

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

DIAGNOSTICS ASSESSMENT PROGRAMME

Equality impact assessment – Scoping

Artificial intelligence software to help detect fractures on X-rays in urgent care

The impact on equality has been assessed during this assessment according to the principles of the NICE Equality scheme.

1. Have any potential equality issues been identified during the scoping process (scoping workshop discussion, assessment subgroup discussion), and, if so, what are they?
 - Some fractures are more common in certain age groups, for example, hip fractures are more common in older people.
 - Clinical experts explained that fractures are also more difficult to detect in children. Missed fractures in children that include the bone growth plate can have severe long term health complications including limb shortening or abnormal growth. Therefore any artificial intelligence software packages that are not approved for use in children may disadvantage this group.
 - People with conditions that affect bone health (for example, osteoporosis and osteogenesis imperfecta) may be more susceptible to fractures.
 - AI technologies may perform differently in people with underlying comorbidities, such as conditions affecting bone health.
 - Clinical experts highlighted that certain drugs can reduce bone density and increase the risk of developing osteoporosis. Therefore this group could be at a greater risk of a fracture.
 - Clinical experts explained that bone health can vary widely with age and can be affected by other factors including socioeconomic background.

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

- If the algorithm has been developed, trained and validated in populations in which particular groups (such as people from

different ethnic groups, age, or sex) have been underrepresented, they may perform differently in these groups.

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 noted by the committee and inform discussions where appropriate.

3. Has any change to the draft scope been agreed to highlight potential equality issues?
 - The potential equality issues have been included in the equalities section of the draft scope.
 - The point raised in section 1 about the diversity of populations used to train artificial intelligence algorithms was highlighted by clinical experts. This has now been added to the potential equality issues section of the final scope.
 - Clinical expert comments about people with conditions that affect bone health being more susceptible to fractures and that bone health can vary widely with age and socioeconomic background, have been added to the final scope.
 - Subgroups have been added to the population section of the scope table to include: children and young people, older people, and people with conditions affecting bone health. Data on performance of the technologies in different groups can be assessed if it is available.

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 additional stakeholders related to potential equality issues have been identified during the scoping process

Approved by Technical Adviser (name): ...Jacob Grant.....

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