Contents:

Summary of RCR Guidelines for focused USS for ICD insertion and Level 1 Thoracic Ultrasound

Knowledge base (Focused and RCR Level1)

This will often be acquired at a specific training course for thoracic ultrasound.

1. Physics and technology, ultrasound techniques and administration
   - The basic components of an ultrasound system
   - Types of transducer and the production of ultrasound, with an emphasis on operator controlled variables
   - Use of ultrasound controls
   - An understanding of the frequencies used in medical ultrasound and the effect on image quality and penetration
   - The interaction of ultrasound with tissue including biological effects
   - The safety of ultrasound and of ultrasound contrast agents
   - The basic principles of real-time and Doppler ultrasound, including colour flow and power Doppler
   - The recognition and explanation of common artefacts
   - Image recording systems

2. Ultrasound Techniques
   - Patient information and preparation
   - Indications for examinations
   - Relevance of ultrasound to other imaging modalities
   - The influence of ultrasound results on the need for other imaging
   - Scanning techniques including the use of spectral Doppler and colour Doppler

3. Administration
   - Image and report recording
   - Image and report storing and filing (PACS/RIS)
   - Image reporting
   - Medico-legal aspects – outlining the responsibility to practice within specific levels of competence and the requirements for training
   - Consent
   - The value and role of departmental protocols
   - The resource implications of ultrasound use

4. Sectional and Ultrasonic Anatomy
   - Right and Left hemidiaphragms
   - Heart
   - Liver and spleen
   - Rib and intercostal spaces

5. Pathology in Relation to Ultrasound
   - Pleural effusion
   - Pleural thickening
   - Consolidated lung
   - Paralysed hemidiaphragm
   - Pericardial effusion

Training and Practice

Practical training for RCR focused USS for pleural drainage should include:

- Observe 20 USS with experienced practitioner
- Perform 20 normal USS examinations
- Perform 20 USS on patients with pleural effusions
- Perform 20 USS guided pleural procedures under supervision

Practical training for RCR Level 1 should include:

- At least one session per week over a period of no less than 3 months with approximately 5 scans per session performed by the trainee, under supervision

During the course of training, the competency assessment sheet should be completed as this will determine which area or areas the trainee can practise independently.

Competencies to be Acquired

- Recognition of the normal anatomy of the pleura and diaphragm
- Identification of the heart, liver and spleen
- Pleural effusion recognition, including different echogenic patterns
- Pleural thickening and its differentiation from fluid using colour Doppler flow if appropriate
- Consolidated lung and its differentiation from effusion
- Estimation of depth of effusion and its measurement
- Guided thoracocentesis and drain placement

Maintenance of skills at RCR Focused USS for pleural drainage standard

A physician should continue to perform ultrasound scans as part of their routine work. This may be intermittent but no more than three months should elapse without the trainee using their scanning skills.

A physician with focused scanning competency should have a named ultrasound mentor.

The RCR guidelines advise:

- Including ultrasound in ongoing CPD (annual appraisal and revalidation)
- Audit practice
- Participate in MDMs

Keep up to date with relevant literature

Maintenance of skills at RCR Level 1 USS standard

A physician should continue to perform ultrasound scans as part of their routine work. This may be intermittent but no more than three months should elapse without the trainee using their scanning skills.

A chest physician scanning at level 1 should perform at least 20 scans per year, have regular meetings with radiological colleagues and have a named ultrasound mentor.

The RCR guidelines advise:

- Including ultrasound in ongoing CPD (annual appraisal and revalidation)
- Audit practice
- Participate in MDMs
- Keep up to date with relevant literature

- Competency Assessment Sheet

Core Knowledge Base

	Trainer signature	Date
Physics and technology		
Practical instrumentation/use of ultrasound controls		
Ultrasound techniques		
Administration		
Sectional and ultrasonic anatomy		
Pathology in relation to ultrasound		

Recognised ultrasound course attended?

Date_____

Location_____

Named Mentors:

_____

_____

_____

Competencies/Skills: to be competent to perform/diagnose the following:

	Trainer signature	Date
Normal anatomy of pleura and diaphragm		
Identification of heart, liver and spleen		
Pleural effusion and different echogenic patterns		
Pleural thickening and its differentiation from fluid		
Consolidated lung and its differentiation from effusion		
Estimation of depth of effusion and its measurement		
Guided thoracocentesis and drain placement		
Know when to refer to a more expert ultrasonologist		

Focused USS for ICD insertion Competency achieved

Date……..

Trainer Signature……..

Log of Procedures

Date		Indication		Added as watched patient	
Liver/Spleen/Heart and diaphragm identified					
Size and character of effusion					
Pleural changes					
Other comments					
Procedure carried out					

Supervised Unsupervised

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