

'Quality is the best policy'

BSE Echo Quality Accreditation

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Introduction

As echocardiography evolves and expands it is our responsibility to ensure we are delivering high-quality standard transthoracic services as well as branch services such as specialist echocardiography, e.g. transoesophageal echocardiography. It is fundamental we all play an active role in undertaking the necessary tasks to help demonstrate quality assurance to our patients, colleagues and wider workforce. For this purpose the Echo Quality Accreditation (EQA) was developed as a formal method by which to assess and evidence departmental compliance with all elements of high-quality echocardiography services, as outlined by the Echocardiography Quality Framework (EQF) (figure 1)¹. The focus of this collaborative article will be to highlight the importance of Quality Assurance (QA) with breakdown examples from the EQF, discuss how the culture and attitude towards it can be a positive experience and to provide some top tips to be successful.

Patient centred approach

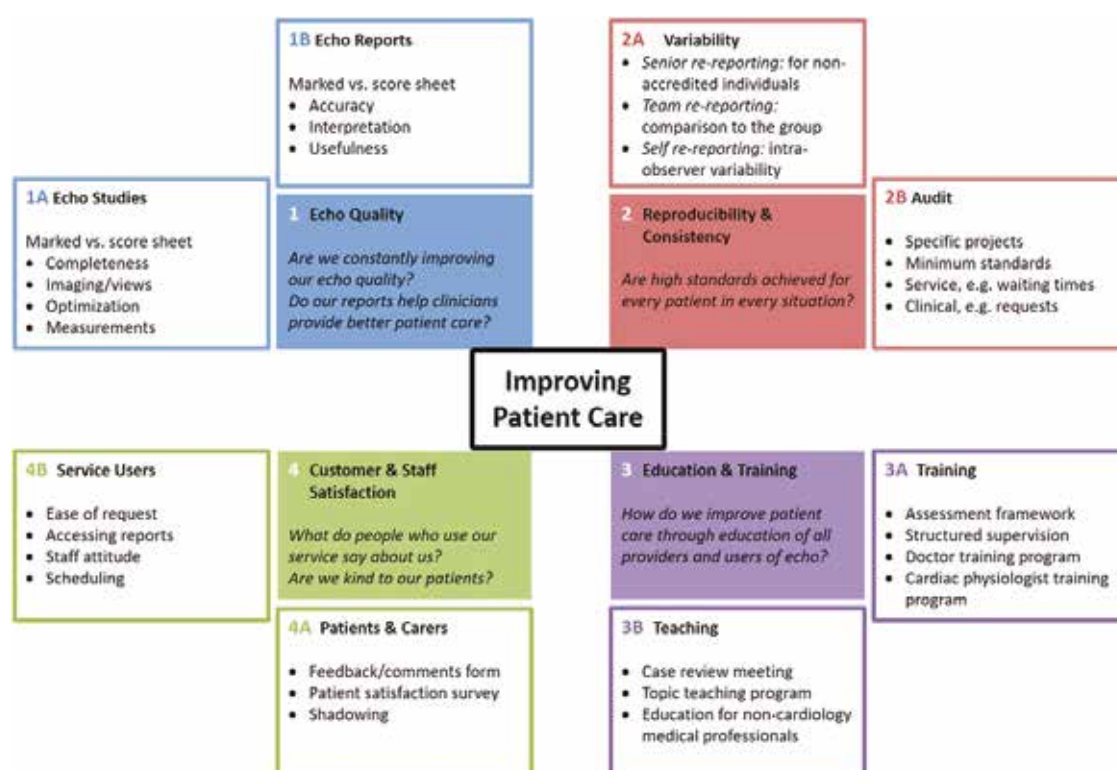


Fig 1. The 4 domains of the Echo Quality Framework (EQF)¹

It is imperative to prioritise the patient when discussing echo QA. As end service users, any change to the echo service configuration will ultimately impact them. For patients to receive consistent, high-quality care, everyone should be working towards the same reproducible standard. The EQF

highlights the importance of building a future workforce within echocardiography, whilst constantly educating and strengthening the current workforce. The EQF can be used to configure services, it is not just an assessment tool for the established service.

Example approach to newly implementing the EQF and achieving EQA at University Hospitals of Leicester NHS trust.

Echo quality

Echo Quality (EQ) focusses on each individual and is about taking us back to the basics of re-assessing our own everyday practice of obtaining good quality and useful images, and also producing legible, detailed, yet succinct reports. The first step to this assessment is to identify a baseline against which imaging and reporting quality can be assessed. Minimum datasets based on local or national protocols are a great place to start. The next question is how? Creating a scoresheet which abides by the gold-standard guideline comparison, such as the British Society of Echocardiography (BSE) minimum datasets is one of the easiest and most flexible methods (and the BSE even provide templates!). This can be delivered by asking staff in turn to volunteer an imaging study each quarter (you can create a rota for this purpose), and then as a team the volunteered imaging study can be discussed based on an agreed focus. Within our department, we used our monthly departmental meeting to focus on assessing optimisation of the volunteered imaging study and completeness of the associated echo report.

This method was a great way to generate team participation and improve group and individual practice. As a group we agreed it was useful to refresh our awareness of the importance of optimisation of 2D images and Doppler signals, and the different methods of optimisation available. The scoring of reports was also beneficial as we were able to have discussions about what we felt was useful and necessary in our standard reports. However, we were also able to discuss variations which may be more efficient in certain pathology cases, such as providing only summary reports for repeat effusion scans. This was notably useful for our trainees as they were able to witness discussions around what they should be aiming for to achieve optimum imaging and reporting quality. The score-sheets may also provide a great method of internally assessing trainees at the end of their training period, using it as evidence for their portfolios and competencies, therefore this links nicely with the education and training EQF domain.

Reproducibility and consistency

The delivery of high standard care sits at the core of a reliable imaging service. A yearly audit is an easy method for evaluating existing services to ensure consistency and continuous improvement. Additionally, re-reporting tasks are useful in ensuring reproducibility of echo practice. These methods importantly focus on group practice and the service as a whole.

Audits can be based on specific or broad areas of the service, i.e. adherence of the team's reports to the minimum datasets, which is what we did in our department. We assessed everyone's reports over a 6 month period for completeness of imaging dataset vs the BSE minimum dataset document. It was demonstrated that some views i.e., suprasternal and ascending aorta were not consistently imaged across the team. Discussion revealed that this was a mix of habit and lack of awareness of the current BSE image dataset. This led to reviewing the full BSE dataset as a group with an agreement to adjust our daily imaging to comply with the minimum dataset, where feasible. This will be re-assessed to complete the audit cycle.

Our re-reporting task occurs every quarter; based on the rota a member of the team volunteers a scan that the team can re-report typically during spare time/study sessions. We focus on pathologies which are rare and interesting but also commonplace such as aortic stenosis. The results are sent back by email, on a reporting template, and then analysed by the QA team/lead. To ensure the task is constructive the results are then discussed at the monthly team meeting, where mainly

areas of variability are discussed in an open forum to better understand why it has occurred and to resolve discrepancies. To bring the process full circle, which also coincides with the Education & Training domain, the team member who volunteered the study presents an educational piece in relation to the pathology of interest.

This task has importantly provided assurance and confidence through consistent results demonstrating that we have little variability amongst the team. It has also been beneficial in determining areas where the team may require educational refreshers in interpretation of pathologies. We have recently begun involving and reviewing results against cardiology consultant reports, with educational presentations on both echo and clinical aspects of pathologies also given by some cardiology consultants. Our team have found this particular strategy comprehensive as it builds a multi-disciplinary team involvement, but again increases confidence demonstrating reproducibility even at different levels of echo practice.

Education and training

Every day is a school day, and echocardiography is a constantly evolving and expanding service. Therefore to progress and ensure delivery of safe and effective patient care we should demonstrate a commitment to constant learning and teaching.

A great multi-disciplinary way to achieve this is regular (weekly/monthly) case review meetings, where interesting and difficult cases can be discussed from both echocardiography/imaging and medical perspectives. In addition, a quarterly educational presentation by medical teams, representatives of companies, and staff themselves, on standard pathology topics and guideline updates is also achievable. In our department we have utilised both processes which have benefitted the staff through multi-disciplinary discussions on management plans which we do not often have opportunity to learn, and by providing dedicated time directed at renewing our theoretical knowledge of assessing pathologies. The latter process has been not only educational, but also as it requires engagement by all, it provides evidence that has been used towards re-accreditation portfolios for BSE accredited staff, and towards competencies for trainees on courses such as ETP/STP and HSST.

Members of the team have set up dedicated weekly training sessions for medical trainees towards BSE accreditations which involve educational presentations and one-to-one hands-on guided practice. Over the past two years, four doctors have achieved full accreditation. Other members have also recently set up a departmental framework to aid mentors in their training of STPs/ETPs. This includes individual folders with internal competency sign-offs for echo knowledge and practice based on the BSE examination requirements. The department have procured a simulator which has since been used for BSE exam practice and initial hand-on training. There has also been a recent trial of monthly mentor meetings for all mentors to discuss mentee progress and swap advice/suggestions. Currently there are four trainees under this route, and success of the process will be audited at the two year point.

Patient and staff satisfaction

We should always be considering how improvements to the service as a whole can contribute to higher quality clinical outcomes. Identifying deficiencies of the service to our patients by staff and patients helps ensure their diagnostic pathway is constantly improving.

A simple method which is reproducible, time-efficient and flexible, is surveys. Patient satisfaction questionnaires and referrer/requestor surveys can be emailed/posted or accessible through an online portal. The surveys can be delivered annually; however, this can be flexible against workforce capacity. The patient questionnaires currently utilised in our

department are on a 2-yearly cycle. We currently have a single-sided paper questionnaire given to our patients who receive an echocardiography appointment. The patient completes the questionnaire after their appointment and the questions are a mix of open-ended, scaled and closed questions. Main topics include their experience at every stage of interaction with our service, ie. if they felt the appointment correspondence was easy to understand or how they felt they were treated by staff during their scan. Overall feedback so far has been positive with >95% suggesting they would refer a family or friend to our echocardiography service. Lack of "something to look at" was the only area for improvement suggested by the patient questionnaire.

The requestor surveys, which are also currently on a 2-yearly cycle, also focus on interaction with the team and service. This includes questions on ease of requesting a scan (are we timely and do we communicate well), ease of interpreting our reports (are they legible and provide the information requested), and ease of receiving results (timely, ease of access to reports on electronic systems etc.). This survey is sent to all referrers who interact with the echocardiography service and is currently only sent internally. The most helpful element was sections for free-text feedback, respondents found this helpful as they have never had such a means to feedback about our service and they were able to write details with examples of any issues to be raised. Examples raised as areas for improvement were lack of communication around referral rejection by our team, and the appearance of reduced confidence in reporting by use of certain terminology in our reports. Despite this, overall user-feedback was positive with scores of 73-86% for all assessed sections.

Feedback has been actioned with the following resulting changes made towards an improved service user experience: altered standard rejection triaging terminology was trialled, change in practice regarding reporting terminology i.e., less use of "appears" in our reports, and winning a bid for funding to provide visual comfort screensavers for the echo rooms.

Experience at Great Western Hospitals, NHS Foundation Trust where the EQF has been implemented long-term, focussing on changing the culture towards continuous EQ

Having decided to apply for EQA, we realised that we were already meeting most of the requirements stipulated by the BSE. Following discussions with colleagues and the wider multidisciplinary team, it became clear that there was a stigma surrounding it. We therefore set about trying to actively change the culture around echo QA.

Initially, the majority of our weekly echo meetings consisted of group EQ in a seminar room with an echo displayed on a projector and the sonographers name visible. Individuals were asked to critique the image quality, optimisation, measurements and report in front of their peers, including the performing sonographer. Everyone involved in the process dreaded their echo being selected from the list. This process created a blame culture which was not conducive with learning or professional growth. More alarmingly there was a significant knock-on effect on the sonographers' individual confidence, leading to decreased job satisfaction. Through the COVID-19 pandemic, as with most meetings, these sessions moved online, but remained the same format, which further added to the negative perception of echo QA and decreased engagement.

It became a priority to change the perception of EQ to enable it to become something that the team can learn from, rather than fearing it. In order to do this, initially we wanted to encourage engagement and participation from the entire team. The goal was to make the group EQ sessions an opportunity for shared

learning, rather than dread. To initiate this process, we engaged with the team, trying to gather their opinions on how EQ could be performed differently. We created a Survey Monkey for all physiologists who echo. This was anonymous to allow everyone an opportunity to give candid and constructive feedback. We stressed that honest feedback from the entire team was the only way to improve the culture around the EQ process.

The feedback we received was honest and as expected. It was very constructive and guided the changes that needed to be made. The feedback was presented to the rest of the team along with a proposed plan to improve EQ format within the department. As this had been a democratic process, the new format was positively received, and additional suggestions were also made.

How did we improve?

The main change was the way we ran our weekly echo meetings. We proposed that an EQ session in person would run once every four weeks covering 2-3 cases. These sessions would involve splitting the team into small groups, with each group reviewing and critiquing an echo and feeding back on the newly created reporting scoresheet. We found this increased engagement and became more of a team effort involving everyone. All cases were chosen in advance and were anonymous with the sonographer's name redacted.

We proposed that education/training sessions, as well as interesting echo cases would be presented in the remaining three sessions of each month. The team was invited to bring forward interesting echo cases or present a learning topic of their choice, for example pulmonary vein flow, aortic stenosis etc. These weekly sessions would be attended in person by all members of the team working in the department that day as well as streamed on MS Teams for those working from home. At least one imaging consultant also attends via MS Teams, which provides additional expertise and creates a more inclusive team culture around EQ.

As part of the plan to continually improve, the survey was repeated three months later, and as hoped, feedback was significantly more positive than the initial survey. Although team attitude towards EQ had improved, and engagement had increased, there was still much improvement to be made. A new action plan was proposed to the team, which involved providing more structured feedback for the traffic light system of 'green', 'amber', and 'red':

Green – No difference between quality assurance physiologist and scan/ minor differences in wording or style or non-inclusion of clinically insignificant features/ consistent good optimisation of images.

Amber – Evidence of sub optimal optimisation or missing information with no detriment to patient/ debatable but possible difference in reporting but with low likelihood of harm

Red – Definite difference in reporting with unequivocal potentially serious or life-threatening effect

It was felt more feedback was needed for 'amber', and 'red' scans. It was suggested that we highlight common trends for 'amber' and 'red', and to introduce more targeted training based on this. Since the start of the process, there has been a 33% increase in the percentage of 'green'. We have continued to send out surveys to the team on a regular basis to ensure we are constantly improving the EQ process, meeting training needs/ requirements and having a patient centred approach to echo QA. Feedback from the most recent survey has been very positive, but there was a suggestion that staff engagement during training sessions could improve. We are currently working on an exciting new way to encourage engagement by using Microsoft Forms in our group EQ sessions.

Top tips for gaining departmental Echo Quality Accreditation

- EQA fits any service and can be used to plan new services as well as assess existing services.
- EQA is particularly useful when building services without walls: the governance framework in effect becomes the departmental infrastructure.
- Think about your particular service when you make use of the four pillars of the framework to get useful information for your patients.
- Think about who your service users are: patients, clinicians or both. This helps you to orientate your service to the user making it more effective and ultimately useful.
- EQA is a cyclical process: by building cyclical re-assessment into your EQA you make re-accreditation easy, but more than that EQA is designed to be used to continuously intelligently enquire about a service not to create any unnecessary additional workload.

Echo quality:

In most cases the minimum dataset is your gold standard, but some services will also include Level I studies. Find a system of echo quality assessment which is relevant to the service. A rolling process is better than an intermittent one. Team engagement is key here. Make the process anonymised if you need to.

Reproducibility and consistency:

Keep it simple. What do you notice is not being done as well? Pick something small and draw the team's attention to it – this is very effective for learning. A good example would be tissue Doppler optimisation or simply LV mass assessment.

Education and training:

Be creative. You don't necessarily need to start new education processes. Are there existing meetings going on that you can join in? Get everyone involved in generating the content. Share the load.

Customer and Staff satisfaction:

Who uses your service? In our particular service our end users are primarily the critical care clinicians looking after the patient and our communication and loop closure needs to be focussed on them; we re-interpret our findings for non-echoing clinicians every time we echo and we hand over our findings to both the bed-side nurse and the clinician in charge of the patient's care to ensure two points of contact.

The EQA framework is designed to be compliant enough to fit the shape of any service. Make it work for you.

References

1. Masani, N. The Echocardiography Quality Framework: a comprehensive, patient-centered approach to quality assurance and continuous service improvement. *Echo Res Pract* 5, G35–G41 (2018). <https://doi.org/10.1530/ERP-18-0052>

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