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## POLICY ON CREDENTIALING FOR FOCUSED ECHOCARDIOGRAPHY IN LIFE SUPPORT

### 1. PURPOSE AND SCOPE

This document is a policy of the Australian College for Emergency Medicine (ACEM), and relates to the use of focussed echocardiography in life support in emergency departments.

The policy is applicable to both public and private hospital emergency departments throughout Australasia.

### 2. POLICY

- 2.1 Basic echocardiography should be rapidly available in the setting of a patient in cardiac arrest or haemodynamic compromise.
- 2.2 Those performing the examination should possess appropriate training and practical experience to perform and interpret limited bedside echocardiography.
- 2.3 Focused Echocardiography examinations for the arrest / peri-arrest setting are limited, goal directed examinations performed to answer specific clinical questions. These examinations are not comprehensive and do not replace formal examinations performed in dedicated echocardiography units.
- 2.4 Within this document, the term sonologist is used to include practitioners who have successfully completed this credentialing process or equivalent (e.g. CCPU, FEEL) or higher, more formal echocardiography training (such as PTEeXAM, ASCeXAM, PGDipEcho, PGCert / Dip of Clinical Ultrasound, DDU).
- 2.5 In the setting of a critically ill patient, other ultrasound examinations may be performed (e.g. pleural or AAA scanning). This document is limited to the echocardiography portion of the examination which may be performed in these circumstances.
- 2.6 Credentialing is the responsibility of the health authority. This document outlines credentialing criteria which ACEM consider should be met by practitioners who wish to perform limited focussed echocardiography in the arrest / peri-arrest setting.

### 3. DESCRIPTION OF EXAMINATION

#### 3.1 Views

- 3.1.1 Subcostal, parasternal long axis, parasternal short axis, apical 4 chamber should be used to obtain the necessary information.
- 3.1.2 It is recognised that in many patients, not all views will be of good quality. In addition, some echocardiographic windows may be inaccessible due to other factors such as contemporaneous procedures, such as Cardio-Pulmonary Resuscitation (CPR).

### **3.2 Information to be obtained in the Arrest/Haemodynamic compromise setting**

- 3.2.1 Is there a pericardial effusion, and if so, is there evidence of cardiac tamponade?
- 3.2.2 Left ventricular size and systolic function.
- 3.2.3 Right ventricular size and systolic function.
- 3.2.4 Estimation of volume status.

### **3.3 Interpretation of Information**

- 3.3.1 The above findings are integrated with other clinical information, to consider causes of haemodynamic instability, for example hypovolemia, cardiogenic shock, tamponade, massive pulmonary embolism.

## **4. CREDENTIALING REQUIREMENTS**

### **4.1 Overview**

- 4.1.1 The credentialing process requires the candidate to attend an instructional workshop which meets the criteria listed below, perform and record a requisite number of accurate proctored exams and be assessed as competent.
- 4.1.2 In order to maintain credentialing, sonologists must meet continuing professional development requirements.

### **4.2 Workshop**

- 4.2.1 Workshops must cover the information described under "Description of Examination". For those workshops with a broader scope than just the peri-arrest/arrest setting, there must be a specific section addressing the use of bedside echo in this setting. Workshops should include information on the limitations and pitfalls of this limited examination.
- 4.2.2 Workshops must include a practical component of at least 4 hours of hands on training. The student: machine ratio must be 5:1 or less.
- 4.2.3 Workshops must ensure candidates are exposed to the images demonstrating the above listed conditions. Simulators may be used in workshops, particularly to demonstrate abnormal conditions, but the majority of practical scanning must occur on live models or patients.
- 4.2.4 The workshop faculty must include a member with experience in leading patient resuscitation teams during cardiac arrest / peri-arrest setting.
- 4.2.5 Workshops should provide participants with a simple report form for use in the peri-arrest / arrest setting, which states the limited nature of the examination performed and what clinical questions have been answered.

## **5. EXPERIENCE PHASE**

Candidates should perform 25 examinations. At least 5 of these should be clinically indicated (i.e. in the setting of cardiac arrest or haemodynamic compromise). These scans should be reviewed by a sonologist

this may occur later using recorded images / loops). Findings should also be compared with clinical data and noted whether the findings were accurate.

- 5.1 At least 5 examinations should be performed under the direct supervision of a sonologist, or cardiac sonographer.
- 5.2 In addition, candidates should interpret a further 25 examinations, which have been performed either by themselves or by other practitioners (for example, previously recorded scans).
- 5.3 These 50 cases must include at least two cases each of tamponade, right heart failure / massive PE, hypovolemia or distributive shock and left ventricular failure.

## **6. DEMONSTRATION OF COMPETENCE**

- 6.1 The candidate should demonstrate competence in image acquisition to a sonologist (as defined in 2.4). It is recommended that this be performed in a structured manner.
- 6.2 The candidate should demonstrate competence in knowledge of normal anatomy and relevant pathological findings, and ability to interpret images, either as part of the practical supervision or by a separate component (e.g. online image interpretation).

## **7. CURRENT PRACTITIONERS**

- 7.1 It is recommended that those who have already completed equivalent requirements and who currently practice echocardiography should be considered competent. These practitioners should meet continuing professional development requirements.

## **8. DOCUMENTATION OF EXAMINATION FINDINGS**

- 8.1 Documentation of the examination should note the limited nature of the examination, the adequacy of views, the findings and the conclusion of the study. If the examination was inadequate, this must be clearly stated as such studies should not be used to make clinical decisions.

## **9. ONGOING MAINTENANCE REQUIREMENTS**

- 9.1 Practitioners should perform 25 examinations over two years. Those practitioners who do not perform this number should attend an accredited workshop as a refresher.
- 9.2 Sonologists should undertake at least 4 hours of CPD annually related to basic echo. This can include a quality framework (which includes a quality improvement program), case reviews and self-directed learning.
- 9.3 Departments where examinations are performed should have regular audits as part of their quality improvement program.

## 10. GLOSSARY OF TERMS

<b>Bedside Echocardiography:</b>	Limited (non-comprehensive) echocardiographic examinations which are goal directed and performed to answer specific clinical questions.
<b>Sonologist:</b>	Practitioners who have successfully completed the credentialing process outlined in DP61 or equivalent or higher echocardiography training.
<b>FEEL:</b>	Focussed echocardiography in emergency life support.
<b>PTEeXAM:</b>	Perioperative Transesophageal Echocardiography exam (US National Board of Echocardiography).
<b>ASCeXAM:</b>	Examination of Special Competence in Adult Echocardiography (US National Board of Echocardiography).
<b>PGDip Echo:</b>	Post graduate diploma of echocardiography (University of Melbourne)
<b>PGCert/Dip of Clinical Ultrasound:</b>	Post graduate certificate or diploma of clinical ultrasound (University of Melbourne).
<b>DDU:</b>	Diploma of diagnostic ultrasound (Australasian Society for Ultrasound in Medicine).
<b>AAA:</b>	Abdominal aortic aneurysm
<b>CPR:</b>	Cardiopulmonary resuscitation
<b>CCPU:</b>	Certificate in Clinical Performed Ultrasound (Australasian Society for Ultrasound in Medicine).

## 11. DOCUMENT REVIEW

Timeframe for review: every five (5) years, or earlier if required.

### 11.1 Responsibilities

Document authorisation:	Council of Advocacy, Practice and Partnerships
Document implementation:	ED Ultrasound Subcommittee
Document maintenance:	Policy and Research Department

### 11.2 Revision History

Version	Date of Version	Pages revised / Brief Explanation of Revision
V1	July 2000	Approved by Council
V2	Nov 2013	Approved by Council

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V3      Mar 2016

'Purpose and Scope' combined.

Under section 2, 'Policy' 'bedside echocardiography' is referred to in item 2.3 'focussed echocardiography.'

'Description of Examination', 'View" item 4.1.1 amended to add the use of 'apical 4 chamber' in obtaining the necessary information.

Item 4.2 referred to as 'Workshop' in place of 'Course'.

4.2.4 amended to include the optional use of simulators as well as live models or patients.

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