CLINICAL GUIDELINE: Emergency Department Bedside Ultrasonography

PURPOSE
This document relates to the utilisation and credentialing of emergency department ultrasonography at the Princess Alexandra Hospital.

It details the criteria which should be met for emergency physicians and emergency trainees who wish to perform ultrasonography in the Princess Alexandra Hospital Emergency Department.

This document is closely aligned to the Australasian College for Emergency Medicine (ACEM) policies and guidelines:
- Policy on Credentialing for Emergency Department Ultrasonography: Trauma Examination and Suspected AAA
- Guidelines on Minimum Criteria for Ultrasound Workshop

BACKGROUND
Emergency department ultrasound is a tool which enhances assessment and management in a wide variety of patients, particularly those suffering from trauma or critical illness.

Clinicians providing emergency ultrasound services should possess appropriate training and experience to perform and interpret limited bedside ultrasonography. Bedside ultrasonography in a credentialed provider can be used to guide immediate management, but it does not necessarily exclude the need for formal ultrasonography.

DEFINITIONS
Limited bedside ultrasonography refers to goal directed examinations which answer specific clinical questions. They do not replace formal sonography offered by the radiological department.

An emergency medicine sonologist is an emergency medicine practitioner who has successfully completed this credentialing process or has successfully completed the Certificate in Clinician Practicing Ultrasound (CCPU), Diploma of Diagnostic Radiology (DDU) or is a Fellow of the Royal Australian and New Zealand College of Radiology (FRANZCR).

Proctored studies are ultrasound examinations that are directly supervised by an emergency medicine sonologist.

Procedural Ultrasound refers to utilising ultrasound to achieve vascular access, as well as to guide nerve block placement, thoracocentesis, paracentesis and pericardiocentesis.

The Focussed Assessment with Sonography for Trauma (FAST) examination is a goal directed study used to detect the presence of haemoperitoneum, haemothorax or haemopericardium. It classically involves 4 views:
- Hepato-renal Interface (Morrison’s pouch) & right diaphragm
- Spleno-renal Interface & left diaphragm
- Rectovesical space or Pouch of Douglas, and paracolic gutters
- Subxiphoid or intercostal views of the pericardium

The extended FAST or EFAST includes left and right parasternal views to detect lung sliding, and is the examination of choice where time permits.
The **Abdominal Aorta Scan** images the abdominal aorta in both the transverse and longitudinal planes from the epigastrium to the aortic bifurcation. It is a goal directed study used to detect the presence of aneurysm and should include the measurement of maximal aortic diameter in the two planes. If an aneurysm is detected, the scan should include a longitudinal measurement of the distance from the origin of the SMA to the aneurysm to assess whether it is infra- or supra-renal.

**PROCEDURES CREDENTIALING**
The credentialing process requires clinicians to attend an accredited course, perform and record the required number of proctored scans and to complete an exit examination. Ongoing requirements must be met to maintain credentialing.

**ACCREDITED COURSE**
Attending an instructional course which meets the conditions described in the ACEM document *Guidelines on Minimum Criteria for Ultrasound Workshop* will satisfy this criterion.

**ONLINE QUIZ**
Online quizzes are available on the EMERGPA website for each module and need to be completed as part of the credentialing process.

**PROCTORED EXAMINATIONS**
All ultrasound examinations must be documented in a logbook. Clinicians can design their own logbook or use the suggested formats which are also available on the EMERGPA website:

- Procedural Ultrasound Logbook
- EFAST Logbook
- Abdominal Aorta Examination Logbook

A minimum of 6 proctored examinations are required to complete the Procedural Ultrasound module. Two of these must be ultrasound guided central access and two must be ultrasound guided nerve blocks.

A minimum of 25 proctored FAST examinations must be performed to complete the FAST module. Half of these scans need to be clinically indicated (trauma) with 3 scans being positive examinations.

A minimum of 15 proctored abdominal aortic examinations must be performed to complete the Abdominal Aortic Examination Module. Half of these scans need to be clinically indicated (back/flank/abdominal pain) with 3 scans being positive for aneurysmal dilation.

**EXIT EXAMINATION**
(applicable to FAST and Abdominal Aortic examination only)

The exit examination has theoretical and practical components. A written paper examines basic ultrasound physics as well as indications and limitations of emergency department ultrasonography. The practical component involves an emergency medicine sonologist observing the candidate performing an ultrasound examination on a volunteer. The focus of the assessment will be on image acquisition and interpretation. Subsequent to this, images from a database for each module will be reviewed to test identification of the positive, negative and inadequate scan.

**ONGOING MAINTENANCE REQUIREMENTS**
(applicable to FAST and Abdominal Aortic examination only)

To maintain their credentials, an emergency medicine sonologist needs to undertake 3 hours of ultrasound training per year as well as maintaining a logbook of examinations. The logbook must demonstrate a minimum of 25 EFAST and 15 aorta scans over a two-year cycle.

**DOCUMENTATION**
Adequate documentation of ultrasound examinations in the patient’s medical record is paramount. Contemporaneous notes should identify the clinician performing the scan, describe the views obtained, their adequacy and indicate the examinations findings.

**CLEANING AND DISINFECTION**
It is a requirement of the use of the ultrasound machines that they are cleaned after each use, in accordance with recommendations made in the current ACEM Statement on cleaning and disinfection of ultrasound transducers that are used for needle-based procedures. As a minimum the probes, including cables, must be cleaned then disinfected before and after every use with additional use of a protective cover when performing procedures. The screen and handles should be included in the cleaning process in lines with routine infection control processes.

**AUDIT**

Bimonthly auditing of the ultrasound examinations performed in the department is undertaken as part of the department’s quality improvement process.

**SUPPORTING DOCUMENTS**

- [Policy on the use of Focused Ultrasound in Emergency Medicine](#)
- Policy on Credentialing for Emergency Department Ultrasonography: Trauma Examination and Suspected AAA
- [Statement on Cleaning and Disinfection of Ultrasound Transducers that are used for Needle-Based Procedures](#)
- [Guidelines on Minimum Criteria for Ultrasound Workshop](#)
- Procedural Ultrasound Logbook
- FAST Logbook
- Abdominal Aorta Examination Logbook