



## 7.6 Medicines in the health system

Medicines contribute to Australians' quality of life and improvements in life expectancy by curing or delaying the onset of diseases, relieving symptoms and preventing health complications. Some medicines are only available via prescription from a health professional, while others can be bought over-the-counter at places such as pharmacies and supermarkets.

Providing consumers with access to affordable medicines is a key part of the Australian health care system. The Australian Government helps people to pay for many medicines dispensed in nearly 300 million prescriptions each year under two subsidy schemes (Box 7.6.1)—at a cost of more than \$12 billion in 2016–17.

This article describes some of the recent trends in the volume and cost of medicines dispensed under the Pharmaceutical Benefits Scheme (PBS) and the Repatriation Pharmaceutical Benefits Scheme (RPBS), as well as those not covered by these schemes. The focus of this article is on the PBS, rather than the RPBS, as the PBS accounts for the majority of all prescriptions and payments.

### Box 7.6.1: What are the PBS and the RPBS and how do they work?

The PBS and the RPBS subsidise the cost of many medicines in Australia. The PBS is available for current Medicare card holders and the RPBS for Department of Veterans' Affairs (DVA) Health Card holders.

The Australian Government administers the PBS under the *National Health Act 1953*; the RPBS is administered under the *Veterans' Entitlements Act 1986*. The PBS began in 1948 and has expanded over time. Today, around 5,300 brands of medicines, used to treat a wide range of health conditions, are listed on the Schedule of Pharmaceutical Benefits. The RPBS subsidises pharmaceuticals available under the PBS and additional medicines and items (including wound dressings) for eligible veterans, war widows and widowers, and their dependants.

Under the PBS and the RPBS, the Australian Government sets a maximum 'co-payment' amount that people pay towards the cost of their medicines. Table 7.6.1 shows this amount, and the eligibility requirements to access the schemes.

The Australian Government pays pharmacies the difference between a consumer's co-payment and the PBS price of a medicine, as listed on the Schedule of Pharmaceutical Benefits. Some medicines are priced below the co-payment amount, so the consumer pays the total cost and the government does not contribute.

Patients fall into two broad categories: general and concessional. By far the majority of subsidised PBS prescriptions (around 90%) are dispensed for concessional patients, whose co-payment is substantially less than that to general patients. Concessional patients whose accumulated PBS co-payments reach the 'safety net' threshold amount during a calendar year (\$384 for 2018) pay no further co-payments for PBS/RPBS medicines for the rest of the year.

(continued)



Box 7.6.1 (continued): What are the PBS and the RPBS and how do they work?

Table 7.6.1 Eligibility and co-payment amounts for the PBS and RPBS

Patient category	Eligibility to access	Maximum co-payment <sup>(a)</sup>
General	Medicare card (for PBS) or	\$39.50 (non-safety net)
	DVA Health Card (for RPBS)	\$6.40 (safety net)
Concessional	Medicare card and one of the following:	
	• Pensioner Concession Card	\$6.40 (non-safety net)
	• Seniors Health Card	\$0.00 (safety net)
	• Health Care Card	
	• DVA Health Card	
	• Safety Net Card	

(a) As at 1 January 2018.

Source: Department of Health 2018.

Generally available medicines and those available under special arrangements

All subsidised medicines are listed on the Schedule of Pharmaceutical Benefits under Section 85 (s85) of the National Health Act 1953. Most of these medicines (referred to as s85 medicines) are listed on the General Schedule and are generally available to consumers. They are dispensed mainly through community pharmacies, although some are available through eligible hospitals to day patients and patients on discharge.

Other subsidised medicines (referred to as s100 medicines) are available under 'special arrangements', described in Section 100 (s100) of the Act. The special arrangements for many of these medicines mean that they are prescribed under specific conditions, supplied through hospitals, require specialised medical supervision, and are high in cost.

An example is the Highly Specialised Drugs (HSD) Program, which accounted for more than 60% of the cost to the Australian Government of all s100 medicines in 2016–17. This program allows for certain medicines to be prescribed and dispensed in hospitals and now (via the 'HSD community access' arrangements) through general practitioners (GPs) and community pharmacies. HSD includes treatments for hepatitis and human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS).

Other programs operating under the special arrangements of s100 of the Act include the supply of medicines for opiate addiction treatment, chemotherapy and in-vitro fertilisation (IVF) programs. They also include arrangements to supply medicines to people living in isolated areas—such as to Aboriginal and Torres Strait Islander patients in remote areas of Australia via Aboriginal Health Services.



The PBS and RPBS do not cover:

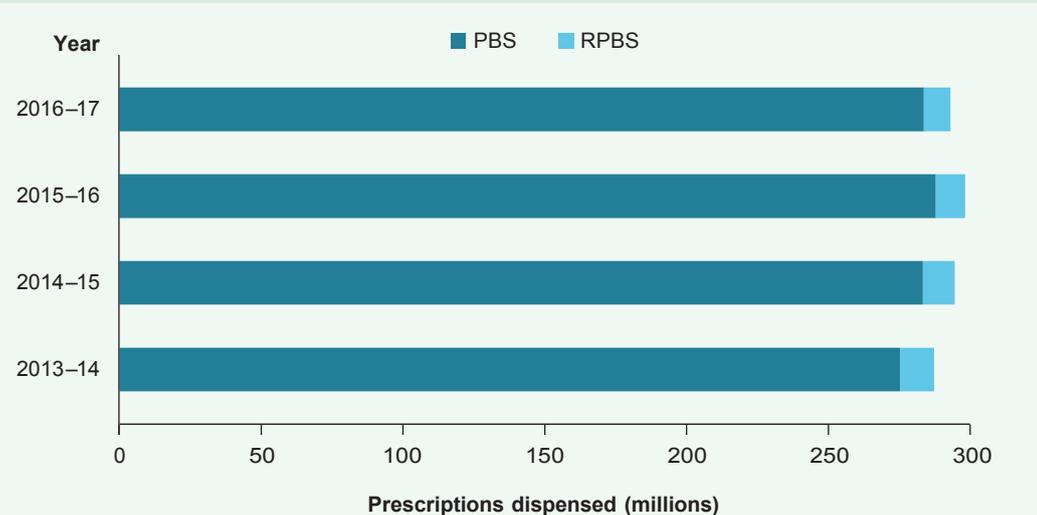
- medicines dispensed via private prescriptions
- over-the-counter medicines
- medicines supplied to public hospital in-patients.

Another Australian Government program for medicines, separate from the PBS, is the Life Saving Drugs Program. It currently provides subsidised access to 13 expensive life-saving medicines for 9 rare and life-threatening conditions. These medicines are not considered cost-effective enough to be listed on the PBS but are funded and made available to eligible patients with recognised rare diseases.

## The number of prescriptions fell in 2016–17 while spending grew

In 2016–17, more than 280 million prescriptions were dispensed under the PBS (Figure 7.6.1), down nearly 2% from the previous year. A further 9.3 million prescriptions were dispensed under the RPBS, also a drop (10%) from 2015–16 (Department of Health 2017).

Figure 7.6.1: Number of PBS and RPBS prescriptions dispensed, 2013–14 to 2016–17



Note: Includes prescriptions priced above and below the co-payment; s85 and s100 medicines; by date of supply.

Source: AIHW analysis of Department of Health PBS and RPBS data 2018; Table S7.6.1.

In 2016–17, the Australian Government spent \$12.1 billion on all PBS medicines (including s100 medicines)—an increase of 11% from \$10.8 billion the previous year. This amounts to about 0.7% of gross domestic product (GDP), contributing slightly more as a proportion of GDP than the previous year.

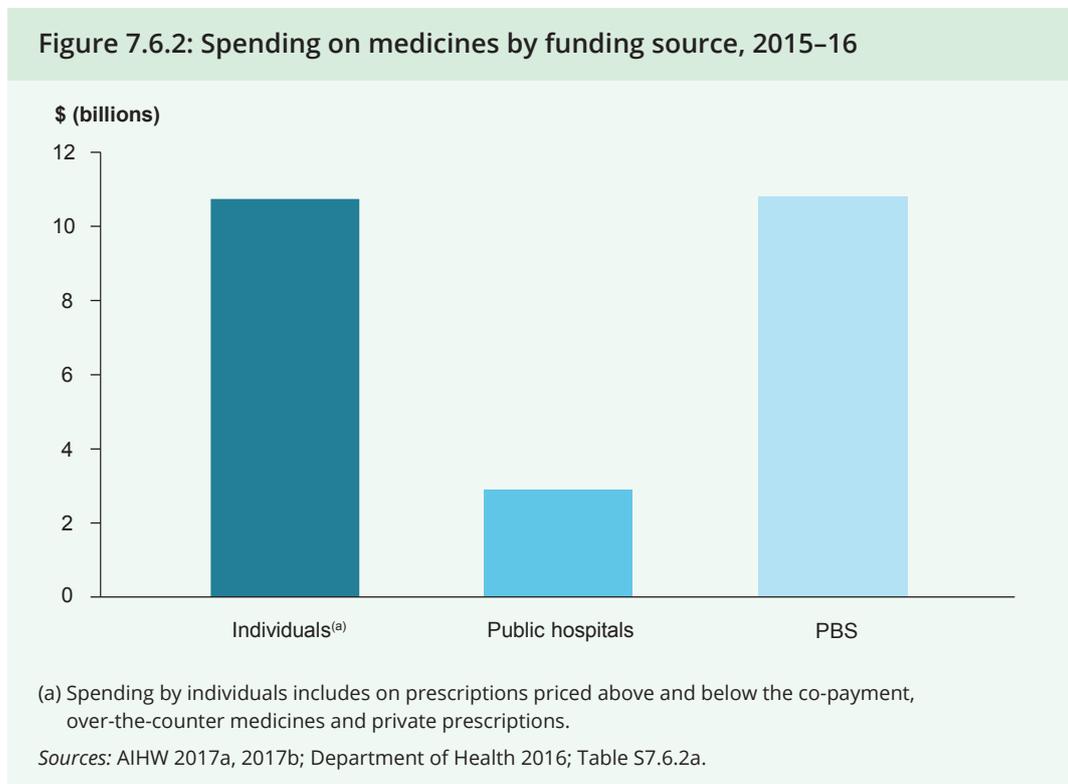


Consumers paid \$1.3 billion in patient contributions on generally available (s85) prescriptions priced above the co-payment in 2016–17—about 13% of the total expenditure on PBS medicines—with the Australian Government contributing the remaining 87% (Department of Health 2017).

Individual consumers spend on medicines both within and outside the PBS. Medicines that do not require a prescription can be bought over-the-counter in a pharmacy or in other retail outlets (for example, supermarkets). Individuals spent a total of \$10.8 billion on medicines (including prescriptions priced above and below the co-payment, over-the-counter medicines and private prescriptions) in 2015–16 (AIHW 2017a).

Aside from government and individual consumers, hospitals are a major source of spending on medicines. Public hospitals reported spending around \$2.9 billion on medicine supplies not covered by the PBS/RPBS in 2015–16 (AIHW 2017b; Figure 7.6.2).

Figure 7.6.2: Spending on medicines by funding source, 2015–16

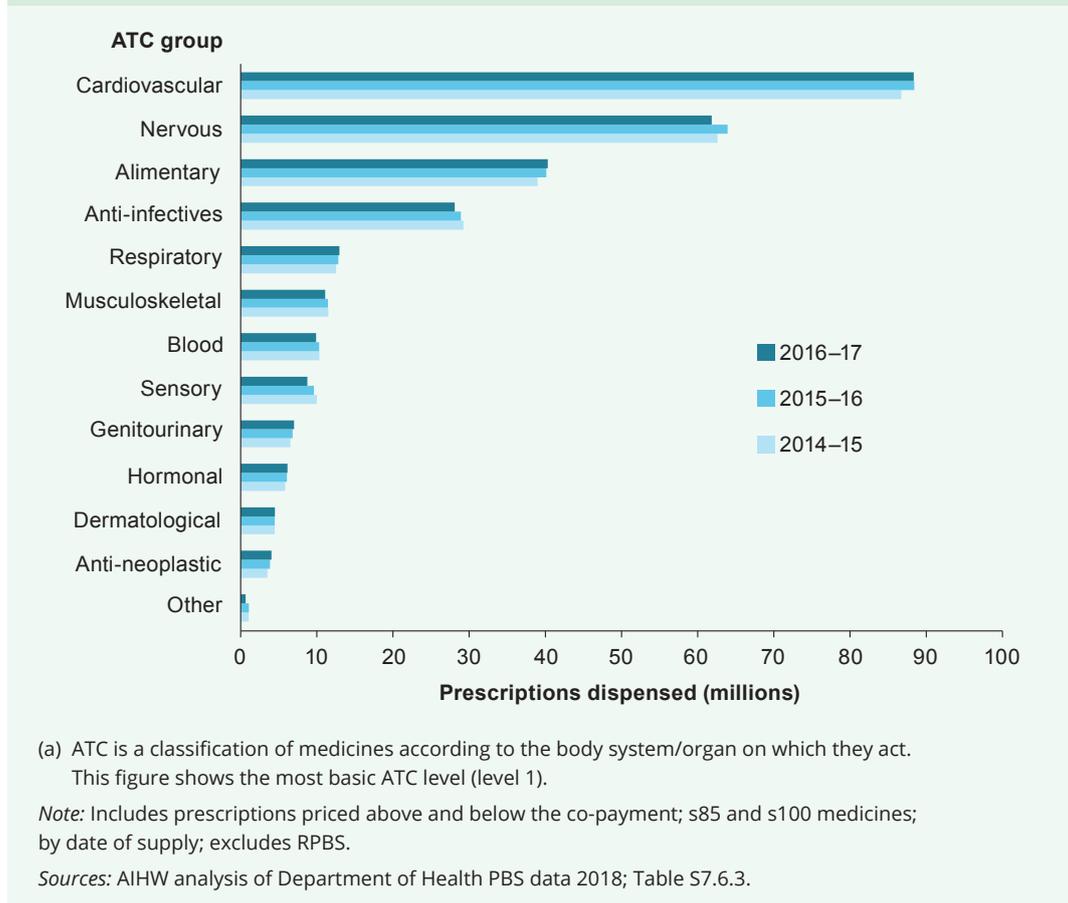


## Cardiovascular medicines are the most often dispensed

Medicines used to treat cardiovascular conditions were dispensed in larger volumes than medicines for other conditions over the 3 years to 2016–17 (Figure 7.6.3). These include cholesterol-lowering medicines (such as statins)—as raised cholesterol is a major risk factor for developing cardiovascular disease.



Figure 7.6.3: Number of PBS prescriptions dispensed by Anatomical Therapeutic Chemical<sup>(a)</sup> (ATC) group, 2014–15 to 2016–17



Although the volume of medicines dispensed for cardiovascular disease remains higher than for other groups of medicines, the number of statins dispensed has been relatively stable over recent years. As an example, atorvastatin—the medicine most often dispensed—was dispensed in a similar volume from 2014–15 to 2016–17—at around 10 million prescriptions each year (Figure 7.6.4).

### Other commonly dispensed medicines

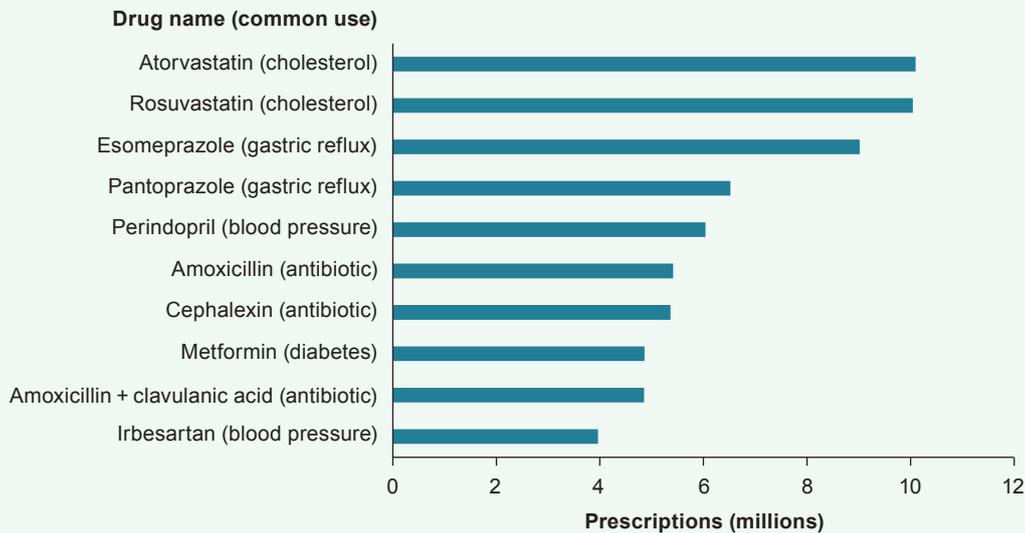
Medicines to treat nervous system conditions were the second largest group dispensed. Although the number of prescriptions dispensed for these medicines has historically been on the rise, it fell in 2016–17 (Figure 7.6.3).

Medicines for the digestive tract (alimentary system) were the third most dispensed group and showed a slight growth in prescriptions from 2014–15 to 2016–17. For example, medicines to treat conditions caused by too much acid in the stomach showed marginal increases in the volume dispensed in 2016–17, with esomeprazole reaching 9 million prescriptions and pantoprazole 6.5 million prescriptions (Figure 7.6.4).

Three types of antibiotics were among the 10 most commonly dispensed medicines (Figure 7.6.4). The prescribing of antibiotics is explored further in Box 7.6.2.



Figure 7.6.4: Ten most common medicines, by number of PBS prescriptions dispensed, 2016–17



Note: s85 medicines only; includes prescriptions priced above and below the co-payment; by date of supply; excludes RPBS.

Source: Department of Health 2017; Table S7.6.4.

### Box 7.6.2: Prescribing of antibiotics

Antibiotics destroy or slow the growth of bacteria. They are used to treat a variety of infection sites, such as skin, respiratory tract and urinary tract infections, as well as infected wounds.

Australia has relatively high rates of antibiotic prescribing compared with other countries and with the Organisation for Economic Co-operation and Development (OECD) average. Medicine usage can be measured as Defined Daily Doses (DDDs). These are the doses for a particular medicine that are assumed to be the average per day for an adult. The overall volume of antibiotics dispensed in Australia was 23.4 DDDs per 1,000 people per day in 2015, higher than the OECD average of 20.6 DDDs (OECD 2017).

In 2016–17, more than 60% of patients who used the PBS were dispensed at least one antibiotic. The most commonly dispensed antibiotics were amoxicillin, cephalexin, and amoxicillin with clavulanic acid.

There is concern that, in some cases, antibiotics may have been prescribed inappropriately to treat a condition—for example, a viral infection or a toothache. However, prescribers of PBS medicines are currently not required to include on a script the reason they prescribed a medicine, limiting the ability to assess if antibiotics are being prescribed unnecessarily in Australia.

Unnecessary prescribing of antibiotics leads to a higher risk of adverse side effects and, importantly, increased anti-microbial resistance in the population. Anti-microbial resistance poses a major health issue because the bacteria adapt so that antibiotics no longer work on them, leading to the emergence of so-called 'superbugs' (WHO 2017).



## GPs prescribe the most medicines

Up until 2008, only medical practitioners (GPs and specialists) and participating dental practitioners could prescribe PBS medicines. Authorised optometrists have been able to write certain PBS prescriptions since January 2008 and authorised nurse practitioners and midwives since September 2010.

GPs still prescribe the most PBS medicines—around 90% of all medicines dispensed. Hence, the most commonly dispensed medicines from prescriptions issued by GPs in 2016–17 broadly reflect overall prescribing patterns, as shown in Figure 7.6.4.

## Medicines commonly prescribed by other occupation groups

The most commonly dispensed medicines for 2016–17, by authorised occupation group, are outlined in Table 7.6.2. Note that some medicines listed on the PBS may be used to treat a variety of conditions (indications) and this article refers to just some of the common conditions treatable by these medicines.

Table 7.6.2: Most common medicines, by number of prescriptions dispensed, by selected occupational groups, 2016–17

Occupation group	Most common medicine(s)	Used to treat...
Medical specialists (other than GPs)	Latanoprost; methylphenidate	High pressure inside the eye, due to glaucoma or other eye diseases; Attention Deficit Hyperactivity Disorder and narcolepsy
Dentists	Amoxicillin	Bacterial infections
Optometrists	Fluorometholone; latanoprost	Eye conditions due to inflammation or injury; high pressure inside the eye
Nurse practitioners	Atorvastatin; esomeprazole	High cholesterol; gastric reflux
Midwives	Cephalexin	Bacterial infections

Note: Includes prescriptions priced above and below the co-payment; s85 and s100 medicines included; by date of supply; excludes RPBS.

Source: AIHW analysis of Department of Health PBS data 2018; Table S7.6.2b.

## People aged 65 and over take the most medicines

The majority of PBS prescriptions are dispensed to people aged 65 and over (Figure 7.6.5). In 2016–17, people aged 80–84 had the highest rate of script dispensing per 1,000 people, followed by people aged 75–79. This is broadly consistent with people in these age groups also using a relatively higher proportion of hospital and other health services (AIHW 2016:349–65).

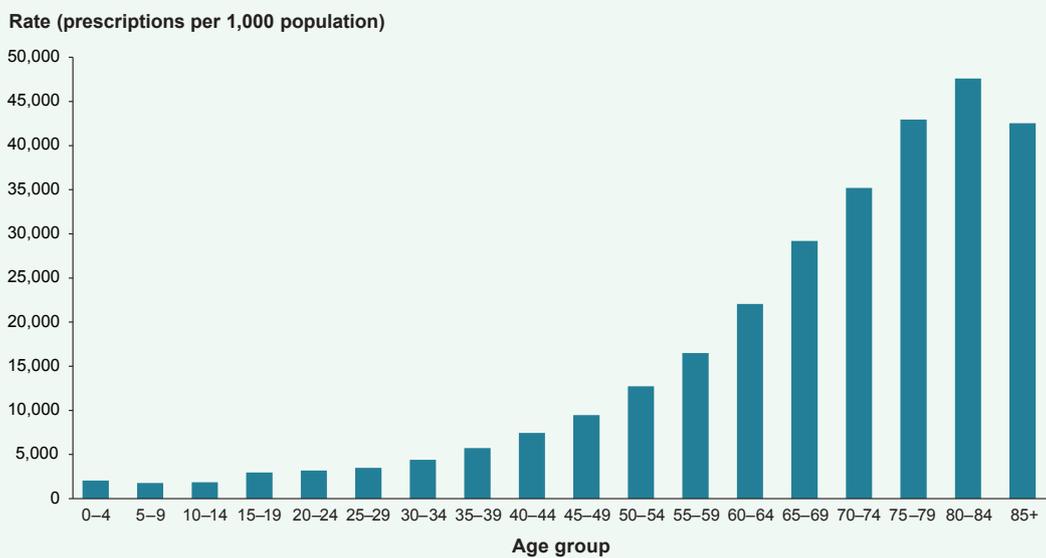


For people aged 50 and over, the most commonly dispensed medicines were:

- atorvastatin and rosuvastatin—mainly used to treat high cholesterol and lower the risk of stroke, heart attack or other heart complications
- esomeprazole and pantoprazole—mainly used to reduce the amount of acid produced in the stomach and prevent peptic ulcers.

As people aged 50 and over received 75% of all PBS medicines dispensed, these commonly dispensed medicines are consistent with those most dispensed overall (Figure 7.6.3).

Figure 7.6.5: Rate of PBS prescriptions dispensed, by age group, 2016–17



Notes

1. Includes prescriptions priced above and below the co-payment; s85 and s100 medicines; by date of supply; excludes RPBS.
2. The population figures are taken from the Australian Bureau of Statistics Estimated Resident Population (the official estimate of the Australian population) as at 31 December 2016.

Source: AIHW analysis of Department of Health PBS data 2018; Table S7.6.5.

## A few specialised medicines account for a disproportionate share of government spending

In 2016–17, around 1% of all PBS prescriptions were for medicines made available under the special arrangements of s100. Yet the total cost of s100 medicines accounted for 26% of spending on all PBS medicines, up from 19% in 2011–12 (Figure 7.6.6).

While government spending on all other medicines has remained relatively stable, spending on s100 medicines has been increasing—it grew by around 15% in the year from 2015–16 to 2016–17 (Department of Health 2017).

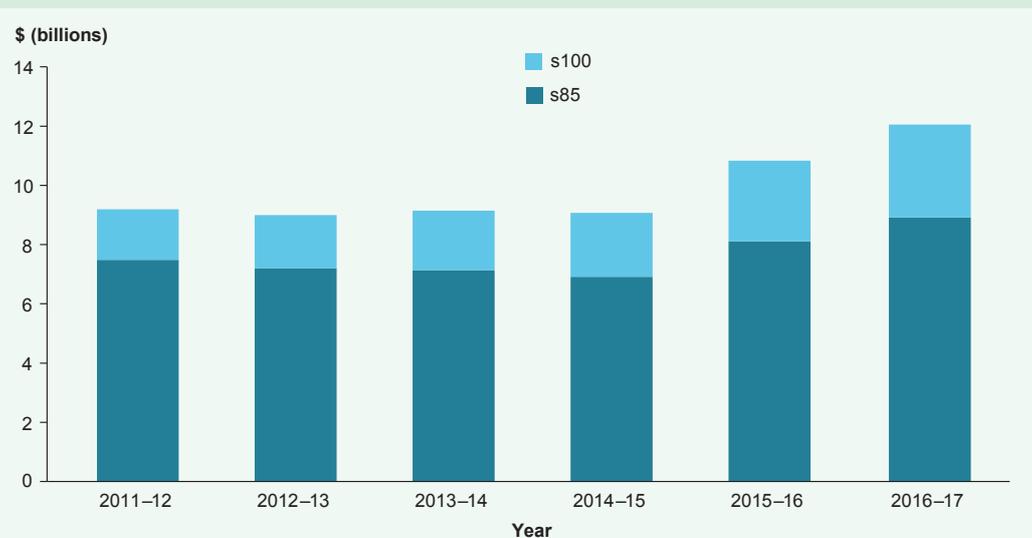


The main increases in spending for s100 medicines are due to the steady rise in HSD and chemotherapy medicines. The often high cost of these medicines means that even a moderate growth in the number of prescriptions dispensed can substantially affect spending. For example, from 2015–16 to 2016–17, the number of prescriptions dispensed for:

- pertuzumab (for breast cancer) increased by 45%, which led to a rise in government spending of about \$10 million
- pembrolizumab (for melanoma) increased by 65%, which led to a rise in government spending of more than \$50 million.

The rise in spending on s100 medicines may partly be explained by more comprehensive recording of PBS data for s100 prescriptions. Other factors contributing to the increase include the growing incidence of diseases such as cancer and Alzheimer disease, improved disease diagnosis and treatment methods, and the expensive new medicines produced by pharmaceutical companies' research and development programs.

**Figure 7.6.6: Government expenditure on PBS generally available (s85) medicines and medicines available under special arrangements (s100), 2011–12 to 2016–17**



Note: Includes s85 and s100 medicines; by date of supply; excludes RPBS.

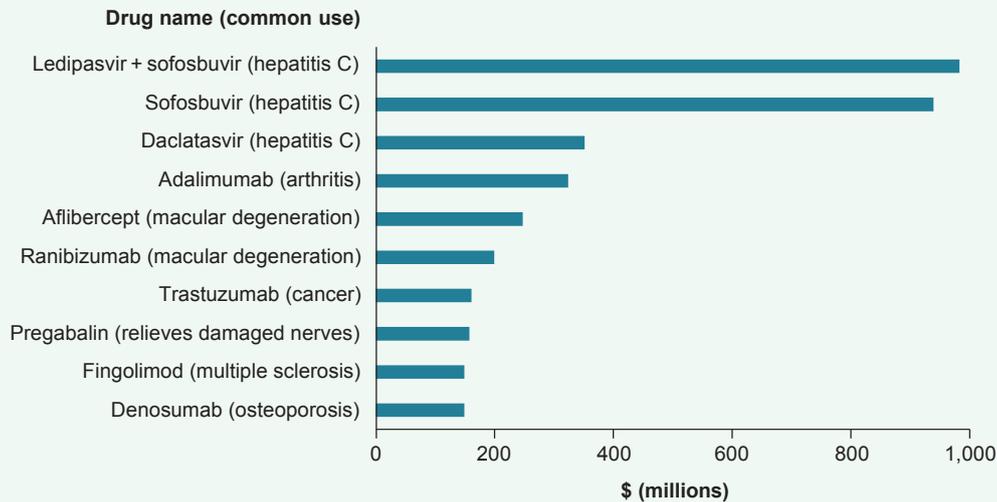
Source: AIHW analysis of Department of Health PBS data 2018; Table S7.6.6.

## New hepatitis C medicines accounted for the most government spending

In 2016–17, some relatively new hepatitis C antiviral medicines, medicines for arthritis, and medicines to treat macular degeneration (a leading cause of blindness) accounted for the most spending on medicines by the Australian Government (Figure 7.6.7).



Figure 7.6.7: Ten medicines accounting for the most Australian government spending on medicines, 2016–17



Note: Includes s85 and s100 medicines; by date of supply; excludes RPBS.

Source: AIHW analysis of Department of Health PBS data 2018; Table S7.6.7.

Approximately 230,000 Australians are infected with the hepatitis C virus, which causes liver inflammation; however, before 2016, less than 2% of people with hepatitis C were treated and cured annually. In March 2016, the Australian Government listed several new direct-acting antiviral medicines for hepatitis C on the PBS. Compared with the medicines previously available for people with hepatitis C, these are easier to take, have fewer side effects and are more effective, with the capacity to eventually cure people of the disease.

Newer medicines—especially those still under a patent—are usually more expensive than older ones (see Box 7.6.3). The listings for hepatitis C (ledipasvir + sofosbuvir; sofosbuvir; daclatasvir) on the general schedule in March 2016 are some of the costliest medicines on the PBS. Expenditure on these medicines contributed substantially to an increase in PBS expenditure from March 2016 onwards. The total increase in government expenditure in 2016–17 for PBS medicines (excluding s100) was 8.5% compared with the previous year (Department of Health 2017).

## Other medicines accounting for substantial government spending

Other medicines that accounted for relatively greater amounts of government spending in 2016–17 were those used to treat:

- rheumatoid arthritis—with \$324 million spent on adalimumab and \$148 million on etanercept
- macular degeneration—with \$247 million spent on aflibercept and \$200 million on ranibizumab
- cancer—with \$161 million spent on trastuzumab and \$131 million on pembrolizumab (Supplementary Table S7.6.7).



### Box 7.6.3: How does the Australian Government manage the cost of our medicines?

The Australian Government has several policies to control the cost of medicines listed on the PBS. An important one is the Price Disclosure Policy, which requires pharmaceutical companies to provide data to the government on the sale prices for their medicine brands in the market. The government uses this information to decide how much it pays for PBS-listed medicines.

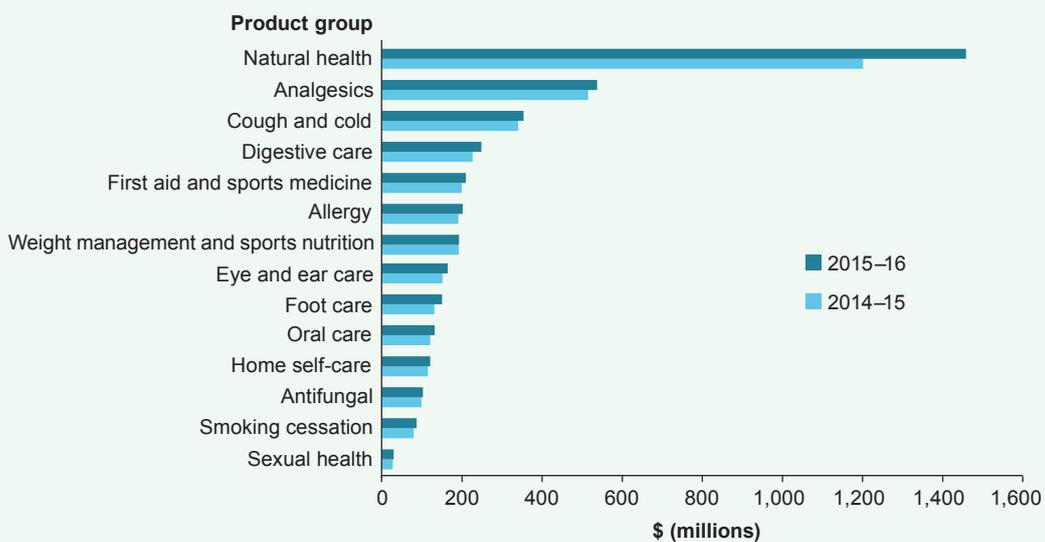
Another policy initiative has been the government's encouragement for listing generic versions of medicines. At the end of a medicine's patent period, other companies can offer generic brands ('bioequivalent'; with active ingredients identical to the original) or biosimilar brands (with very similar but not identical active ingredients) at a cheaper price. Statutory requirements reduce the price of the original medicine by 16% when the first bioequivalent or biosimilar medicine (with the same manner of administration as the original) is listed on the PBS.

## Natural health products are the most popular over-the-counter medicines

Among over-the-counter products sold in pharmacies that did not require a prescription, natural health products were the largest selling items in 2015–16 (\$1.4 billion). These include naturally occurring substances that can be used to maintain or restore health, such as vitamins and minerals, herbal medicines, homeopathic preparations and probiotics. Analgesics were the second largest selling group (\$537 million).

Compared with the previous year, growth in sales in 2015–16 was also greatest for natural health products, at about 21%. Digestive care and smoking cessation products both recorded a growth in sales of more than 9% from 2014–15 to 2015–16 (Figure 7.6.8).

Figure 7.6.8: Spending on over-the-counter products, by product group, 2014–15 to 2015–16



Source: IRI customised report, 2015–16; Table S7.6.8.



## What is missing from the picture?

Except for the PBS Schedule of Pharmaceutical Benefits—which lists restrictions and authority requirements (which outline the medical conditions) for some medicines—there is little information recorded on PBS prescriptions about the disease or condition for which a medicine is prescribed. This information would greatly help in assessing how many prescriptions are prescribed, and how much money is spent on each disease group. It may also shed some light on whether some medicines are being over-prescribed for certain conditions.

In previous years, results of the Bettering the Evaluation and Care of Health (BEACH) surveys provided some insights into the prescribing patterns of GPs. (The survey was discontinued after 2015–16.) Better understanding prescribing patterns may be helped by future improvements in primary care data (see Chapter 7.5 'Primary health care').

Furthermore, there is at present an incomplete picture of medicines dispensed in hospitals. This is because medicines for admitted patients in public hospitals are not subsidised under the PBS and are therefore not included in the PBS data. PBS medicines are available for non-admitted patients and patients on discharge from hospitals, but only for states and territories that are part of the Public Hospital Pharmaceutical Reforms. Nationally collated data on medicines dispensed to hospital admitted patients would provide a clearer picture of the overall use of medicines in Australia.

## Where do I go for more information?

For more information on medicine statistics in Australia, visit the [Medicare Statistics](#) website or the [PBS Statistics](#) webpage.

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