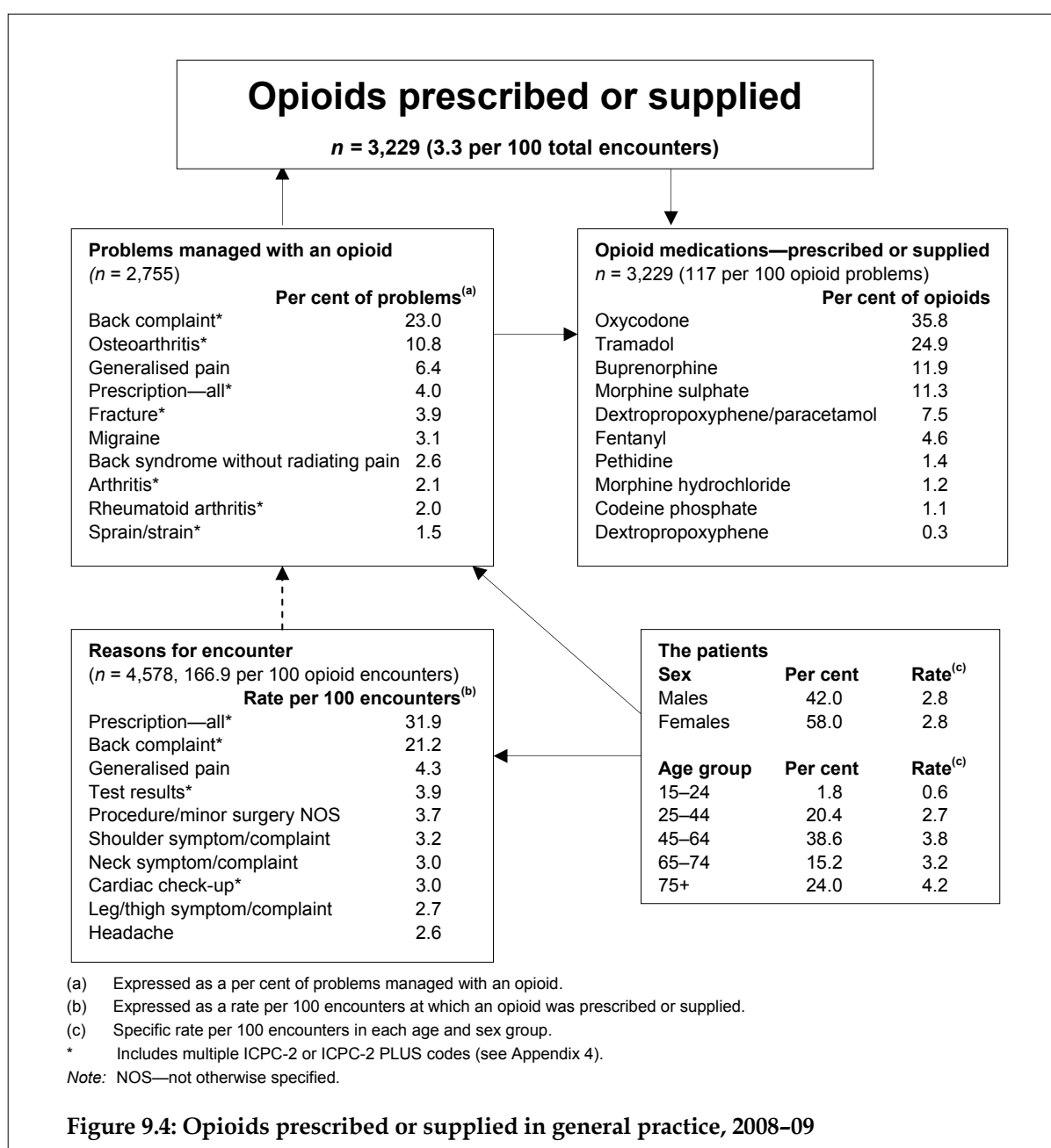


Figure 9.4: Opioids prescribed or supplied in general practice, 2008–09

## 9.6 Changes in medications over the decade 1999–00 to 2008–09

Data on medications are reported for each year from 1999–00 to 2008–09 in Chapter 9 of the web-based companion report entitled *General practice activity in Australia 1999–00 to 2008–09: 10 year data tables*.<sup>1</sup>

Results shown in that report include the significant decrease in medication prescribing rates per 100 encounters in 2008–09 compared with 1999–00. Among the drug groups which decreased were systemic antibacterials, and sex hormones such as systemic contraceptives and hormone replacement therapy. At the same time, prescribing rates of several drug groups increased significantly, for example lipid reducing agents and drugs for acid-related digestive disorders.

At the individual generic level, roxithromycin, levonorgestrel/oestradiol, cefaclor monohydrate and systemic diclofenac sodium were some of the medications for which significant decreases in prescribing rates occurred over time. On the other hand, significant increases were found in the prescribing rates of many medications. Among them were atorvastatin, metformin, oxycodone, tramadol and warfarin sodium.

Other changes that occurred over the 10-year period were a 30.0% increase in the proportion of prescriptions for which five repeats were recorded and a significant increase in the rate at which medications (mainly vaccines) were supplied to patients by GPs.