Remoteness and socioeconomic status

In the 2001 National Health Survey, the prevalence of use of inhaled corticosteroids and long-acting beta agonists among people with asthma did not differ between urban, regional and remote communities (ACAM 2003). There was also little variation in reported use of inhaled corticosteroids or short- and long-acting beta agonists across socioeconomic groups in 2001 (ACAM 2003) (data not shown).

Summary

Inhaled short-acting beta agonists and inhaled corticosteroids are the most commonly used medications among people with asthma. Almost all bronchodilator medication is delivered by inhalation, the majority by metered dose inhaler. The use of nebulised solutions for administration of bronchodilators is decreasing in accordance with current recommendations.

Most inhaled corticosteroids are delivered in the most potent available formulation. It is unlikely that this dosage level is required in all individuals who are receiving it. Since 2003, the majority of inhaled corticosteroid doses have been delivered in combination with long-acting beta agonists. This should lead to reduction in the potency of inhaled corticosteroid that is required.

Despite evidence of relatively high doses of inhaled corticosteroids being delivered to those that are taking them, there is also evidence that the majority of people with asthma do not use inhaled steroids regularly. This almost certainly includes a substantial proportion of people who would stand to benefit from using this class of medications.

6.3 Spirometry

Measurement of lung function has an important role in the diagnosis, assessment and follow-up of patients with asthma (NAC 2002). Spirometry is used to establish the presence of airflow obstruction and its reversibility in response to the inhalation of a bronchodilator. This is an important feature in the diagnosis of asthma. The degree of airflow obstruction is an indicator of one aspect of the severity of asthma, and guidelines for the assessment of impairment and disability due to asthma, based upon spirometric function, have been published (American Thoracic Society 1993). Finally, change in spirometric function has an important role in the periodic assessment of patients with asthma: both at times of symptomatic deterioration and, routinely, to assist in the management of back-titration of medication and maintenance of optimal asthma control. It is for this reason that the measurement of spirometric function is recommended as part of the initial GP consultation in the Asthma 3+ Visit Plan (DoHA 2003).

In addition to providing clinicians with important information relevant to the management of asthma, spirometry has a role in providing patients with objective evidence about the presence and severity of their asthma.

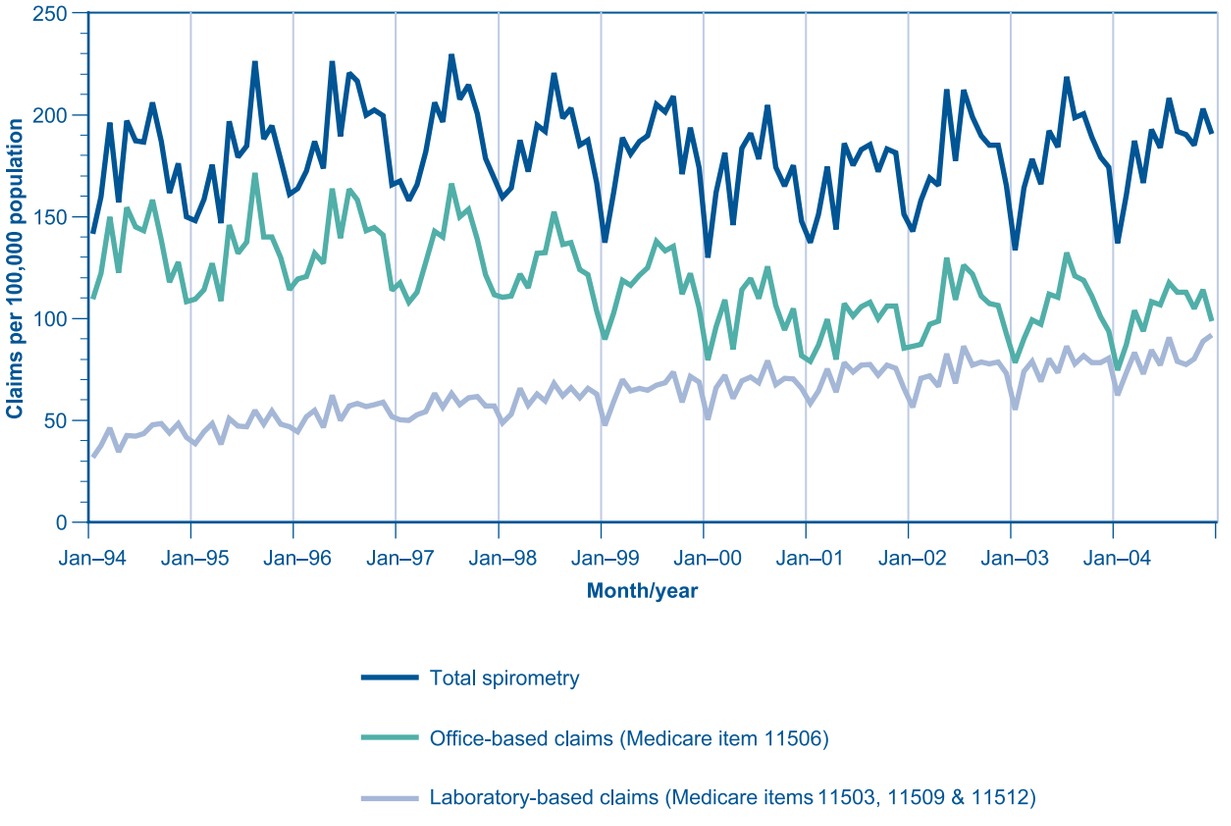
The main source of information about the performance of spirometry in Australia is data derived from claims for reimbursement of the fee for performing this test. The level of payment, and hence the item number, for the performance of spirometry depends on the setting in which it was performed. For the purpose of this analysis we have divided the claims into those that were performed outside a lung function laboratory (item 11506, which includes most office-based spirometry) and spirometry that was performed in a lung function laboratory (item numbers 11503, 11509, and 11512, depending on what other tests are performed at the same time).

Spirometry is not solely used for the diagnosis and assessment of asthma. It may be used in the assessment of a range of other lung diseases, most commonly chronic obstructive pulmonary disease (COPD), and also to exclude disease. In order to provide a more valid indicator of the use of spirometry in people with asthma, we have conducted a secondary analysis of the data in the subset of people aged 5 to 34 years, in whom we believe most spirometry measurements would have been made for the assessment of asthma, as opposed to other respiratory diseases (see Appendix 1, Section A1.7, for a further discussion on this data source).

Time trends in spirometry use

There was no long-term increase or decrease in the rate of claims for spirometry in Australia over the period 1994 to 2004 (Figure 6.11). However, during this period there was a gradual decline in claims for office-based spirometry (that is, tests performed in the doctor's examination room) and an increase in claims for lung function laboratory-based tests. Among people aged 5 to 34 years, in whom we believe most spirometry would be performed for the assessment of asthma, there was an overall decline in total spirometry claims between 1994 and 2000 (Figure 6.12). There was a small rise in claims for office-based spirometry from 2000 in those aged 5 to 34 years, for whom the claims are more likely to reflect those for asthma management or assessment. The increase, which arrests the previous downward trend, coincides with the introduction of the Asthma 3+ Visit Plan. The performance of office-based spirometry declined steadily during the period 1996 to 2004, apart from a small reversal of this trend in 2002–03. This trend was only partially offset by the small rise in claims for the performance of spirometry in the lung function laboratory in this age group, during this period.

Figure 6.11
Claims for the performance of spirometry and complex lung function tests which included spirometry per 100,000 population, all ages, Australia, 1994–2004

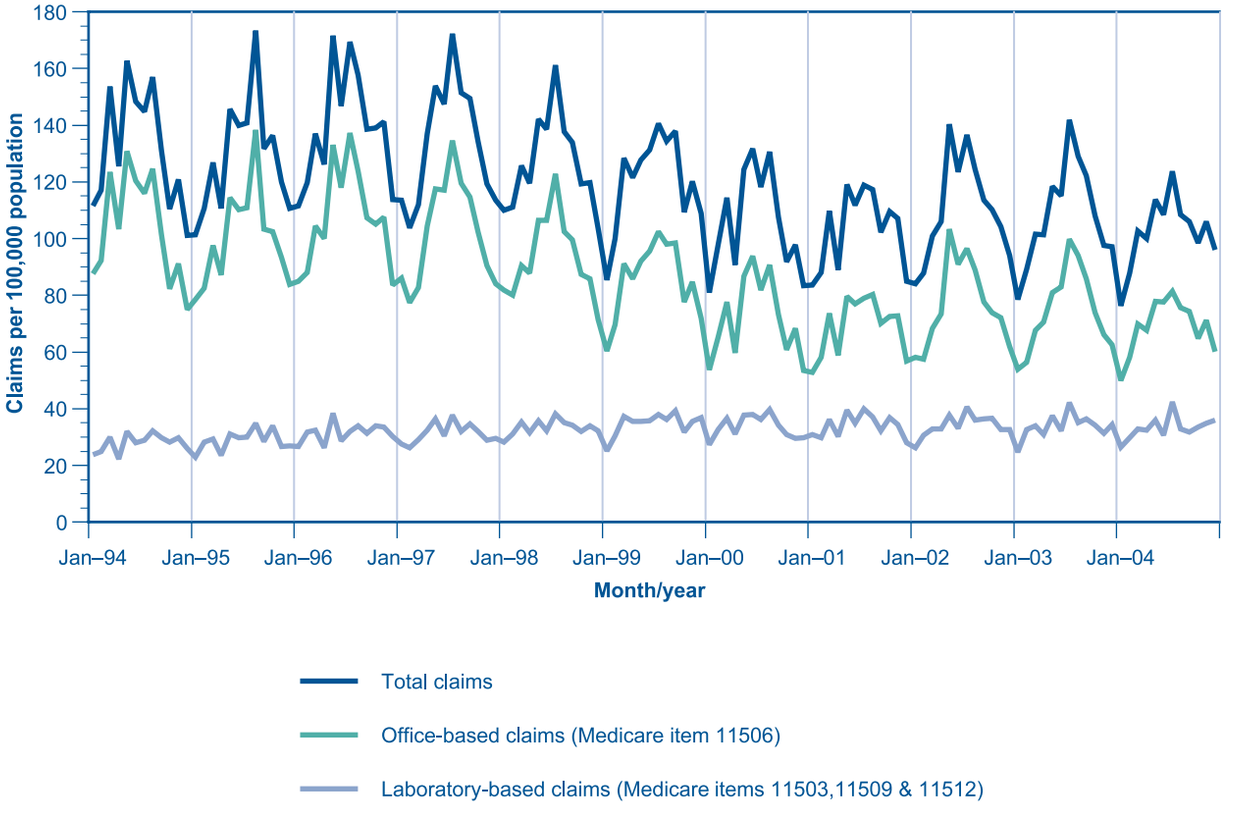


Sources: HIC health statistics; Australian Bureau of Statistics.

There was evidence of marked seasonal fluctuations in the use of office-based spirometry for all ages (Figure 6.11) and also for people aged 5 to 34 years (Figure 6.12). The number of spirometry procedures performed peaked in the winter months, when respiratory tract infections are most common, and was generally lowest in the summer months. There was a small increase in the number of spirometry procedures performed in February and March. This period coincides with the beginning of the school year and has been shown to be a period of increased risk of asthma exacerbations in school-aged children (Sheppeard et al. 2001).

Figure 6.12

Claims for the performance of spirometry and complex lung function tests which included spirometry per 100,000 population, people aged 5 to 34 years, Australia, 1994–2004



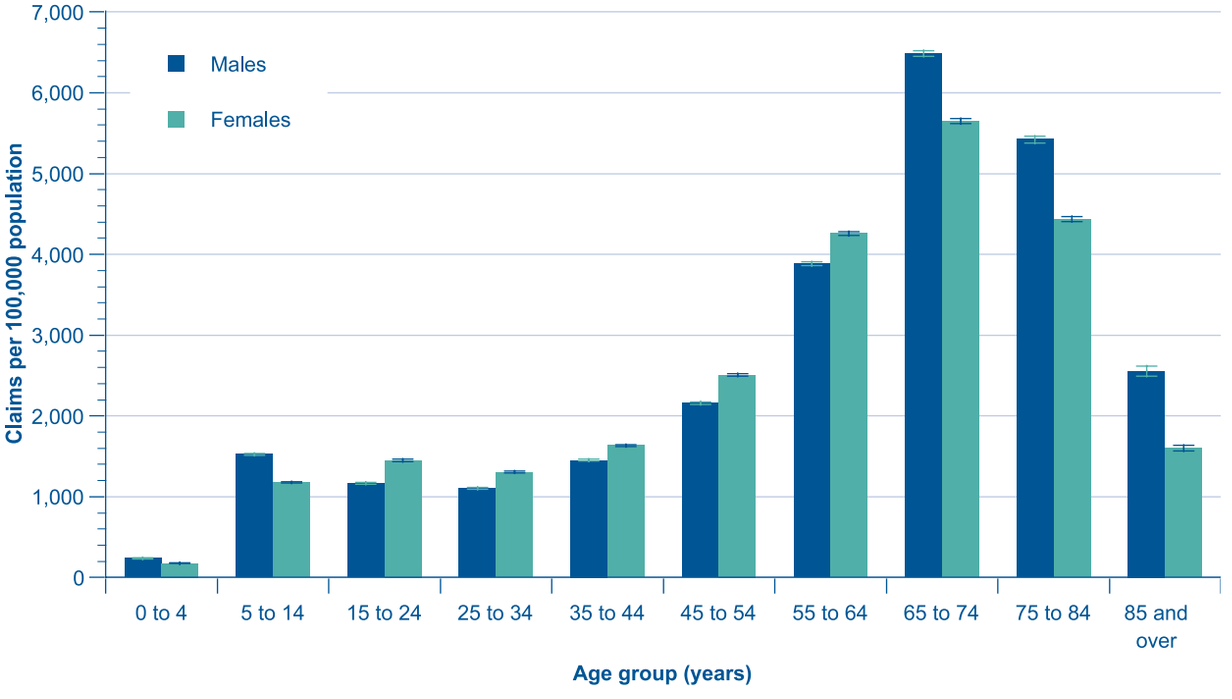
Sources: HIC health statistics; Australian Bureau of Statistics.

Differentials in spirometry use

Age and sex

The rate of claims for the performance of spirometry increased with increasing age over the range 35 to 74 years (Figure 6.13). This suggests that most measurements are performed in persons with known or suspected COPD. There were equal numbers of claims for males and females for most age groups except for those aged 65 years and over, among whom claims for spirometry among males exceeded claims among females. Once again, this is consistent with the higher prevalence of COPD among males than females (AIHW 2002c, 2004b).

Figure 6.13
Total claims for the performance of spirometry and complex lung function tests which included spirometry per 100,000 population, by age group and sex, Australia, 2002–2004



Note: Data are aggregated from 2002, 2003 and 2004 claims for Medicare items 11503, 11506, 11509 and 11512. Population is Australian population as estimated by the ABS for the relevant years.

Sources: HIC health statistics; Australian Bureau of Statistics.

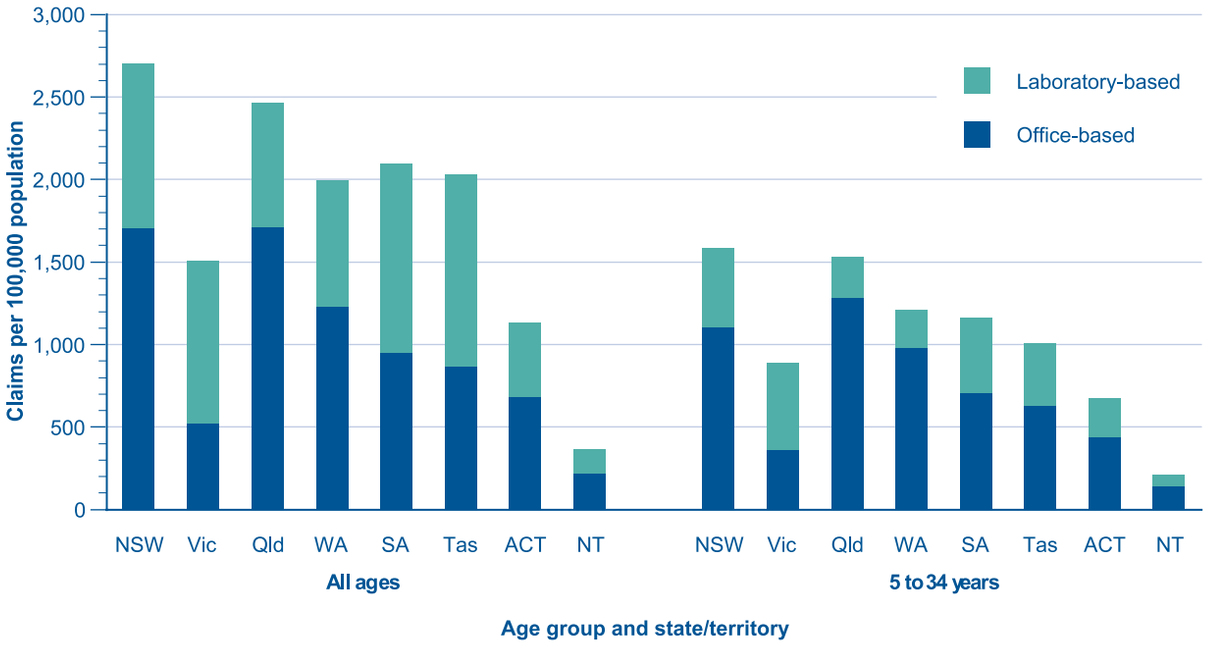
States and territories

There was substantial variation between states and territories in the rates of claims for office-based spirometry between 2002 and 2004, with higher rates in New South Wales and Queensland and lower rates in Victoria than average (Figure 6.14). This variation was not offset by claims for laboratory-based spirometry and is largely unexplained. A similar pattern was reflected in the data for 5 to 34 year olds, except that the proportion of laboratory-based testing was lower in this age group. This would be consistent with the procedure being performed most commonly as a routine, office-based tool in the management of people with asthma.

In some areas, particularly remote regions, spirometry may be performed in community health centres that do not claim for Medicare reimbursement from the HIC. In states and territories with substantial non-metropolitan areas, claims per 100,000 population may underestimate the rate of spirometry tests being conducted.

Figure 6.14

Claims for the performance of spirometry and complex lung function tests which included spirometry per 100,000 population, by state and territory and type, Australia, 2002–2004



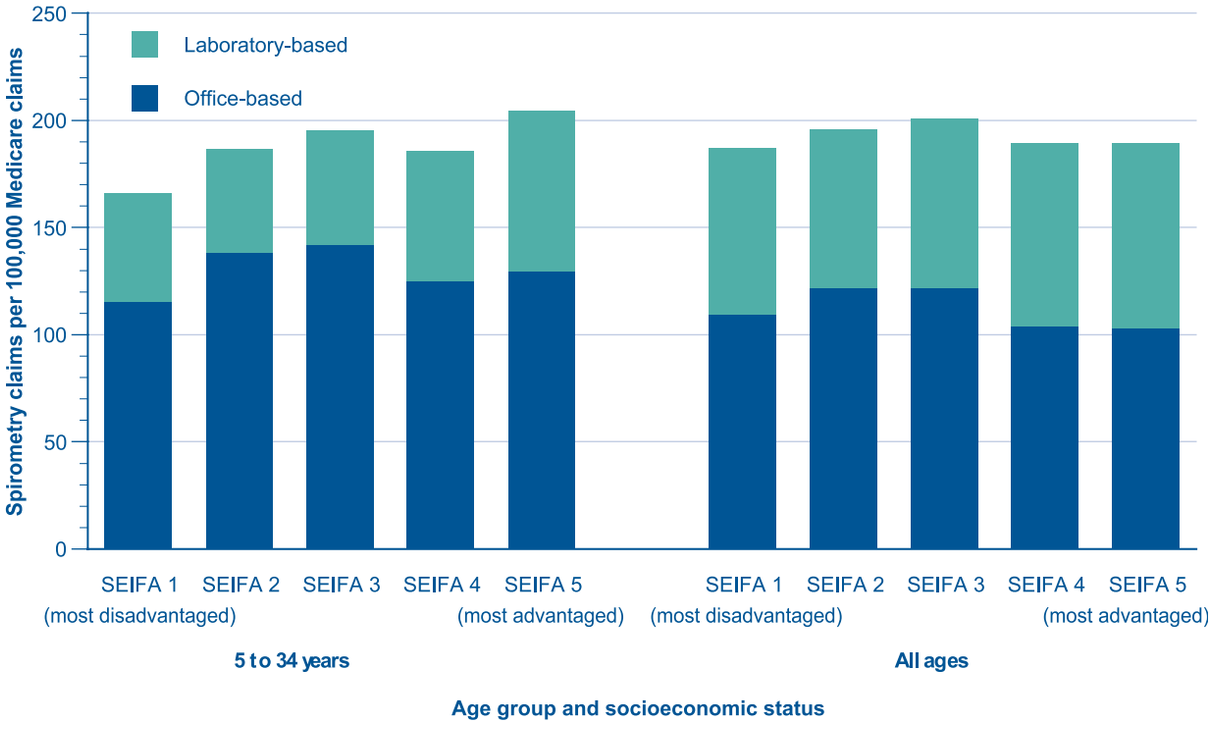
Note: Data are aggregated from 2002, 2003 and 2004. Laboratory-based claims include claims for Medicare items 11503, 11509 and 11512. Office-based claims comprise claims for Medicare item 11506 only. Population is Australian population as estimated by the ABS for the relevant years.

Sources: HIC health statistics; Australian Bureau of Statistics.

Socioeconomic disadvantage

There was no obvious trend in the spirometry claims as a proportion of Medicare claims among people of all ages. However, among people aged 5 to 34 years, this rate was greater among those living in more socioeconomically advantaged localities (Figure 6.15) than those in more disadvantaged localities.

Figure 6.15
Claims for the performance of spirometry per 100,000 Medicare claims, by socioeconomic status, Australia, 2002–2004



Note: Data are aggregated from 2002, 2003 and 2004. Laboratory-based claims include claims for Medicare items 11503, 11509 and 11512. Office-based claims comprise claims for Medicare item 11506 only.

Source: HIC health statistics.

Summary

Measurement of spirometric lung function (spirometry) has an important role in the diagnosis and management of asthma and other lung diseases. It is an objective measure providing information relevant to the establishment of the diagnosis, the assessment of severity, and the monitoring of change over time. The test may be performed at the time of consultation (in the doctor's office) or in a lung function laboratory. In the latter case it would usually form part of a complex range of lung function tests.

Analysis of data from claims for reimbursement demonstrates a trend towards more laboratory-based lung function tests and less office-based spirometry over the last 9 years. Spirometry is most commonly performed in people aged over 55 years. Many of the patients in this age group who have spirometry performed probably have chronic obstructive pulmonary disease, rather than asthma. There is unexplained variation among the states and territories in the rate of claims for this procedure.

Among people aged 5 to 34 years, spirometry rates tend to be higher among those living in more socioeconomically advantaged localities.