

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

DIAGNOSTICS ASSESSMENT PROGRAMME

Equality impact assessment – Guidance development

AI-derived computer-aided detection (CAD) software for detecting and measuring lung nodules in CT scan images

Consultation

1. Have the potential equality issues identified during the scoping process been addressed by the committee, and, if so, how?

Potential equality issues were discussed both in the scoping workshop 3 November 2021 and in the assessment subgroup meeting 18 November 2021.

The following were identified as potential equality issues relating to the condition:

- People with lung cancer may be classified as having a disability and therefore protected under the Equality Act 2010 from the point of diagnosis.
- Incidence rates for lung cancer in the UK are highest in people aged 85 to 89 (Cancer Research UK 2016-2018).
- Lung cancer is more common in men than in women. But over time, whereas lung cancer rate in men has become lower, the rate in women has increased.
- There are differences in the rates of lung cancer between ethnic groups. In men, lung cancer is most common in white men and men of Bangladeshi family background. In women, lung cancer is most common in white women.
- The incidence and mortality of lung cancer are higher in deprived communities.

The following were identified as potential equality issues relating to the testing:

- Some people may find it challenging to lie still and to hold their breath or both during a chest CT scan. Some people may find it

difficult to understand the instructions for what to do during the scan.

- If the software has been developed and validated in populations in which particular groups (such as people from different ethnic groups or people with lung conditions other than cancer) have been underrepresented, it may perform differently in these groups than data suggests.

Ethnicity was included as a subgroup in the scope. EAG's report provided information about ethnicity of the study populations in the addendum to the diagnostics assessment report. No studies reported outcomes separately for groups based on ethnicity. Only 1 of the 21 studies in which software was used alongside clinician (Hall et al. 2022, Veolity, UK), reported ethnicity of the 751 study participants: white 84%, black 10% and other 7%. The committee recommended further research on the technologies and specified that future studies should include groups of people similar to those seen in clinical practice in the NHS.

2. Have any other potential equality issues been raised in the diagnostics assessment report, and, if so, how has the committee addressed these?

No.

3. Have any other potential equality issues been identified by the committee, and, if so, how has the committee addressed these?

During the committee meeting, the committee considered whether there were any groups in which they would expect the software to perform differently. The clinical experts pointed that many studies excluded people with pre-existing lung disease or for technical reasons due to the CT scan which may limit who each software could be used for. The experts pointed out that people who are referred for a chest CT scan in routine clinical practice, outside of targeted lung cancer screening setting, because of signs or symptoms suggestive of lung cancer or for reasons unrelated to suspicion of lung cancer are more likely to have other underlying lung conditions. How common these conditions (for example granulomatous disease) are may also depend on the population. These conditions may make it harder for the software to differentiate nodules, especially subsolid nodules, from other nodule-like structures in the lungs and falsely detect them as nodules. Only 1 study in routine clinical practice was found. The committee concluded that more research is needed before software is

used outside the targeted screening settings. Studies should include groups of people similar to those seen in clinical practice in the NHS.

4. Do the preliminary recommendations make it more difficult in practice for a specific group to access the technology compared with other groups? If so, what are the barriers to, or difficulties with, access for the specific group?

No.

5. Is there potential for the preliminary recommendations to have an adverse impact on people with disabilities because of something that is a consequence of the disability?

No.

6. Are there any recommendations or explanations that the committee could make to remove or alleviate barriers to, or difficulties with, access identified in questions 4 or 5, or otherwise fulfil NICE's obligations to promote equality?

No but the committee considered that people with underlying lung conditions, and people whose family background means they are more likely to have subsolid nodules, may be at a higher risk of not having nodules detected and lung cancer missed and so they would particularly benefit if the technologies helped to improve detection. The committee's research recommendations aim for this evidence to be generated.

7. Have the committee's considerations of equality issues been described in the diagnostics consultation document, and, if so, where?

Committee's considerations on the groups in which the software may perform differently are described in section 3.6 of the diagnostics consultation document. The discussion on the populations that could particularly benefit from the technologies is summarised in section 3.7 of the diagnostics consultation document. The committee's discussion on what studies should consider is described in section 3.15 and research recommendations are in section 4 of the diagnostics consultation document.

Approved by Programme Director (name): Sarah Byron

Date: 3/2/2023

Diagnostics guidance document

1. Have any additional potential equality issues been raised during the consultation, and, if so, how has the committee addressed these?

One stakeholder commented that there are no equality issues for the recommendations. The committee noted that section 3.7 of the document describes populations that could particularly benefit from the technologies but that these had not been clearly described in the research considerations. It added specific examples of the populations that could particularly benefit from the technologies in the research considerations in section 1.4 and 4.2 of the diagnostics guidance document.

2. If the recommendations have changed after consultation, are there any recommendations that make it more difficult in practice for a specific group to access the technology compared with other groups? If so, what are the barriers to, or difficulties with, access for the specific group?

Stakeholders commented that the wording of the draft recommendation for targeted lung cancer screening (use with evidence generation) excluded any new centres and sites joining the NHS England's Targeted Lung Health Check programme. This could have deterred other sites joining the programme at a later stage. To encourage equity in access, the committee re-worded the recommendation for targeted screening population in section 1.3 of the diagnostics guidance document to all centres using the software as part of targeted lung cancer screening.

3. If the recommendations have changed after consultation, is there potential for the preliminary recommendations to have an adverse impact on people with disabilities because of something that is a consequence of the disability?

No.

4. If the recommendations have changed after consultation, are there any recommendations or explanations that the committee could make to remove or alleviate barriers to, or difficulties with, access identified in questions 2 and 3, or otherwise fulfil NICE's obligations to promote equality?

No.

5. Have the committee's considerations of equality issues been described in the diagnostics guidance document, and, if so, where?

Committee's considerations on the groups in which the software may perform differently are described in section 3.6 of the diagnostics guidance document. The discussion on the populations that could particularly benefit from the technologies is summarised in section 3.7 of the diagnostics consultation document. The committee's research recommendations and considerations on what studies should consider, including specific examples of subgroups who could particularly benefit from the technologies, are described in sections 1.4, 3.15 and 4 of the diagnostics consultation document.

Approved by Centre or Programme Director (name): Sarah Byron

Date: 12/04/2023