

Title of Clerkship: **Emergency Ultrasound UTMC (2 week)**

Elective Year(s): 4th-Year

Department: Emergency Medicine

Type of Elective: Clinical X Non-Clinical/Research _____ Basic Science _____

Clerkship Site: University of Toledo Medical Center & Promedica Toledo Hospital

Course Number: ERMD 716

Blocks Available: ALL

Number of Students/
Block: 1

Faculty: Ultrasound Director, Emergency Medicine Faculty

Elective Description/
Requirements: The utilization for bedside (point-of-care) emergency ultrasound is expanding and providing efficient and effective patient care. This elective introduces a 4th year medical student with emergency medicine interest to the basics of performing and interpreting bedside ultrasound in the emergency department. They will receive one-on-one bedside teaching in the use of emergency ultrasound with attending physicians and residents and the ability to scan on their own with appropriate supervision.

Length of Clerkship: 2 weeks

Links to Competencies: Educational Course Objectives:

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|-----------------------------|---|
| PC9, SBP1 | 1. Describe where emergency ultrasound fits into emergency medicine. |
| PBL7 | 2. Describe the basic physics and knobology of ultrasound. |
| PC6 | 3. Demonstrate proper Set Up, cleaning, utilization, and storage of a typical ultrasound machine. |
| MK1,MK3,MK5,
PC6,PC7,PC9 | 4. Perform ultrasound studies in the core areas of emergency ultrasound. |
| PC10 | 5. Electronically store ultrasound images and retrieve images as necessary. |
| PC2 | 6. Communicate ultrasound findings to the physician(s) taking care of the patient that was imaged. |
| SBP1, SBP3 | 7. Describe how ultrasound can prevent unnecessary CT scan imaging. |
| PC7, PBL5 | 8. Enumerate the limitations of bedside ultrasound. |
| PBL1 | 9. Compare and correlate the bedside ultrasound performed by the student to formal studies ordered by the physician(s). |
| PBL2, PBL4 | 10. Demonstrate the ability to self-teach and perform bedside ultrasound using online references, applications, etc. |
| PC6 | 11. Eight 6-hour scan shifts (Mon-Fri) over 2-week elective rotation with faculty & residents. Total number of scans can vary based on time of year and ultrasound director's discretion. |

Professionalism: UT/COM students will meet or exceed the institutional standards for professionalism as stated in the current Educational Program Objectives and the current Educational Course Objectives for the Sponsoring Department.

Instructional Methods:

1. Individual and supervised bedside ultrasound scanning.
2. Independent Study
3. Online references and applications
4. Brief presentation of 1 ultrasound case at weekly didactics or other presentation at ultrasound director's discretion.

Resources:

1. Ultrasound Lab in Simulation Center UTMC Campus Rm. 2211
2. Smartphone app: EM Ultrasound by Peter Canning, MD, EM Apps, LLC (\$5 optional)
3. <http://emergencyultrasoundteaching.com/>
4. Reference: Introduction to Bedside Ultrasound (iBook) (download)
5. Select journal articles (US for Chest Pain & Abd Pain)

Evaluation Methods:

1. Pretest 1 & Post-test <http://emergencyultrasoundteaching.com/>
2. Debrief session with Ultrasound Director at the end of the month.
3. Procedure competency evaluations completed by faculty & residents using standardized direct observation tool (SDOT) forms.

Prerequisites:

At least one emergency medicine clinical rotation (anywhere)

Ultrasound Director:

Mohamad Moussa, MD, RDMS

Clerkship Coordinator:

Missy Johnson

Phone Number:

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Email:

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Special Requirements:

Ultrasound scans to be covered

1. Measurement of optic nerve sheath diameter for intracranial pressure
2. Retinal detachment detection
3. Pneumothorax detection- lung sliding, comet tails
4. B-Lines for pulmonary edema
5. Cardiac/Echo – estimating contractility, detecting pericardial effusion, right ventricular size
6. Cellulitis/Abscess – Using ultrasound to determine the need for Incision & Drainage versus antibiotics and observation.
7. Gallbladder- detecting cholelithiasis and cholecystitis
8. Fluid Status/IVC- estimating central venous pressure and performing serial exams to monitor fluid resuscitation in sepsis
9. Aorta- Aneurysm
10. FAST exam- Trauma
11. Renal- ruling out hydronephrosis
12. IUP- finding an intrauterine pregnancy transabdominally and obtaining a fetal heart rate.
13. DVT- compression, augmentation, 2/3-point compression
14. Central Venous Access- internal jugular, femoral, other
15. RUSH (Rapid Ultrasound for Shock & Hypotension) exam- differentiating hypotension using ultrasound