

Faculty Director:	Richard Gordon, MD
Participating Faculty:	Faculty in the Department of Emergency Medicine
Location:	Memorial Hermann TMC Emergency Center, L.B.J. Hospital
Prerequisites:	None
Streams Offered:	All
Max. # Students/3-week Period:	3

Course Objective

Material Covered:

This third-year elective will provide an introduction to the use of bedside ultrasonography in the emergency department. Students will learn how to use the ultrasound machine and how to perform the emergency medicine ultrasounds that are commonly used to help diagnose and differentiate our urgent and emergent, undifferentiated patients. Students will be introduced to the use of POCUS (point of care ultrasound) in the emergency department.

Specific learning objectives for this third-year elective are as follows:

By the end of this elective, the student will be able to:

- Perform various POCUS scans of the undifferentiated patient.
- Develop a systematic approach to choosing which ultrasound to use based on patient history and physical exam.
- Perform basic procedures (such as ultrasound guided intravenous access and phlebotomy).
- Identify anatomy relevant to common POCUS exams.
- Discuss infection control procedures and importance of those procedures.

Common POCUS scans include but are not limited to -

Cardiovascular	Echo RUSH exam DVT ultrasound
Respiratory	Lung ultrasound
Gastrointestinal	Gall bladder ultrasound Appendix ultrasound Renal ultrasound
Genitourinary	Early OB ultrasound Ovarian/Testicular Torsion ultrasound
Procedural	Peripheral IV and phlebotomy Central venous access Intra-articular injections/blocks Paracentesis Arthrocentesis

Students will be enrolled in an interactive didactic course developed by the EM Division of Ultrasound. The didactic material is 8 hours in duration and self-paced to be completed by the end of the elective. The students will also attend weekly Wednesday ultrasound section conference; this session varies from week to week with ultrasound QA review, case presentations, journal club, and dedicated supervised scanning in the department. Additionally, students attend weekly Thursday EM resident conference as scheduled by the department of Emergency Medicine.

The students work 10 supervised scan shifts with EM faculty who have point of care ultrasound expertise. During the scan shift the students have the opportunity to operate the ultrasound machine, acquiring and interpreting images and discussing ways the findings can be integrated into patient care. The students also assist with machine maintenance and infection control procedures. At the end of the elective the student will turn in a shift log of completed scan shifts and procedures.

Students will demonstrate attainment of the above objectives through attendance, participation in US conference, completion of online didactic material, and final US quiz.

Activities Of Elective

Number Of New Patients/Student/Week: N/A

Responsibilities Of Student For Assigned Patients:

Does history/physical:	Yes
Who critiques:	Attending and resident on the respective shift.
Follows patients, with appropriate notes as needed:	Yes
Who supervises:	Attending and resident on the respective shift.
Does student see ambulatory patients:	Yes

Procedures	Observe	Perform
Venous access and phlebotomy/ US needle guidance	Yes	Yes
Basic suturing	Yes	Yes
Other (Foley Catheter, NG tube, EKG, etc.)	Yes	Optional

Scheduled Duties of Student:

Frequency of rounds on patients	N/A
Presents patients to preceptor or attending physician	YES
Weekly schedule of required teaching sessions	as dictated by the residency conference schedule

Other Required Activities:

Reading/review of current literature	Yes
Writing or presenting a paper	No

How Is Student Evaluated:

This elective is pass/fail. Students will be evaluated by faculty based on their attendance and participation in didactic sessions and clinical assignments. The students are evaluated based on the demonstration of their accomplishment of the objectives.