Resource impact summary report

Resource impact
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This is a new collaborative guideline developed jointly by the British Thoracic Society (BTS), NICE and the Scottish Intercollegiate Guidelines Network (SIGN).

This summary report is based on assumptions used in the resource impact template. Users can amend the 'Inputs and eligible population' and 'Unit costs' worksheets in the template to reflect local data and assumptions.

Eligible population for guideline

The guideline covers diagnosing, monitoring and managing asthma in adults, young people and children.

Table 1 shows the number of people who are expected to benefit from improved accuracy of diagnosis, improved monitoring and better control of their asthma in the next 5 years. This is expected to lead to a reduced risk of asthma exacerbations and hospital admissions.

Further detail showing how the eligible populations have been calculated, along with assumptions and source references, can be found in the resource impact template ('Inputs and eligible population' sheet).

Resource impact: local template

Due to variations in practice, a national resource impact could not be estimated. Where possible, published estimates are used to provide a starting point for current practice in the template, however these are not estimates of the extent to which the previous NICE guideline on asthma has been implemented. Users are strongly encouraged to review the local template assumptions for recommendations with a potential resource impact and assess the resource impact locally (see 'Interventions inputs' sheet).

All UK populations are included in the resource impact template.

To estimate the resource impacts for primary and secondary acute services, such as the impact of increasing access for each type of test across the settings and the cost of additional testing equipment as a result, see the resource impact template.

Table 1 Population expected to benefit from recommendations which may have significant resource impact (England)

Eligible population	Current year '000	2025 to 2026 '000	2026 to 2027 '000	2027 to 2028 '000	2028 to 2029 '000	2029 to 2030 '000
Objective tests for diagnosis (recs 1.1.5, 1.2.4 and 1.2.9), age 5 and over	202	203	205	207	209	211
Monitoring asthma control (rec 1.5.4), aged 12 and over	3,263	3,294	3,326	3,358	3,390	3,423

Note: Committee experts commented that in clinical practice, the 12 to 17 age group are likely to be treated as adults for monitoring as this prepares them for monitoring visits when they reach adult age. For simplicity, this age group is therefore assumed to be monitored in line with people aged 12 and over.

Diagnosis and monitoring key impacts

Objective tests for acute symptoms at presentation (see algorithms A and B in the guideline).

Diagnosis (recommendations 1.1.5, 1.2.4 and 1.2.9)

Clinical experts from the committee suggest access to fractional exhaled nitric oxide (FeNO) and spirometry is highly variable across the UK and between healthcare settings. The purchase of equipment and training for these tests would need to be resourced to comply with this recommendation, however performing these tests in the community has the potential to reduce hospital appointments. The opportunity to diagnose at first presentation may save money by preventing misdiagnoses.

Implementing the diagnostic recommendations is likely to result in a change in practice for testing for asthma, with more sensitive or higher specificity tests being used ahead of other tests such as peak flow variability. This could drive increased referrals to paediatric respiratory services if tests are not available in primary care. For people not currently diagnosed with asthma, there may be an increase in people presenting to services.

Table 2 shows how the order of testing may change from implementing the recommendations. This could lead to a change in practice for tests such as FeNO where there is variation in availability, such as in primary care.

Current practice varies, but the sequence of tests recommended (as per algorithms A and B) is shown in table 2.

Table 2 Sequencing of objective tests for diagnosing asthma from implementing the guideline

Sequence	Future practice children	Future practice adults

1	FeNO if available	Blood eosinophils **or** FeNO
2	Bronchodilator reversibility (BDR) with spirometry	Bronchodilator reversibility (BDR) with spirometry
3	Peak expiratory flow variability (if BDR unavailable or delayed)	Peak expiratory flow variability (if BDR unavailable or delayed)
4	Skin prick test **or** total IgE and blood eosinophils	Bronchial challenge test

Tests for blood eosinophil count and peak flow tests are widely available in current practice.

Recommendations 1.2.4 and 1.2.9 are likely to result in an increase in referrals to respiratory specialist services. This is because where there is doubt about the diagnosis, many primary care clinicians may previously have tried treatment before referral, whereas under the new recommendations people will be referred to avoid an incorrect diagnosis.

Monitoring (recommendation 1.5.4)

The evidence for the guideline showed that, in adults, regular FeNO monitoring led to a reduction in the number of asthma exacerbations. This is a change from the previous recommendation in NG80, which did not recommend the routine use of FeNO to monitor asthma control (recommendation 1.13.4). Clinical experts from the committee suggest that this would result in an increase in the number of people receiving a FeNO test, probably once per year. Implementing the recommendation in primary care services is likely to have a capacity impact. This can be assessed locally.

Testing cost and resource use for diagnosing or monitoring asthma

Table 3 shows the unit costs of consumables for each test and estimated healthcare professional (HCP) time to carry out the tests. This is based on the economic evidence for the guideline and Asthma + Lung UK.

Table 3 Estimated unit costs and HCP time for asthma tests

Test	Cost (£)	HCP time
Peak flow with BDR	£7.47	30 minutes
FeNO	£6.37	15 minutes
Peak flow	£4.70	10 to 20 minutes
Skin prick test	£2.33	40 minutes
Spirometry	£1.80	20 minutes
Bronchial challenge test	£25.60	90 minutes

Note: Blood eosinophils and IgE blood tests are relatively low cost tests and likely to be carried out in addition to the above tests, therefore it is not assumed practice will change significantly from implementing the guideline. The cost of FeNO, spirometry and bronchodilator reversibility (BDR) also include amortisation of the device. The cost of the bronchial challenge test relates to consumables and includes single use nebuliser and drug cost.

Financial resource impact (cash items)

Due to variations in practice in monitoring and diagnosing asthma, a national resource impact is challenging to estimate. For example, there is no standard way to diagnose asthma. A FeNO result can be used to support a positive bronchodilator reversibility, positive peak flow variability or bronchial hyperactivity test result.

A recommended test where there is variation in practice according to respiratory clinical experts is FeNO. This test is used as both a diagnostic tool and asthma monitoring tool. FeNO is used to support diagnosis and it has a high specificity for asthma. The evidence supporting the guideline showed that, in both adults and children, regular FeNO monitoring led to a reduction in the number of asthma exacerbations. Respiratory expert opinion suggests that FeNO testing could lead to a potential reduction in hospital appointments and unnecessary treatments, including corticosteroid prescribing.

Table 4 shows the estimated cost of implementing recommendations that may have significant resource impact for a given change in activity.

The key driver of financial resource impact is FeNO monitoring for adults with asthma (recommendation 1.5.4).

Based on the cost effectiveness evidence for the guideline and clinical respiratory expert opinion, implementing recommendation 1.5.4 is likely to increase demand for the use of FeNO in primary care services. The financial impact could be significant because the test applies to the prevalent population. Table 4 illustrates the cost for different activity scenarios.

The resource impact of recommendations on diagnosis are not included in the table as these are assumed to apply to new (incident) cases each year, so the resource impact is not anticipated to be significant. The cost of changes to practice on diagnosis can be assessed locally in the template.

Table 4 Potential financial impact of recommendation 1.5.4 (FeNO) per change in testing activity

Number of FeNO tests	50,000	100,000	150,000	200,000	250,000
Ongoing costs, £m (unit cost: £6.37)	0.35	0.63	0.95	1.27	1.59

Notes: There are different pack sizes for consumables (test kit and mouthpiece), therefore an average unit cost of FeNO test is used. The cost also includes amortisation of the device. This is from the health economics supporting the guidance.

The average equipment purchase cost of the FeNO device is £1,250. The devices have a 7-year life span. There are also maintenance costs associated with the equipment, which will vary locally. Equipment costs can be assessed locally in the resource impact template (see unit costs tab).

For further analysis, including the cost of equipment purchase needed to support estimated changes in activity, or to calculate the financial impact of cash items, see the resource impact template.

Capacity impact

There will be capacity impacts and capacity benefits from implementing the guideline. These can be assessed locally in the template. Key capacity impacts which can be assessed are:

- Specialist staffing: increase in second opinion referral for bronchial challenge tests (paediatric and adult), recommendations 1.2.4 and 1.2.9.
- Nursing staffing: monitoring (primary care) appointments, recommendation 1.5.4.
- Nursing staffing: capacity benefit from reduced use of peak expiratory flow test for monitoring, recommendation 1.5.3.

Potential resources released

Implementing the recommendations may lead to reduced hospital admissions for exacerbations in people whose asthma is not well controlled. Where FeNO is used, results can be used to assess the risk of exacerbations and lung function decline, so the use of the test could help clinicians to better control the disease (Rognoni et al. 2023).

Low-dose MART treatment (recommendation 1.7.3)

Implementing the recommendation on low-dose MART could avoid A&E attendances and potentially hospital admission for people who have uncontrolled mild asthma. This is based on a study comparing MART with maintenance ICS plus SABA when required (Levy et al. 2024).

Clinical respiratory experts from the committee suggest that offering a low-dose MART to people with asthma that is not controlled on an ICS/formoterol combination inhaler is not current practice, with an estimate of 10% of GP practices using this approach. MART is an alternative option for treatment and is not anticipated to have significant resource impact.

For assessing potential resource benefits, there is no data on the number of people who will need MART rather than ICS/formoterol alone (when required) because the latter treatment is so new. Expert opinion suggests this could be between 158,000 and 326,000 after considering people who are non-adherent to treatment, have inhaler technique difficulties or other reasons for their symptoms. Taking a mid-point, this is currently around 242,000 people in England who could benefit.

Potential capacity benefits from reduced A&E attendances and hospital admissions can be assessed locally in the resource impact template.

For further analysis or to calculate the financial capacity impact from a commissioner (national) and provider (local) perspective, see the resource impact template.

Key information

Table 5 Key information

Time from publication to routine commissioning funding	N/A
Programme budgeting category	11B Problems of the Respiratory System - Asthma
Commissioner(s)	Integrated care boards
Provider(s)	NHS England and NHS Scotland hospital trusts/primary care providers (GPs)
Pathway position	Diagnostic; Management

About this resource impact summary report

This resource impact summary report accompanies the British Thoracic Society (BTS), NICE and Scottish Intercollegiate Guidelines Network (SIGN) guideline on Asthma: diagnosis, monitoring and chronic asthma management and should be read alongside it. See terms and conditions on the NICE website.