Advanced Emergency Ultrasound

Enhance your knowledge and skills in the following areas:

- Extended applications for echocardiography
- Venous compression ultrasound
- Lung ultrasound
- Ultrasound-guided procedures

Course Objectives:

This workshop offers a full day of advanced applications for emergency ultrasound. This course is designed to augment skills that emergency physicians have already acquired during a two-day introductory course. Applications covered include those encountered in critical injured patients and includes advanced echocardiography and lung ultrasound as well as ultrasound-guided procedures and venous ultrasound to assess for deep venous thrombosis. Due to the technical nature of many of these applications, a significant amount of the course will be directed towards hands-on scanning. This includes both normal models and phantoms for practicing ultrasound-guided procedures.

Course Schedule:

8:00-8:15 *Introduction and Course Objective:*
Speaker will go over specific objectives of the course: advanced echo, assessment of volume status, lower extremity DVT, pneumothorax, and ultrasound guided techniques. Discuss the role of Emergency Ultrasound and what differentiates emergent ultrasonography from formal consultative studies, including the relative advantages and pitfalls.

8:15-9:00 *Deep Venous Thrombosis*
Speaker will describe lower extremity compression ultrasonography to assess for deep venous thrombosis and propose a clinical pathway using emergency ultrasound in patients with suspected deep venous thrombosis.

9:00-9:30 *Pulmonary Ultrasound*
Speaker will describe the technique used when performing thoracic ultrasound to assess for the presence of hemothorax and pneumothorax as well as describe ultrasound visualization to confirm endotracheal tube placement.

9:30-10:30 *Ultrasound Guided Procedures*
Speaker will describe the ultrasound-guided approach to central and peripheral venous access, paracentisis, thoracentis, and pericardiocentisis.

10:30-11:15 *Advance Cardiovascular Techniques / Ultrasound-Guided Resuscitation*
Speaker will describe cardiac and pericardial imaging including subcostal, parasternal, and apical views in order to assess cardiac activity, pericardial effusion, tamponade, aortic root, right ventricular strain, and left ventricular function. In addition, speaker will discuss how to visualize IVC to assess hemodynamic status.

11:15-12:15 Lunch

12:15-1:00 Soft Tissue Ultrasound
The speaker will discuss the ultrasound applications for soft tissue infection and injury. Specific content areas include the sonographic delineation of cellulitis, abscess, and necrotizing fasciitis. As well, characteristics of soft tissue injury will be discussed.

1:00-5:00 Ultrasound Lab Session
Students will rotate through separate labs covering each of the areas discussed in the didactic sessions. A combination of live models and phantoms will be used to illustrate and practice the techniques.