

## Key points

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- In the 2000-01 financial year, health expenditure on asthma was \$693 million, which represented 1.4% of total allocated health expenditure.
- The proportion of total health expenditure on asthma is highest among children, particularly boys aged 5 to 14 years, where it is 5.5% of annual health expenditure for that age group.
- More than half of expenditure on asthma is attributable to pharmaceuticals.
- Within the hospital care sector, 46% of expenditure on asthma is attributable to children aged 0 to 14 years.
- Per capita health expenditure on asthma increased by 21% between 1993-94 and 2000-01 (adjusted for inflation).

## Introduction

The economic impact of asthma on society includes expenditure on health care for people with asthma and indirect costs for individuals with asthma and their families arising from disability and time lost from school and work. This chapter provides information about health expenditure for asthma, which is a component of the overall costs of asthma in Australia. It has drawn on information included in ACAM's report Health Expenditure and Burden of Disease due to Asthma in Australia (ACAM 2005b).

Health expenditure is a term used to describe the actual amount spent on health care services. In this chapter the term 'total health expenditure' refers to the sum of health expenditure for all health conditions, while 'expenditure on asthma' is the component of total health expenditure that is attributable to health care for asthma. The data presented here represent allocated, recurrent health expenditure. This excludes expenditure that could not be allocated to specific diseases and also excludes capital expenditure.

This chapter examines asthma expenditure in terms of (1) the rate of expenditure per capita (i.e. per person in the population); (2) the proportion of expenditure spent by age group or sex; (3) the distribution of expenditure by health sector; and (4) changes in expenditure between 1993-94 and 2000-01.

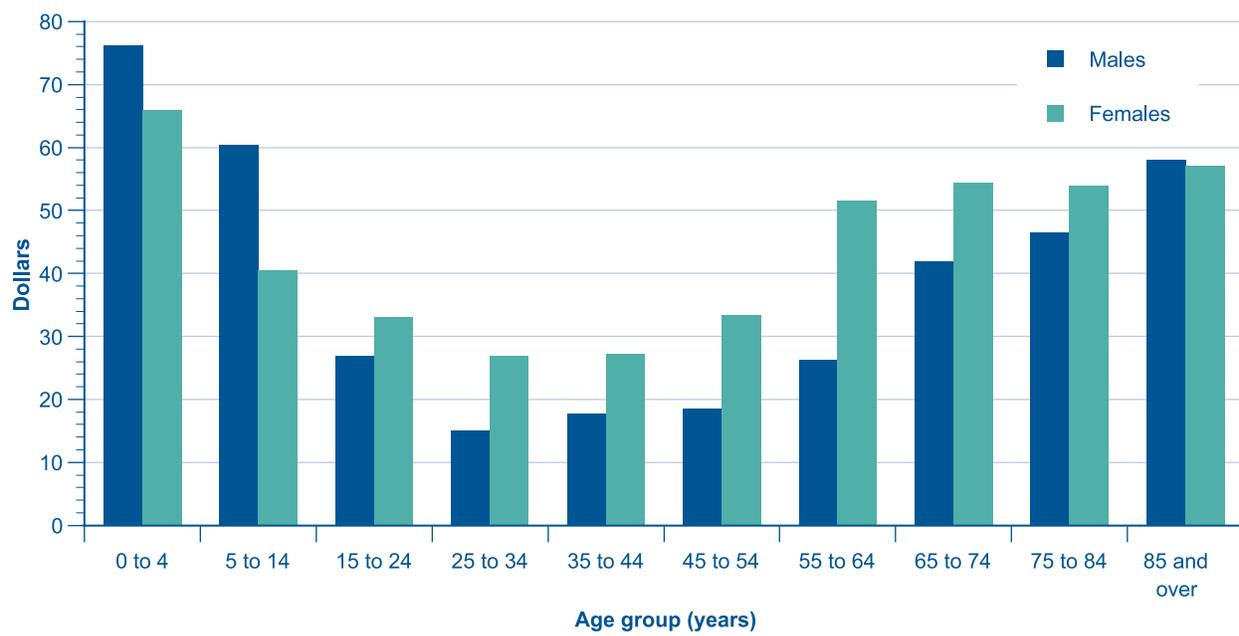
The methods and data used in this section are described in Appendix 1, Section A1.5. Summarised data are provided in Appendix 2, Tables A2.13 and A2.14.

## 9.1 Overall expenditure on asthma

In 2000-01, total allocated, recurrent health expenditure for government and non-government services in Australia was \$49.2 billion. In the same year, health expenditure attributable to asthma was \$693 million (1.4% of total allocated recurrent health expenditure) (AIHW 2004c).

Children aged 0 to 4 years had the highest per capita rate of health expenditure for asthma (\$76 per boy and \$66 per girl) (Figure 9.1). Per capita expenditure on asthma was lowest among those aged 25 to 34 years and rose again in older people, though not as high as for children. Among adults, per capita health expenditure was generally higher for females than males.

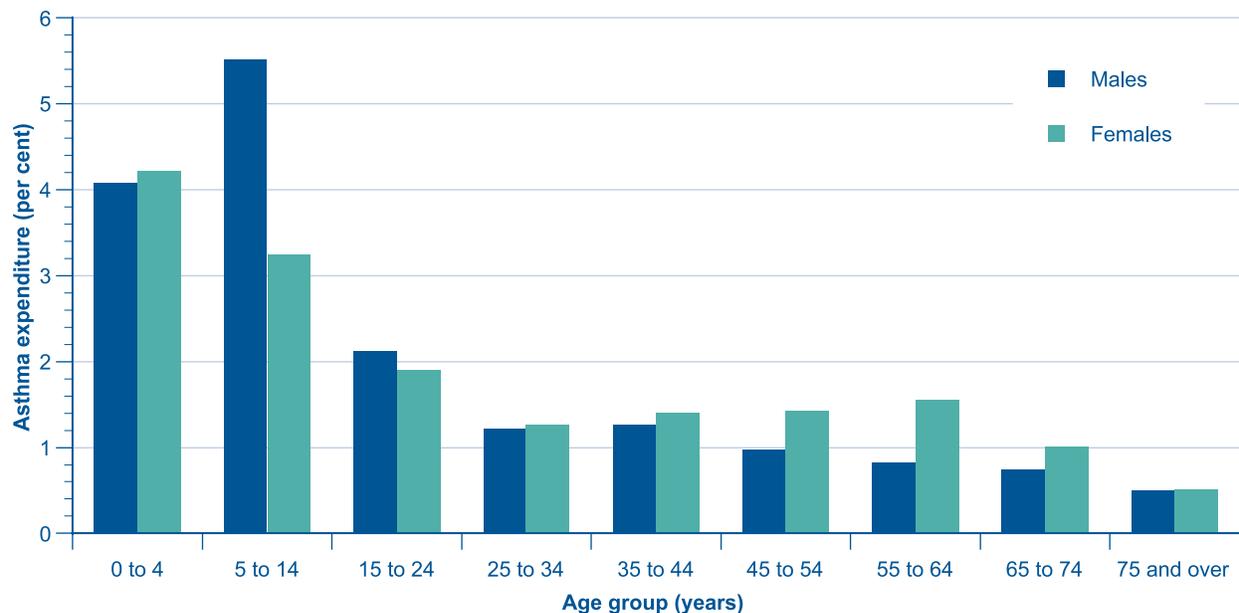
**Figure 9.1**  
**Expenditure on asthma per capita, by age group and sex, Australia, 2000–01**



Source: AIHW health care expenditure database.

The proportion of total health expenditure attributable to asthma was higher among children, particularly boys aged 5 to 14 years, where 5.5% of total health expenditure in this age group was attributable to asthma. On the other hand, among the elderly, asthma represented a substantially lower proportion of health expenditure (0.5%) (Figure 9.2). This is because there are many other causes of health expenditure in the elderly.

**Figure 9.2**  
**Proportion of total health expenditure attributed to asthma, by age group and sex, Australia, 2000–01**



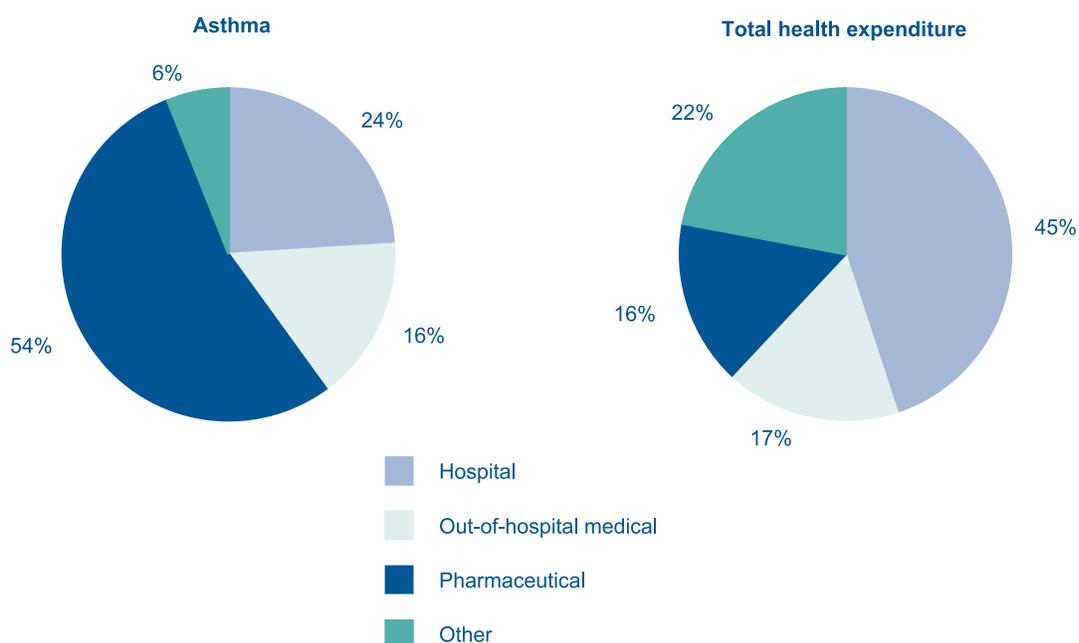
Source: AIHW health care expenditure database.

## 9.2 Expenditure by health care sector

In this section, four health care sectors are considered: (1) hospital, which includes inpatient, emergency and outpatient care (both public and private); (2) out-of-hospital medical care, which is primarily care in the community from general practitioners as well as specialists, imaging and pathology services; (3) pharmaceuticals, including prescribed and over-the-counter medications; and (4) other expenditure which comprises aged care services, community allied health services and research.

Over half (54%) of the expenditure on asthma was attributable to pharmaceuticals (Figure 9.3). This was substantially higher than the proportion of total health expenditure that was attributable to pharmaceuticals (16%). On the other hand, a substantially lower proportion of expenditure on asthma was attributable to hospital care (24%) compared to total health expenditure (45%).

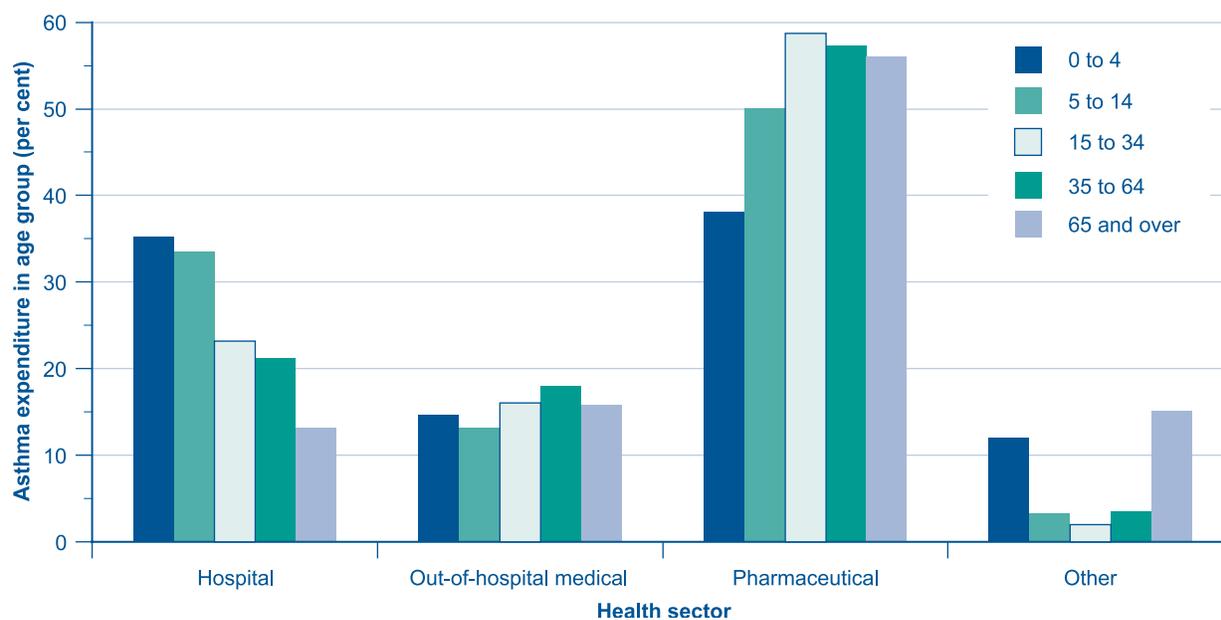
**Figure 9.3**  
**Distribution of expenditure on asthma and total health expenditure among health sectors, Australia, 2000–01**



Source: AIHW health care expenditure database.

The highest proportion of expenditure on asthma in all age groups was attributable to pharmaceutical costs (Figure 9.4). Pharmaceutical expenditure comprised a greater proportion of expenditure on asthma in adult age groups than in children, particularly young children. A relatively greater proportion of expenditure on asthma in children occurred in the hospital care sector.

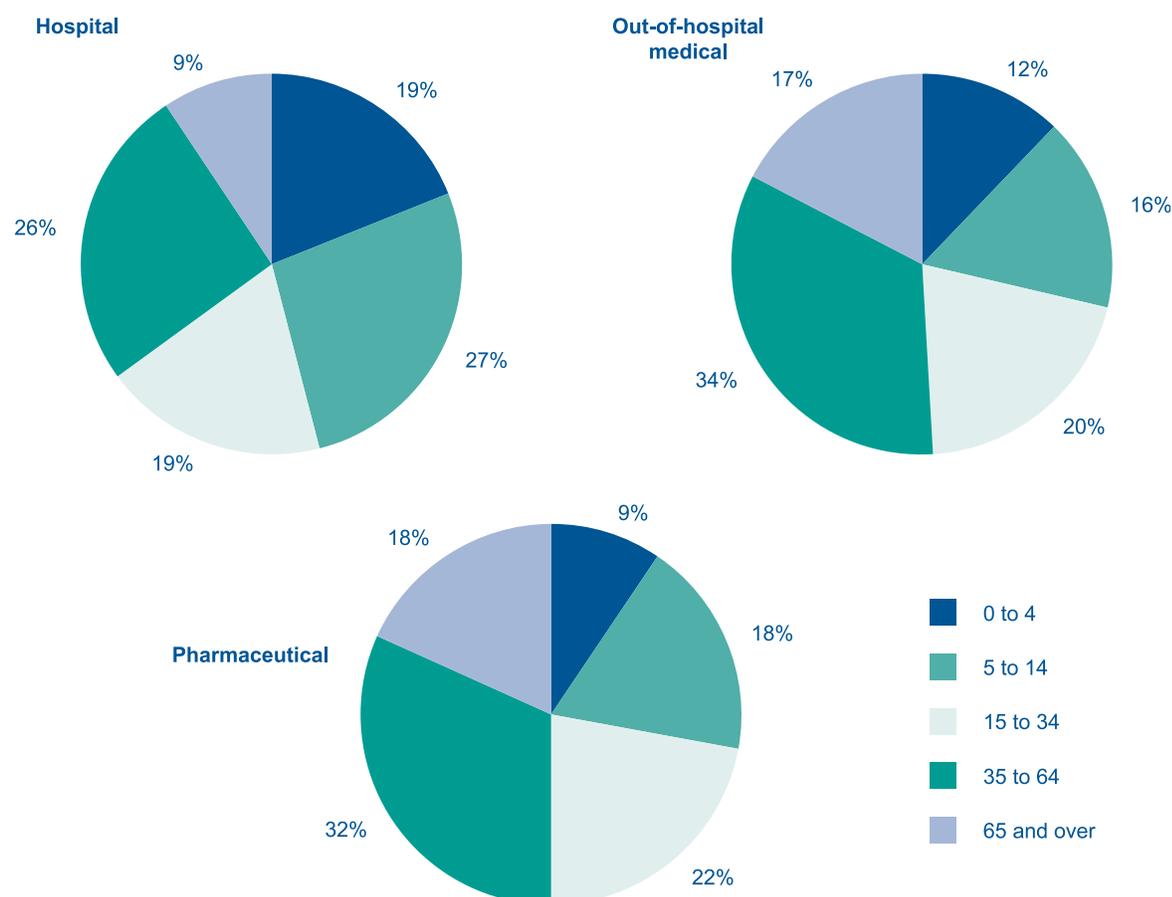
**Figure 9.4**  
Proportions of expenditure on asthma in each age group, by health sector, Australia, 2000–01



Source: AIHW health care expenditure database.

In each health sector, over 25% of asthma-related health expenditure was for children aged 0 to 14 years (Figure 9.5). In the hospital sector, nearly half (46%) of hospital expenditure on asthma was for this age group. In the out-of-hospital medical sector, children aged 0 to 14 years accounted for 28% of expenditure on asthma, while 55% was for adults aged 15 to 64 years.

**Figure 9.5**  
**Expenditure on asthma, by health sector and age group, Australia, 2000–01**



Source: AIHW health care expenditure database.

### 9.3 Changes in expenditure on asthma, 1993–94 to 2000–01

Between 1993–94 and 2000–01 there was a 21% increase in per capita expenditure on asthma, after adjustment for inflation (Table 9.1). The increase was 17% for expenditure on asthma in males and 27% for expenditure on asthma in females. However, among children aged 0 to 14 years, this increase was substantially smaller and among boys aged 0 to 4 years, the group with the highest per capita expenditure on asthma (see Figure 9.1), there was actually an 11% decrease in expenditure on asthma, reflecting the reduction in hospitalisations for asthma among children over this time period (see Figure 5.20).

**Table 9.1**  
**Expenditure on asthma per capita, Australia, 1993–94 and 2000–01**

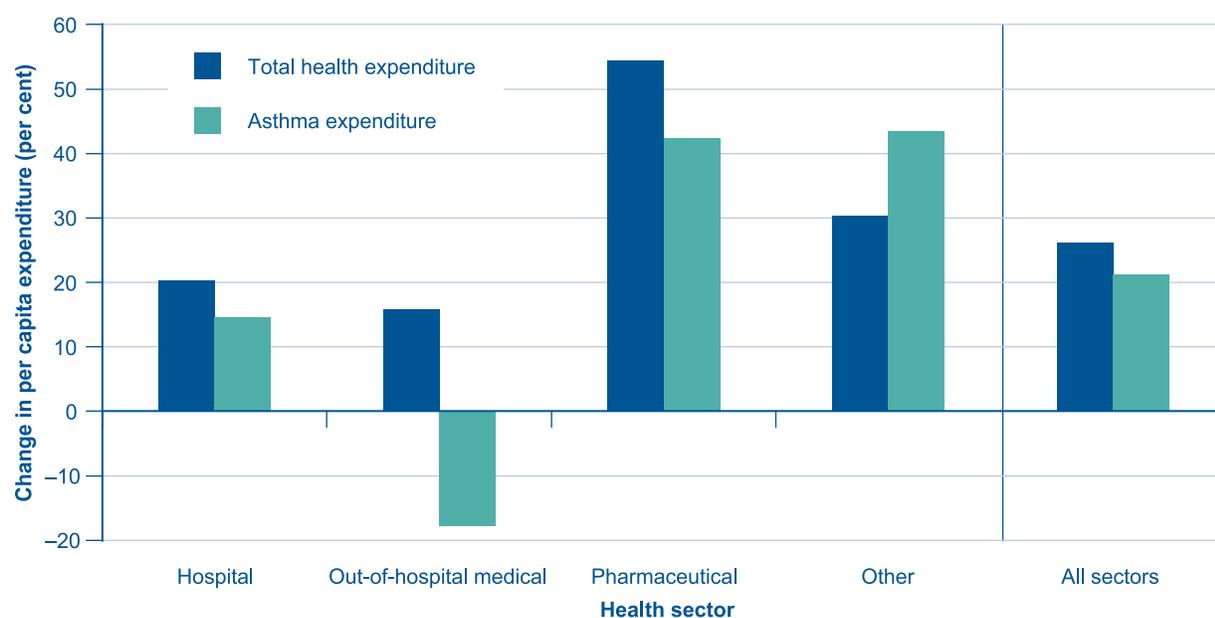
Sex/age group (years)	1993–94 expenditure (\$2000–01 prices)	2000–01 expenditure (\$)	Per cent change
<b>Males</b>			
0 to 4	85.38	76.24	-11
5 to 14	57.78	60.42	5
15 to 24	18.58	26.98	45
25 to 34	10.83	15.02	39
35 to 44	12.16	17.73	46
45 to 54	14.01	18.61	33
55 to 64	20.51	26.27	28
65 to 74	34.28	41.86	22
75 and over	35.56	48.70	37
<b>All males</b>	<b>27.87</b>	<b>32.73</b>	<b>17</b>
<b>Females</b>			
0 to 4	63.03	65.91	5
5 to 14	40.10	40.44	1
15 to 24	24.46	33.15	36
25 to 34	18.26	26.92	47
35 to 44	19.85	27.28	37
45 to 54	23.79	33.49	41
55 to 64	38.28	51.54	35
65 to 74	39.60	54.45	38
75 and over	41.38	54.77	22
<b>All females</b>	<b>30.87</b>	<b>39.12</b>	<b>27</b>
<b>Persons</b>			
0 to 4	74.49	71.21	-4
5 to 14	49.17	50.68	3
15 to 24	21.46	30.01	40
25 to 34	14.54	21.00	44
35 to 44	16.00	22.53	41
45 to 54	18.80	26.05	39
55 to 64	29.35	38.75	32
65 to 74	37.10	48.36	30
75 and over	39.19	52.40	34
<b>All persons</b>	<b>29.66</b>	<b>35.95</b>	<b>21</b>

Note: 1993–94 dollars converted to 2000–01 dollars to control for inflation.

Source: AIHW health care expenditure database.

The increase in per capita expenditure on asthma during the period 1993–94 to 2000–01 (21%) was slightly less than the increase in total health expenditure over this period (26%) (Figure 9.6). The greatest difference between expenditure on asthma and total health expenditure was in the out-of-hospital medical sector, where expenditure on asthma decreased by 18% while total health expenditure increased by 16%. This is consistent with the observed decrease in GP episodes of care for asthma (see Figure 5.2 and Figure 5.3). Although the largest increase in expenditure on asthma was in pharmaceuticals, the increase in pharmaceutical expenditure for asthma was less than the increase in total health expenditure for pharmaceuticals. It is also noteworthy that while expenditure on asthma increased in the hospital sector, hospitalisation rates decreased (see Figure 5.20). This suggests that expenditure per hospital admission on asthma increased over this period.

**Figure 9.6**  
**Change in per capita health expenditure, total and for asthma, by health sector, Australia, 1993–94 to 2000–01**

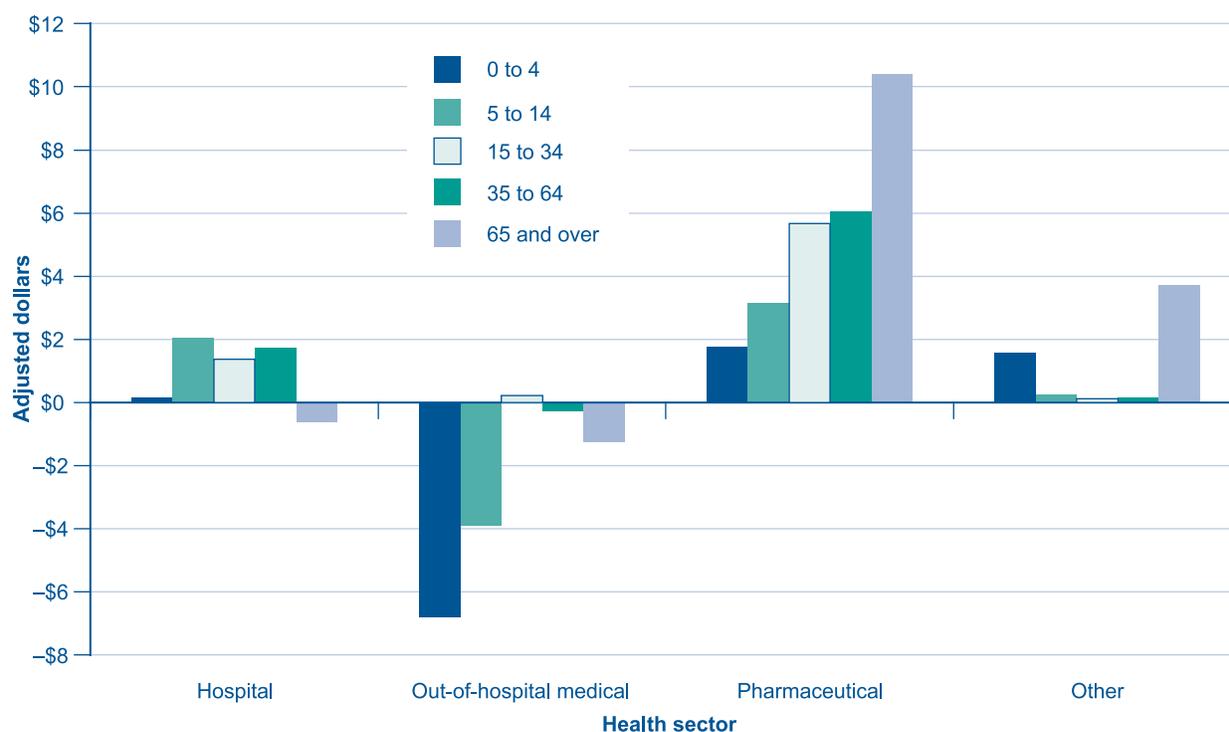


Note: 1993–94 dollars converted to 2000–01 dollars to control for inflation.

Source: AIHW health care expenditure database.

Inflation-adjusted per capita expenditure for out-of-hospital medical care decreased in most age groups between 1993–94 and 2000–01, apart from a small increase in people aged 15 to 34 years (Figure 9.7). Expenditure on asthma pharmaceuticals increased in all age groups, with increases of more than \$10 per capita in the 65 years and over age group. This increase occurred over a time when the prevalence of asthma had remained stable, and possibly even decreased slightly (see Figure 3.1 and Figure 3.2). This implies that either a relatively higher proportion of people with asthma were receiving pharmaceutical treatment for asthma, or they were being treated with more expensive pharmaceuticals, or both. A possible alternative explanation is that the decline in asthma prevalence among children was illusory and that the continued rise in expenditure for asthma pharmaceuticals in this age group implies that they were being relabelled with an alternative diagnosis.

**Figure 9.7**  
**Change in per capita expenditure on asthma, by age group and health sector, Australia, 1993–94 to 2000–01**



Note: 1993–94 dollars converted to 2000–01 dollars to control for inflation.

Source: AIHW health care expenditure database.

## Summary

Overall, expenditure on asthma represented a rather small proportion of total health expenditure in Australia in 2000–01. Many features of the distribution of expenditure are predictable on the basis of the nature of the disease, its treatment and its known epidemiology. For example, the observed gender differences in expenditure on asthma also reflect known differences in prevalence and health service use, with more asthma in boys than girls and more in adult women than men. As reported in Section 5.4, hospitalisation rates were highest in children, hence the proportion of expenditure attributable to hospital care in children was greater than in adults. The major therapeutic intervention for asthma is pharmaceutical, and this was reflected in the relatively high proportion of expenditure on asthma in the pharmaceutical sector. Furthermore, the proportion of expenditure on asthma attributable to pharmaceuticals was higher in adults than in children, in whom regular preventer therapy is less widely recommended and used.

There has been a substantial inflation-adjusted rise in expenditure on asthma in all age groups except under-5 year olds and across most sectors except out-of-hospital medical care. In fact, there was a reduction in expenditure on out-of-hospital medical care for children during the period 1993–94 to 2000–01. This probably reflects the observed decline in GP episodes of care for asthma.

The largest proportion of expenditure on asthma was for pharmaceuticals. This was also the sector with the largest increase in expenditure since 1993–94, particularly in adults.