*This document has been provided by the ACEM and EMUGs Collaboration Working Group to assist Clinical Leads in Ultrasound in developing ED ultrasound training programs. The suggestions outlined are not required for accreditation for the FACEM Training Program. Due to the variation in size and resources available at sites throughout Australia and Aotearoa New Zealand, the guidance provided in this document may or may not be appropriate for your site.*

**Assessments:**

During a formative or summative assessment, the candidate must demonstrate the ability to:

* acquire adequate ultrasound images of all the appropriate anatomical structures;
* identify any relevant artefacts or pathology present during real time scanning and/or on recorded scans and/or hard copies of scans;
* recognise an inadequate scan; and
* demonstrate an understanding of the indications and limitations of ultrasound examination for the condition in question.
* demonstrate appropriate machine care, image labeling and documentation of their findings; and
* integrate their findings into the overall clinical picture and generate appropriate treatment recommendations if appropriate

**Formative Assessment: (at least 2 required)**

* The purpose of the formative assessments is to directly supervise the candidate performing an ultrasound examination in order to provide feedback and guidance for ongoing self-directed learning.
* The supervisor may prompt, guide and give feedback during the assessment.
* The first formative assessment should be completed soon after commencing scanning in any given modality. The second one should occur at a later stage, at least one week apart, and not on the same day as the summative assessment.

**Summative Assessment: (at least 1 required)**

* The purpose of the summative assessment is to directly supervise the candidate performing an ultrasound examination in order to determine competence.
* The supervisor should provide minimal (if any) prompting, guidance or feedback during the examination.
* The summative assessment should be completed after at least 75% completion of the logbook, and can be counted towards the logbook.
* This assessment may be undertaken simultaneously as a Direct Observation of Procedural Skills (DOPS) assessment by ACEM trainees.

# Formative and Summative Assessment Form – FELS

|  |  |  |
| --- | --- | --- |
| **Hospital name:** | **Candidate First Name:** | **Assessor First Name:** |
| **Date:** | **Candidate Last Name:** | **Assessor Last Name:** |
| **Formative Assessment □**  **Summative Assessment □** | **Overall: Competent / Not yet competent**  **(Circle one)** |  |
| **Assessor comments:** | | |

**FELS ASSESSMENT**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Component** | **Criteria** | **Not yet competent** | **Competent** | **Assessor notes** |
| **Relevant Clinical Information**Able to explain indication(s) and clinical question(s) | Arrested patient:Is there a reversible cause?Is there organised cardiac activity? |  |  |  |
| Shocked patient: What is the cause / what type of shock (e.g., cardiogenic, obstructive, hypovolaemic)? |  |  |  |
| Chest Pain: Is there a pericardial effusion? |  |  |  |
| **Preparation** | Verbal Informed Consent (focused scan only) |  |  |  |
| Machine prepared (cleaned, battery charged/plugged in)Suitable positioning: supine patient if possible +/- left lateral. Appropriate machine placementPatient privacy & dignity maintainedLights dimmed if possible |  |  |  |
| **Practical Aspects**Uses machine controls appropriately | Patient demographics (3 identifiers e.g. medical record number, Full Name, DOB)Choice of appropriate transducer & presetOptimisation e.g., Depth (just deep to the heart), gain, frequency, focus (if available)(Image labelling/annotation not essential unless poor view/not easily identifiable) |  |  |  |
| **Image Acquisition**Captures adequate minimum image set. | Subcostal / subxiphoid: cardiac 4-chamber |  |  |  |
| Subcostal / subxiphoid: IVC transverse (and longitudinal ideal)Confirms IVC by demonstrating continuity with *either* right atrium or hepatic veins. |  |  |  |
| Parasternal long axis (PLAX): demonstrating LV, LA, RVOT, including Mitral & Aortic valves. |  |  |  |
| Parasternal short axis (PSAX): at level of mitral valve and/or papillary muscles. Demonstrates LV, IV septum, RV. |  |  |  |
| Apical 4 and/or 5 chamber |  |  |  |
| **Anatomy** Able to recognise normal anatomy | Identifies anatomy:All cardiac chambers, pericardial space, IVC, aorta.Surrounding organs: ribs, pleural surface, diaphragm, liver, spleen. |  |  |  |
| **Artefacts**Able to recognise common artifacts | Scatter from air (in lung and GIT) |  |  |  |
| Acoustic shadowing (ribs and costal cartilages) |  |  |  |
|  | Mirror image (e.g., deep to heart in PLAX) |  |  |  |
| Asks the following focused questions | Is there organised cardiac activity? |  |  |  |
| Is there pericardial fluid?If so, are there signs of tamponade:IVC distensionRV diastolic collapseRA systolic collapse |  |  |  |
| Is there evidence of abnormal RV function or size? |  |  |  |
| Is LV function grossly normal / reduced/ increased? |  |  |  |
| Is IVC grossly distended, normal, or small and highly collapsible? |  |  |  |
| Able to recognise pathology(Note: assessor may need to use library images of pathology e.g. [TPA (thepocusatlas.com)](https://www.thepocusatlas.com/) | Cardiac standstill |  |  |  |
| Grossly reduced LV systolic activity |  |  |  |
| Hyperdynamic LV |  |  |  |
| Pericardial fluid without signs of tamponade |  |  |  |
| Pericardial fluid with signs of tamponade |  |  |  |
| RV compressing LV |  |  |  |
| Distended IVC |  |  |  |
| Collapsing IVC |  |  |  |
| Non-contributory IVC |  |  |  |
| **Interpretation**Able to explain limitations and pitfalls | Notably this 2D examination is not comprehensive and does not evaluate valves, regional wall motion, spectral doppler or diastolic function.It should not be used in lieu of comprehensive echocardiography, where clinically indicated. |  |  |  |
| **Clinical Integration** | Appropriately integrates PoCUS findings with remainder of clinical assessment (history, examination, investigations).  Trainee considers causes of haemodynamic instability, for example hypovolemia, cardiogenic shock, tamponade, massive pulmonary embolism.  Able to explain how a positive/negative scan will affect patient management. |  |  |  |
| **Documentation**Completes minimum documentation in clinical record (using institution’s template if available) | Documentation should address the following:IndicationFocused question(s) addressedFindings/ Adequacy of images/clipsImpression / Clinical recommendationOperator name, role (e.g. FACEM, trainee)Operator credentialed in this modality Y/N |  |  |  |
| **Machine care** | Ends the examination on the machineWipes off excess gel and cleans probe and machine appropriatelyReturns machine to storage area and places on charge |  |  |  |