

5.6 Use of medications

Use of medications is the most common health-related action taken by Australians (ABS 1997b). Prescription medications are provided through community pharmacies and hospitals, and non-prescription medicines and complementary and alternative medicines are available from pharmacies and other retail outlets.

The 1995 National Health Survey provides the most recent data on the overall use of medicines in the total community. The survey estimated that 10.7 million Australians (59.1% of the population) used some form of prescribed or non-prescribed orthodox medication (medications other than homeopathic, herbal, nutritional and other complementary and alternative medicines) in the 2 weeks before interview, 4.7 million (25.8%) used vitamins or minerals and 1.7 million (9.4%) used herbal or natural medications. In general, the use of medication as a health-related action increased with age, with the lowest usage in the age group 5–14 years (48.9%) and the highest in the age group 75 years and over (91.6%). More females reported medication use than males (74.0% compared with 63.4%).

Use of orthodox medicines was also more common in females (64.0%) than in males (54.2%) and most common in persons aged 75 years or more (87.3%). Most types of drugs were most commonly used by persons aged 65 years or more; however, medications for coughs and colds were most commonly reported for children under the age of 5 years (16.7%), asthma medications were most common in children in the age group 5–14 years (9.6%) and use of medications for allergies and pain relievers was most often reported by persons in the age group 35–44 years (4.3% and 31.3% of people in that age group, respectively).

Prescribed medicines

The 1995 National Health Survey estimated that 6.54 million Australians used medications that had been prescribed by a medical practitioner in the 2 weeks prior to interview. The types of drugs most commonly used were medications for fluid, heart, blood pressure (1.93 million people), asthma medications (1.01 million people) and pain relievers (752,000 people).

Other information on the apparent use of prescription medicines in the community is compiled from two sources (DHAC 1999b). The first is the Health Insurance Commission records of prescriptions submitted for payment of a subsidy under the Pharmaceutical Benefits Scheme or the Repatriation Pharmaceutical Benefits Scheme (PBS and RPBS, see Box 5.9, page 302). The second is the Pharmacy Guild of Australia's ongoing survey of a representative sample of about 250 community pharmacies, which provides an estimate of the use of non-subsidised prescription medicines. These sources do not cover use of medications in public hospitals and only cover use of some medications in private hospitals.

In 1998–99, there were 128.4 million community PBS prescriptions (19.3 million to general patients, 109.1 million or 85.0% to concessional patients) and about 45 million prescriptions which did not attract a subsidy (35 million below the copayment threshold and about 10 million private prescriptions, i.e. prescriptions for drugs not

Box 5.9: The Pharmaceutical Benefits Scheme

The Pharmaceutical Benefits Scheme (PBS) aims to provide timely, reliable and affordable access for the Australian community to necessary and cost-effective medicines, subsidising the cost of a wide range of prescription medications. As at 1 February 2000, 574 generic drugs, available in 1,391 forms and strengths (items) marketed as 2,084 different drug products (brands) were covered by the scheme. The items that attract benefits are reviewed frequently, and the price of every item covered is negotiated with the supplier.

Australian residents and visitors from those countries with which Australia has a Reciprocal Health Care Agreement are eligible for PBS benefits. Patients are grouped into two classes. General patients pay the first \$20.60 (from 1 January 2000) for each prescription item. Concessional patients (people with low incomes and sickness beneficiaries who hold a healthcare card) make a copayment of \$3.30 per item.

Individuals and families are protected from large overall expenses for PBS-listed medicines by safety nets. Once a general patient and/or their immediate family has spent \$631.20 in a calendar year, the patient copayment per item decreases from \$20.60 to the concessional rate of \$3.30 per item. For concessional patients, the \$3.30 copayment is not required once their expenditure on PBS items exceeds \$171.60 in a calendar year. These copayments and safety net thresholds are indexed to movements in the Consumer Price Index from 1 January each year.

Patients may pay more than the standard copayment where a PBS item is priced above the benchmark price for different brands of the same drug or the benchmark price for a particular therapeutic group of drugs. These additional payments do not count towards safety nets.

The PBS also funds a range of miscellaneous services including highly specialised drugs, IVF-centre hormones, growth hormones, emergency (Doctor's Bag) supplies and methadone.

The Commonwealth also helps in the provision and purchase of drugs through the Repatriation Pharmaceutical Benefits Scheme (RPBS), which provides assistance to specific groups of Australian war veterans and dependants. It is generally similar to the PBS for concessional beneficiaries.

listed on the PBS or RPBS) (DHAC 1999b). The number of prescriptions per person remained fairly constant over the period 1995 to 1998, averaging around 6.7 PBS prescriptions and 2.5 non-PBS prescriptions per year.

Use of prescription medicine can be described using the defined daily dose per 1,000 population per day (DDD/1,000/day) as the unit of measurement. The DDD is based on the assumed average dose per day of the drug, used for its main indication (reason for use) by adults. It provides an estimate of how many people per 1,000 population are taking the standard dose of the drug each day, on average, and allows for comparisons independent of differences in quantities of drugs per prescription. In 1998, salbutamol (a bronchodilator used for asthma) was the most commonly used drug using the DDD/1,000/day measurement (Table 5.43), followed by frusemide (a diuretic) and simvastatin (used for serum lipid reduction). In contrast, the top three drugs by prescription volume were paracetamol (an analgesic; 4.6 million PBS/RPBS prescriptions and 0.1 million

other prescriptions), amoxicillin (an antibiotic; 2.3 million PBS/RPBS prescriptions and 2.3 million other prescriptions) and salbutamol (3.6 million PBS/RPBS prescriptions and 0.9 million other prescriptions).

The BEACH survey of general practice activity collects information on drugs prescribed by GPs. In 1998–99, antibiotics was the drug group most commonly prescribed by general practitioners, accounting for 17.8% of all prescriptions. This was followed by cardiovascular drugs (14.8%), central nervous system drugs (12.0%), psychological drugs (8.3%), respiratory drugs (7.3%) and hormones (6.9%).

Table 5.43: Top 10 drugs by defined daily dose per 1,000 population per day

Rank and drug name	Action	PBS/RPBS	Non-PBS/RPBS	Total community use
1 Salbutamol	Bronchodilator (used for asthma)	22.5	6.5	29.0
2 Frusemide	Diuretic	20.3	2.2	22.6
3 Simvastatin	Serum lipid reduction	21.9	0.1	22.0
4 Enalapril	Anti-hypertensive	18.7	0.3	19.0
5 Ranitidine	Peptic ulcer treatment	17.0	0.1	16.9
6 Ipratropium bromide	Bronchodilator (used for asthma)	15.4	0.0	15.5
7 Amlodipine	Anti-hypertensive	13.9	0.1	13.9
8 Budesonide	Asthma preventative	13.5	0.0	13.6
9 Felodipine	Anti-hypertensive	10.9	1.0	11.9
10 Thyroxine	Thyroid hormone	7.1	4.6	11.7

Source: DHAC 1999b.

The most frequently prescribed individual generic drugs are listed in Table 5.44 (page 304). Five of the top ten drugs are from the antibiotic group. Simple analgesics were very frequently prescribed, probably reflecting their prescription for health care cardholders for whom they are a cheaper option than over-the-counter purchase. Influenza vaccine represented 1.8% of all prescriptions, presumably reflecting a response by patients and GPs to public health campaigns to increase vaccination levels in at-risk groups.

Non-prescribed medicines

The 1995 National Health Survey estimated that 6.3 million people (34.6% of the population) used orthodox medications that were not prescribed in the 2 weeks prior to interview, and 178,900 Australians (1.0%) used medications provided by a doctor or hospital (ABS 1997b). The most commonly used types of non-prescribed drugs were pain relievers (used by 3.6 million people) and skin ointments and creams (1.1 million people). Those drug types were also most commonly reported as provided by doctors or hospitals (48,600 people and 14,500 people respectively).

The BEACH survey collects information on drugs that GPs advise patients to purchase over the counter, and those that the GPs supply directly. About 8.0% of drugs were advised for over-the-counter purchase in 1998–99 and 6.7% were supplied by the GP, with the remainder being prescribed. Extrapolated, this represented about 8 million recommendations for purchase of drugs, and 6.7 million occasions at which at least one

Table 5.44: GP consultations: 20 most frequently prescribed drugs, 1998-99

Generic drug	Percentage of prescriptions	Prescriptions per 100 encounters
Paracetamol	4.2	3.9
Amoxycillin	3.5	3.2
Paracetamol/codeine	2.8	2.7
Salbutamol	2.6	2.4
Cefaclor monohydrate	2.3	2.2
Cephalexin	2.3	2.1
Roxithromycin	1.9	1.8
Amoxycillin/potassium clavulanate	1.9	1.8
Influenza virus vaccine	1.8	1.7
Temazepam	1.5	1.4
Diclofenac sodium systemic	1.4	1.3
Levonorgestrel/ethinyloestradiol	1.3	1.2
Doxycycline HCl	1.2	1.2
Diazepam	1.2	1.1
Erythromycin	1.2	1.1
Ranitidine	1.1	1.0
Atenolol	1.1	1.0
Furosemide (furosemide)	1.0	1.0
Betamethasone topical	1.0	0.9
Simvastatin	1.0	0.9
<i>Subtotal</i>	36.2	..
Total prescribed	100.0	93.6

Note: Based on 90,710 prescriptions.

Source: AIHW GPSCU: Britt et al. 1999b.

drug was supplied from the GPs' stocks or samples. The drugs most commonly advised for over-the-counter purchase were paracetamol, chlorpheniramine/phenylephid (an expectorant) and topical clotrimazole (an anti-infective). GPs most commonly supplied influenza vaccine, triple antigen vaccine and oral polio vaccine.

Complementary and alternative medicines

In addition to the prescribed pharmaceuticals and other orthodox drugs, some Australians use a range of complementary and alternative medicines, including homoeopathic, herbal and nutritional medications. The 1995 National Health Survey estimated that 25.8% of Australians used vitamin or mineral supplements in the 2 weeks prior to interview, and 9.4% used herbal or natural medications (ABS 1997b). Vitamin or mineral supplements were used more commonly by females (30.3%) than by males (21.3%), as were herbal or natural medications (12.0% and 6.9% respectively). Persons aged 45 to 54 years were most likely to have used vitamin and mineral supplements (32.3%), and herbal or natural medications were most commonly used by persons aged between 45 and 64 years (13.6%).

In a 1993 representative survey of South Australian residents, 48.5% of respondents (54.8% of females and 33.8% of males) reported using at least one non-medically prescribed alternative medicine in the past year (MacLennan et al. 1996). Non-prescribed vitamins were most commonly reported (41.2% of females and 33.8% of males), followed by herbal medicines (11.1% of females and 8.6% of males), mineral supplements (10.3% of females and 8.1% of males) and evening primrose oil (12.7% of females and 2.7% of males). Respondents reported spending between \$1 and \$500 each on alternative medicines each month, with a median expenditure of \$10. Extrapolated to the total Australian population, this expenditure corresponded to an estimated \$621 million spent on complementary and alternative medicines in 1993.

Expenditure on pharmaceuticals

Total expenditure on non-hospital pharmaceuticals was \$5,335 million in 1997–98: \$3,377 million on benefit-paid pharmaceuticals and \$1,958 million on other non-hospital pharmaceuticals. The Commonwealth Government contributed \$2,783 million to the benefit-paid pharmaceuticals and individuals paid the remaining \$593 million (Table 5.45). Public hospital expenditure reported to the AIHW National Public Hospital Establishments Database was about \$611 million.

Table 5.45: Expenditure on pharmaceuticals^(a) in Australia, 1997–98 (\$ million)

	Benefit-paid pharmaceuticals	All other pharmaceuticals	Total pharmaceuticals
Public sector			
Commonwealth Department of Veterans' Affairs	205	..	205
Commonwealth Department of Health and Aged Care	2,578	2	2,580
Public acute care and psychiatric hospitals	..	611	611
Other State, Territory and local government	..	16	16
<i>Total public sector</i>	<i>2,783</i>	<i>629</i>	<i>3,412</i>
Private sector			
Health insurance funds	..	34	34
Individuals	593	1,869	2,463
Workers' compensation insurance	..	27	27
Third party motor vehicle insurance	..	10	10
Private hospitals	..	n.a.	n.a.
<i>Total private sector^(b)</i>	<i>593</i>	<i>1,940</i>	<i>2,534</i>
Total^(b)	3,377	2,569	5,946

(a) Not including complementary and alternative medicines.

(b) Not including most expenditure in private hospitals.

Source: AIHW Health Expenditure Database.

The PBS was the largest single contributor to expenditure on pharmaceuticals. PBS expenditure on prescriptions and other miscellaneous services was \$2,785 million in 1997–98 and increased by 10% to \$3,070 million in 1998–99 (Table 5.46, page 306) (DHAC 1999c). Costs of the scheme and patient copayments have both risen each year in recent years, with the proportion met by the scheme remaining constant at about 82%.

Table 5.46: Cost of PBS items to the PBS and patients, 1994–95 to 1998–99 (\$ million)

	1994–95	1995–96	1996–97	1997–98	1998–99
Patient contributions for PBS prescription items (a)	445	478	530	570	601
General patients	230	252	278	294	318
Concessional patients	214	227	252	276	283
PBS payments for PBS prescription items (b)	1,882	2,191	2,333	2,527	2,782
General patients—no safety net	291	343	392	412	468
General patients—safety net	93	119	73	99	107
Total general patients	384	462	465	510	576
Concessional patients—no safety net	1,195	1,369	1,466	1,576	1,740
Concessional patients—safety net	303	360	402	440	467
Total concessional patients	1,497	1,730	1,867	2,016	2,207
<i>Total cost of PBS prescription items (a) + (b)</i>	<i>2,326</i>	<i>2,669</i>	<i>2,863</i>	<i>3,097</i>	<i>3,384</i>
Miscellaneous PBS service payments (c)	110	135	206	259	287
Total expenditure by the PBS (b) + (c)	1,991	2,327	2,538	2,785	3,070
Total cost of PBS items to the PBS and patients (a) + (b) + (c)	2,436	2,805	3,068	3,356	3,671

Source: DHAC 1999c.

5.7 Health promotion and prevention

Health promotion and prevention are part of the suite of activities generally referred to as public health or population health. Health promotion and prevention activities have traditionally included population screening (e.g. for breast cancer), mass immunisation, water fluoridation, food inspection and quarantine, communicable disease control and surveillance, and health promoting communications (including social marketing), to name just a few.

In the last couple of decades, the scope of population health interventions and infrastructure has extended to include surveillance of disease risk factors, management of healthy growth and development (including, for example, parenting effectiveness training and support), mental health promotion, consumer product safety, and so on.

Population health interventions are characterised by a focus on:

- prevention, promotion and protection as opposed to treatment;
- population groups rather than the individual;
- the factors that affect health and causes of illness.

In its population health planning framework document, the National Public Health Partnership (NPHP 2000) lists 10 types of public health interventions covering policy and program areas (see Box 5.10).

For a particular public health issue, a mixture of intervention types is typically employed (constituting an intervention portfolio)—this is another characteristic of public health action, namely a comprehensive program of integrated activities to tackle the health issue. This section presents a case study of an intervention portfolio in the area of tobacco control.