Training in Critical Care Echocardiography

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Three Separate Components of Training

- Knowledge base
- Image interpretation
- Image acquisition

Knowledge Base

- Physics, anatomy, pathophysiology, clinical applications
- Resources: books, articles, course
- Includes knowledge of the application of echo to bedside management of the critically ill

As a Start

- Otto Textbook of Clinical Echocardiography. Philadelphia Saunders 2004

Image Interpretation

- Recognition of wide range of normal
- Recognition of wide range of abnormal

Image Interpretation

- Small group training with skilled clinician sonographer
- CD, DVD, video, courses, books
- Static images are of limited value
- Dynamic images are required

Image Acquisition

- Key element of training
- The clinician in charge of the case performs the scan
- The clinician uses the information for immediate diagnosis and treatment
- The clinician must be skilled in image acquisition

Image Acquisition

- Best done under the supervision of a skilled clinical sonographer
- Requires auto-didactic approach
- Difficulty: same as image interpretation

Training in Image Acquisition Requires Complete Control of Your Own Machine

- Avoids political/economic issues
- Avoids being a “second class citizen”
- Critical for training and clinical use

Training in Goal Directed Echocardiography

- My estimate:
- 5 hours of didactics
- 20 supervised studies

Training for Advanced Level Echocardiography

- By AHA/ACC standard: 150 performed and 300 studied; boards not required
- My experience is that this is not sufficient
- My estimate: 400 full TTE studies performed; 1200 read under direct supervision of an expert. 50 TEE

My Strongest Suggestion

- Follow the French requirements
- It will take several more years for the USA organize a system of certification