NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Equality impact assessment

GID10067: Artificial intelligence (AI)-assisted echocardiography analysis and reporting 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.

Scoping

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

Date: 17/09/2025

Draft guidance

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

The committee noted the equality issues identified during the scoping process. A patient expert highlighted the impact that heart failure has on people's daily lives and quality of life. For example, debilitating symptoms such as severe breathlessness and fatigue leading to a sedentary lifestyle and difficulties with daily activities (see section 3.6 of

the draft guidance). The committee reiterated that heart failure is more prevalent in certain ethnic family backgrounds and noted that this was an important consideration when assessing how AI models have been trained and validated. It considered that a lack of external validation in UK or similar populations may limit suitability of the technologies and pose clinical risks. The committee concluded that more research was needed to understand how the AI technologies are trained and more transparency is needed around the populations used for validation (see section 3.23 of the draft guidance).

2 Have the potential health inequality issues identified during the scoping process been addressed by the committee? If so, how?

See response to question 3.

3 Have any other potential equality or health inequality issues been raised in the stakeholder submissions or the assessment report? If so, how has the committee addressed these?

No additional potential equality or health inequality issues have been raised in stakeholder submissions or the external assessment report. However, in its assessment report the EAG highlighted that there is a lack of evidence to determine whether EchoGo Heart Failure, US2.ai or Ligence Heart have been adequately externally validated in a UK population, or a population with demographics close to that of UK population. EchoConfidence was validated on a UK population as part of its CE marking process.

4 Have any other potential equality or health inequality issues been identified by the committee? If so, how has the committee addressed these?

No

5 **Do the preliminary recommendations make it more difficult for a specific group to access the technology than other groups? If so, what are the barriers to, or difficulties with, access for this group?**

No

6 **Has the committee made any reasonable adjustments for the equality issues identified in its recommendations? That is, any adjustments needed to remove or alleviate barriers to, or difficulties with, access needed to fulfil NICE's obligations to promote equality.**

Not applicable

7 **Have the committee's considerations of equality and health inequality issues been described in the draft guidance? If so, where?**

Equality issues and considerations have been described in section 3.23 of the draft guidance.

Approved by associate director: Lizzy Latimer

Date: 29/01/2026

Final draft guidance

This section will be completed when the final draft guidance is issued.

8 Have any additional potential equality or health inequality issues been raised during consultation on the draft guidance? If so, how has the committee addressed these?

No

9 Have any additional potential equality or health inequality issues been identified by the committee? If so, how has the committee addressed these?

No

10 If the recommendations have changed after consultation, do the updated recommendations make it more difficult for a specific group to access the technology than other groups? If so, what are the barriers to, or difficulties with, access for this group?

Not applicable

11 If the recommendations have changed after consultation, has the committee made any other reasonable adjustments for the equality issues identified in its recommendations? That is, any adjustments needed to remove or alleviate barriers to, or difficulties with, access needed to fulfil NICE's obligations to promote equality.

Not applicable

12 Have the committee's considerations of equality and health inequality issues been described in the final draft guidance? If so, where?

Equality issues and considerations have been described in section 3.24 of the final draft guidance.

Approved by associate director: Lizzy Latimer

Date: 24/03/2026