NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Medical technologies evaluation programme

Equality impact assessment: Guidance development

GID-HTE10015 Artificial intelligence technologies to aid contouring for radiotherapy treatment planning: early value assessment

The impact on equality has been assessed during this early value assessment (EVA) according to the principles of the NICE Equality scheme.

Draft guidance consultation

1. Have the potential equality issues identified during the scoping process been addressed by the committee, and, if so, how?
The committee thoroughly considered the potential equality issues that were identified during scoping. Key issues included: • AI models can contain algorithmic bias depending on the population used in training. Populations used in training datasets may not be representative of patient populations in clinical practice which can cause potential age, sex and disability bias. • Clinical experts advised that there may be a lack of representation of female pelvis and male breast cancer in some training datasets. Training datasets may also underrepresent children and young people. This may affect the performance of AI auto-contouring for these populations. • AI auto-contouring may perform best with certain CT or MRI sequences or with the person being in a specific position such as supine head-first. Training datasets may not include data on atypical positioning which may make AI auto-contouring less accurate for some people with limited mobility who have difficulty with these positions. Clinical experts advised that AI auto-contouring may also not work as well for people with atypical anatomy associated for example after some surgeries. • Potential risk of bias of a specific technology should be considered when deciding if to use that technology in research or clinical settings. This should form part of a local assessment process before purchase and clinical

decision-making. Companies should also provide detailed information on training datasets as part of their product information pack, including guidelines used and demographics such as age range, sex ratios and inclusion of disabilities.

- Cancer is considered a disability under the Equality Act 2010. Incidence rates in the UK for all cancers combined are highest in people aged 85 to 89 with more than a third of diagnoses each year being in people aged 75 and older. Age, gender, disability and race are protected characteristics under the Equality Act (2010).

2. Have any other potential equality issues been highlighted in the company's submission, or patient and carer organisation questionnaires, and, if so, how has the committee addressed these?
No, all equality issues considered by the committee were raised during scoping.

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?
The clinical experts advised that AI auto-contouring could be used for everyone having external beam radiotherapy planning. The draft recommendations do not limit access to the technologies for any specific groups. Healthcare professionals may consider manual contouring to be more appropriate for some people. This is not thought to affect patient care or outcomes.

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?
AI auto-contouring may perform best with the person being in a specific position such as supine head-first. Training datasets may not include data on atypical positioning which may make AI auto-contouring less accurate for some people with limited mobility who have difficulty with these positions. Healthcare professionals may consider manual contouring to be more appropriate for some people because it may produce more accurate contours in these specific cases. This is not thought to affect patient care or outcomes.

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?
Manual contouring may be more accurate and efficient than AI auto-contouring for some patients. This is discussed in section 3.11 of the draft guidance.

7. Have the committee's considerations of equality issues been described in the medical technology consultation document, and, if so, where?
Yes, these have been discussed in sections 3.10 to 3.12 of the draft guidance.

Approved by Associate Director: Anastasia Chalkidou

Date: 31 July 2023