

Maintaining a quality echo service

Maintaining Competence & Quality Control

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3 parts of a first class echo lab

- ✦ Good staff – Individual accreditation and Re-accreditation
- ✦ A good laboratory – Departmental accreditation
- ✦ A high quality service – Quality Control

Maintaining competence

What is the evidence?

- ✦ Evidence for recommendations on maintaining competence
 - ☐ Limited/Almost none
 - ☐ Consensus statements
 - ☐ TEE > DSE > TTE

Current recommendations on maintaining competence

	Studies / year	CME	QC
ACC / ASE TTE	300	5 hrs / yr	Yes
ACC / ASE DSE	100	5 hrs / yr	Yes
ACC / ASE TOE	25-50	5 hrs / yr	Yes
BSE TTE	a) 100 b) 500	a) 50 hrs / 5 yrs b) 30 hrs / 5 yrs	No
BSE TOE	40	15 / 5 yrs	No
ASE-CSA Periop	50 TOE	50 hrs / 4 yrs	No

BSE (EAE) Re-accreditation

- ✦ Evidence of continuing practice
 - ☐ > 100 TTE studies / year
- ✦ Continuing learning
 - ☐ Major echo meetings (EurEcho / BSE / ASE)
 - ☐ Other meetings (ACC, AHA, ESC, national and regional)

Developing new skills

- ✦ Difficult
- ✦ See techniques
- ✦ 'Hands on' under supervision
 - ☐ Meetings / networks / industry
- ✦ Controlled practice
- ✦ Audit and QC

But what else is needed?

- ✦ Audit and Clinical Governance
 - ☐ Systematic review of work
 - ☐ System for adverse incidents
-Quality control

Why bother with Quality Control?

1. Intrinsic importance inc. patient monitoring
2. Protection
3. Requirements for service



British
Society of
Echocardiography

The evaluation of left ventricular function for patients being considered or receiving Trastuzumab (Herceptin) therapy

1. NICE have recently extended their guidance on indications for Trastuzumab. As part of the care of patients considered for Trastuzumab pre-treatment measurement of left ventricular (LV) function is required and 3 monthly during treatment according to most protocols.
 2. ...patients should not normally be commenced on Trastuzumab if their baseline Ejection Fraction (EF) is < 50%. If the EF falls by more than 10% or to < 50% cessation of treatment should be considered.
 3.
 4.
 5. The exacting nature of the guidelines require accurate measurement of EF. This is likely to be only possible by the use of (biplane) Simpson's Rule Method or 3D echocardiography, with the availability of contrast for LV opacification, by appropriately skilled echocardiographers.
 6. Echo laboratories performing such studies should have evidence (eg through audit or other Quality Control processes, not more than 12 months old), that they can repeatedly measure EF to the requirements of the guidelines. This means that they can identify a 10% change in EF as a true change.
 7.
- The Council of the British Society of Echocardiography, June 2006

Independent sector providers of echo

- ✦ Typically 10% re-reporting
 - ▣ Agree
 - ▣ Minor differences in style or presentation
 - ▣ Significant difference but low risk of harm
 - ▣ Significant difference with risk of morbidity but not mortality
 - ▣ Life threatening differences
- ✦ Department of Health Structures in place

QC across the world

- ✦ Very variable across Europe
 - ▣ SIEC
 - ▣ BSE – guidelines for stress echo
- ✦ More advanced in the USA
 - ▣ J Am Soc Echo 1995 - Recommendations for continuous quality improvement in echocardiography ASE
 - ▣ ASE guidelines for trials
 - ▣ ICAEL, Intersociety Commission for Accreditation in Echocardiography
- ✦ More advanced for DSE

Elements of a QC Programme *Keep it simple*

- ✦ Equipment
- ✦ Staff CME
- ✦ Staff Activity
- ✦ Internal routine review
- ✦ Formal review
- ✦ Measurement QC

Equipment

- ✦ Have an equipment maintenance policy
- ✦ Have an equipment maintenance log

Staff Activity and CME

- ✦ Have a record of staff workload and individual staff competences and CME
- ✦ Set targets for CME

Internal review

- ✦ Most labs have a system for asking senior members of staff for advice and sharing interesting case
 - ▣ Often at least 10%
- ✦ Keep a record of this activity

Formal (random) review of reporting

- ✦ First steps
 - ▣ It is just a small step to finish each meeting with a random case drawn from the weeks activities and to review it (or ask the sonographer to defend their report)
- ✦ Next steps
 - ▣ Blind random review in a group or singly
 - ▣ Compare data with outcomes of caths, nuclear, MR studies
 - ▣ Random review between departments or nationally / internationally

Measurement QC

- ✦ Re-measuring
 - ▣ Inter and intra observer
 - ▣ Within and across departments
 - ▣ Numerical measurements
 - ▣ EF, valve gradients
 - ▣ Qualitative evaluations
 - ▣ Valve regurgitation

Conclusions

- High quality echocardiography requires
 - ✦ High *quality* practitioners of echo
 - ▣ TTE and TEE individual accreditation programmes
 - ▣ Maintaining competence (reaccreditation)
 - ✦ High *quality* echo departments
 - ▣ Departmental Accreditation
 - ✦ High *quality* studies performed by high *quality* practitioners in high *quality* echo departments
 - ▣ Quality Control programmes will show that this is happening AND encourage it to happen