

COMMENTARY

Self-regulation sets standards in echocardiography accreditation

An echocardiographer's perspective on accreditation in echocardiography

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ABSTRACT

The British Society of Echocardiography (BSE) and the European Association of Echocardiography (EAE) run voluntary accreditation programmes both for individuals and echocardiography laboratories with the aim of elevating standards both ways. In this commentary John Chambers discusses the evolution of accreditation and the development of standards of care in echocardiography in the UK and Europe. As past president of the BSE he has been instrumental in the process of developing training programmes and accreditation in echocardiography.

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CURRENT SITUATION

It is obvious that we want to perform echocardiograms as well as possible and at least to an appropriate minimum standard. In most countries of the world, including South Africa, training in echocardiography is performed as an apprenticeship. It is not taught and tested to a level sufficient for clinical use within established professional training schemes. This means that standards of performing and reporting studies must inevitably vary and it is also difficult to demonstrate quality objectively. The development of relatively inexpensive portable machines has made it easier to set up a service with minimal training. Ideally it should not be possible to perform or to charge for echocardiograms without being accredited. However in the absence of governmental or commercial restraints a professional body needs to self-regulate both to protect the patient and keep the reputation of members in good standing.

PROFESSIONAL BODIES

Most countries have formed echocardiographic societies. The USA has the American Society of Echocardiography (ASE) which recognises examinations provided by the American Registry for

Medical Diagnostic Sonography (ARMDS) and by Cardiovascular Credentialing International (CCI). Europe has the European Association of Echocardiography (EAE) which runs its own accreditation system and there are also numerous national societies within Europe. South Africa could choose to adopt an external accreditation process, but it would still be useful to have a national echocardiographic body which would first and foremost act as a catalyst for change.

In our experience, the formal structure of the British Society of Echocardiography (BSE) with central committees and regional representatives has allowed active individuals to energise large parts of the whole echo community. Good ideas have emerged via discussion in committee and also, importantly via the web-based forum. A national body allows the coordination of activity for example training programmes. It can also share and generalise innovations such as an agreed list of indications for echocardiography or a template machine specification or job description. We have found that national consensus documents have provided a useful external authority to aid individuals making a case for departmental improvements.

WHAT IS AN ECHOCARDIOGRAM?

There is a surprising lack of agreement on what views and measurements constitute a basic minimum transthoracic echocardiogram. A consensus view was published by the BSE in 2005⁽¹⁾ and by EAE in 2008.⁽²⁾ The BSE has a continuing programme of guidelines relating to each important clinical entity. Nationally-agreed minimum standards reduce inappropriate variation in practice and raise standards. They make it impossible to justify the “quick-look” examination, which is prevalent when there is pressure to achieve activity regardless of quality. Minimum standards for transoesophageal⁽³⁾ and stress echocardiography⁽⁴⁾ have also been published.

INDIVIDUAL ACCREDITATION

It is possible to perform a scan without any training whatever and perceptions of what constitutes echocardiographic expertise vary widely. It is not unknown for an interventional cardiologist to feel competent in echocardiography as a result of a practical training many years before and the retained capacity to recognise a 4-chamber view! Most echocardiographers feel that accreditation must include the ability both to perform and interpret a scan. In fact in the USA, accreditation examinations test only theoretical knowledge and the ability to interpret scans while European systems include the ability to perform as well as interpret a scan. The accreditation process must include an educational threshold for entry, a curriculum and a method of assessment. Crucially there must also be provision for reaccreditation.

Because the interpretation of echocardiograms requires some cardiac knowledge it is necessary to agree on entry qualifications for an accreditation process. In the UK, accredited echocardiographers include anaesthetists, intensivists, acute physicians, general practitioners and cardiac nurses. However moves by the government to introduce a type of screening echocardiogram performed by practitioners at the level of cardiographers have been resisted.

The BSE^(5,6) and EAE⁽⁷⁾ offer accreditation in transthoracic and transoesophageal but not stress echocardiography. The EAE/BSE system requires:

- 250 log-book cases for transthoracic echocardiography within 12 months for EAE and 2 years for BSE. For transoesophageal echocardiography the requirement for both EAE and BSE is

125 studies or only 75 if the candidate also has accreditation in transthoracic echocardiography;

- A written examination consisting of multiple choice questions covering theoretical knowledge and interpretation of clips; and
- Recorded cases.

Reaccreditation occurs every 5 years in both systems by a combination of performing a minimum number of studies annually and achieving CPD points. These are gained in the BSE system by attending meetings and distance learning.

DEPARTMENTAL ACCREDITATION

It is possible to be an expert echocardiographer but still produce poor studies if the department is of insufficient standard. Common inadequacies are obsolete machines, insufficient time allotted for each study and no quality assurance. The USA established guidelines for echocardiography laboratories in 2001,⁽⁸⁾ and the BSE established a departmental accreditation system in 2005⁽⁶⁾ which was adopted with modifications by Europe in 2007.⁽⁹⁾

The core standards are:

- Qualified individuals. USA asks for examples of each member's work and EAE and BSE stipulate individual accreditation. BSE and EAE stipulate named clinical and technical heads of department with minimum direct involvement in echocardiography. Nominal leadership is not an option.
- Machines of adequate quality and age.
- 30-40 minutes allocated for individual basic studies.
- Adequate space and equipment e.g. basins.
- Established list of applications and minimum standards.
- System for CPD including library, time-allocation.

Accreditation is offered in transthoracic, transoesophageal and stress echocardiography at basic and advanced level. Basic level is attainable by any department and advanced level is aimed mainly at specialist cardiac centres. Training is an integral part of the EAE process while the BSE offers a separate accreditation in training.

CAN A VOLUNTARY PROCESS WORK?

All BSE and EAE accreditation processes are voluntary. However the BSE adult process which was established since 1994 is so much

part of the echocardiography culture now that either it or an equivalent from Europe, the USA or Australia is now virtually essential for sonographers. It is stipulated in almost all job descriptions for sonographers at a certain grade of seniority and is also encouraged for all cardiology trainees including those destined to become interventionists or arrhythmologists. Departmental accreditation has been adopted more slowly but has already been used by the government as a yard-stick for judging heart failure services. The BSE publishes a list of all accredited individuals on its website so that any patient can check whether their sonographer or cardiologist is accredited. However private individuals remain free to practice in private without accreditation and insurance companies do not stipulate accreditation before payment. In the USA remuneration has for a long time been linked to credentialing and some individual states are beginning to mandate credentialing.

STARTING UP: A PERSONAL PERSPECTIVE

In the UK, a small number of like-minded people established an echo community with teaching study days, and a newsletter as well as accreditation. We made the mistake of “grandfathering” established operators including ourselves. This led to accrediting some who probably would not have passed the exam. It also caused disharmony when people who thought they were worthy were rejected or missed the deadline. When we introduced transoesophageal accreditation we all took the exam without “grandfathering” and without discord.

I believe it has been important that BSE runs educational initiatives so that the accreditation system, which some see as judgmental and commercial, is balanced by unquestionably positive or altruistic ventures.

We have always had some concerns that the same small group of active people tend to do the training and also set and run the examination which could raise concerns over governance. This has improved over the years as a cascade effect has brought more people into the process. However it would be avoided by having the accreditation process run by an organisation separate from the echocardiography society as occurs in the USA.

Our biggest problem has been quality assurance (QA). This is still largely informal and is based around business meetings, supervision of studies and review of studies as a result of clinical questions. Few centres systematically report a proportion of every operator's work. However we have had one episode reported in the national newspapers in which inaccuracies in a locum sonographer's work were discovered which led to the recall of hundreds of patients. At least one private company in the UK systematically rereads a proportion of all studies. There is little doubt that we must integrate QA within work-plans so that it is seen to be as much part of echocardiography as writing a report.

CONCLUSION

Voluntary self-regulation by a national body overseeing a system of accreditation which includes training, assessment and quality control is a machine for progress. It leads to expansion of training programmes, dissemination of expertise, and the discussion and adoption of agreed standards. These in turn lead to an overall improvement in quality and a reduction in variability of standards.

REFERENCES

1. http://www.bsecho.org/index.php?option=com_content&task=view&id=233&Itemid=115.
2. Evangelista A, Flachskampf F, Lancellotti P, et al. EAE recommendations for standardisation of performance, digital storage and reporting of echocardiographic studies. *Europ J Echocardiogr* 2008;9:438-48.
3. Flachskampf F, Decoodt P, Fraser AG, et al. Recommendations for performing transoesophageal echocardiography. *Europ J Echocardiogr* 2001;2:8-21.
4. Becher H, Chambers J, Fox K, et al. BSE procedure guidelines for the clinical application of stress echocardiography. *Heart* 2004;90:23-30.
5. Monaghan M, Anderson V, Chambers J, et al. BSE guidelines; training in echocardiography. *Brit Heart J* 1994;71:2-5.
6. <http://www.bsecho.org/index.php?option=content&task=category§ionid=13&id=31&Itemid=57>.
7. Popescu BA, Andrade MJ, Badano LP, et al. European Association of Echocardiography recommendations for training, competence, and quality improvement in echocardiography. *Europ J Echocardiogr* 2009;10:893-905.
8. <http://www.icael.org/icael/index.htm>.
9. Nihoyannopoulos P, Fox K, Fraser A, et al. EAE laboratory standards and accreditation. *Europ J Echocardiogr* 2007;8:80-7.