

EMSSA Preconference workshop
Level 2: Enhanced/ Point of Care Ultrasound Workshop

Monday 14 November 2011

Booking instructions:

Each candidate may select between the ½ day (3 modules) and the full day (6 modules) options. Each candidate must pre-select his or her own modules from the 14 modules provided when they book for the course. Please note: The candidate cannot change their module selection once on the course.

Course format:

Every module last 1 hour with hands on practical training by a highly experienced point of care ultrasound trainer (Ratio = 4 candidates per 1 trainer). Candidates change over on top of every hour until they complete all their selected pre-booked modules.

- *Full Day option:*
8:30 – 16:30 (including lunch)
Pre-select x6 application modules
- *Half-Day option:*
8:30 - 12:00 & 13:00 – 16:30 (including lunch)
Pre-select x3 application modules

Pre-course ultrasound experience recommended:

Some ultrasound experience will be beneficial but inexperienced practitioners are also welcome to attend

Pre-course preparation:

2 Sources of pre course reading are highly recommended since the focus will be on practical ultrasound training

1. www.sonoguide.com (ditto application modules as per your selection)
2. Pre-course on-line lectures (ditto application modules as per your selection)

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PLEASE MAKE YOUR SELECTION FROM THE FOLLOWING 14 MODULES

Module 1: Aorta

- Understand the surface landmarks for appropriate transducer positioning to perform sonographic examinations of the Aorta
- Understand the sonographic windows and landmarks of the Aorta
- Demonstrate the ability to identify and visualize landmarks for the Aorta in the transverse and longitudinal scanning planes.
- Understand the sonographic findings and pitfalls for identifying pathology including aortic aneurysm.

Module 2: eFAST

- Understand the surface landmarks for appropriate transducer positioning to perform the eFAST examination.
- Understand the sonographic landmarks and anatomical relationships of the Heart, Liver, Spleen and Bladder as they relate to the eFAST examination.
- Demonstrate the ability to identify and visualize the areas of potential intra-abdominal and thoracic spaces for free fluid to collect in on the eFAST examination.
- Understand the sonographic findings and pitfalls for identifying life threatening, trauma conditions such as cardiac tamponade, hemo/pneumothorax and intra-abdominal hemorrhage.

Module 3: Vascular access and deep venous thrombosis (DVT).

- Understand the sonographic landmarks and anatomical relationships as they relate to the vasculature of the neck, upper extremity and groin.
- Acquire and interpret sonographic images of the internal jugular, femoral, basilic, brachial and axillary veins in live patient models.
- Demonstrate ultrasound guided cannulation on vascular simulator.
- Learn the diagnostic criteria for deep venous thrombosis (DVT).
- Demonstrate compression technique for DVT assessment.

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Module 4: Image acquisition, equipment and instrumentation

- Enhance the understanding of the basic principles of ultrasound.
- Apply these principles to the reduction of common artifacts and improvement of high quality diagnostic ultrasound images.
- Understand the relationship between transducer position and image orientation.
- Demonstrate the basic operator controls on the ultrasound system required for image acquisition. Enhance the understanding of the basic principles of ultrasound.
- Apply these principles to the reduction of common artifacts and improvement of high quality diagnostic ultrasound images.
- Learn to be an expert on your own equipment.
- Learn how to safely connect and remove probes from their ports.
- Learn how to switch between transducers.
- Learn and demonstrate how to store and review images.
- Demonstrate adjustments to controls ie; gain, depth, frequency in hands- on session.
- Demonstrate how to properly document an ultrasound study by adding pt. information, text annotation and proper landmarks.

Module 5: Cardiac

- Understand the utility of motion modality (M-mode) and demonstrate its use.
- Demonstrate the surface landmarks and transducer position necessary to perform an echocardiogram in the ED.
- Acquire and interpret sonographic images of heart (subcostal, parasternal long, parasternal short and apical windows).
- Identify pathologic conditions such as pericardial effusion, gross wall motion abnormalities and cardiac tamponade.

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Module 6: Renal, ureter and bladder (KUB)

- Understand the surface landmarks for appropriate transducer positioning to perform sonographic examinations of the Kidney, Ureter and Bladder.
- Understand the sonographic windows and landmarks of the Kidney, Ureter and Bladder.
- Demonstrate the ability to identify and visualize landmarks for the Kidney, Ureter and Bladder in the transverse and longitudinal scanning planes.
- Understand the sonographic findings and pitfalls for identifying pathology including hydronephrosis/ureter.

Module 7: Liver, gallbladder and cystic ducts

- Understand the surface landmarks for appropriate transducer positioning to perform sonographic examinations of the Liver, Gallbladder and cystic ducts.
- Understand the sonographic windows and landmarks of the Liver, Gallbladder and cystic ducts.
- Demonstrate the ability to identify and visualize landmarks for the Liver, Gallbladder and cystic ducts in the transverse and longitudinal scanning planes.
- Understand the sonographic findings and pitfalls for identifying pathology including cholelithiasis/cholecystitis.

Module 8: 1st Trimester pregnancy

- Understand the indications for emergency screening ultrasound examinations of the pelvis.
- Describe the surface landmarks and transducer position necessary to perform transabdominal and endovaginal ultrasound examinations of the pelvis.
- Perform an endovaginal US on model patients demonstrating correct scanning technique.
- Interpret common diagnoses in first trimester pregnancy.

Module 9: Musculoskeletal

- Discuss the advantages and disadvantages of diagnostic musculoskeletal ultrasound compared to other imaging modalities.
- Demonstrate the appearances of various tissues on diagnostic musculoskeletal ultrasound.
- Correctly apply ultrasound basic concepts so as to ensure proper visualization of musculoskeletal structures.
- Proficiently perform a diagnostic musculoskeletal ultrasound on various upper and lower limb structures.

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Module 10: Peripheral nerve blocks

- Discuss the science and practical performance of brachial plexus, axillary and femoral blockade
- Learn the physiology and anatomy of the techniques, factors that influence success and complications.
- Demonstrate approaches for peripheral nerve blocks in the upper and lower extremity.
- Demonstrate peripheral nerve block on simulator under ultrasound guidance.

Module 11: Pulmonary

- To review and understand the sonographic artifacts of normal and pathologic pulmonary conditions that give pulmonary ultrasound its diagnostic capacity. This includes but is not limited to pleural imaging, the "lung sliding sign", B-line and comet tail identification for extravascular pulmonary congestion and pleural effusion imaging techniques.
- Demonstrate sonographic landmarks of the ribs, pleura, diaphragm and lung parenchyma.
- Distinguish between normal and pathologic condition through image review and hands on imaging practice.

Module 12: FASH (Focused Assessment of Sonography during HIV and Tb)

- To review and understand the relationship between extra pulmonary Tb and HIV.
- To understand the importance of early diagnosis and treatment of extra pulmonary Tb in HIV.
- Demonstrate sonographic landmarks of the FASH scan.
- Demonstrate possible pitfalls when performing the FASH scan
- Discuss the interpretation of positive FASH scan findings and their external validation in different clinical settings.

Module 13: Shock protocols (medical and trauma patients)

- Provide a sequenced approach to ultrasound in the shocked medical patient.
- Provide a sequenced approach to ultrasound in the shocked trauma patient.
- Demonstrate the surface landmarks and transducer position necessary to perform the shocked protocols (Rush/7-Up) scan.
- Review causes and potential responses to treatments of hypotension and tissue malperfusion.

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Module 14: Setting up a point of care ultrasound training programme

- Review the responsibilities of the ultrasound director.
- Review the requirements for training faculty and residents and discuss the process of privileging faculty to perform emergency ultrasound.
- Review how to establish a quality assurance process and how to report, document and archive images for both teaching and clinical use.
- Review equipment necessary to begin a successful program.
- Share public domain resources others have used in program initiation.

