

5.1 General practice encounters for asthma

General practitioners (GPs) play a central role in the management of asthma in the community. This role includes assessment, prescription of regular medications, education and review as well as managing acute exacerbations.

Asthma-related visits to GPs may occur for a variety of reasons, including:

- the acute or reactive management of asthma symptoms
- a review during or following an acute episode
- a visit for maintenance activities, such as monitoring and prescription of regular medications.

The GP may initiate an opportunistic review when a patient visits for another condition or the patient or GP may schedule a structured asthma review visit.

In a study of 1,006 adults with current asthma during 2003 and 2004, 14.3% had an emergency visit to a general practitioner for asthma in the 12 months before being surveyed (Marks et al. 2007). This same study reported that 21.4% of 199 children made an emergency visit to the GP. In another study, 58% of 421 patients with asthma who had visited the GP in the past 12 months had had asthma managed during at least one of those visits. Of those who had not had their asthma managed by a GP in the last 12 months, 72.6% stated it had been more than 2 years since such management had been provided by their GP (AIHW: Britt & Miller 2007, SAND abstract 104).

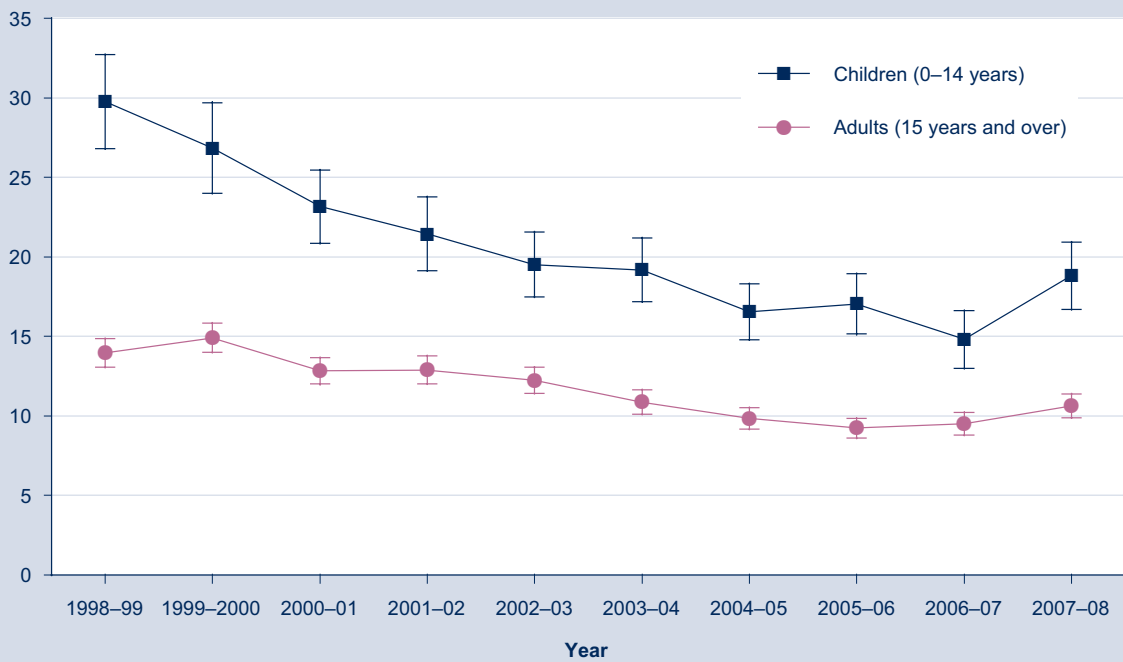
Unscheduled medical visits for asthma, which are most likely to represent visits for acute or reactive management of asthma symptoms, occur less commonly among Australians with asthma than people with asthma in other countries. In the Asthma Insights and Reality surveys of North America, Europe and Asia, the rate of unscheduled asthma visits to a health facility other than a hospital ED (for example, visits to a GP) among people with asthma ranged from 25% in western Europe to 47% in Japan (Rabe et al. 2004).

This section presents information on all asthma-related general practice encounters. These estimates are based on data from the Bettering the Evaluation and Care of Health (BEACH) survey (AIHW: Britt et al. 2008), which are derived from a set of encounters reported by a rolling random sample of GPs in Australia. Rates are expressed as population-based rates and as proportions of all general practice encounters. This section also includes data on how asthma is managed in general practice, also obtained from the BEACH survey. Information on referrals, performance of spirometry and other lung function tests, prescription patterns and the provision of education are provided. For more details about BEACH data and methods, see Appendix 1, Section A1.3. This section also reports data on Practitioner Incentives Payment (PIP) claims for reimbursement for structured general practice review visits for asthma (the Asthma Cycle of Care, formerly the Asthma 3+ Visit Plan).

5.1.1 Time trends

The rate of general practice encounters for asthma has decreased since 1998–99. The largest reduction, expressed as the rate per 100 population, has been among children, where the rate fell by around 37 percentage points between 1998 and 2008 (Figure 5.1). The rate among adults demonstrated a slightly slower overall decline (24 percentage points) reaching a plateau of around 10 encounters for asthma per 100 population during the most recent 4 years (Figure 5.1; see also Appendix 2, Table A2.9). The proportion of all GP encounters that include the management of asthma has also declined over this time period, although the relative decrease is smaller than absolute reduction in visits for asthma (Figure 5.2; see also Appendix 2, Table A2.9). In 2007–08, encounters at which asthma was managed accounted for 4.8% of all GP encounters with children and 1.8% of all adult GP encounters.

General practice encounters per 100 population



Notes: Asthma classified according to International Classification of Primary Care, 2nd edition (ICPC-2) code R96. Bettering the Evaluation and Care of Health (BEACH) year is April to March.

Sources: BEACH Survey of General Practice; Australian Bureau of Statistics.

Figure 5.1: General practice encounters for asthma per 100 population, adults and children, April 1998 to March 2008

Proportion of general practice encounters (per cent)



Notes: Asthma classified according to International Classification of Primary Care, 2nd edition (ICPC-2) code R96. Bettering the Evaluation and Care of Health (BEACH) year is April to March.

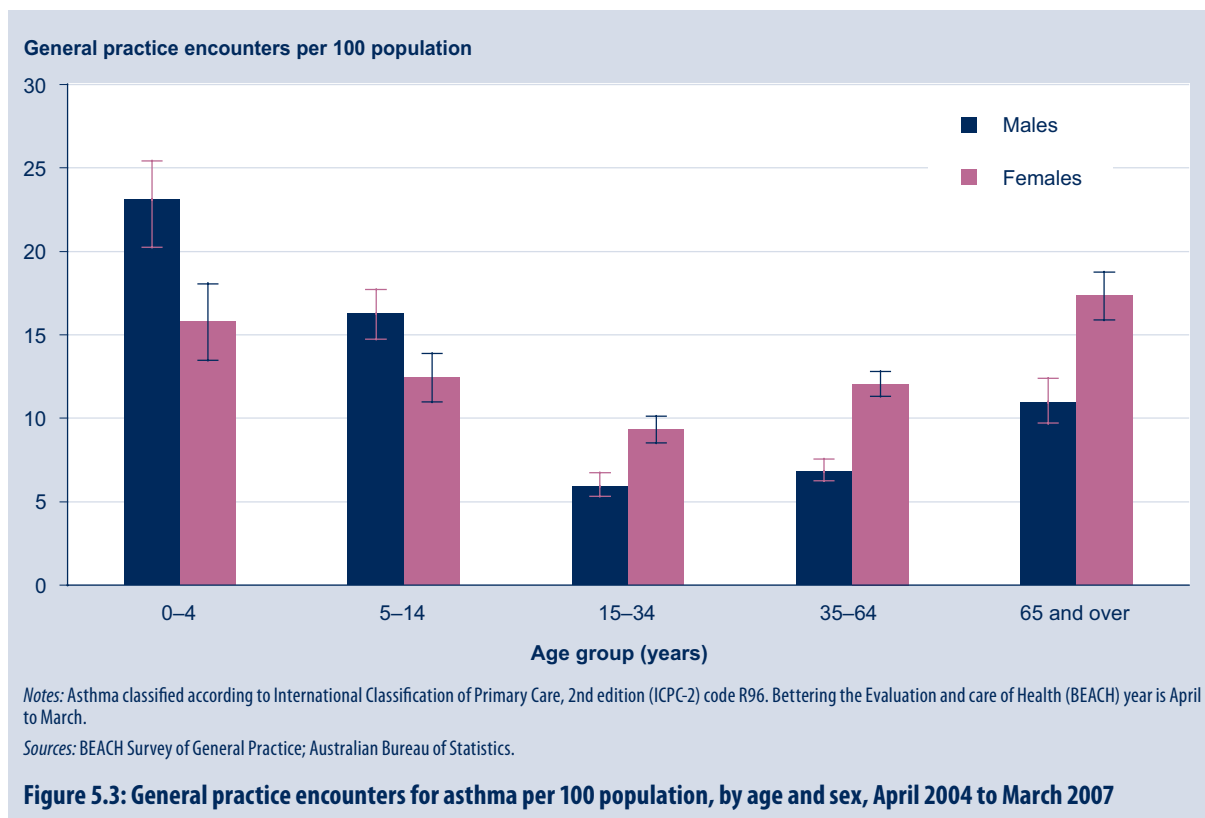
Sources: BEACH Survey of General Practice; Medicare Australia.

Figure 5.2: Proportion of general practice encounters for asthma, adults and children, April 1998 to March 2008

5.1.2 Population subgroups

Age and sex

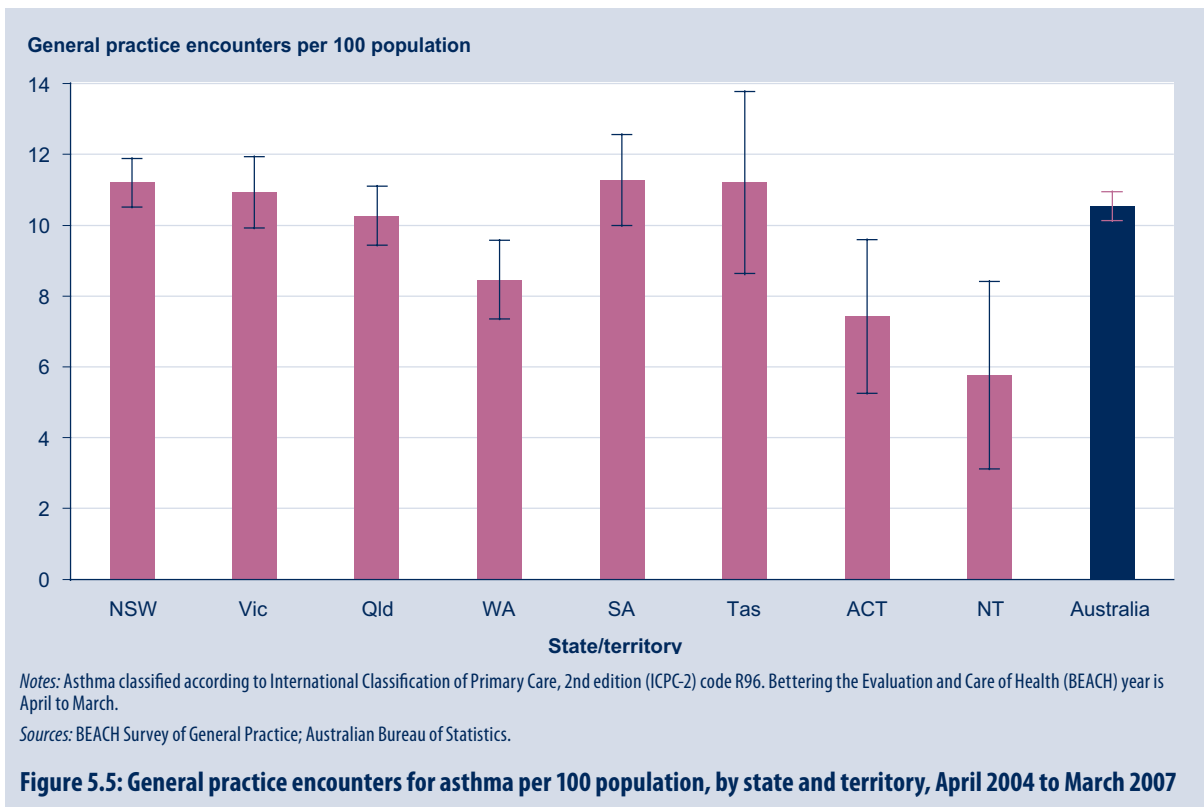
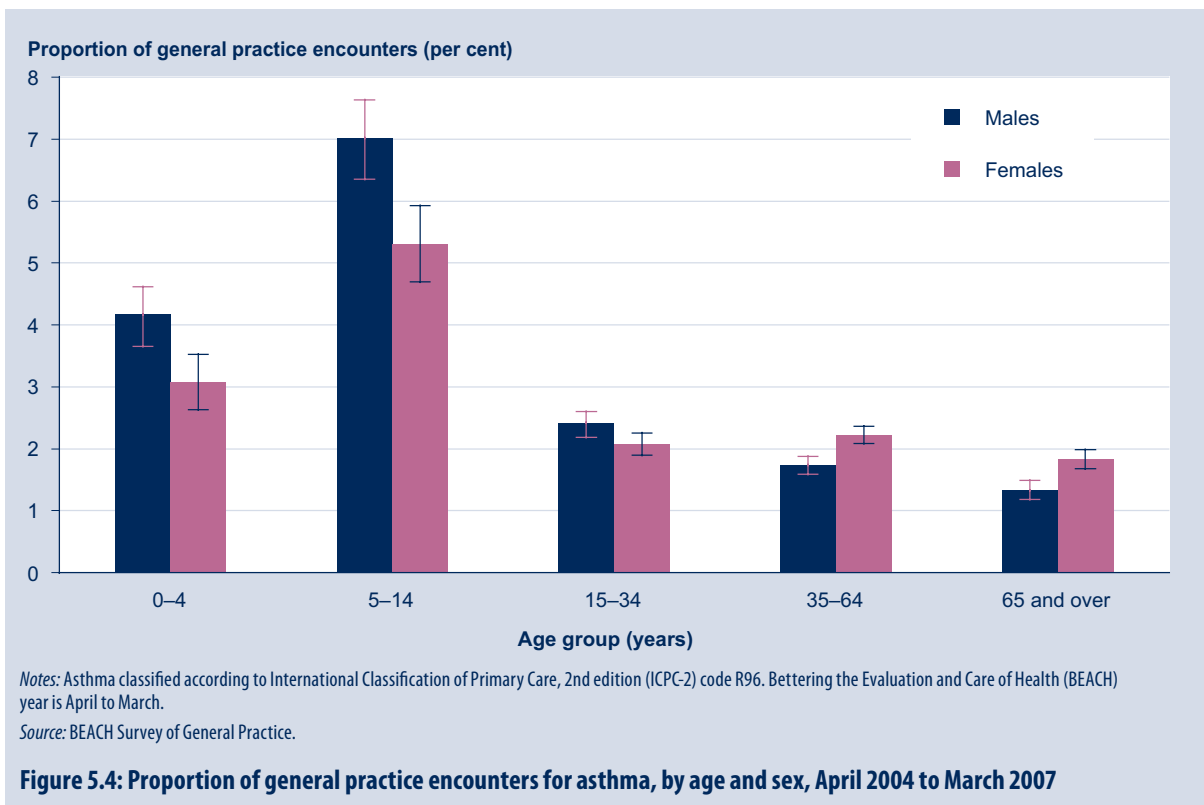
Among children, boys are more likely than girls to have an asthma-related general practice encounter. After the age of 15 years, this trend is reversed and females have more asthma-related general practice encounters than males (Figure 5.3). This reflects the change in asthma prevalence during the teenage years.



Although the absolute rates of asthma-related GP encounters were highest in children aged 0–4 years and in adults aged 65 years and over, people in these age groups also visited general practices relatively more commonly for reasons other than asthma. Out of all general practice encounters, the proportion of those related to asthma was largest among children aged 5–14 years (7.0% in boys and 5.3% in girls) and the smallest in adults aged 65 years and over (1.3% in males and 1.8% in females) (Figure 5.4).

States and territories

The rates of general practice encounters for asthma in Western Australia, the Australian Capital Territory and the Northern Territory were lower than the national average (10.5%). There was little variation in rates of asthma-related GP encounters among other states (Figure 5.5).

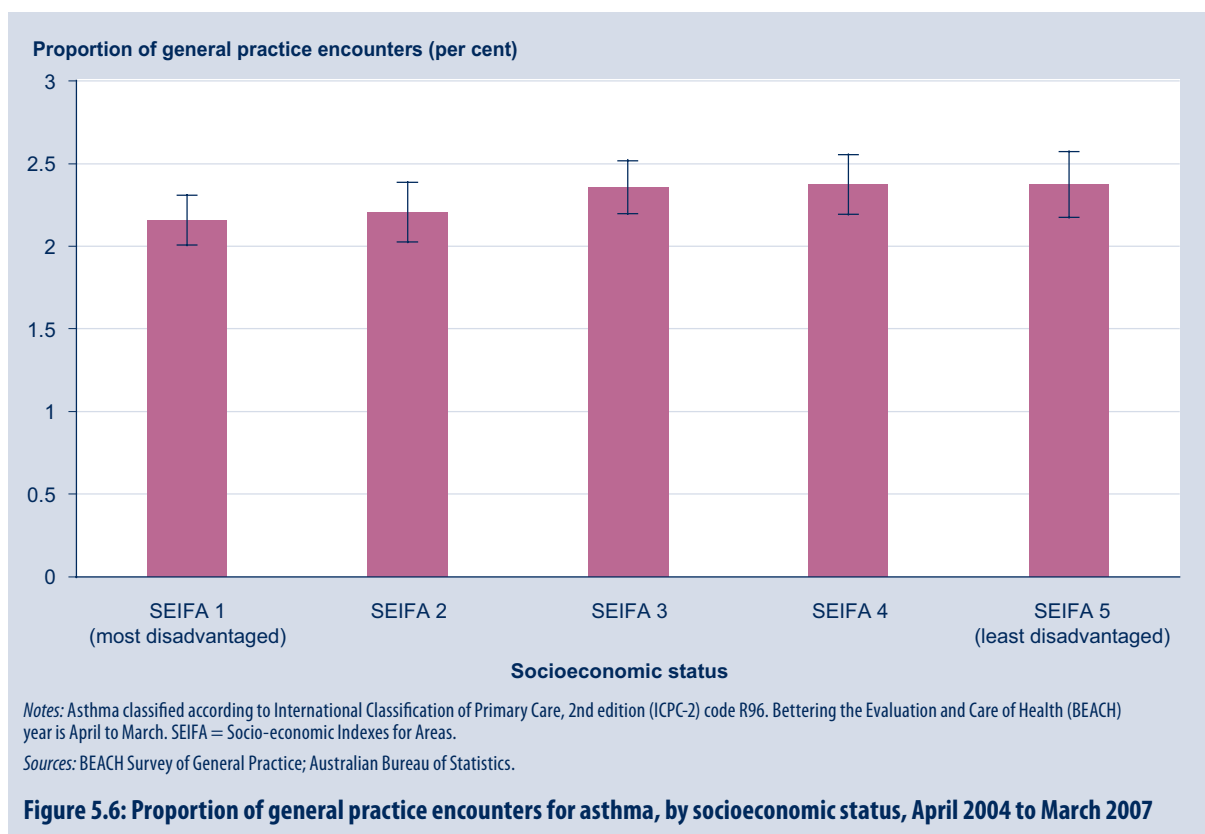


Urban, rural and remote areas

Published studies of aggregated BEACH data (1998–2004) showed that rates of management of respiratory problems in general decreased with increasing remoteness (from 22.2 per 100 GP encounters in major cities to 19.5 in inner regional, 19.4 in outer regional and 18.3 in remote Australia, with a slight increase to 19.4 per 100 GP encounters in very remote Australia (AIHW: Knox et al. 2005). However, the proportion of asthma-related general practice encounters did not differ across major cities (2.3%), inner regional (2.4%), outer regional (2.4%) or remote/very remote (2.4%) areas of Australia for the period April 2004 to March 2007.

Socioeconomic disadvantage

It has been reported that socioeconomically disadvantaged persons have higher rates of overall general practice consultations than those who are less disadvantaged (Charles et al. 2003b). However, analysis of recent BEACH data shows that the proportion of GP encounters that were for asthma was lowest in those living in the most disadvantaged localities ($p = 0.03$) (Figure 5.6). This association with socioeconomic status did not differ between age groups ($p = 0.5$).



5.1.3 Practice Incentives Program Asthma Cycle of Care (formerly the Asthma 3+ Visit Plan)

On 1 November 2006, the Practice Incentives Program (PIP) Asthma Cycle of Care replaced the Asthma 3+ Visit Plan, which had been in operation since 2001. The initiatives, both funded by the Australian Government, were introduced to recognise the key role general practice plays in the monitoring and management of asthma. The changeover occurred in response to feedback received by GPs, respiratory physicians and patients on how the Asthma 3+ Visit Plan could be improved (DoHA 2007a).

Zwar et al. (2005) interviewed 315 GPs in 5 Divisions of General Practice in metropolitan Sydney and found that 91.2% knew of the Asthma 3+ Visit Plan, but only 44.9% had used it. Major barriers to use of the Asthma 3+ Visit Plan included workload and administrative complexities, while patient attitude towards asthma care, non-compliance of follow-up consultations and patient assessment of the severity of their asthma influenced the completion of the Asthma 3+ Visit Plan.

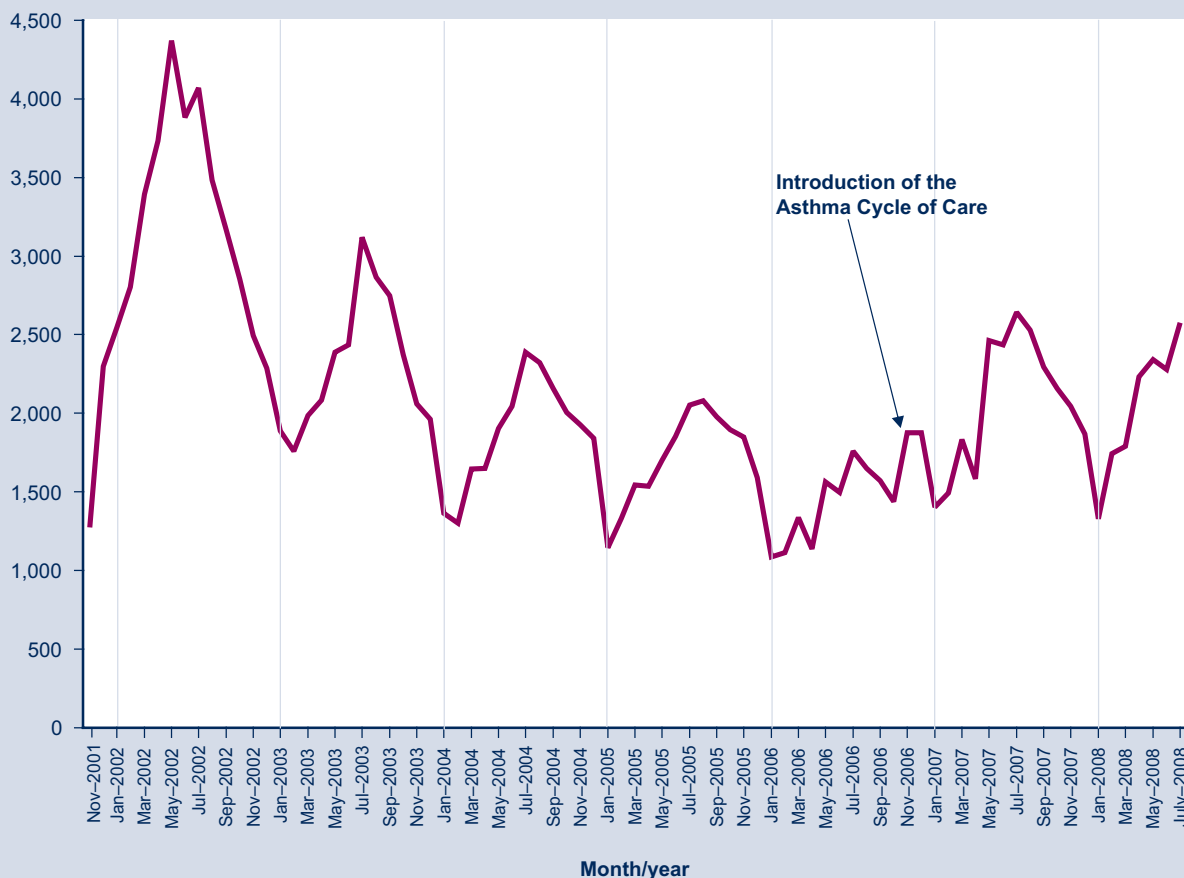
As with the Asthma 3+ Visit Plan, the Asthma Cycle of Care is aimed at patients with moderate to severe asthma and entails the development and ongoing review of an asthma action plan. In contrast to the Asthma 3+ Visit Plan, which required a patient to visit the doctor at least three times over a 4-month period, the Asthma Cycle of Care requires at least two visits over a 12-month period. The following five steps must be implemented during these two visits to ensure the Asthma Cycle of Care is successfully completed:

1. document diagnosis and assessment of asthma severity and level of asthma control
2. review the patient's use of, and access to, asthma-related medication and devices
3. provide a written asthma action plan (or document alternative if the patient is unable to use a written action plan)
4. provide asthma self-management education
5. review the written or documented asthma action plan.

The number of claims for payment under the Asthma 3+ Visit Plan gradually declined from 2002 to 2006 but after the commencement of the Asthma Cycle of Care in November 2006, the number of claims rose (Figure 5.7)—to the end of December 2007, there had been 28,503 claims for completed Asthma Cycles of Care lodged for 28,305 individuals.

For the Asthma Cycle of Care and the Asthma 3+ Visit Plan, there has been a general trend for claims to peak during the winter months and for low rates of claims during January to March (Figure 5.7).

Number of claims



Notes: Claims are for asthma review visit classified codes 2546, 2547, 2552, 2553, 2558, 2559, 2664, 2666, 2668, 2673, 2675 & 2677. The Asthma Cycle of Care replaced the Asthma 3+ Visit Plan in November 2006. PIP = Practice Incentives Program.

Source: Medicare Australia, Medicare Benefits Schedule (MBS) online statistics.

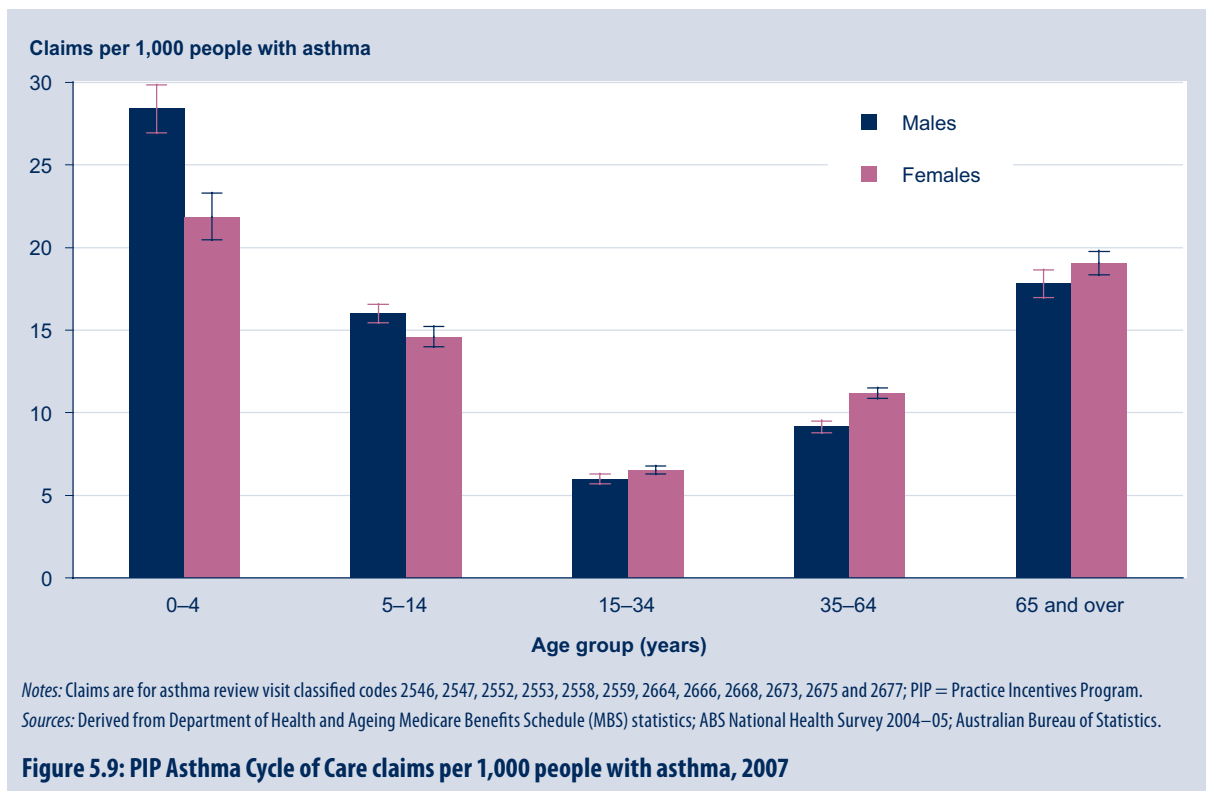
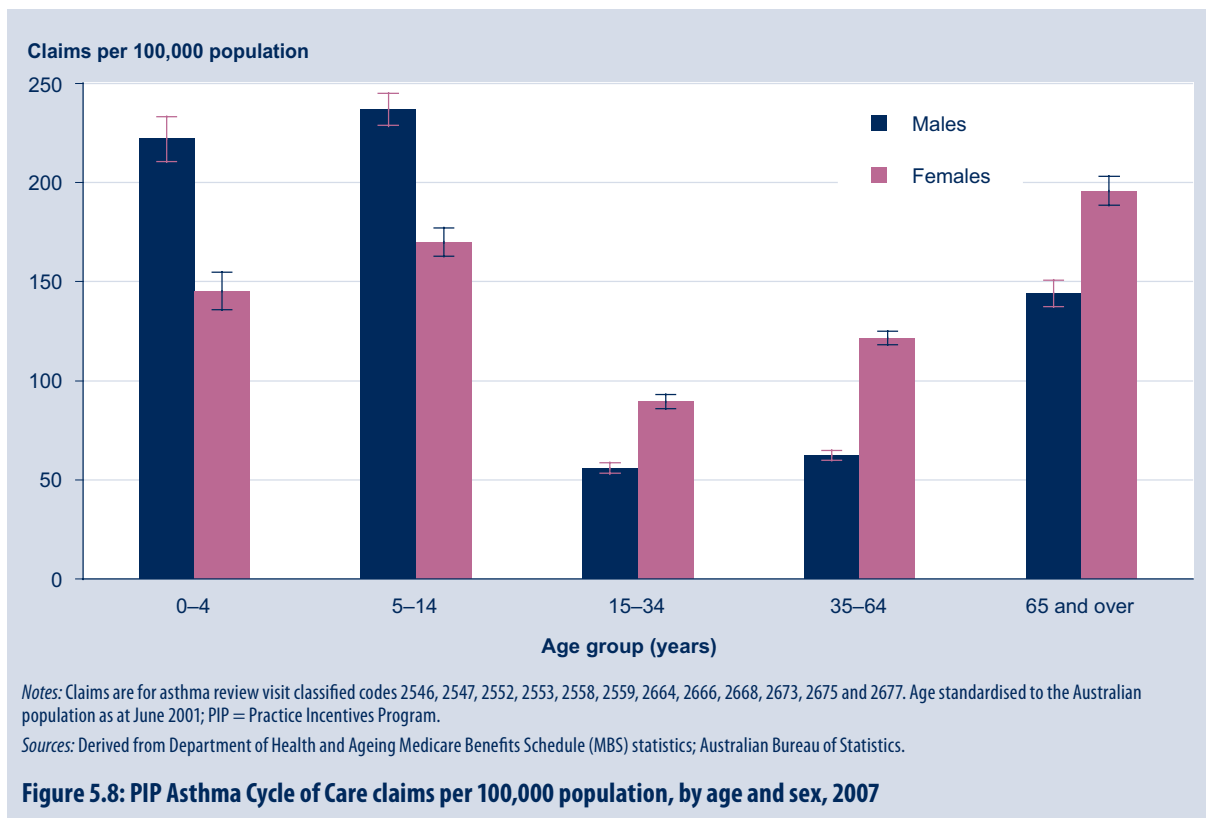
Figure 5.7: Number of claims for completed Practice Incentives Program Asthma 3+ Visit Plan /Asthma Cycle of Care, all ages, November 2001 to July 2008

5.1.4 Claims for completed Asthma Cycles of Care in population subgroups

Age and sex

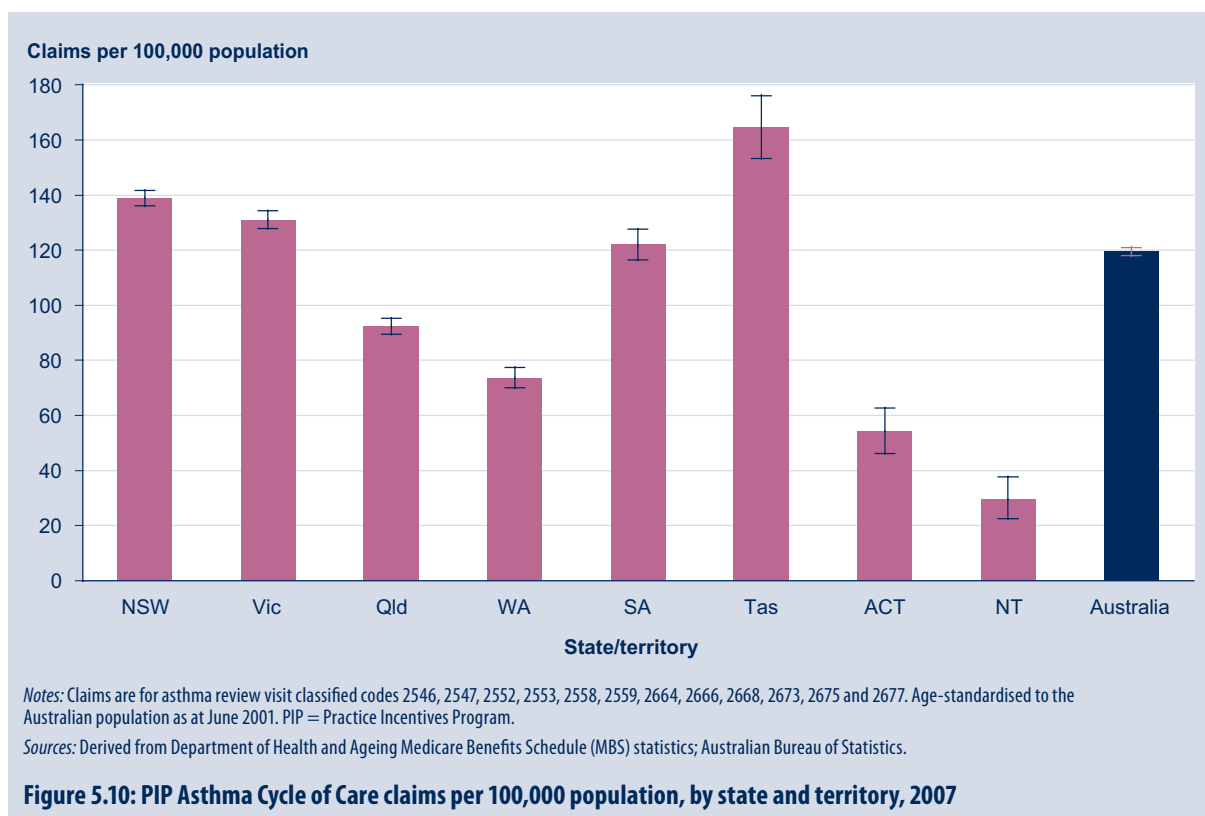
Among children aged 14 years and under, the rate of claims for completed Asthma Cycles of Care was higher for males than females (Figure 5.8). This is consistent with the higher prevalence of asthma among boys in this age group. From the age of 15 years, females had a higher rate of claims than males. The highest rate of claims for completed Asthma Cycles of Care occurred among boys aged 5–14 years (237 per 100,000 population) and females aged 65 years and over (196 per 100,000 population).

Among people with asthma, young adults aged 15–34 years were least likely to have utilised the Asthma Cycle of Care with 6.3 claims per 1,000 population (Figure 5.9). Children aged 0–4 years, especially males, and older Australians aged 65 years and over had the highest rates of claims.



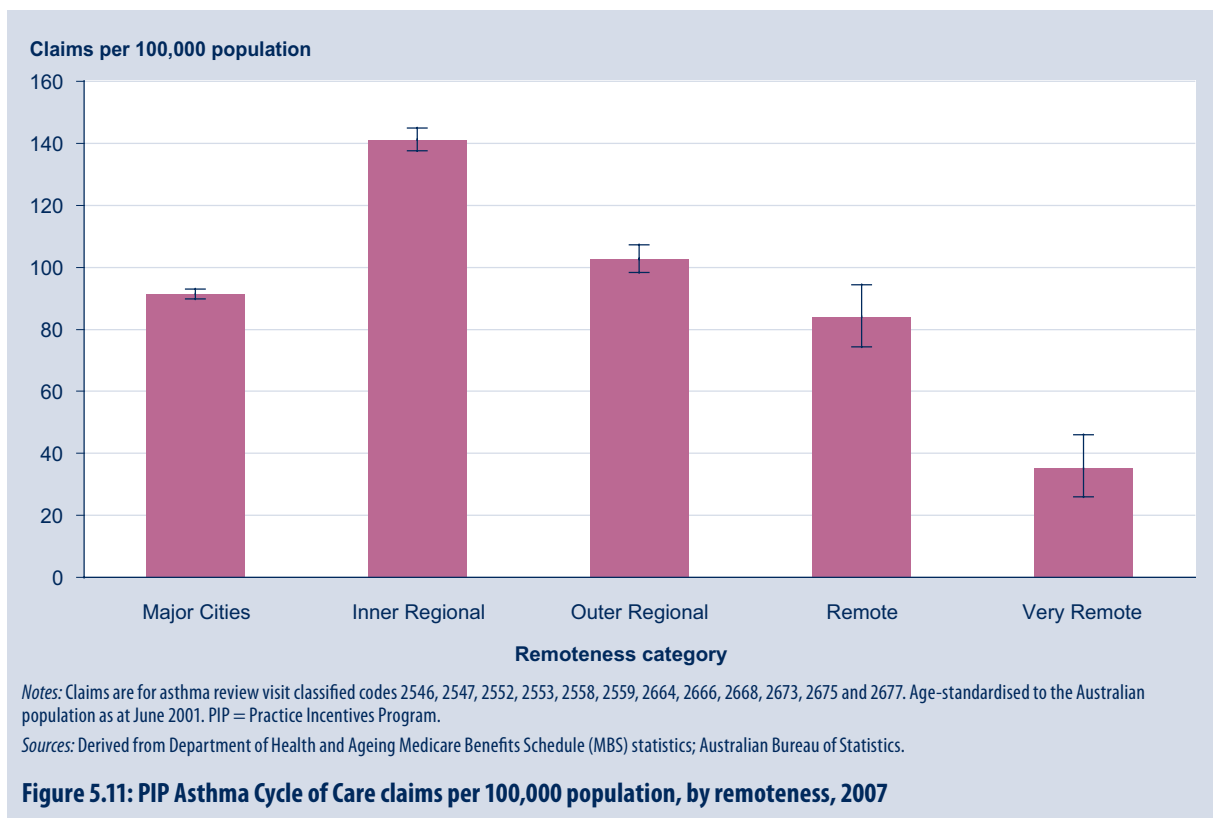
States and territories

During 2007, the rate of claims for completed Asthma Cycles of Care varied widely by state and territory (Figure 5.10). New South Wales, Victoria and Tasmania showed a higher rate of claims than the national average, while the rate of claims observed in the Northern Territory, Australian Capital Territory, Western Australia and Queensland were much lower than the national average. The low rate of claims in some states and territories may reflect access to the Asthma Cycle of Care in those areas.



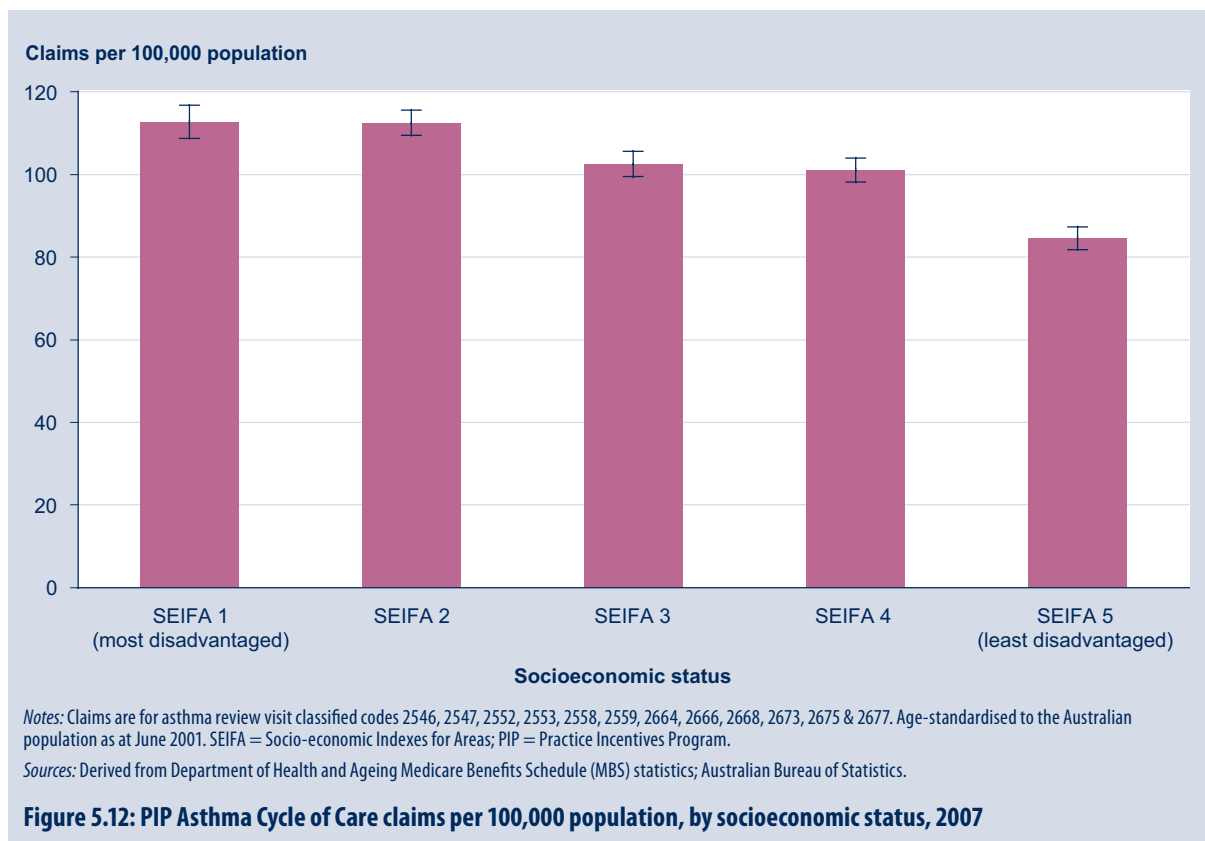
Urban, rural and remote areas

There was a significant relationship between increasing remoteness and decreasing rates of claims for completed Asthma Cycles of Care in 2007 (Figure 5.11). The highest rates of claims were observed among people residing in inner regional (141 per 100,000 population) and outer regional areas (103 per 100,000) of Australia. People living in very remote areas were 75% less likely than those living in inner regional areas to access the Asthma Cycle of Care ($p < 0.0001$). Claims for completed Asthma Cycles of Care can only be made by practices which participate in the PIP and have registered for the PIP Asthma incentive.



Socioeconomic disadvantage

The rate of claims for completed Asthma Cycles of Care decreased with increasing socioeconomic status (Figure 5.12). People living in the most disadvantaged areas were 33% more likely than those living in the least disadvantaged areas to access the Asthma Cycle of Care ($p < 0.0001$).



5.1.5 Management of asthma in general practice

Between April 2004 and March 2007, there were 290,000 encounters recorded in the BEACH survey of general practice and asthma was managed in 6,583 (2.3%; 95%CI 2.2–2.4) of these encounters. For the analysis of the management of asthma in general practice that follows, we have examined the prescriptions, procedures and referrals that took place during these 6,583 encounters.

Provision of prescriptions

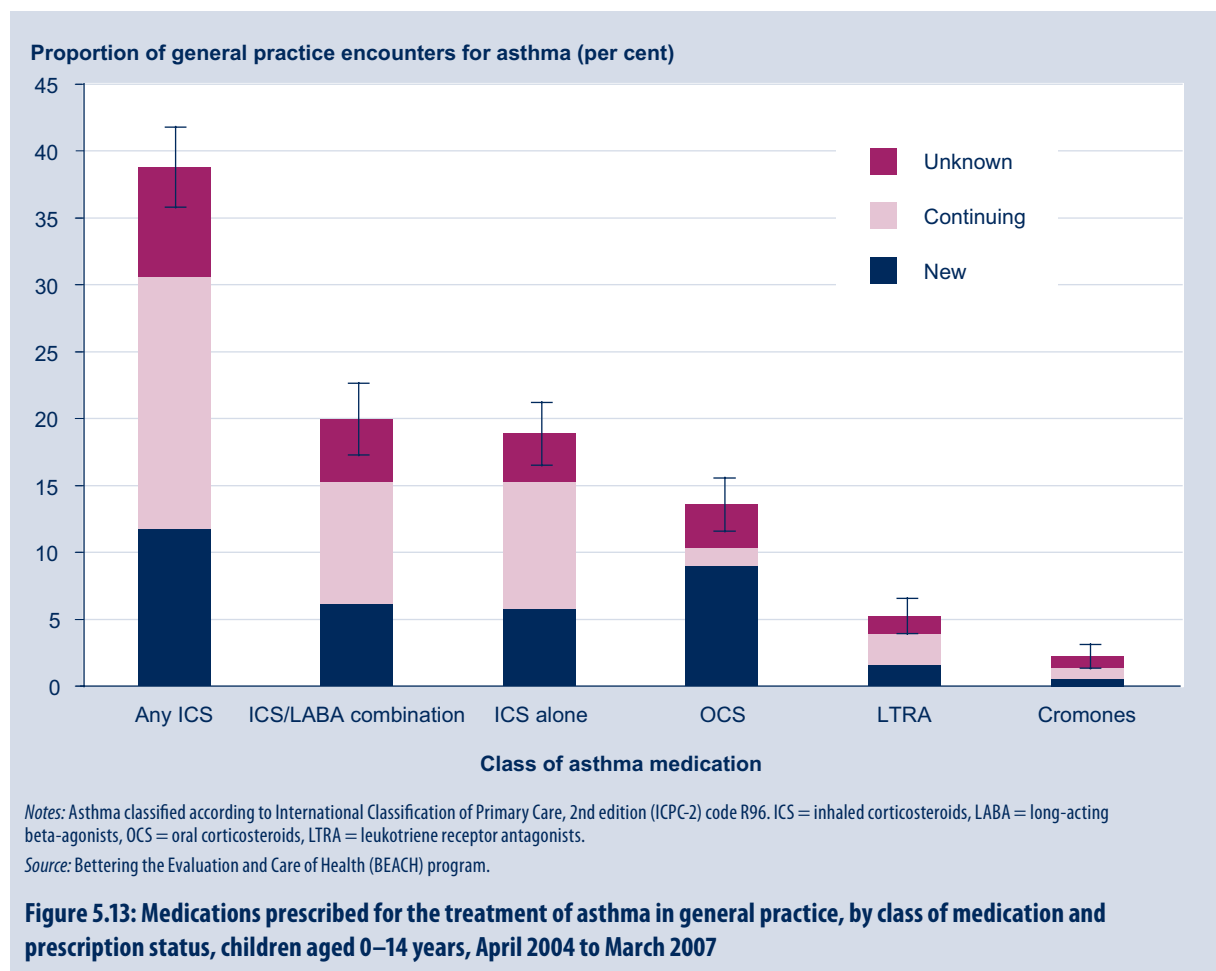
The most frequently prescribed medication during asthma-related GP encounters between April 2004 and March 2007 was inhaled corticosteroids (either alone or in combination with long-acting beta-agonists). During this time, inhaled corticosteroids were prescribed for the management of asthma at 51.9% (95% CI 50.3–53.6) of asthma-related GP encounters. In comparison, oral corticosteroids were prescribed for asthma at 11.5% (95% CI 10.5–12.5) of asthma-related encounters, while leukotriene receptor antagonists (1.7%) and cromones (1.0%) were rarely prescribed.

Prescribing patterns among children

Among children aged 0–14 years who visited a GP for their asthma, 38.8% were prescribed inhaled corticosteroids either alone or in combination with long-acting beta-agonists (Figure 5.13). Approximately half (49.4%) of these prescriptions were ‘continuing’ prescriptions and 28.2% were prescribed for the first time (that is, ‘new’).

Oral corticosteroids were prescribed for 13.6% of children attending GPs for asthma between April 2004 and March 2007. The majority of oral corticosteroid prescriptions were new (66.3%).

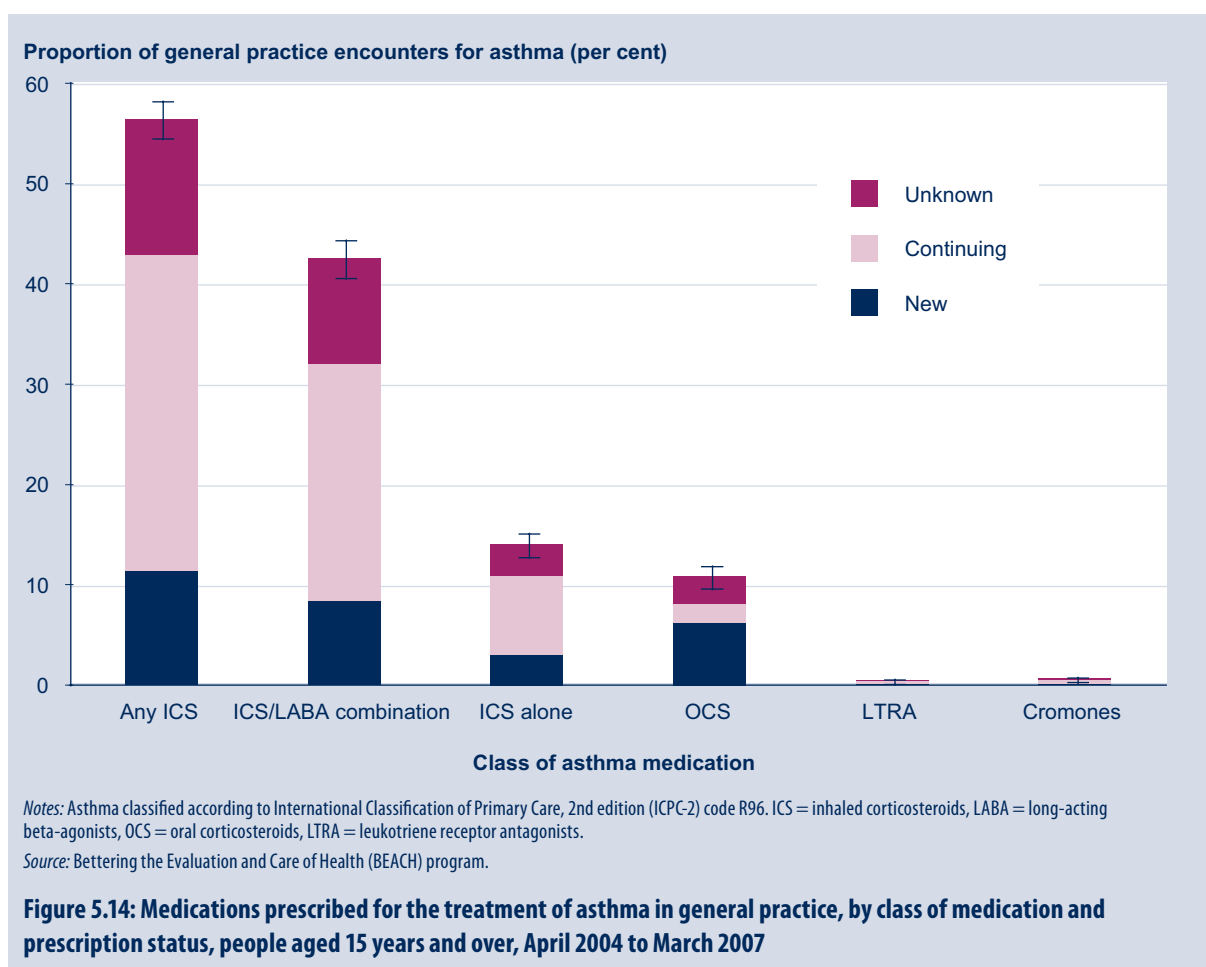
Very few children were prescribed leukotriene receptor antagonists (5.3%) or cromones (2.2%) for their asthma. Among children prescribed leukotriene receptor antagonists, 42.8% of prescriptions were continuing and 31.9% were new. The majority of prescriptions for cromones (47.6%) had an ‘unknown’ status, hence the remaining 32.6% of continuing and 19.8% of new prescriptions are likely to be underestimated.



Prescribing patterns among adults

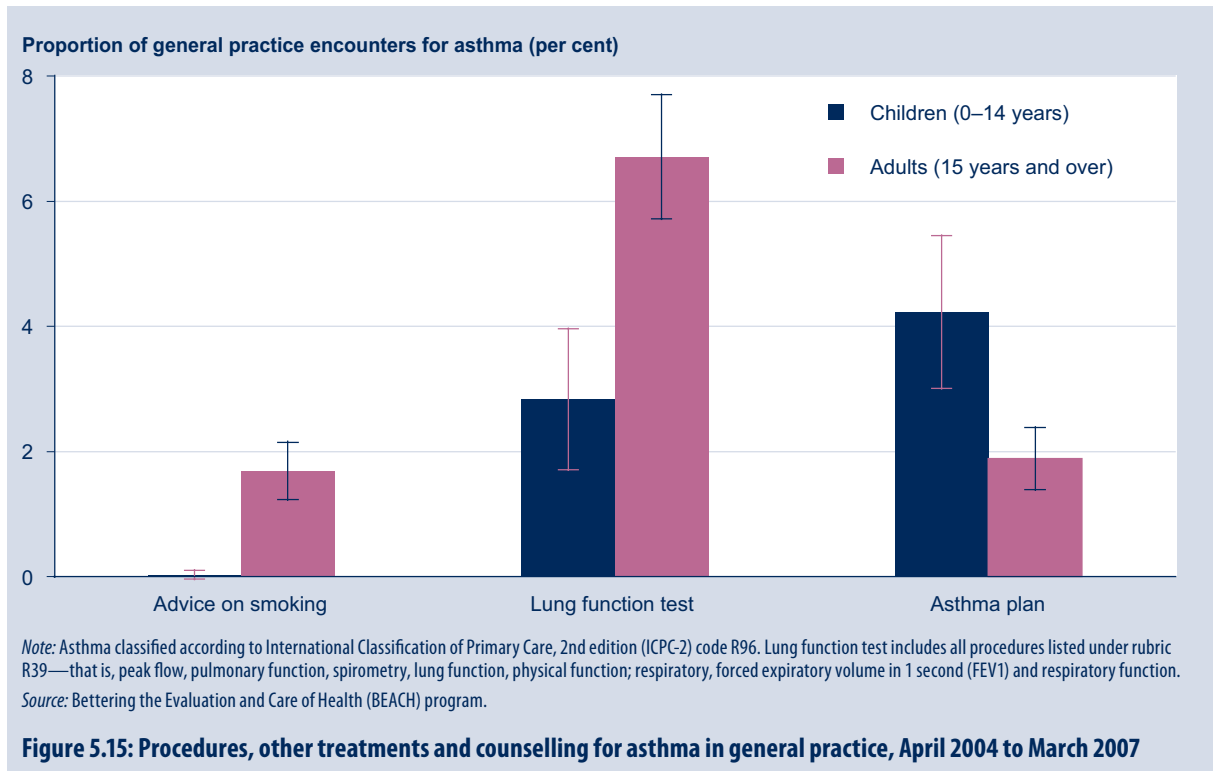
Among adults, the pattern of new and continuing medication was similar to that observed for children, however the overall proportions were different (Figure 5.14). The overall proportion of asthma consultations in which any inhaled corticosteroids were prescribed was higher in adults (56.4%) than it was in children. The proportion of asthma prescriptions for inhaled corticosteroids in combination with long-acting beta-agonists (42.6%) was more than triple the proportion of prescriptions for inhaled corticosteroids alone (14.0%). Fifty-six per cent of all inhaled corticosteroid prescriptions prescribed for asthma were continuing while 19.4% were first-time prescriptions for this class of medication.

Oral corticosteroids were prescribed at 10.8% of consultations for asthma among adults while cromones (0.6%) and leukotriene receptor antagonists (0.5%) were very rarely prescribed.



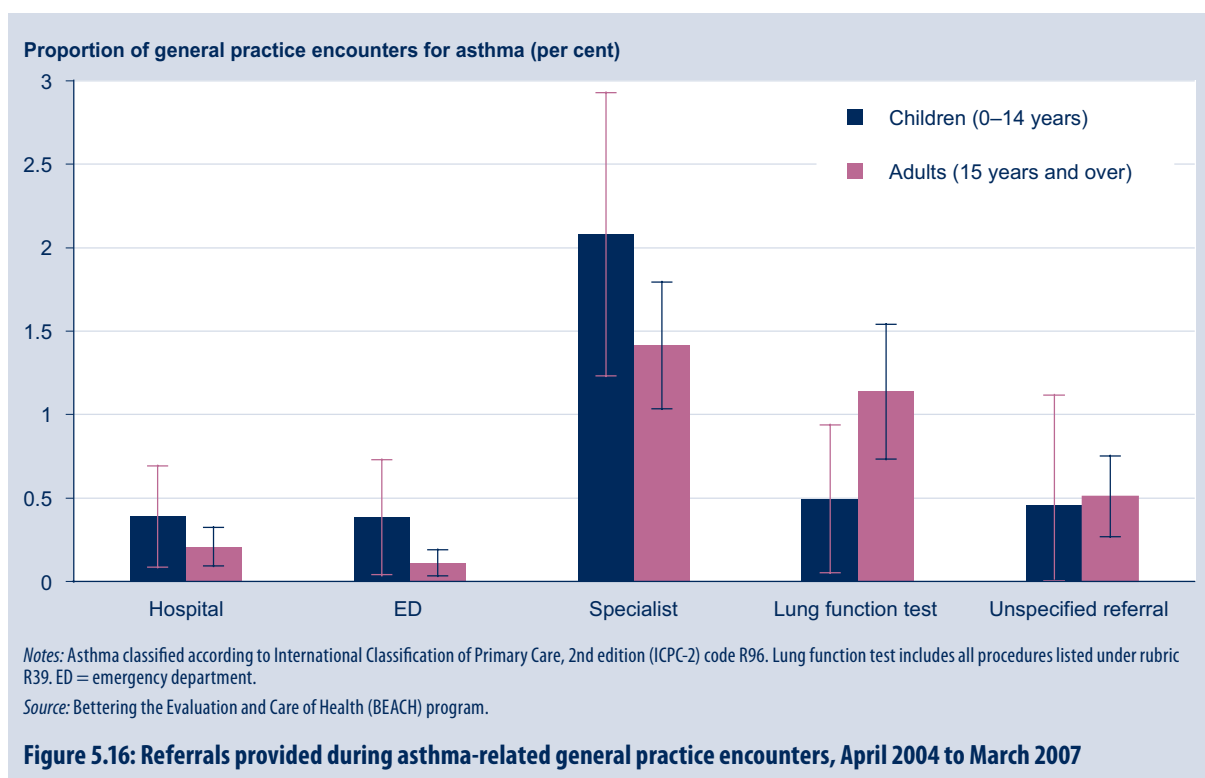
Procedures and treatments

The most common procedures provided by GPs for asthma management were spirometry (lung function) testing and provision of an asthma action/management plan. Between 2004 and 2007, children had an asthma plan provided in 4.2% and lung function testing was performed in 2.8% of all asthma-related GP encounters (Figure 5.15). Among adults, asthma plans were provided less frequently (1.9%), while lung function testing was done more commonly (6.7%). GPs reported providing advice on smoking at 1.7% of all adult asthma-related encounters.



Referrals

Asthma-related general practice encounters rarely resulted in referral for outside services (Figure 5.16). General practitioners referred children and adults to hospital (including to the emergency department—ED) in less than 1% of all asthma-related encounters. The referral rates to hospital, ED and specialists were higher in children than in adults. Children were referred to a hospital in 0.4% of all asthma-related GP encounters, and to the ED in 0.4%. Among adults, 0.2% were referred to hospital and 0.1% to the ED. Children were also more frequently referred to a specialist (2.1%) than adults (1.4%). Adults were twice as likely as children to be referred for lung function tests, which is to be expected since testing cannot be reliably performed in children under the age of 7 years.



Summary

Between 1998 and 2008, the rate of asthma-related general practice encounters among children declined by around 37%. The highest rate of asthma-related general practice encounters was seen in boys aged 0–4 years and the lowest rate was among males aged 15–64 years. Prescriptions for inhaled corticosteroids represented 52% of all asthma-related prescriptions provided between 2004 and 2007. Spirometry or other lung function testing was performed by GPs in 6.7% of all adult asthma-related encounters. Asthma action plans were more commonly provided for children than adults. Very few referrals relating to asthma management were provided by GPs. GPs provided advice on smoking at 1.7% of all adult asthma-related encounters.

Since the introduction of the PIP Asthma Cycle of Care (which supersedes the Asthma 3+ Visit Plan) in November 2006, the rate of claims for completing best practice care for patients with moderate to severe asthma through the Asthma Cycle of Care has increased. Access to the Asthma Cycle of Care is highest in young children, particularly males, and in older Australians. People aged 15–34 years, people living in remote areas and people living in areas of a relatively higher socioeconomic status are less likely to access the Asthma Cycle of Care.

5.2 Hospitalisations and emergency department visits

5.2.1 Emergency department visits

People with asthma may visit an emergency department (ED) when they experience an exacerbation or worsening of their disease. Since exacerbations may be a feature of severe or poorly controlled asthma, rates of ED visits for asthma are often considered to reflect the prevalence of severe or poorly controlled asthma in the community (Vollmer et al. 2002). The occurrence of ED visits for asthma may also be a useful indicator of the effects of interventions to improve disease control in patients with asthma (Bateman et al. 2004) and the effect of environmental exposures on asthma control (Forbes et al. 2007).

However, going to an ED is only one of a range of alternatives available for managing less severe flare-ups of asthma. Hence, variation in ED visits may, in part, be attributable to variation in access to general practitioner care (including after hours and home visit accessibility) and in the use of self-management plans for exacerbations. Also, the accessibility of the ED care itself may influence the likelihood that people with worsening of asthma will seek this care. Finally, it should be noted that not all ED visits for asthma are attributable to exacerbations of asthma. There is some evidence to show that people may use EDs as a source of routine primary care (Ford et al. 2001).

In this section we present the time trend in data obtained from the New South Wales Emergency Department Data Collection.

There were marked month-to-month fluctuations in the rate of ED visits for asthma, particularly among children under the age of 15 years (Figure 5.17). Of note, the lowest rate of ED visits for asthma consistently occurred in January when there was also the least difference between age groups. At other times of the year, the rate of visits to an ED for asthma was much higher among children aged 0–14 years than in all other age groups. Both the timing and the size of peaks in rates of ED visits varied with age (Figure 5.17). Among children under the age of 15 years, the peak ED visit rate was in late summer, with several very large peaks occurring, most notably in February 1999, 2001 and 2006. Peaks in ED attendance rates for asthma among children also occurred in May 2002, 2004, 2005 and 2007. Among people aged 65 years and over, and to a lesser extent those aged 35–64 years, the fluctuations in ED visit rates were less marked. Small peaks in ED visit rates for asthma among adults tended to occur in late autumn and winter.

In 2007, there were 22,942 ED visits for asthma in New South Wales. Among all people attending ED for asthma in New South Wales in 2007, 42% were admitted to hospital rather than being discharged home. The rate of admission to hospital for asthma from the ED was higher among children aged 0–14 years (48%) than among people aged 15 years and over (32%).