

# Drug use

## Introduction

This chapter presents information on drug use for cardiovascular disease in Australia. Detailed analysis from three national sources of data (the Drug Utilization Sub-Committee Database; the Survey of Morbidity and Treatment in General Practice in Australia 1990–91; and the Australian Bureau of Statistics' National Health Survey 1995) are presented as well as results from the Newcastle and Perth MONICA Projects and the Hunter Region Heart Disease Prevention Programme's Risk Factor Prevalence Study 1994.

The limitations of the national data sources, as discussed in the chapter *National data sources*, should be kept in mind when interpreting the results presented here. In particular, no information is available on drugs used in public hospitals.

## Data sources

- **The Drug Utilization Sub-Committee Database.** Provides estimates of the community (i.e. non-public hospital) use of prescription medicines in Australia, and the costs of prescriptions subsidised by the Pharmaceutical Benefits Scheme.
- **The Australian Bureau of Statistics' National Health Survey 1995** (Australian Bureau of Statistics 1997a; 1997b). Provides estimates of the self-reported use of medications for cardiovascular conditions.
- **The Survey of Morbidity and Treatment in General Practice in Australia 1990–91** (Bridges-Webb et al. 1992). Provides estimates of drugs prescribed for cardiovascular conditions and the use of specific cardiovascular drugs.
- **The Newcastle MONICA Project** (Steele & McElduff 1995a; Steele & McElduff 1995b). Information is provided on drugs prescribed before onset of the coronary event, during the event for those who went to hospital, and at discharge for those who went to hospital and were discharged alive.
- **The Perth MONICA Project** (Thompson et al. 1992). Information is available on drugs prescribed before onset of the coronary event, during the event for those who went to hospital, and at discharge for those who went to hospital and were discharged alive.
- **The Hunter Region Heart Disease Prevention Programme Risk Factor Prevalence Study** (Alexander et al. 1995). Surveys were conducted in 1983, 1988–89 and 1994. Participants were selected from the New South Wales electoral roll. The 1994 survey included people aged 35–69 years living in the local government areas of Newcastle, Lake Macquarie, Cessnock, Maitland and Port Stephens. Potential respondents who did not participate in the main study were invited to complete a brief postal questionnaire. There were 1,670 participants in the main study. Information on aspirin use was obtained from participants in the main study only.

## **Estimates from the Drug Utilization Sub-Committee Database**

Drugs used in the management of cardiovascular disease are classified by the Anatomical Therapeutic Chemical code under the Cardiovascular system group (ATC code 'C'). These include inotropic drugs, antiarrhythmics, nitrates, diuretics, beta blockers, calcium channel blockers, ACE inhibitors, other antihypertensives and peripheral vasodilators. Also of interest in this report are anticoagulants, antiplatelet drugs, thrombolytic drugs and serum lipid lowering drugs which are classified as drugs for Blood and blood forming organs (ATC code 'B'). A detailed list of drugs by generic drug name is given in **Appendix C**.

### **Use and cost of prescriptions subsidised by the PBS in 1995–96**

#### **Cardiovascular drugs**

Almost 125 million prescriptions were subsidised by the PBS in 1995–96 (Table 40). The total cost (i.e. cost to Government plus patient contributions) of these prescriptions was \$2,686 million. Of the highest cost medicine groups, ACE inhibitors ranked second with a total cost of \$275 million. Calcium channel blockers, cardiac therapy drugs, beta blockers and diuretics were the 6th, 11th, 17th and 20th highest cost medicine groups, respectively, in 1995–96. The total cost for each of these groups, with the exception of beta blockers, increased between 1994–95 and 1995–96.

#### **Serum lipid lowering drugs**

In 1995–96, serum lipid lowering drugs subsidised by the PBS ranked fourth highest in terms of total cost, accounting for 7% of the total cost of all drugs subsidised by the PBS in that year (Table 40). Further, between 1994–95 and 1995–96, the total cost of lipid lowering drugs increased by 30%.

**Table 40: Total costs of prescriptions subsidised by the PBS, by therapeutic main group, 1995–96**

Group	Total cost (\$)	Percentage of total cost	Percentage increase in total cost over 1994–95	Prescription volume
<b>The 20 highest cost medicine groups</b>				
Antacids, drugs for treatment of peptic ulcer	308,146,238	11.47	24.01	7,356,937
ACE inhibitors	275,093,904	10.24	14.17	8,270,940
Antiasthmatics	240,594,649	8.96	15.68	9,514,228
Serum lipid lowering drugs	194,887,133	7.26	30.36	4,040,388
Antibacterials for systemic use	178,731,272	6.66	-3.46	13,451,656
Calcium channel blockers	177,722,293	6.62	11.20	7,179,788
Psychoanaesthetics	167,520,633	6.24	50.16	5,316,648
Sex hormones and modulators of the genitals	104,202,768	3.88	6.56	5,296,422
Analgesics	88,071,114	3.28	13.81	9,102,266
Drugs used in diabetes	78,874,722	2.94	13.28	2,271,266
Cardiac therapy <sup>(a)</sup>	68,132,391	2.54	6.97	3,376,501
Psycholeptics	64,955,657	2.42	17.45	8,188,460
Antiinflammatory and antirheumatic products	60,122,105	2.24	3.58	4,679,312
Ophthalmologicals	55,078,156	2.05	6.72	4,742,190
Endocrine therapy	50,033,702	1.86	15.66	305,247
Antiepileptics	49,068,201	1.83	19.84	1,227,194
Beta blocking agents	40,337,389	1.50	-1.40	3,523,607
Vaccines	38,231,357	1.42	2.75	1,972,280
Antivirals for systemic use	33,598,641	1.25	11.22	157,000
Diuretics	33,242,771	1.24	2.23	2,902,906
<b>Other drugs used in the management of cardiovascular disease</b>				
Other antihypertensive drugs	17,870,609	0.67	-4.64	1,047,800
Antithrombotic agents	9,328,922	0.35	29.56	914,597
Peripheral vasodilators	60,057	0.00	15.02	3,275
<b>Total</b>				
<b>All medicine groups</b>	<b>2,685,548,163</b>	<b>100.00</b>	<b>14.67</b>	<b>124,888,280</b>

(a) Includes inotropic drugs, antiarrhythmics and nitrates.

Notes: Costs include patients' contributions but exclude expenditure on miscellaneous items other than Doctor's Bag.  
Prescriptions subsidised by the RPBS not included.  
Excludes drug use in public hospitals.

Source: Pharmaceutical Benefits Branch, Department of Health and Family Services.

## Use and cost of drugs dispensed in the community in 1994 and 1995

### Cardiovascular drugs

Over 163 million prescriptions were dispensed in the Australian community in 1994 (Table 41). Of these prescriptions, 16.8% were for drugs from the cardiovascular system group (ATC code 'C'). Ninety per cent of the cardiovascular prescriptions dispensed in 1994 were subsidised by the PBS or the RPBS.

**Table 41: Distribution of prescription numbers for cardiovascular system drugs, 1992–1994**

ATC group/source	1992	1993	1994
<b>Cardiovascular system (ATC code 'C')</b>	<b>Number (%)</b>	<b>Number (%)</b>	<b>Number (%)</b>
Subsidised prescriptions (PBS/RPBS)	21,623,055 (13.9)	23,908,255 (14.8)	24,578,784 (15.0)
Estimated non-subsidised prescriptions ('Survey')	3,668,189 (2.4)	3,025,609 (1.9)	2,800,920 (1.7)
<i>Total cardiovascular system</i>	<i>25,291,244 (16.3)</i>	<i>26,933,864 (16.7)</i>	<i>27,379,704 (16.8)</i>
<b>All other groups</b>			
Subsidised prescriptions (PBS/RPBS)	84,950,147 (54.6)	92,164,284 (57.1)	94,169,303 (57.6)
Estimated non-subsidised prescriptions ('Survey')	45,210,328 (29.1)	42,255,095 (26.2)	41,871,431 (25.6)
<i>Total all other groups</i>	<i>130,160,475 (83.7)</i>	<i>134,419,379 (83.3)</i>	<i>136,040,734 (83.2)</i>
<b>All groups</b>			
<b>Total</b>	<b>155,451,719 (100.0)</b>	<b>161,353,243 (100.0)</b>	<b>163,420,438 (100.0)</b>

Source: Commonwealth Department of Human Services and Health 1996.

From 1992 to 1994, there was an average increase of 4.0% per year in community prescriptions for cardiovascular drugs (Table 41). This increase was due to an increase in the number of subsidised prescriptions over the 3-year period, as the number of non-subsidised prescriptions actually fell.

At the generic drug level, several cardiovascular drugs were among the ten most frequently dispensed drugs in 1994 in terms of defined daily dose per 1,000 population per day (DDD per 1,000 population per day) (Commonwealth Department of Human Services and Health 1996):

- frusemide (22.645 DDD/1,000/day; ranked second),
- captopril (11.701 DDD/1,000/day; ranked fifth), and
- enalapril maleate (10.295 DDD/1,000/day; ranked ninth).

In 1995, five cardiovascular drugs were among the top ten for defined daily dose per 1,000 (Commonwealth Department of Health and Family Services 1997a):

- frusemide (22.869 DDD/1,000/day; ranked second),
- enalapril (22.191 DDD/1,000/day; ranked third; DDD change since 1994),
- hydrochlorothiazide with amiloride (14.147 DDD/1,000/day; ranked fifth; DDD change since 1994),
- felodipine (12.638 DDD/1,000/day; ranked seventh; DDD change since 1994), and
- captopril (11.813 DDD/1,000/day; ranked ninth).

In terms of prescription numbers in 1994, enalapril maleate was the only cardiovascular drug in the top ten and ranked sixth highest with a total of 3,127,370 prescriptions

(Commonwealth Department of Human Services and Health 1996). Almost all prescriptions for enalapril maleate were subsidised by the PBS or RPBS in 1994.

In 1995, enalapril maleate still ranked sixth highest for prescription numbers with 3,264,467 prescriptions (Commonwealth Department of Health and Family Services 1997c). However, atenolol was also among the top ten with 2,821,699 prescriptions (9th highest).

If only subsidised prescriptions are considered, enalapril maleate and atenolol ranked third and tenth highest in terms of prescription numbers in 1994. In contrast, no non-subsidised cardiovascular drugs were among the top ten for prescription numbers in 1994.

Cost information is available for subsidised drugs only. In 1994, enalapril maleate ranked third highest in terms of cost to government with a cost of \$77 million (Commonwealth Department of Human Services and Health 1996). Other cardiovascular drugs that ranked among the top ten for cost to government in 1994 were captopril (fourth highest) and felodipine (ninth highest) with costs of \$59 million and \$34 million respectively.

In 1995, enalapril maleate, captopril and felodipine were still among the ten highest cost drugs to government (Commonwealth Department of Health and Family Services 1997c). Enalapril maleate ranked fourth highest with a cost to government of \$82 million, captopril ranked fifth highest with a cost to government of \$59 million, and felodipine ranked ninth highest with a cost to government of \$37 million.

### **Serum lipid lowering drugs**

Simvastatin was the highest cost subsidised drug in 1994 with a total cost to government of \$95 million (Commonwealth Department of Human Services and Health 1996). In terms of prescriptions subsidised by the PBS in 1994, simvastatin ranked ninth highest with 2,065,826 prescriptions.

In 1995, simvastatin ranked 8th highest for defined daily dose per 1,000 population per day (12.284 DDD/1,000/day). It had the tenth highest prescription count (2,757,201 prescriptions) and had the highest cost to government of any drug in that year (\$117 million). Almost all prescriptions for simvastatin were subsidised by the PBS or RPBS in 1995.

### **Trends in the use of cardiovascular drugs**

The data described in this section relate mainly to cardiovascular drugs at a broad level (i.e. the ATC code therapeutic main group and subgroup levels). Therefore it should be noted that the trends observed are average trends and may not reflect trends at the individual generic drug level.

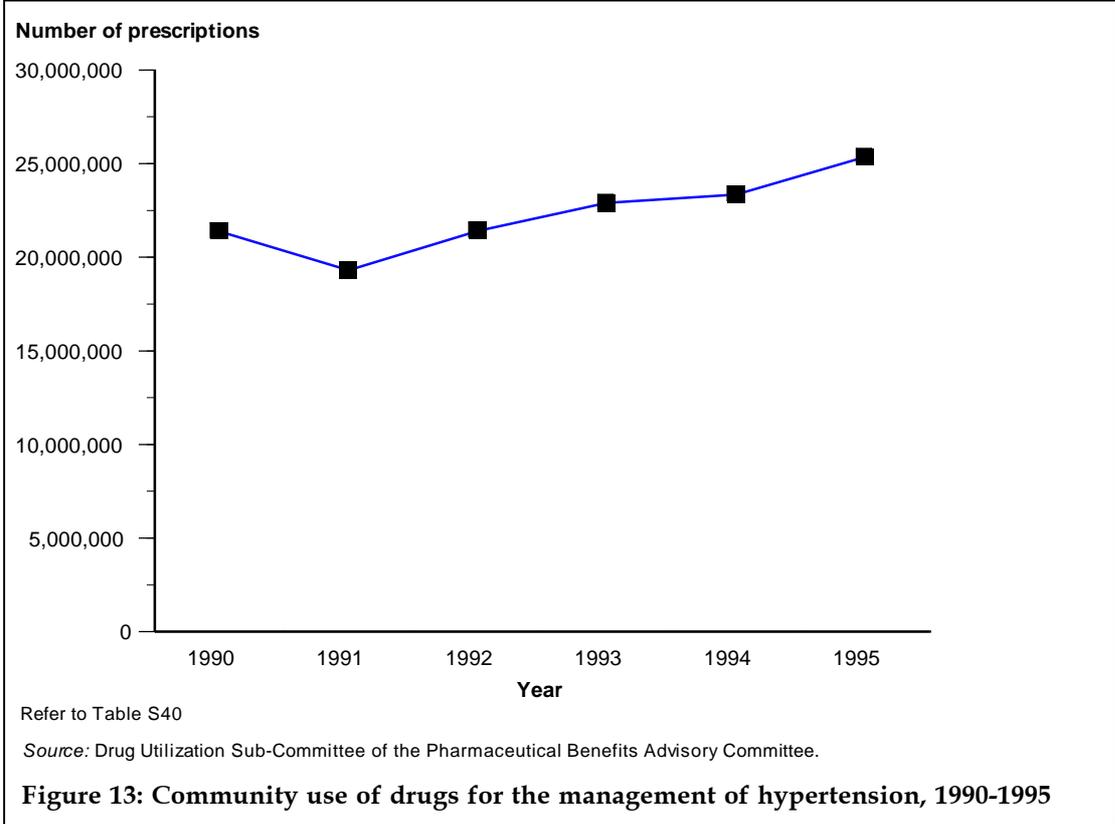
The trend data described in this section are based on numbers of prescriptions; however trend data based on DDD per 1,000 population per day are provided in Tables S40 to S47.

### **Drugs used in the management of hypertension**

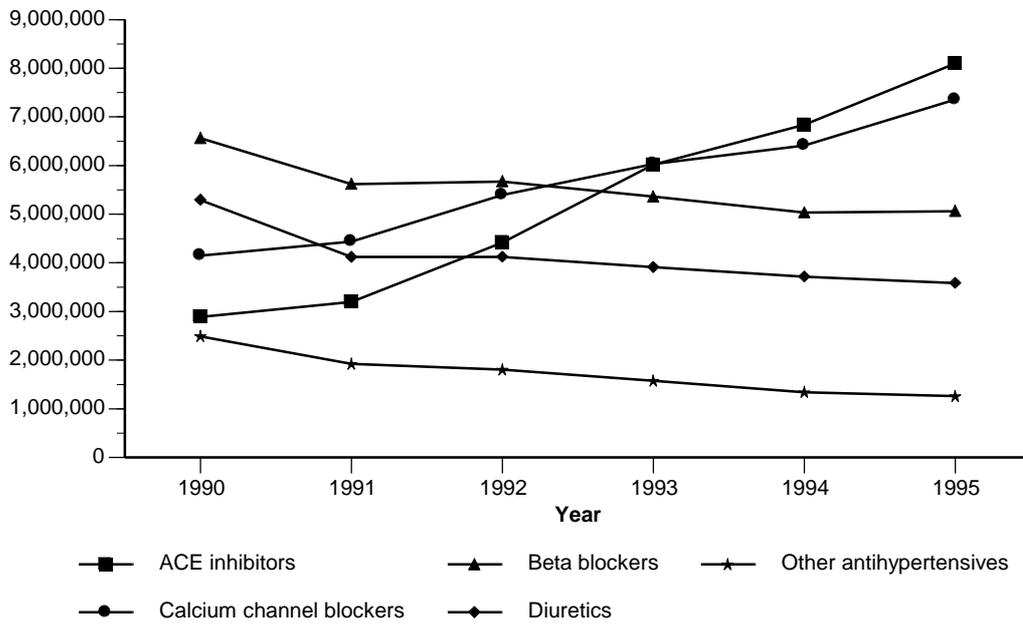
Henry et al. (1994) reviewed trends in the use of antihypertensive drugs between 1986 and 1993. Data from various sources were analysed – the PBS/RPBS database, the Pharmacy Guild Survey (available from 1989), and the Australian Medical and Pharmaceutical Indices maintained by Intercontinental Medical Statistics. Between 1986 and 1993, an average of 1.6 million people per year were receiving drug treatment for hypertension. The type of antihypertensive drugs prescribed for hypertensive patients changed over the study period, with a fall in the use of diuretics, beta blockers and other antihypertensives (i.e. centrally and peripherally acting antiadrenergic agents and agents acting on arteriolar smooth

muscle) and an increase in the use of ACE inhibitors and calcium channel blockers. Further, the co-prescribing of antihypertensive agents fell from 1.4 items per patient in 1986 to just over 1.2 items per patient in 1993.

Data on the community use of antihypertensive drugs in 1994 and 1995 indicate that the trends observed by Henry et al. have continued (Figures 13 and 14).



**Number of prescriptions**



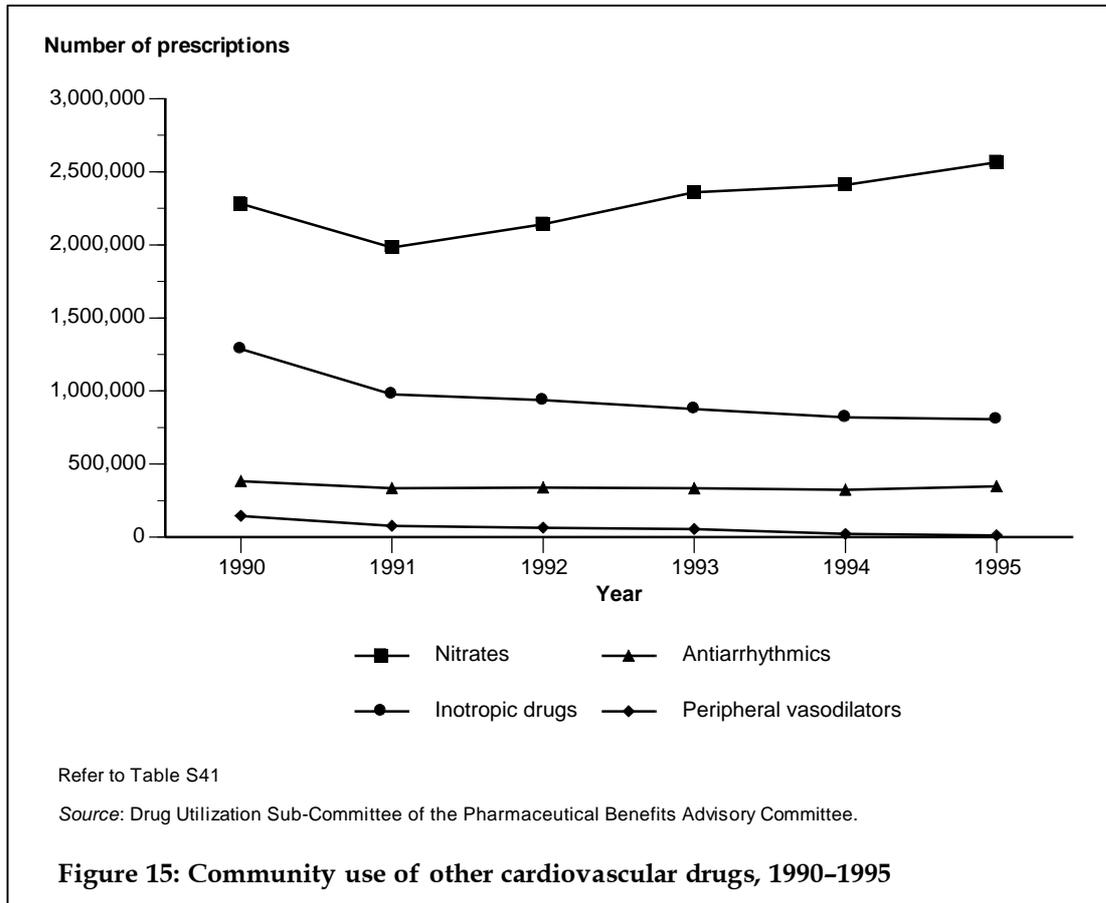
Refer to Table S40

Source: Drug Utilization Sub-Committee of the Pharmaceutical Benefits Advisory Committee.

**Figure 14: Community use of drugs for the management of hypertension by class, 1990-1995**

## Other cardiovascular drugs

Between 1990 and 1995, nitrates were the most commonly dispensed cardiovascular drugs other than antihypertensives. Further, over the 6-year period, prescriptions for nitrates increased from 2.3 million to 2.6 million, an average rise of 2% per year (Figure 15). The number of prescriptions dispensed in the community for inotropic drugs and peripheral vasodilators fell between 1990 and 1995. There was also a small decrease in the use of antiarrhythmic drugs over the 6-year period.

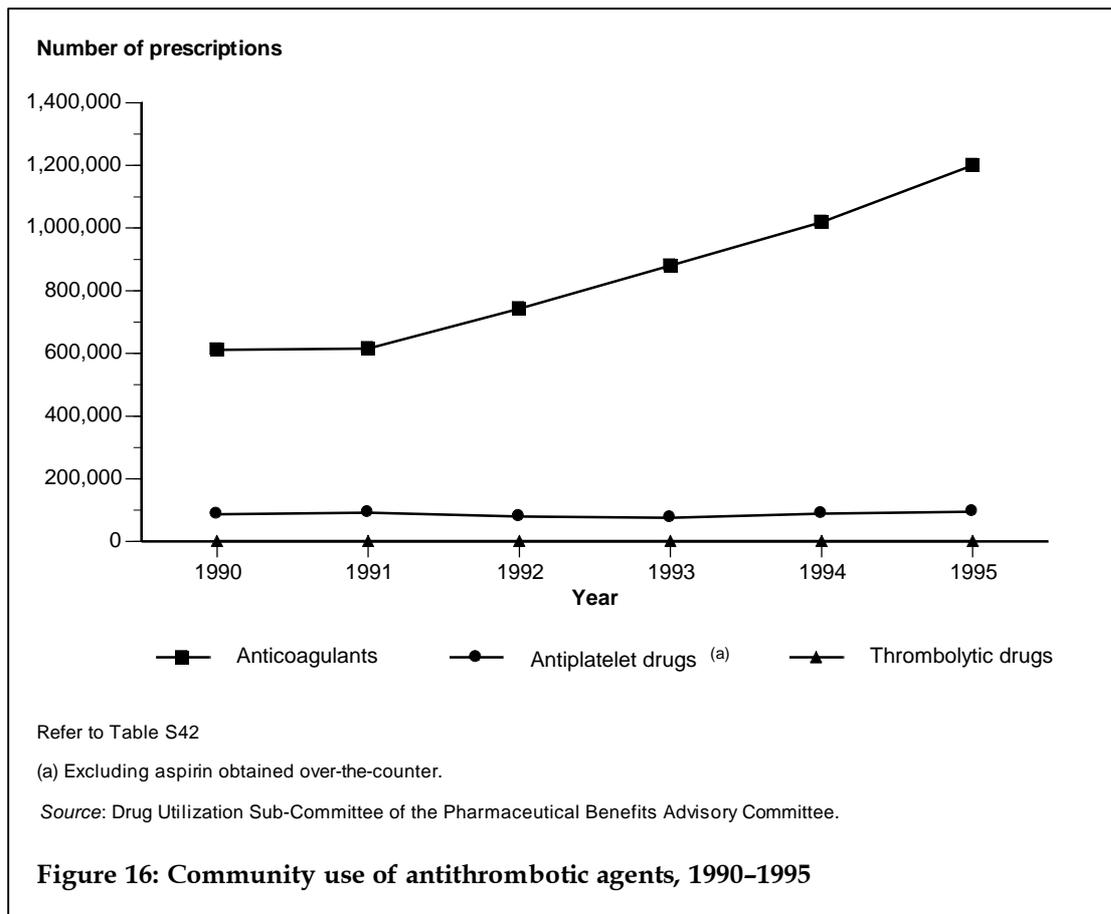


## Trends in the use of antithrombotic agents

The number of prescriptions dispensed in the community for anticoagulants, which include vitamin K antagonists and the heparin group, doubled between 1990 and 1995, from 0.6 million prescriptions to 1.2 million prescriptions (Figure 16).

The community use of antiplatelet drugs, excluding aspirin obtained over the counter, is quite small. Before 1993, there were no antiplatelet drugs listed on the PBS, although aspirin in standard doses was classified under analgesics in the central nervous system (ATC group 'N'). Therefore the use of antiplatelet drugs could only be monitored through the Pharmacy Guild survey if identification was via the ATC therapeutic subgroup B01AC. However, in 1993, ticlopidine hydrochloride was listed on the PBS. From 1990 to 1995, there was a slight increase in prescriptions for antiplatelets (Figure 16).

Prescription counts for thrombolytic drugs (streptokinase) are also small, but increased by an average of 14% per year between 1990 and 1995. This increase most likely represents use in private hospitals that dispense under the PBS.



## Trends in the use of serum lipid lowering drugs

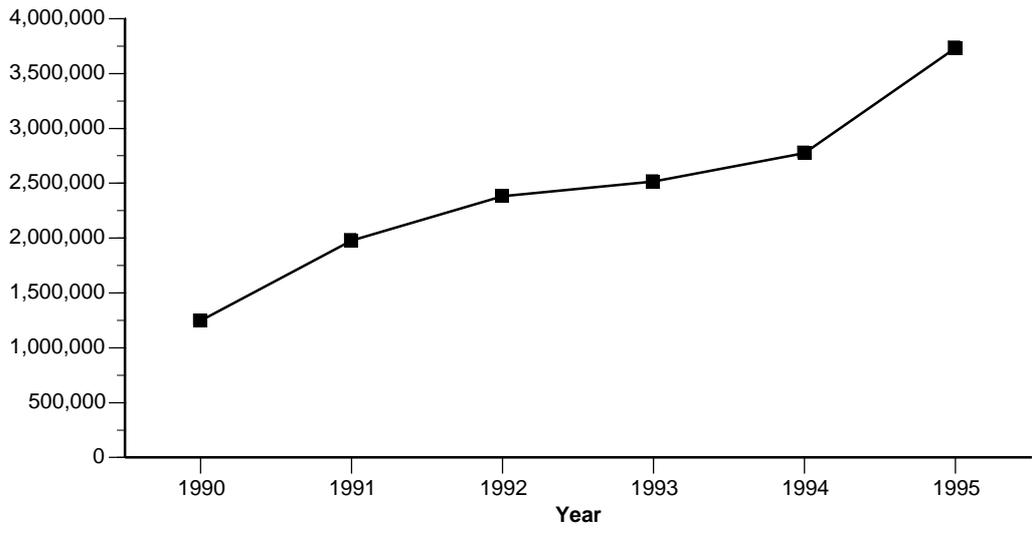
Dispensing of lipid lowering drugs through community pharmacies increased substantially over the period 1990 to 1995, from 1.2 million prescriptions to 3.7 million prescriptions (Figure 17).

The increase in the community use of lipid lowering drugs over the last few years has resulted mainly from an increase in the use of statins (Figures 18 and 19), particularly simvastatin which was listed on the PBS in late 1990 (Commonwealth Department of Human Services and Health 1996). Between 1991 and 1995, dispensing of simvastatin through community pharmacies increased by an average of 21% per year, from 1,282,289 prescriptions to 2,757,201 prescriptions (Figure 19). Community use of pravastatin, which was not listed on the PBS until 1992, also increased rapidly between 1993 and 1995.

Prescriptions for fibrates fell between 1990 and 1991 and then remained fairly steady until 1995 when they began to increase again. However at the generic drug level, the use of clofibrate has fallen since 1990, in response to a policy decision to restrict its availability on the PBS, while that of gemfibrozil has increased.

The community use of other classes of lipid lowering drugs, namely resin binders, nicotinic acid and other cholesterol and triglyceride reducers, decreased over the period from 1990 to 1995.

Number of prescriptions

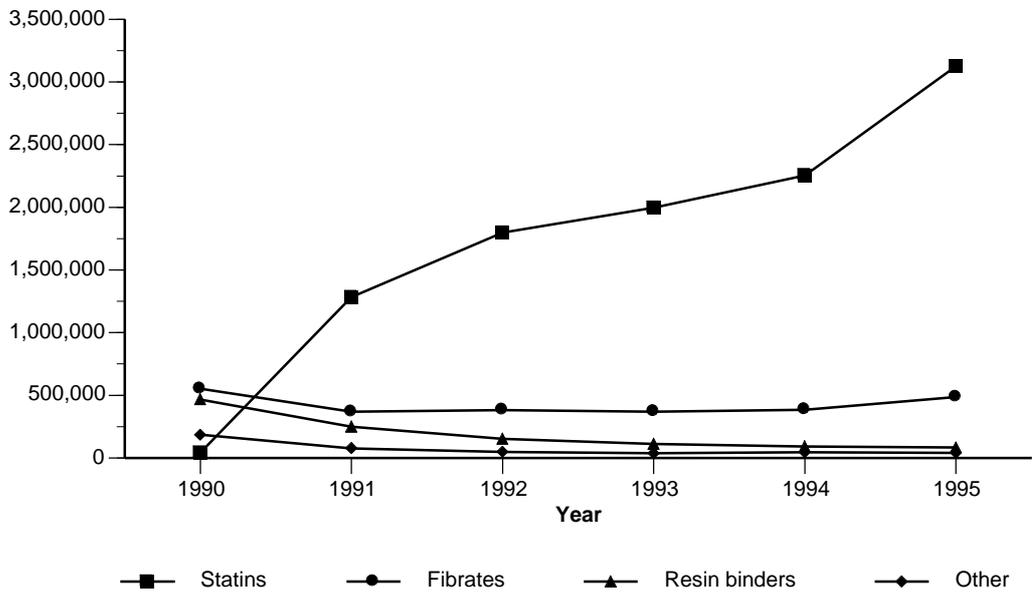


Refer to Table S43

Source: Drug Utilization Sub-Committee of the Pharmaceutical Benefits Advisory Committee.

Figure 17: Community use of lipid lowering drugs, 1990-1995

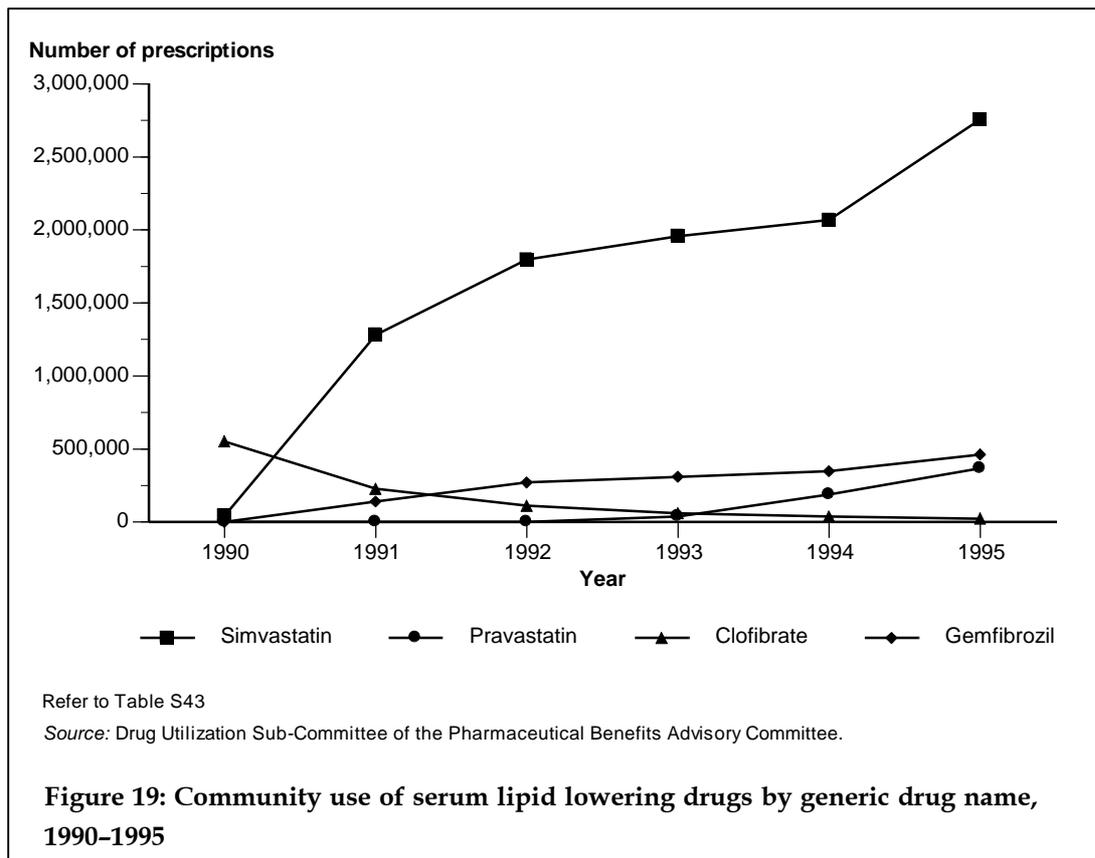
Number of prescriptions



Refer to Table S43

Source: Drug Utilization Sub-Committee of the Pharmaceutical Benefits Advisory Committee.

Figure 18: Community use of serum lipid lowering drugs by class, 1990-1995



## Trends in the cost of subsidised cardiovascular drugs

### Drugs used in the management of hypertension

Between 1990 and 1995, the total cost of subsidised prescriptions for ACE inhibitors increased from \$158 million to \$270 million (Table 42). This increase was consistent with the increase in the community use of ACE inhibitors over the same period. The total cost of subsidised prescriptions for calcium channel blockers also increased over the 6-year period, from \$120 million in 1990 to \$177 million in 1995.

For diuretics, the total cost of subsidised prescriptions decreased by 40% between 1990 and 1991 but has since remained fairly steady. A similar pattern occurred for beta blockers.

The cost of subsidised prescriptions for other antihypertensive drugs fell by an average of 15% between 1990 and 1995 which was consistent with the pattern observed for the community use of antihypertensive drugs over that period.

### Other cardiovascular drugs

There was no real trend in total costs of subsidised prescriptions for antiarrhythmics or inotropic drugs over the period 1990 to 1995 (Table 42). The total cost of nitrates subsidised by the PBS/RPBS increased by an average of 9% per annum over the 6-year period, while the cost of subsidised prescriptions for peripheral vasodilators fell from \$0.6 million in 1990 to less than \$0.1 million in 1995.

## **Trends in the cost of subsidised antithrombotic agents**

For subsidised anticoagulants, there was an average increase of approximately 16% per year in total costs between 1990 and 1995 (Table 42). Antiplatelets have only been subsidised by the PBS/RPBS since 1993, and since then there has been a dramatic rise in the total cost of subsidised prescriptions for these drugs. Between 1990 and 1993 there was little change in the total cost of subsidised thrombolytic drugs. However between 1993 and 1995, the total cost of thrombolytic drugs subsidised by the PBS/RPBS increased threefold.

## **Trends in the cost of subsidised serum lipid lowering drugs**

The total cost of subsidised lipid lowering drugs increased significantly between 1990 and 1995 (Table 42). In 1990, the total cost was \$49 million and by 1995 this had risen to \$178 million, an average annual increase of almost 30%. This trend was consistent with the increase in the community use of lipid lowering drugs over the 6-year period.

**Table 42: Total costs for subsidised drugs used in the management of cardiovascular disease, 1990–1995 (1995 prices<sup>(a)</sup>)**

Type of drug (ATC code) / source	1990	1991	1992	1993	1994	1995
	<b>\$'000</b>					
Beta blockers (C07)	71,978	39,417	41,374	41,988	41,041	42,583
Calcium channel blockers (C08)	119,911	103,933	119,760	138,387	155,057	176,745
ACE inhibitors (C02E)	157,544	135,713	165,122	207,388	230,892	269,747
<b>Diuretics</b>						
Low ceiling diuretics, thiazides (C03A)	5,767	3,851	3,742	3,578	3,293	3,128
Low ceiling diuretics excluding thiazides (C03B)	8,142	5,074	7,213	6,200	7,878	10,619
High ceiling diuretics (C03C)	14,308	10,272	10,716	11,122	10,857	10,881
Potassium sparing agents (C03D)	5,146	3,756	3,817	4,251	4,186	4,099
Diuretics and potassium sparing agents in combination (C03E)	18,849	8,163	7,836	6,869	6,201	5,803
<b>Total diuretics (C03)</b>	<b>52,212</b>	<b>31,116</b>	<b>33,324</b>	<b>32,018</b>	<b>32,415</b>	<b>34,531</b>
<b>Other antihypertensive drugs</b>						
Centrally acting antiadrenergic agents (C02A)	16,133	8,958	8,269	7,210	6,266	6,088
Peripherally acting antiadrenergic agents (C02C)	24,375	13,206	13,453	12,888	12,019	12,051
Agents acting on arteriolar smooth muscle (C02D)	1,071	678	657	626	553	568
<b>Total other antihypertensives (C02A, C02C, C02D)</b>	<b>41,580</b>	<b>22,842</b>	<b>22,379</b>	<b>20,723</b>	<b>18,837</b>	<b>18,708</b>
Antiarrhythmics (C01B)	11,362	8,771	9,411	9,513	9,311	10,064
<b>Inotropic drugs</b>						
Cardiac glycosides (C01A)	6,967	6,172	5,703	5,641	5,569	5,717
Cardiac stimulants excluding glycosides (C01C)	—	—	—	—	—	—
<b>Total inotropic drugs (C01A, C01C)</b>	<b>6,967</b>	<b>6,172</b>	<b>5,703</b>	<b>5,641</b>	<b>5,569</b>	<b>5,717</b>
Nitrates (C01D)	35,904	33,244	40,347	49,632	50,916	55,721
Peripheral vasodilators (C04)	563	294	266	284	103	80
Anticoagulants (B01AA, B01AB)	3,678	3,550	4,271	5,227	6,149	7,570
Antiplatelet drugs (B01AC)	n.a.	n.a.	n.a.	123	619	1,396
Thrombolytic drugs (B01AD)	81	86	92	92	123	285
Lipid lowering drugs (B04)	48,604	92,153	115,645	125,671	140,384	177,969

(a) 'Chemist' price index from the Private Final Consumption Expenditure (PFCE) deflators produced by the Australian Bureau of Statistics used to adjust figures to 1995 prices.

Note: n.a. not applicable; — data not available.

Source: Drug Utilization Sub-Committee of the Pharmaceutical Benefits Advisory Committee.

# Estimates from the Survey of Morbidity and Treatment in General Practice in Australia 1990–91

## Prescriptions written for cardiovascular conditions

For each problem managed, doctors were asked to record the brand or generic names of up to four prescriptions issued at the encounter for that problem (Bridges-Webb et al. 1992). Non-prescription drugs recommended by the doctor were not included. Where a drug was prescribed for more than one problem, it was only recorded under the problem for which it was most required. While dosage and regimen were not recorded, doctors were asked to specify the form of presentation where several presentations were available (e.g. nystatin – oral, topical, vaginal). Drugs were classified under an in house Family Medicine Research Unit classification, however the system is similar to that used in MIMS and the classification used is compatible with the Anatomical Therapeutic Chemical (ATC) code.

When interpreting the results in this section, it should be remembered that the survey only collected information about prescriptions written at the recorded encounter. No information was collected about prescriptions written at previous encounters that were not included in the survey, even if the same problem was managed. This may be a limitation for chronic conditions.

The unit record data set provided to the Australian Institute of Health and Welfare included information relating to a total of 98,556 prescriptions, an average of 99.8 prescriptions per 100 encounters and 67.7 prescriptions per 100 problems managed. At least one prescription was written at 63.6% of all encounters and for 53.5% of all problems managed.

Approximately 15,000 prescriptions were issued for cardiovascular problems (Table 43), representing 15.2% of all prescriptions written during the survey period. At least one prescription was written for 56.7% of cardiovascular problems managed.

Over 8% of all prescriptions issued were for hypertension (Table 43). A further 2.0% were written for heart failure, 1.4% for other and chronic coronary heart disease, 0.8% for angina and 0.3% for cerebrovascular disease.

At least one prescription was issued for 71.3% of all angina problems managed (Table 43). Similarly, at least one script was written for the majority (i.e. > 50%) of heart failure, hypertension, rheumatic heart disease, and other and chronic coronary heart disease problems managed.

**Table 43: Prescriptions written for cardiovascular conditions**

Condition (ICPC code)	Number of problems managed where at least one prescription written for condition	Percentage of problems managed where at least 1 prescription written for condition	Total number of prescriptions written for condition	Percentage of all prescriptions written (N=98,556)
Rheumatic heart disease (K71)	31	63.3	61	0.1
Angina (K74)	521	71.3	800	0.8
Acute myocardial infarction (K75)	29	40.8	55	0.1
Other and chronic coronary heart disease (K76)	812	60.3	1,425	1.4
Coronary heart disease (K74-K76)	1,361	63.3	2,279	2.3
Heart failure (K77)	1,080	66.6	1,968	2.0
Hypertension (K86, K87)	5,979	63.9	8,309	8.4
Cerebrovascular disease (K89, K90)	262	42.6	299	0.3
Atherosclerosis (K91)	14	31.8	19	< 0.1
Peripheral vascular disease (K92)	121	28.3	140	0.1
<b>All cardiovascular disease (K)</b>	<b>10,311</b>	<b>56.7</b>	<b>14,947</b>	<b>15.2</b>

Source: AIHW derived from the Survey of Morbidity and Treatment in General Practice in Australia 1990–91.

Overall, antihypertensive drugs were the most frequently prescribed type of drugs for cardiovascular conditions, accounting for 28.6% of all prescriptions for cardiovascular problems (Table 44). On average, 23.5 prescriptions for antihypertensive drugs were issued for every 100 cardiovascular problems managed. Diuretics, beta blockers, antiangina agents and cardiac glycosides were also frequently prescribed for cardiovascular conditions, accounting for a further 54.3% of all prescriptions written for cardiovascular disease.

Not surprisingly, antihypertensive agents were the most commonly prescribed type of drugs for hypertension, while antiangina agents were the most commonly prescribed type of drugs for angina and other and chronic coronary heart disease. For heart failure, diuretics were the most frequently prescribed type of drug and, for cerebrovascular disease, simple analgesics were the preferred form of drug therapy.

**Table 44: Five most frequently prescribed drug subgroups for selected cardiovascular conditions**

Condition (ICPC code)/drug subgroup	Number of prescriptions written for condition	Percentage of all prescriptions written for condition	Number of prescriptions written per 100 problems managed for condition
<b>All cardiovascular disease (K)</b>			
Antihypertensive agents	4,270	28.6	23.5
Diuretics	2,796	18.7	15.4
Beta blockers	2,470	16.5	13.6
Antiangina agents	2,020	13.5	11.1
Cardiac glycosides	836	5.6	4.6
<b>Angina (K74)</b>			
Antiangina agents	601	75.1	82.2
Beta blockers	66	8.3	9.0
Antihypertensive agents	37	4.7	5.1
Simple analgesics	34	4.2	4.6
Diuretics	15	1.9	2.1
<b>Other and chronic coronary heart disease (K76)</b>			
Antiangina agents	735	51.6	54.6
Diuretics	151	10.6	11.2
Beta blockers	138	9.7	10.2
Antihypertensives	104	7.3	7.7
Cardiac glycosides	94	6.6	7.0
<b>Heart failure (K77)</b>			
Diuretics	885	45.0	54.6
Cardiac glycosides	375	19.1	23.2
Mineral tonic	277	14.1	17.1
Antihypertensive agents	216	11.0	13.3
Antiangina agents	79	4.0	4.9
<b>Hypertension (K86, K87)</b>			
Antihypertensive agents	3,682	44.3	39.4
Beta blockers	2,122	25.5	22.7
Diuretics	1,437	17.3	15.4
Antiangina agents	469	5.6	5.0
Mineral tonic	227	2.7	2.4
<b>Cerebrovascular disease (K89, K90)</b>			
Simple analgesics	142	47.3	23.0
Anti emetic	43	14.2	6.9
Other blood	32	10.6	5.2
Antiangina agents	15	4.9	2.4
Antihypertensive agents	7	2.4	1.2

Source: AIHW derived from the Survey of Morbidity and Treatment in General Practice in Australia 1990–91.

At the generic drug level, frusemide was the most frequently prescribed drug for cardiovascular disease (Figure 20). On average, 6.7 prescriptions for frusemide were written for every 100 cardiovascular problems managed. Other commonly prescribed generic drugs for cardiovascular conditions included atenolol, digoxin and verapamil.

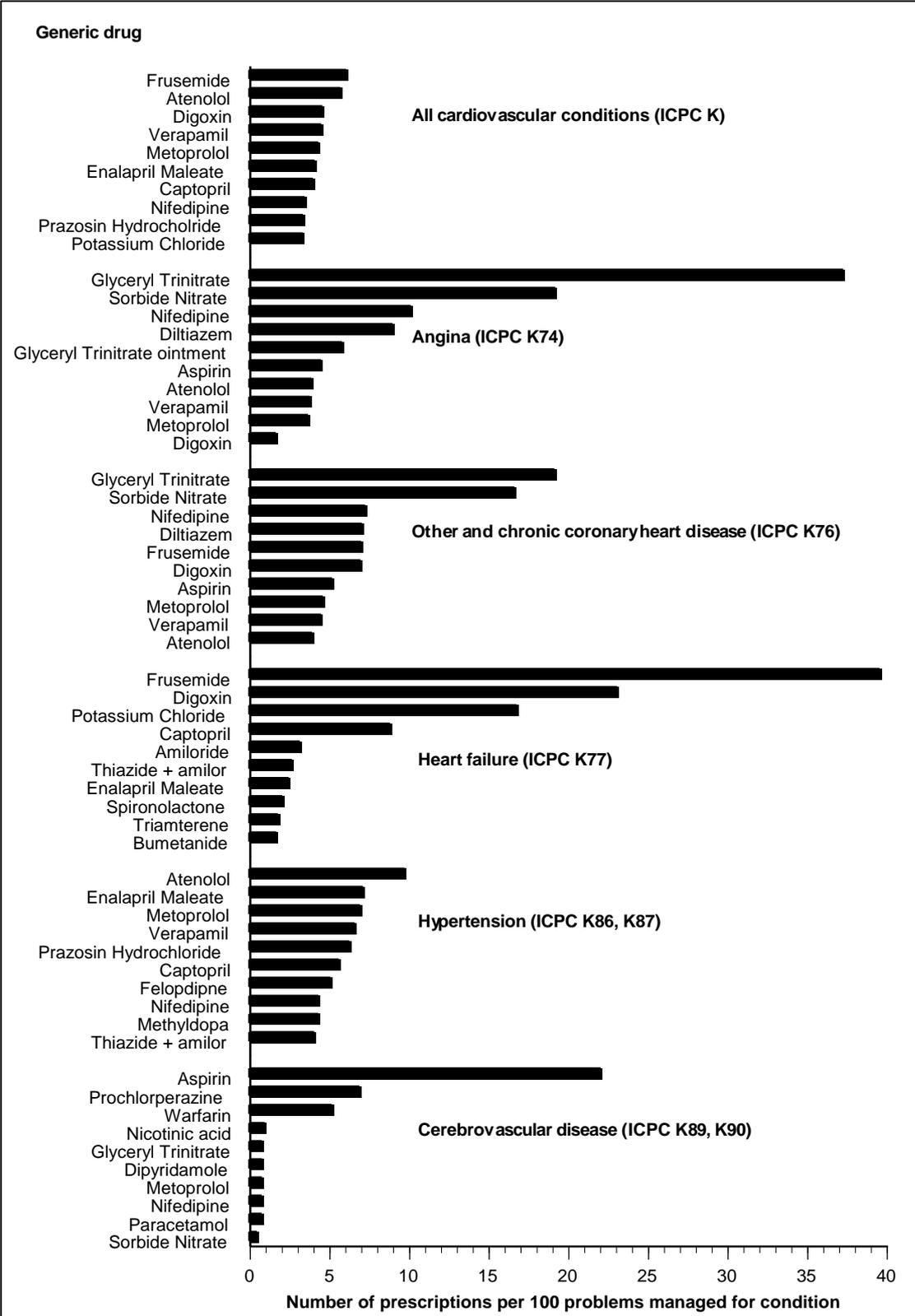
The most frequently prescribed drug for angina was glyceryl trinitrate, which accounted for 34.1% of all prescriptions for angina and was prescribed at an average rate of 37.2 prescriptions per 100 angina problems managed (Figure 20). Other antiangina agents commonly prescribed for angina were sorbide nitrate, nifedipine, diltiazem and glyceryl trinitrate ointment. These four drugs accounted for a further 40.4% of all prescriptions for angina.

For other and chronic coronary heart disease, the most commonly prescribed drugs were glyceryl trinitrate, sorbide nitrate, nifedipine and diltiazem (Figure 20). On average, 19.2 prescriptions for glyceryl trinitrate were written for every 100 diagnoses of other and chronic coronary heart disease. Sorbide nitrate, nifedipine and diltiazem were prescribed at rates of 16.6, 7.3 and 7.1 prescriptions, respectively, per 100 diagnoses.

Frusemide was the most frequently prescribed drug for heart failure. Frusemide accounted for 32.6% of all prescriptions for heart failure, and was prescribed at an average rate of 39.6 prescriptions per 100 heart failure diagnoses (Figure 20). Digoxin, potassium chloride, captopril, and amiloride were also commonly prescribed for heart failure, accounting for a further 42.7% of prescriptions for heart failure.

The five most frequently prescribed drugs for hypertension were atenolol (9.7 scripts per 100 diagnoses), enalapril maleate (7.1 scripts per 100 diagnoses), metoprolol (6.9 scripts per 100 diagnoses), verapamil (6.6 scripts per 100 diagnoses), and prazosin hydrochloride (6.3 scripts per 100 diagnoses) (Figure 20). Just over 40% of all prescriptions written for hypertension were for these five drugs.

Aspirin accounted for 45% of all prescriptions written for cerebrovascular disease (Table S14). On average, 22.1 scripts for aspirin were issued for every 100 cerebrovascular problems managed (Figure 20). Prochlorperazine and warfarin were the second and third most frequently prescribed drugs for cerebrovascular disease.



Refer to Tables S9–S14

Source: AIHW derived from the Survey of Morbidity and Treatment in General Practice in Australia 1990–91.

**Figure 20: Distribution of the ten most frequently written prescriptions for selected cardiovascular conditions, 1990–91**

## Prescribing of cardiovascular drugs

The Survey of Morbidity and Treatment in General Practice in Australia 1990–91 classifies cardiovascular drugs into the following nine groups:

- antihypertensive agents;
- antiarrhythmic agents;
- antiangina agents;
- cardiac glycosides;
- beta blockers;
- adrenergic stimulants;
- peripheral vasodilators;
- antimigraine drugs; and
- other cardiovascular drugs.

The survey classifies diuretics as urogenital drugs but in the analysis that follows diuretics have been included as cardiovascular drugs. The lipid lowering drugs clofibrate and cholestyramine, and the antithrombotic drugs warfarin, heparin and phenindione, are classified under the blood system and are not included in the analysis presented here.

A list of cardiovascular drugs by group and generic drug name is provided in **Appendix F**.

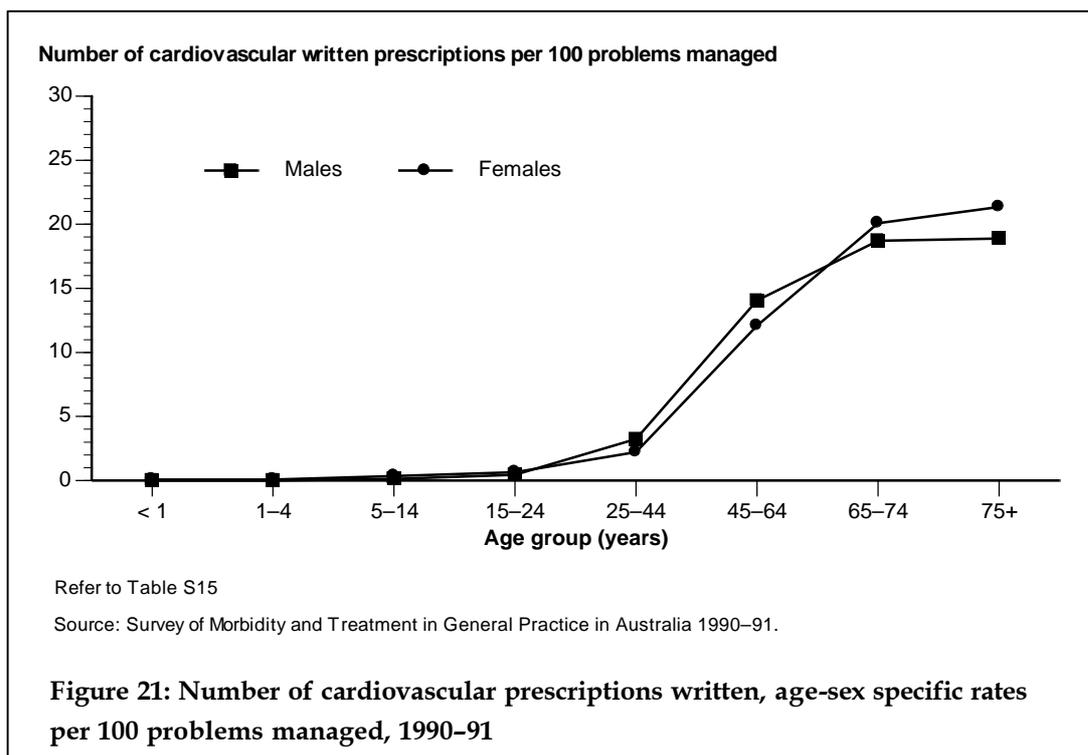
The unit record data set provided to the Australian Institute of Health and Welfare included information relating to a total of 98,556 prescriptions, an average of 99.8 prescriptions per 100 encounters and 67.7 prescriptions per 100 problems managed. At least one prescription was recorded at 63.6% of all encounters and for 53.5% of all problems managed.

Prescriptions for cardiovascular drugs (14,047 prescriptions) accounted for 14.3% of all prescriptions written during the survey period and were issued at an average rate of 9.6 prescriptions per 100 problems managed (Table S15).

The number of cardiovascular prescriptions written per 100 problems managed increased with age for both males and females (Figure 21). Between the ages of 25 and 64 years, the rate of cardiovascular prescriptions written was slightly greater for males than females, however the reverse was true from age 65 years onwards.

The four most frequently prescribed types of cardiovascular drugs were antihypertensive agents, diuretics, beta blockers and antiangina agents (Table 45). Together these four categories accounted for 86.6% of all cardiovascular prescriptions. Antihypertensive drugs were prescribed at an average rate of 3.0 prescriptions per 100 problems managed, while diuretics, beta blockers and antiangina agents were prescribed at average rates of 2.1, 1.8 and 1.4 scripts per 100 problems managed.

At the generic drug level, frusemide and atenolol were the most commonly prescribed drugs (Table S16).



**Table 45: Distribution of cardiovascular drugs by drug subgroup**

Drug subgroup	Number of prescriptions written	Percentage of all cardiovascular prescriptions written	Percentage of all prescriptions written	Number of prescriptions written per 100 problems managed (N=145,645)
Antihypertensive agents	4,390	31.3	4.5	3.0
Diuretics	3,058	21.8	3.1	2.1
Beta blockers	2628	18.7	2.7	1.8
Antiangina agents	2083	14.8	2.1	1.4
Cardiac glycosides	859	6.1	0.9	0.6
Other cardiovascular system drugs	547	3.9	0.6	0.4
Antimigraine drugs	225	1.6	0.2	0.2
Antiarrhythmic agents	173	1.2	0.2	0.1
Peripheral vasodilators	66	0.5	0.1	< 0.1
Adrenergic stimulants	14	0.1	< 0.1	< 0.1
Other cardiovascular drugs	6	0.0	< 0.1	< 0.1
<b>All cardiovascular drugs(a)</b>	<b>14,047</b>	<b>100.0</b>	<b>14.3</b>	<b>9.6</b>

(a) Components may not add to total due to rounding.

Source: AIHW derived from the Survey of Morbidity and Treatment in General Practice in Australia 1990-91.

Nearly 90% of all cardiovascular prescriptions (12,613 prescriptions) were written as part of the management for cardiovascular conditions. In terms of the management of specific conditions, 55.4% of all cardiovascular prescriptions were written for hypertension (Table 46). A further 11% were written for heart failure, followed by 9% for other and chronic coronary heart disease and 5% for angina.

**Table 46: Ten conditions most frequently managed by cardiovascular prescriptions**

Problem managed (ICPC code)	Total number of cardiovascular prescriptions written for condition	Percentage of all cardiovascular prescriptions (N=14,047)
Hypertension (K86 + K87)	7,779	55.4
Heart failure (K77)	1,580	11.2
Other and chronic coronary heart disease (K76)	1,246	8.9
Angina pectoris (K74)	735	5.2
Lipid metabolism disorder (T93)	480	3.4
Atrial fibrillation/flutter (K78)	290	2.1
Migraine (N89)	255	1.8
Disease of heart Not Otherwise Specified (K84)	198	1.4
Circulatory check up (K31)	127	0.9
Swollen ankles/ooedema (K07)	122	0.9

Source: AIHW derived from the Survey of Morbidity and Treatment in General Practice in Australia 1990–91.

Cardiovascular prescriptions accounted for more than 50% of all scripts written for people with hypertension, angina, other and chronic coronary heart disease, heart failure, acute myocardial infarction and rheumatic heart disease (Table 47). Further, at least one cardiovascular prescription was issued as part of the management regimen for 69.1% of angina problems, 63.9% of heart failure problems, 62.8% of hypertension and 56.3% of other and chronic coronary heart disease.

**Table 47: Number of cardiovascular prescriptions written for cardiovascular conditions**

Condition (ICPC code)	Number of cardiovascular prescriptions written for condition	Percentage of all prescriptions written for condition	Number of cardiovascular prescriptions written per 100 problems managed for condition	Percentage of problems managed for which at least one cardiovascular prescription written for condition
Rheumatic heart disease (K71)	32	52.5	65.3	36.7
Angina (K74)	735	91.9	100.5	69.1
Acute myocardial infarction (K75)	33	60.0	46.5	29.6
Other and chronic coronary heart disease (K76)	1,246	87.4	92.5	56.3
Coronary heart disease (K74-K76)	2,014	88.4	93.7	59.8
Heart failure (K77)	1,580	80.3	97.5	63.9
Hypertension (K86, K87)	7,779	93.6	83.2	62.8
Cerebrovascular disease (K89, K90)	52	17.4	8.5	6.7
Atherosclerosis (K91)	4	21.1	9.1	4.5
Peripheral vascular disease (K92)	52	37.1	12.2	10.5
<b>All cardiovascular disease (K)</b>	<b>12,613</b>	<b>84.4</b>	<b>69.3</b>	<b>50.4</b>

Source: AIHW derived from the Survey of Morbidity and Treatment in General Practice in Australia 1990–91.

# Estimates from the Australian Bureau of Statistics' National Health Survey 1995

## Use of medication for recent cardiovascular condition

### Use of medication for recent cardiovascular condition by age

The percentage of males and females reporting taking any medication for a recent cardiovascular condition increased dramatically with age until the 45–54 year age group, after which it remained fairly constant at about 98%. The proportions of males and females taking any medication for cerebrovascular disease and 'ill-defined signs and symptoms of heart conditions' were less than for the other cardiovascular conditions (Table 48).

**Table 48: Percentage of males and females reporting taking any medication for a recent cardiovascular condition by age group, 1995**

Sex/Type of condition	Age group (years)							All ages
	<25	25–34	35–44	45–54	55–64	65–74	75+	
<b>Males</b>								
Hypertension	*79.2	87.6	96.0	96.8	98.6	98.4	97.4	97.6
Heart disease	*43.1	85.5	97.1	94.2	92.2	90.6	95.8	92.1
Atherosclerosis	—	—	—	*	*95.4	100.0	*100.	92.2
Cerebrovascular disease <sup>(a)</sup>	*100.0	—	*	*77.4	*	67.4	59.8	61.8
Other diseases of the circulatory system	97.0	72.6	89.2	98.9	97.0	96.5	91.5	95.2
Ill-defined signs and symptoms of heart conditions	*28.2	—	72.9	74.7	60.6	74.5	75.1	69.7
<b>All cardiovascular<sup>(b)</sup></b>	<b>64.3</b>	<b>81.8</b>	<b>95.4</b>	<b>96.6</b>	<b>96.6</b>	<b>95.2</b>	<b>94.4</b>	<b>95.1</b>
<b>Females</b>								
Hypertension	64.5	79.5	96.9	97.0	98.4	98.4	97.8	97.5
Heart disease	*	*	100.0	97.4	89.1	95.1	97.3	94.8
Atherosclerosis	—	—	—	*	85.2	100.0	100.0	91.9
Cerebrovascular disease <sup>(a)</sup>	—	*100.0	*100.0	*40.8	*27.1	84.6	77.4	69.9
Other diseases of the circulatory system	*39.4	57.4	83.1	81.1	97.2	98.0	97.1	92.8
Ill-defined signs and symptoms of heart conditions	*32.1	*22.1	*82.2	77.8	72.1	82.8	78.5	76.5
<b>All cardiovascular<sup>(b)</sup></b>	<b>49.6</b>	<b>68.2</b>	<b>95.2</b>	<b>94.2</b>	<b>96.2</b>	<b>97.7</b>	<b>97.0</b>	<b>95.4</b>

(a) Includes after-effects of stroke.

(b) Each person may have reported more than one type of condition and therefore components do not add to totals.

—nil

\* Subject to high sampling variability.

Source: AIHW derived from the ABS National Health Survey 1995.

### Box 12: National Health Survey explanatory notes

Age-specific and age-standardised estimates are provided here. The standard population used for age standardisation was the estimated total mid-year Australian population in 1991 (refer to the Glossary).

Very small estimates are subject to high standard errors (relative to the size of the estimate). In this report, only estimates which were derived from a numerator estimate with a relative standard error of less than 25% are considered reliable. However, estimates with relative standard errors between 25% and 50% have been included and are preceded by an asterisk (e.g. \*1.6) to indicate that they should be interpreted with caution. Estimates with relative standard errors greater than 50% have not been shown as they are considered too unreliable for use (Australian Bureau Statistics 1997a). These estimates have been replaced by an asterisk (\*).

Definitions of the items included in the tables below are provided in **Appendix A**.

Just over 90% of males and females reported taking 'heart' medication (i.e. medication for fluid, the heart or blood pressure) for a recent cardiovascular condition. Over 95% of males and females reporting hypertension, reported taking 'heart' medication for that condition. Relatively more males (68.8%) than females (53.2%) took 'heart' medication in the 25–34 year age category (Table 49).

**Table 49: Percentage of males and females reporting taking 'heart' medication for a recent cardiovascular condition by age group, 1995**

Sex/Type of condition	Age group (years)							All ages
	<25	25–34	35–44	45–54	55–64	65–74	75+	
<b>Males</b>								
Hypertension	*79.2	84.4	96.0	95.7	98.3	96.9	94.5	<b>96.3</b>
Heart disease	*26.8	*52.4	85.7	87.5	87.3	81.7	91.1	<b>84.8</b>
Atherosclerosis	—	—	—	—	*95.4	*60.6	*67.5	<b>67.3</b>
Other diseases of the circulatory system	*	*38.0	36.5	54.9	72.2	58.8	51.8	<b>57.8</b>
Ill-defined signs and symptoms of heart conditions	*28.2	*	100.0	92.5	89.9	91.2	94.4	<b>89.6</b>
<b>All cardiovascular<sup>(a, b)</sup></b>	<b>28.8</b>	<b>68.8</b>	<b>88.3</b>	<b>91.7</b>	<b>94.5</b>	<b>90.7</b>	<b>92.0</b>	<b>90.7</b>
<b>Females</b>								
Hypertension	53.5	77.5	93.1	94.6	96.2	96.6	96.2	<b>95.4</b>
Heart disease	*	*	*86.0	86.8	82.0	89.7	88.4	<b>87.0</b>
Atherosclerosis	—	—	—	*	*61.7	*100.0	*100.0	<b>91.2</b>
Other diseases of the circulatory system	—	—	*9.1	36.0	53.4	54.4	61.5	<b>49.6</b>
Ill-defined signs and symptoms of heart conditions	*32.1	*55.8	*75.7	69.2	85.5	89.1	93.1	<b>86.9</b>
<b>All cardiovascular<sup>(a, b)</sup></b>	<b>32.9</b>	<b>53.2</b>	<b>78.4</b>	<b>88.2</b>	<b>91.6</b>	<b>93.4</b>	<b>93.7</b>	<b>90.3</b>

(a) Includes cerebrovascular disease and after-effects of stroke.

(b) Each person may have reported more than one type of condition and therefore components do not add to totals.

—nil

\* Subject to high sampling variability.

Source: AIHW derived from the ABS National Health Survey 1995.

## Use of medication for recent cardiovascular condition by sex

After adjusting for age, 84.8% of males and 75.8% of females reported taking some form of medication for a recent cardiovascular condition. The prevalence of people taking 'heart' medication for a recent cardiovascular condition was around 63% for both males and females (Table 50).

Females reported higher rates of taking medication for hypertension, atherosclerosis and 'ill-defined signs and symptoms of heart conditions'. Males reported higher rates (33.6%) than females (15.9%) for taking 'heart' medication for 'other diseases of the circulatory system', whereas females reported greater rates (18.0%) than males (3.5%) for cerebrovascular disease (Table 50).

**Table 50: Percentage<sup>(a)</sup> of males and females reporting taking medication for a recent cardiovascular condition by sex, 1995**

Type of condition	Any medication		Heart medication	
	Males (SE)	Females (SE)	Males (SE)	Females (SE)
Hypertension	65.7 (1.1)	83.5 (1.3)	64.6 (1.1)	73.5 (1.1)
Heart disease	74.9 (2.5)	67.7 (2.7)	55.7 (2.0)	56.0 (2.3)
Atherosclerosis	19.2 (2.7)	21.9 (4.3)	13.8 (2.3)	21.9 (4.3)
Cerebrovascular disease <sup>(b)</sup>	40.6 (4.7)	35.6 (4.5)	3.5 (0.6)	18.0 (3.0)
Other diseases of the circulatory system	91.5 (3.0)	60.3 (2.2)	33.6 (1.4)	15.9 (0.9)
Ill-defined signs and symptoms of heart conditions	55.5 (2.4)	64.6 (2.6)	53.8 (2.3)	58.5 (2.4)
<b>All cardiovascular</b>	<b>84.8 (1.2)</b>	<b>75.8 (1.0)</b>	<b>63.3 (0.9)</b>	<b>63.7 (0.8)</b>

(a) Age-standardised to the mid-1991 total Australian population.

(b) Includes after-effects of stroke.

SE: Standard error

Source: AIHW derived from the ABS National Health Survey 1995.

## Use of medication for recent cardiovascular condition by State and Territory

After adjusting for age, the reported rate for taking any medication for a recent cardiovascular condition was highest in Queensland (88.0%) and Victoria (83.2%) and lowest in South Australia (59.6%) and the Australian Capital Territory (58.6%). For use of specific 'heart' and blood pressure medications, reported rates were highest in Queensland (78.9%) and Victoria (68.3%) and lowest in South Australia (48.7%), Western Australia (51.1%) and the Australian Capital Territory (51.4%) (Table 51).

**Table 51: Percentage<sup>(a)</sup> of people reporting taking any medication for a recent cardiovascular condition by State and Territory, 1995**

Medication	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
	Per cent (SE)							
<b>Any medication</b>	69.6(1.1)	83.2 (1.6)	88.0 (2.1)	68.0 (2.5)	59.6 (2.1)	74.9 (4.4)	58.6 (5.6)	68.7 (11.3)
<b>Heart medication</b>	55.8 (0.9)	68.3 (1.4)	78.9 (1.9)	51.1 (1.9)	48.7 (1.8)	60.5 (3.6)	51.4 (5.0)	64.0 (10.7)

(a) Age-standardised to the mid-1991 total Australian population.

SE: Standard error

Source: AIHW derived from the ABS National Health Survey 1995.

# Data from the Newcastle and Perth MONICA Projects

## Newcastle MONICA project

This study is described in detail on page 76. Information is available on drugs prescribed before onset of a coronary event, during the event for those who went to hospital, and at discharge for those who went to hospital and were discharged alive.

As there is a lack of national data on drug use in hospitals, a summary is provided here of the Newcastle MONICA results on drugs prescribed during hospitalisation for patients suffering coronary events. In 1994, anticoagulants were the most common type of drug prescribed during hospitalisation for persons suffering coronary events and were prescribed for 81% of cases managed (Table 52). Aspirin was the second most commonly prescribed drug in that year, being prescribed during hospitalisation for 80% of cases managed in hospital. Other drugs commonly prescribed during hospitalisation were beta blockers and calcium channel blockers.

Trends indicate that the use of most cardiovascular drugs during hospitalisation for coronary events has generally increased since 1984–85 (Table 52). This was true for anticoagulants, aspirin, antiarrhythmic drugs, beta blockers, calcium channel blockers, ACE inhibitors, thrombolytic therapy, and hypolipidaemic agents. However, the use of digoxin/digitalis during hospitalisation for coronary events fell over the 10-year period. The use of diuretics and 'other antihypertensive drugs' during hospitalisation fell between 1984–85 and 1988–89 but have remained fairly stable since.

**Table 52: Percentage of patients suffering coronary events who were prescribed certain drugs during hospital admission, persons aged 25 to 69 years, Newcastle, 1984–1994**

Type of drug	Year						
	1984–85	1988–89	1990	1991	1992	1993	1994
Anticoagulants	65.1	66.2	72.0	77.0	74.7	78.6	81.2
Aspirin	17.4	56.8	66.3	69.9	76.1	80.5	80.0
Other antiplatelet agents	0.2	1.2	0.5	—	—	—	—
Antiarrhythmic-not							
Beta blockers	23.3	17.9	20.3	20.1	22.0	25.6	28.6
Beta blockers	41.0	40.9	44.3	44.9	49.4	51.9	55.5
Calcium channel blockers	26.7	41.8	48.5	49.5	52.3	54.1	52.2
Ace inhibitors	2.7	16.9	22.8	29.8	31.2	36.6	35.5
Diuretics	40.6	31.0	29.8	31.2	30.4	31.9	29.8
Other antihypertensive drugs	19.4	7.5	6.7	5.5	4.9	5.7	6.5
Digoxin/digitalis	25.3	19.3	17.1	17.6	15.3	16.0	15.5
Nitrates	71.9	75.0	79.8	85.1	—	—	—
Hypolipidaemic agents	0.8	5.0	6.1	7.6	9.4	12.0	9.8
Thrombolytic therapy	0.2	15.4	18.6	20.8	18.3	19.5	22.0
Insulin	—	5.6	5.6	5.9	5.5	7.4	3.7
Oral hypoglycaemic agents	—	4.5	4.6	4.7	6.0	5.1	5.7

—nil

Source: Steele & McElduff 1995b.

## Perth MONICA project

The Perth MONICA centre collected data on all suspected cases of heart attack or coronary death among residents aged 25 to 64 years living within the Perth statistical division. The study was conducted over a 10-year period and registration began in 1984.

Trends in the drug treatment of patients treated in hospital for acute myocardial infarction have been published by Thompson et al. (1992) for the period 1984 to 1990. In their paper, Thompson and colleagues defined a coronary event as a 'definite acute myocardial infarction or a fatal possible acute myocardial infarction or a final clinical diagnosis coded to the ICD-9 codes 410 or 411 (except 411.1)'.

For drug therapy during the hospital stay, there was a steady increase in the use of beta blockers from 52% in 1984 to 76% in 1990 (Table 53). The use of antiplatelet drugs (mainly aspirin), lipid lowering drugs and thrombolytic agents (principally streptokinase) also increased over the 7-year period. However, the proportion of patients receiving digitalis, other antiarrhythmics and diuretics during their hospital stay fell between 1984 and 1990.

**Table 53: Percentage of patients aged 25 to 64 years with acute coronary symptoms prescribed certain drugs during hospital admission<sup>(a)</sup>, Perth, 1984–1990**

Type of drug	Year							All
	1984	1985	1986	1987	1988	1989	1990	
Beta blockers	51.5	56.8	62.4	64.3	71.0	75.9	76.1	65.6
Calcium channel blockers	52.8	54.2	53.1	57.6	54.4	49.1	45.6	52.3
Diuretics	42.0	41.6	39.1	33.8	33.8	35.7	33.3	37.0
Other antihypertensive agents	9.8	13.1	11.3	9.9	14.2	16.6	17.5	13.2
Digitalis	12.2	10.5	10.0	7.8	10.2	9.8	7.8	9.7
Other inotropic agents	10.9	11.1	12.5	12.8	13.6	14.0	14.3	12.8
Antiarrhythmic agents	49.3	36.4	35.4	33.0	28.9	29.3	22.6	33.4
Anticoagulants	83.1	84.1	86.5	86.9	84.9	74.2	80.7	82.9
Thrombolytic agents	2.4	7.9	12.2	17.4	24.6	30.5	32.4	18.4
Antiplatelet agents	25.1	47.2	48.6	63.1	80.4	88.9	87.9	63.3
Intravenous nitrates	44.8	48.3	42.3	41.9	40.5	45.3	48.5	44.5
Insulin	5.2	8.5	10.4	12.3	10.2	9.5	11.2	9.6
Hypolipidaemic agents	0.7	0.4	1.4	3.0	4.8	3.7	4.2	2.6
Number of patients	745	718	782	757	748	748	796	5,294

(a) Information on drugs prescribed during admission was not available for approximately 2% of patients each year. These patients were treated in non-teaching hospitals and are assumed not to have been prescribed the drug in question.

Source: Thompson et al. 1992.

## Data from the Hunter Region Heart Disease Prevention Programme

The 1994 survey of the Hunter Region Heart Disease Prevention Programme Risk Factor Prevalence Study asked several questions about aspirin use (Alexander et al. 1995). Specifically, respondents were asked how often they took aspirin, and whether they had taken aspirin during the last two weeks to prevent or treat heart disease.

In 1994, 5% of males and 2% of females aged 35 to 64 years reported that they had taken aspirin in the two weeks before interview to prevent or treat heart disease (Table 54). The

proportion of males and females taking aspirin to prevent or treat heart disease increased with age. Those aged 65 to 69 years were particularly more likely to have taken aspirin than those aged 64 years and under.

**Table 54: Percentage<sup>(a)</sup> of males and females who took aspirin in the two weeks before interview to prevent or treat heart disease, 35 to 69 year olds, Hunter region, 1994**

Age group (years)	Males	Females
35–39	—	1
40–44	1	—
45–49	3	1
50–54	9	1
55–59	9	4
60–64	12	6
65–69	22	11
<b>Total (35–64)</b>	<b>5</b>	<b>2</b>

(a) Weighted per cent

—nil

Source: Alexander et al. 1995

Over the period 1983 to 1994, the proportion of males aged 35 to 64 years taking aspirin every day increased from 3% to 8% (Table 55). In fact, in each age group, males in 1994 were more likely to take aspirin every day than their counterparts in 1983 and 1988–89. Among females, however, this was only true for those aged 55 to 69 years, and overall the proportion of females taking aspirin every day remained constant at 3%.

**Table 55: Percentage<sup>(a)</sup> of males and females taking aspirin every day, 35 to 69 year olds, Hunter region, 1983–1994**

Sex / age group (years)	Year		
	1983	1988–89	1994
<b>Males</b>			
35–39	1	—	—
40–44	2	2	—
45–49	3	—	6
50–54	4	6	17
55–59	5	12	16
60–64	4	12	17
65–69	n.a.	18	28
<b>Total (35–64)</b>	<b>3</b>	<b>5</b>	<b>8</b>
<b>Females</b>			
35–39	2	1	1
40–44	2	1	—
45–49	5	4	1
50–54	4	5	1
55–59	3	4	7
60–64	4	8	11
65–69	n.a.	15	18
<b>Total (35–64)</b>	<b>3</b>	<b>3</b>	<b>3</b>

(a) Weighted per cent

—nil

n.a. not applicable, people aged 65–69 years were not included in the 1983 survey.

Source: Alexander et al. 1995.