NICE National Institute for Health and Care Excellence

HealthTech Programme

Equality Impact Assessment – Guidance Development

Artificial intelligence software to help detect and characterise colorectal polyps

Consultation

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

Age, disability, sex, race and religion or belief are protected characteristics under the Equality Act (2010). The committee considered the potential risks for creating inequity in service provision and in implementing AI technologies to colonoscopy. These risks were related to two issues: firstly, the disease process itself and how it presents in different population groups; and secondly, the interventions themselves, including the population the AI software has been trained on, and issues with funding and deployment.

Population considerations

The committee heard from the EAG that some high-risk groups were excluded in the identified studies, limiting the generalisability of the technologies in these groups. These included people with Lynch syndrome, familial adenomatous polyposis (FAP), and inflammatory bowel disease (IBD). The implication of this is that the AI technologies may not perform reliably in these populations, which are at higher risk of colorectal cancer. The committee also noted that sessile serrated lesions (SSLs) may be more common in certain genetic syndromes, and the evidence for AI in detecting these is less robust. Therefore, the committee recommended that more research is done on the ability of AI to detect polyps of different types and sizes, as well as the use of AI used to characterise (diagnose) polyps.

The committee heard that people with IBD are over-represented in post-colonoscopy colorectal cancer risk. This suggests a systemic inequality in detection and follow-up for this group. The committee also heard from a clinical expert that although the presentation of polyps did not usually differ between groups (such as ethnicity or gender), there were differences observed in referral pathways, with significant delays in some groups and that this could lead to late diagnoses. This suggests that there may be systemic issues with access to colonoscopy rather than biological differences in polyp presentation which is not something these technologies can address.

Technology considerations

The committee heard there was generally a lack of published information reported on the demographic diversity used in the AI training datasets. The ethnicity, gender, and age of the training sets were not consistently reported in company literature. When questioned, the EAG stated that granular data on patient demographics such as ethnicity were usually not reported so it was not possible to know if these groups were underrepresented or not. A company representative stated that their training sets were diverse concerning geography, with people from North America, Europe, and Asia being represented. Another company representative stated that the software used is constantly evolving on expanded training sets.

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

In section 3.2.2.1.9 of the diagnostic assessment report (DAR), issues with the patient perception on the use of AI, derived from the literature and patient groups, could have some relevance to equality issues. For instance, younger people and males are more likely to be receptive to the use of AI and have greater digital literacy skills. On the other hand, older people and some ethnic minorities have less trust and confidence in these technologies which could potentially impact uptake.

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

No other potential equality issues or considerations were identified by the committee.

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?

Yes. People with diagnosed IBD or Lynch syndrome would not have routine access to the AI software. This is because it is unclear whether the technologies would work effectively in people with those conditions, so more research is needed to make sure their use does not adversely impact on them.

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?

The committee recommended that high-risk groups (such as Lynch syndrome and IBD) which were excluded from the studies should be explicitly studied in future trials of AI devices. Where possible, future studies should incorporate long-term post-colonoscopy colorectal cancer outcomes to investigate if any issues relating to equality impact on these clinical outcomes.

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

Equality issues and considerations have been described in sections 3.19, 3.39 and 3.40 to of the draft guidance.

Approved by Associate Director: Lizzy Latimer (TBC)

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