

# Expert evaluation of a novel transoesophageal echocardiography simulator

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## Purpose

- Clinical demand for transoesophageal echocardiography (TOE) is increasing but there is limited opportunity for hands-on training.
- A well-validated TOE simulator, which augments current training practice, will benefit both trainees and patients.
- We performed an independent evaluation of a new and innovative TOE simulator to establish its validity with respect to defined criteria for medical simulation.
- This new simulator enables interactive TOE simulation, with real-time probe and image plane manipulation, displayed with a 3D virtual heart model (figures 1 & 2).

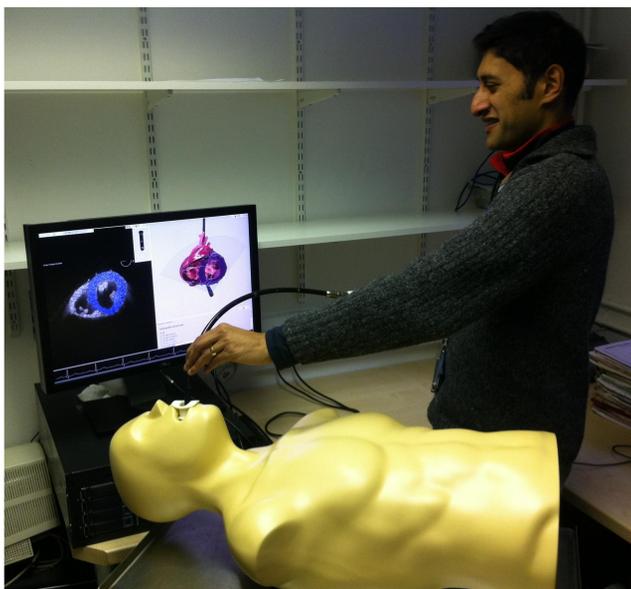


Figure 1

## Methods

- Expert TOE practitioners, defined as having performed >200 TOEs, were invited to evaluate the TOE simulator.
- Participants were given a short introduction and then allowed to explore the simulator intuitively, with assistance from a trained facilitator.
- Face and content validity, as well as expert opinion regarding potential utility as a training tool, were assessed by an anonymous and standardised questionnaire.

Figure 2



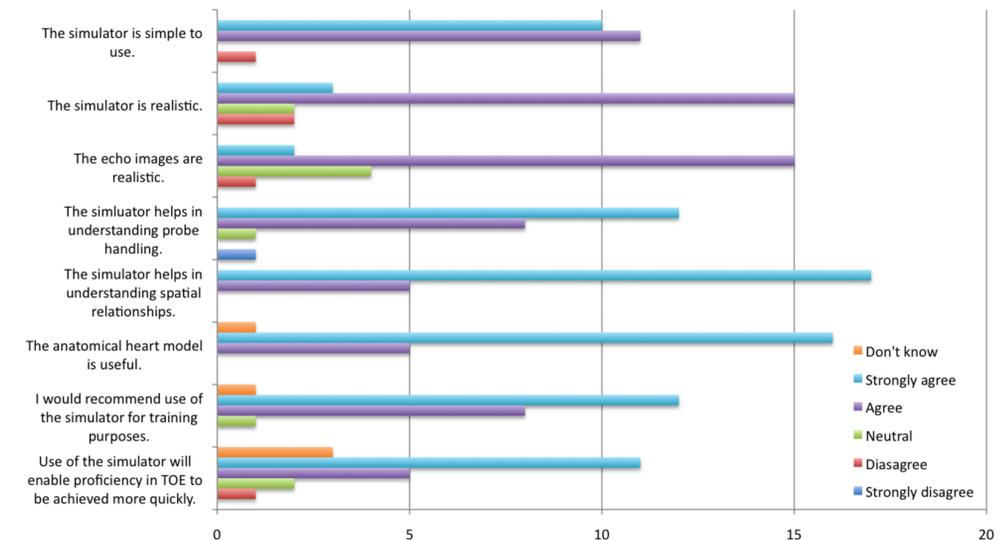
## Results

- Twenty-two expert TOE practitioners (15 cardiologists, 7 cardiothoracic anaesthetists) evaluated the simulator.
- Participants had been performing TOE for 6±3 years and were undertaking 100±50 studies per year.

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- 7 (32%) and 10 (45%) participants held BSE or EAE accreditation in TOE and TTE respectively.
- Questionnaire results are presented in Figure 3.

Figure 3



## Conclusion

Expert evaluation of a novel TOE simulator has demonstrated excellent face and content validity, as well as exciting potential as a training tool, particularly with respect to the understanding of probe handling and spatial relationships.