NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Equality impact assessment – Scoping

GID10067: Artificial intelligence assisted echocardiography to support the diagnosis and monitoring of heart failure

The impact on equality has been considered during this assessment 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?

Several potential equality considerations have been identified during the scoping of these technologies. Key considerations concerning heart failure and its diagnosis or monitoring using adjunctive AI technologies include:

- People with potential heart failure may have symptoms which affect their daily living and quality of life. Under the Equality Act 2010, a person has a disability if they have a physical or mental impairment that has a substantial and long-term effect on their ability to do typical day-to-day activities.

- People over 75 living with heart failure often experience less aggressive management and poorer access to support services compared with younger groups. The equalities and health inequalities impact assessment for chronic heart failure ([NG106 EHIA](#)) found that older patients are less likely to receive guideline-recommended pharmacotherapy and device therapy. Access to exercise-based rehabilitation, including education and psychological support, is lower in rural areas and among older people. Specific presentations of heart failure, such as heart failure with preserved ejection fraction (HFpEF), disproportionately affect older age groups and these people face gaps in service provision. Age is a protected characteristic under the 2010 Equality Act.

- The prevalence of heart failure is similar in both men and women. However, men are more prone to develop heart failure with reduced ejection fraction (HFrEF), often driven by earlier-onset ischaemic heart disease. Women have a higher prevalence of HFpEF, especially presenting in later decades of life. Sex. is a protected characteristic under the 2010 Equality Act.

- The impact of heart failure is related to socioeconomic factors. People living in the most deprived 20% of neighbourhoods in England live up to 20 fewer healthy years, with cardiovascular disease, including heart failure, being the leading contributor to premature disability and death ([British Heart Foundation, 2025](#)). Underfunded public health services (such as smoking cessation and weight management services) disproportionately impact deprived communities.

- Race and ethnicity play a role in heart failure. South Asian and Black British populations have a higher prevalence of heart failure. Additionally, the screening biomarker for heart failure, N-terminal pro-B-type natriuretic peptide (NT-proBNP) diagnostic thresholds vary by ethnicity. This risks underdiagnosis in some ethnic groups unless adjustments are made.

- Additional considerations that are specific to how AI technologies are used in echocardiography to diagnose heart failure may arise due to a mismatch between the groups used to train the AI and groups that are underrepresented in clinical practice. Most AI models have been built on large, adult cohorts (likely to be predominantly White patients) from North American and European centres. So there may be potential issues with diagnostic accuracy or related outcomes in certain subgroups, for instance concerning:

  - Age, as training data may under-represent very young or very old people, leading to inaccurate norms.

  - Disability (e.g. people with amputated limbs or people with scoliosis), as acoustic windows may differ and AI may misread doppler signals.

  - Pregnancy, as haemodynamic changes in pregnancy may alter echo metrics, and unvalidated models could misclassify these.

  - Race and ethnicity, as differences in cardiac size and function between ethnic groups could skew datasets to yield systematic errors. Specific groups identified included Black populations, who tend to have thicker ventricular walls and react differently to hypertension.

  - Sex, as there are male and female differences in myocardial thickness and mixed-sex models may underperform in one sex.

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

   The committee should consider all equality issues and considerations when making recommendations.

The view from those attending the scoping workshop was that the equality issues were fairly described but that proven technologies need to be made available to as many people as possible. The exclusion criteria described in the scope has been adjusted to reflect this, explaining that only contraindications listed in the individual manufacturer's Instruction for Use (IFU) should necessitate a particular AI technology being unsuitable for an individual to access.

There was some concern over how the AI was trained and its potential impact on diagnostic accuracy and effectiveness, and that companies need to be transparent about the population the technologies have been trained on and that this should be made explicit in any future research. These do not necessitate a change to the draft scope.

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

No change to the draft scope has been made to highlight potential equality issues, as these have already been adequately described (also in question 1).

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 have been identified.

Approved by Associate Director (name): Lizzy Latimer

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