

HealthTech Programme

Algorithms applied to spirometry to support the diagnosis of lung conditions in primary care and community diagnostic centres

Equality impact assessment: Scoping

The impact on equality has been assessed during this evaluation according to the principles of the [NICE Equality scheme](#).

1. Have any potential equality issues been identified during the scoping process, and, if so, what are they?

There are some potential equality issues relating to lung conditions:

- Incidence and mortality rates of respiratory disease are higher in people with lower socioeconomic backgrounds or who live in areas of social deprivation, where there is often higher smoking incidence, exposure to higher levels of air pollution, poor housing conditions and exposure to occupational hazards. These factors drive to increase health inequalities in lung conditions in the most deprived communities. People in the poorest areas are five times more likely to die from COPD and three times more likely to die from asthma than the richest areas. There is a stronger link between respiratory deaths and deprivation than for any other major disease area ([Asthma + Lung UK, 2023a](#)).
- In many areas in the country, objective testing (including spirometry), is not available. For people in these areas, a diagnosis may be based on clinical assessment alone. This means that many people living with lung conditions are either not diagnosed, or receive an incorrect diagnosis ([Asthma + Lung UK, 2023a](#)).
- There are concerns over not only regional inequity in spirometry, but also the inequity of all services for respiratory patients when compared with those with other diseases (such as cardiovascular diseases) ([Doe et al., 2023](#)).
- NICE's guideline on asthma recommends spirometry for diagnosis in children aged 5 and over ([Overview | Asthma: diagnosis, monitoring and chronic asthma](#)

Equality impact assessment (scoping): GID-HTE10065 Algorithms applied to spirometry to support the diagnosis of lung conditions in primary care and community diagnostic centres

[management \(BTS, NICE, SIGN\) | Guidance | NICE](#)). No evidence was available for diagnostic tests in children under 5 when this guideline was developed. The age at which a child can co-operate with tests will vary, but it is usually necessary to manage these children pragmatically based on symptoms and signs only.

- It is recommended in [NICE's guidance on COPD](#) that European Respiratory Journal GLI 2012 and GLI 2022 reference values are used for spirometry, but it is recognised that these values are not applicable for all ethnic groups.
- Some lung diseases, such as COPD do not commonly occur in children. Restrictive lung diseases are also less common in children, but obesity may contribute to the development of some of these conditions.

Some people may particularly benefit from the technologies in this assessment, for example:

- People who live in geographical areas where there is less access to diagnostic tests and larger waiting lists. These people may have received no diagnosis at all, or may go on to receive an incorrect diagnosis that is based on clinical history alone.
- People who are unable to leave their home to undergo diagnostic spirometry. Technologies that enable spirometry to be performed at home have the potential to make spirometry more accessible for these people.
- Children for whom diagnostic spirometry is recommended but find it difficult to perform spirometry in current practice. Technologies that have paediatric spirometry coaching and incentives may help children to correctly perform spirometry.

There are some considerations to ensure the technologies do not add to health inequalities, for example:

- The patient population used in the training and validation set for AI technologies may be biased, and may not be inclusive of people from all ethnic backgrounds, ages or sex.

- For some patient groups, spirometry testing may be difficult to perform in certain settings, or at all. For example, some people with cognitive impairment or neurodiversity.
- Patient views and acceptability of artificial intelligence (AI)

2. What is the preliminary view as to what extent these potential equality issues need addressing by the Committee?

The potential equality issues will be considered by the committee during decision making.

3. Has any change to the draft scope been agreed to highlight potential equality issues?

It was discussed that home-based testing may make spirometry more accessible for a number of different patient groups. Technologies that enable spirometry to be performed at home (with the subsequent diagnosis being made in primary care or community diagnostic centres) have been included in the final scope.

Subgroups based on age have been included so that data can be considered to see if children may gain greater benefit from the technologies.

4. Have any additional stakeholders related to potential equality issues been identified during the scoping process, and, if so, have changes to the stakeholder list been made?

No.

Approved by Associate Director: Rebecca Albrow

Date: 21/08/2025