

**Certificate in Clinician Performed Ultrasound  
(CCPU)  
Syllabus**

**Extended Focussed Abdominal Scan for Trauma (E-FAST)**

## Extended Focussed Abdominal Scan for Trauma (E-FAST) Syllabus

### Purpose:

This unit is designed to cover the theoretical and practical curriculum for E-FAST ultrasound.

### Prerequisites:

Learners should have completed the ASUM Physics Image Optimisation unit or accredited equivalent.

### Training:

Recognised either through attendance at an ASUM accredited (E-FAST) course or equivalent.

### Assessments:

Learners are required to provide evidence of satisfactory completion of training sessions, supervised ultrasound scans and documentation in a logbook.

### Unit Objectives

On completing this unit learners should be able to:

- Demonstrate an understanding of the appropriate anatomy, physiology and pathology.
- Effectively perform and interpret E-FAST ultrasound.
- Understand the limitations of ultrasound of the chest in trauma.
- Understand the limitations of ultrasound of the abdomen in trauma.

### Unit Content

The unit will present learners with the following material:

#### Abdominal views

- Liver
- Right Kidney
- Spleen
- Left Kidney
- Bladder
- Uterus
- Bowel
- Intra abdominal free fluid

#### Cardiac views

- Liver
- Right ventricle
- Pericardium
- Pericardial fluid

#### Chest views

- Lung sliding
- Pleural fluid
- Pneumothorax

### Imaging the Chest

- Be able to image the pleural space via intercostal views.
- Be able to identify normal lung movement in the above views.
- Be able to identify pleural fluid in the intercostal, RUQ and LUQ views and give qualitative estimates of the amount of free fluid.
- Be able to understand the implications of the absence of normal lung movement and the finding of pleural fluid in the clinical setting.
- Understand the limitations of ultrasound of the chest in trauma.

### Imaging the Pericardium

- Be able to image the pericardial space via the subcostal window and other windows such as parasternal/apical.
- Be able to identify pericardial fluid in the above view and give qualitative estimates of the amount of free fluid.
- Be able to understand the implications of the finding of pericardial fluid in the clinical setting.

### Imaging the perihepatic, perisplenic and pelvic regions:

- Be able to identify free fluid in the above views
- Give qualitative estimates of the amount of free fluid
- Be able to understand the implications of the finding of free intraabdominal fluid in the clinical setting.

### **Teaching Methodologies**

All units accredited toward the CCPU will be conducted in the following manner:

- A pre-test shall be conducted at the commencement of the course which focuses learners on the main learning points
- Each course shall comprise at least 3 hours of teaching time of which at least 2 hours shall be practical teaching. Stated times do not include the physics, artefacts and basic image optimization which should be provided if delegates are new to ultrasound
- Learners will receive reference material covering the course curriculum.
- The lectures presented should cover substantially the same material as the ones printed in this curriculum document.
- An appropriately qualified clinician will be involved the development and delivery of the course (they do not need to be present for the full duration of the course).
- The live scanning sessions for this unit shall include sufficient live patient models to ensure that each candidate has the opportunity to scan (maximal candidate: tutor / machine ratio of 5:1). Models will include normal subjects and patients with ascites or peritoneal dialysis patients.
- Image interpretation station (or models) should also demonstrate at least one case of pericardial fluid, pleural fluid and pneumothorax.
- A post-test will be conducted at the end of the course as formative assessment.

### **Assessment and Logbook**

- Evidence of satisfactory completion of training sessions
- Evidence of assessment of competence (summative assessment) signed off by a suitably qualified assessor (DDU, Radiographer, DMU or AMS or be a sonographer registered by NZ MRTB in a relevant field, CCPU in a relevant field or other qualification as approved by the

CCPU board ). The original completed competence assessment form is to be sent to ASUM with the candidate's completed log book.

- Logbook requirements need to be completed, and logbooks need to be submitted within two years of completing a course.

### **Formative Assessments**

- 2 E-FAST scans directly supervised by a suitably qualified assessor (see above).

### **Summative Assessment**

- Summative assessment is to be performed by a suitably qualified assessor (see above) using the competence assessment form supplied at the end of this document (or equivalent if deemed sufficient by ASUM at their discretion).

### **Logbook Requirements**

- Evidence of satisfactory completion of training sessions
- Logbook requirements need to be completed, and logbooks need to be submitted within two years of completing an accredited course.
- 25 E-FAST scans, including 5 positive [free abdominal pleural or pericardial fluid, or pneumothorax] not necessarily directly supervised. All cases must be compared with gold standard findings (such as comprehensive imaging, pathological findings or if these are unavailable then clinical course).
- Evidence of completion of logbook signed off by a suitably qualified supervisor (DDU, Radiographer, DMU or AMS or be a sonographer registered by NZ MRTB in a relevant field, CCPU in a relevant field or other qualification as approved by the CCPU board ).
- At the discretion of the ASUM CCPU Certification Board candidates may be allowed an alternative mechanism to meet this practical requirement.
- Those cases that involve a procedural component must be signed off by a suitable assessor who performs those procedures themselves.

### **Minimal Imaging Sets**

The following are proposed as minimal imaging sets for focused ultrasound examinations for the CCPU units. It is understood that in many cases more images should be recorded to fully demonstrate the abnormality. In some cases the patient's condition will not allow the full set to be obtained (e.g. basic echo during CPR or positive free fluid in an unstable trauma patient), in which case the clinician should record whatever images are obtainable during the time available to adequately answer the clinical question without allowing the ultrasound examination to interfere with ongoing medical treatment. If local protocols recommend more images for a particular examination then these should be adhered to.

- Still or cineloop images of RUQ (including Morison's Pouch, tip of liver and base of right hemithorax)
- Still or cineloop images of LUQ (including lienorenal space, tip of spleen and base of left hemithorax)
- Transverse and longitudinal pelvis
- Cineloops of cardiac (subcostal or other window that clearly demonstrates posterior pericardium)
- Anterior right lung and left lung (cineloop or M-mode that clearly demonstrates presence or absence of lung sliding)

**ASUM CCPU Competence Assessment Form  
E-Fast Ultrasound**

Candidate: \_\_\_\_\_

Assessor: \_\_\_\_\_

Date: \_\_\_\_\_

- Assessment type: Formative (feedback & teaching given during assessment for education)   
 Summative (prompting allowed but teaching not given during assessment)

To pass the summative assessment, the candidate must pass all components listed

|  | <b>Competent</b> | <b>Prompted</b> | <b>Fail</b> |
|--|------------------|-----------------|-------------|
| <b>Prepare patient</b>                               |                  |                 |             |
| Position   |                  |                 |             |
| Informed   |                  |                 |             |
| <b>Prepare Environment</b>                           |                  |                 |             |
| Lights dimmed if possible                            |                  |                 |             |
| <b>Probe &amp; Preset Selection</b>                  |                  |                 |             |
| Can change transducer                                |                  |                 |             |
| Selects appropriate transducer                       |                  |                 |             |
| Selects appropriate preset                           |                  |                 |             |
| <b>Data Entry</b>                                    |                  |                 |             |
| Enter patient details                                |                  |                 |             |
| <b>Image Acquisition</b>                             |                  |                 |             |
| Optimisation (depth, freq, focus, gain)              |                  |                 |             |
| <b>RUQ</b>   |                  |                 |             |
| <i>Identifies</i> Liver                              |                  |                 |             |
| Rt Kidney  |                  |                 |             |
| Morrison's pouch                                     |                  |                 |             |
| Diaphragm  |                  |                 |             |
| Lung   |                  |                 |             |
| Bowel  |                  |                 |             |
| <b>LUQ</b>   |                  |                 |             |
| <i>Identifies</i> Spleen                             |                  |                 |             |
| Lt Kidney  |                  |                 |             |
| Splenorenal recess                                   |                  |                 |             |
| Diaphragm  |                  |                 |             |
| Lung   |                  |                 |             |
| <b>PELVIS</b>  |                  |                 |             |
| <i>Identifies</i> Bladder                            |                  |                 |             |
| Iliac vessels  |                  |                 |             |
| Prostate / Uterus                                    |                  |                 |             |
| Rectum   |                  |                 |             |
| Scans TS & LS  |                  |                 |             |
| <i>Describes</i> Where abdominal free fluid collects |                  |                 |             |
| Where pleural fluid collects                         |                  |                 |             |
| Appearance of fresh and clotted blood                |                  |                 |             |

**PERICARDIUM / SUBCOSTAL**

*Identifies* Liver  
 Right Ventricle  
 Left Ventricle  
 Septum  
 Pericardium

*Describes* Where pericardial fluid collects  
 Appearance of fresh and clotted blood

| Competent | Prompted | Fail |
|-----------|----------|------|
|           |          |      |
|           |          |      |
|           |          |      |
|           |          |      |
|           |          |      |
|           |          |      |

**LUNG**

*Identifies* Rib  
 Pleura  
 Comet tail artefact & b lines (if present)  
 Sliding sign  
 Able to differentiate lung sliding & cardiac motion on left chest  
 Able to use M mode & explain its role & limitations

*Describes* Appearance of PTx  
 Assessment of PTx size  
 Where pleural fluid collects, and appearance of fresh and clotted blood

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**Artefacts**

Identifies & explains the basis of common artefacts

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**Record Keeping**

Labels & stores appropriate images  
 Documents any pathology identified  
 Completes report  
*Each view adequate / inadequate*  
*Documents focussed scan only*  
*Describe findings briefly*  
*Integrates ultrasound findings with clinical assessment and explains how the findings might change management*

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**Machine Maintenance**

Cleans / disinfects ultrasound probe  
 Stores machine and probes safely and correctly

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|  |  |  |

**For Formative Assessment Only:**

Feedback of particularly good areas: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Agreed actions for development \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Examiner Signature: \_\_\_\_\_ Candidate Signature: \_\_\_\_\_

Examiner Name: \_\_\_\_\_ Candidate Name: \_\_\_\_\_

Date: \_\_\_\_\_