Dartmouth-Hitchcock

Emergency Medicine Rotation—Geisel School of Medicine at Dartmouth

Welcome to the Emergency Department at Dartmouth-Hitchcock Medical Center and your Emergency Medicine Rotation. We hope that the next few weeks you spend with us will be an exciting, high-yield clinical experience and that you will complete your rotation having gained unparalleled bedside teaching, valuable procedural skills, and a better understanding of the unique and exciting specialty of Emergency Medicine.

Our expanded curriculum includes expanded student responsibilities, procedure labs, simulation, didactic sessions, ultrasound exposure, and closer interaction with faculty and our Emergency Medicine residents. The emphasis of the rotation, however, remains **the clinical evaluation of the undifferentiated patient** in the Emergency Department.

NOTE: It is essential that you are familiar with the enclosed documents, particularly the section on grading, as they will help you navigate the course more smoothly.

As we continue to make changes to the curriculum in order to improve your experience, we value your feedback. Thanks for choosing to rotate with us. We look forward to having you on the team!

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Medical Student Guidelines

The following are required for successful completion of **MEDI 416** (Sub-Internship in Emergency Medicine) and **MEDI 510** (Elective in Emergency Medicine):

1. **Clinical Shifts in the Emergency Department:** Each student will rotate through an equal number of clinical shifts in the Emergency Department at Dartmouth-Hitchcock Medical Center. Students will be assigned approximately **15 nine-hour clinical shifts**, to include days, evenings, overnights, and weekends. Your shift schedule will be assigned at the start of the rotation. Absences must be reported to **Nicole Roberts (603-650-7254)** as well as the Attending Emergency Physician on that particular shift **(603-650-7001).** The Director must also be notified. Anticipated absences, such as residency interviews and medical school functions, must be requested in advance and rescheduled. Absences due to illness will be rescheduled at the discretion of the Director. Shift trades must be approved by the Director. A sample Schedule Template is at the end of this document. **Your schedule will be finalized on the first day of the rotation.**

2. **Didactic Days:** From June-September sub-intern-focused didactic sessions are held each Wednesday from 10am-11:30am. Students then join Resident didactics from approximately 12pm-2pm. These sessions will be held in the Emergency Medicine Large Conference Room unless otherwise noted. These sessions involve lectures, procedure labs, interaction with EM Residents, and are taught by Guest Faculty, Attending Faculty and Emergency Medicine Residents in the Emergency Department. Attendance is mandatory. Occasionally, because of scheduling constraints with resident didactics and the Sim Training Center, the hours are changed; although almost always still occur on Wednesdays afternoons.

3. **Patient Log and Shift Card:** In order to ensure a well-rounded clinical experience, you will be given a Patient Log for you to keep track of the variety of patients you encounter as well as any procedures you perform. Review this log mid-way through your rotation with the Director to ensure that you are seeing an appropriate number and type of patient encounters. Turn your logs in at the end of your rotation. Shift cards should be handed to the Attending or Senior Resident (PGY3) at the end of your shift. The patient log and shift cards contribute 10% of your final grade.

4. **Notes and Orders:** You are required to write notes on each patient, unless directed otherwise by the Attending on duty. These should be concise, complaint-focused notes that clearly communicate the course of the patient during their ED stay. Please see the attached template for the appropriate format. Students may "*pend orders"* in the patient's chart; however, since this requires an electronic co-signature by an Attending or resident before orders are executed, please check with the Attending you are working with to determine whether you or the Attending will place the orders electronically. You are expected to function as the lead provider for your patients. As such, you are expected to closely manage and follow the progress of all of your patients,

including test results, patient condition and disposition. You will be expected to call consults, admit the patient, and review discharge planning. In short, **the patients you see are your patients**.

5. **Timing and Efficiency:** The nature of Emergency Medicine requires that you be able to manage multiple tasks at once. EM physicians simultaneously manage multiple patients of varying acuity at all stages of their clinical course. Since the nature of the ED evaluation is problem-focused, you should limit your H&P to the problem at-hand. It is expected that the time to complete an H&P for a patient with an ankle sprain will be much shorter than a patient with chest pain. By the end of your rotation, you should aim to manage multiple patients at a time (up to three). Try to vary the type and acuity of patients that you encounter during your shift in order to appreciate this aspect of our specialty.
   NOTE: Students must staff each patient with an Attending Physician or Senior EM Resident before picking up additional patients.

6. **Reading List:** There will be required independent study in order to successfully complete and pass the final exam. The Core Curriculum can be found at https://cdemcurriculum.com/ under the tab curricula. Students enrolled in the elective should complete the MS3 curriculum and highly consider completing the MS4 curriculum and the Peds EM curriculum. Students enrolled in the sub-I should complete MS3, MS4 and Peds EM curriculum. If you wish to study from a textbook, the core material can be found in the ***Emergency Medicine Manual*** by Ma, Cline, and Tintinalli.

7. **Introduction to Ultrasound:** The utilization of Ultrasound in the Emergency Department has many unique applications and is part of the core curriculum in Emergency Medicine. Students will receive a brief introduction to Emergency Ultrasound with hands-on practice, and are encouraged to scan patients in the ED with appropriate supervision.

8. **Journal Club:** Journal Club is typically held monthly and is an opportunity for you to interact with the faculty and residents in a social, relaxed setting. The purpose of Journal Club is to discuss articles relevant to the practice of Emergency Medicine (i.e. *does this study influence what we do in the real world and, if so, how?).* We meet typically on a Tuesday evening over dinner. These are fun, casual evenings. You are encouraged to attend as our guest. Students who are assigned a clinical shift during Journal Club may be excused to attend. We will send you the articles once they are available.

9. **EMS:** Students interested in pre-hospital care may request a ride-along one of our local EMS services. This is an optional component of the rotation. Each Ride-along is for one day (8am-4pm) and is observation only. If interested, contact Nicole Roberts in the EM office for details.

10. **Grading:** This is designed to be a challenging rotation. In order to achieve the grade of Honors, a student must clearly demonstrate a knowledge base and clinical skill level *above* that expected for their level of training.

11. **Final Exam:** All students are required to take a multiple-choice final exam. This is typically administered the last day of your rotation—coordinate the exact date and time you would like to take the test with Nicole Roberts. The exam counts toward 25% of your final grade. Practice exams are available at saemtests.org. Contact the Director for access.

Course Grading

Faculty Evaluations—Based on the Core Competencies 45%

- History/Physical/Presentation
- Problem Solving/Management Plans
- Patient Management Skills
- Knowledge Base
- Work Ethic

Final Exam 25%

Professionalism..... 20%

- Attendance at lectures
- Timeliness for shifts
- Motivated work ethic and attitude
- Professional interactions with staff, nurses, residents, and attending

Patient Logs & Shift Cards 10%

Total..... 100%

Grade Key

Honors 90-100%
High Pass.....80-89%
Pass 70-79%
Fail.....<70%

12. **Emergency Medicine as a Career Choice?:** Students interested in Emergency Medicine as a career choice should set up a time to meet with Dr. Paul DeKoning, Residency Program Director for Dartmouth-Hitchcock Medical Center Emergency Medicine. Please contact Judy Collins at (603) 650-7317 or judith.m.collins@hitchcock.org) to schedule an appointment.

Helpful Hints

1. Plan to arrive 5-10 minutes prior to the start of your scheduled shift and introduce yourself to the Attendings and Residents. The physician home base is "the Cave" or Physician Workroom located in the center of the Emergency Department. Attendings typically use the corner computers in the Cave and residents and students use workstations in between the Attendings. If all of the desktop computers are occupied when you arrive, you may use one of the portable computers (located near the Charge Nurse's station—ask for assistance). Shift length is 9 hours, with the last hour to be used for tying up loose ends, completing documentation, discussion with family, etc. Generally, you do not see new patients during this last hour. Student shifts typically run 7am-4pm, 3pm-12am, and 11pm-8am. Attending and resident shift lengths vary.

2. The Attending physicians are responsible for **EVERY** patient in the Emergency Department. Every patient seen by a student must be staffed with an Attending after evaluation. It is required that you present each patient to an Attending and together develop a plan of care *before* you evaluate another patient.
   Note: If at any time you evaluate an unstable patient (abnormal vital signs, altered mental status, etc.) or you are concerned about a patient in any way, notify an Attending immediately.

3. The primary goal of Emergency Medicine is to identify life-threatening conditions. Subsequently, patients are seen first in the order of acuity (how sick they are and/or their potential to decompensate), then the amount of time they have been waiting. This is based on their triage level (see chart below). In other words, a level 2 patient should be seen prior to a level 3 patient. Generally, students should coordinate with the senior resident which patient should be seen next. **Medical Students should not evaluate patients with a triage level 1 without direct Attending or upper level resident supervision.** You should check with an Attending prior to evaluating a level 2 patient to determine if this is appropriate. If you have any questions on which patient to see next, just ask.

Table 4. The Emergency Severity Index (ESI)

CATEGORY	DEFINITION	STATISTICS
ESI 1	Severely unstable patient, must be seen immediately by a physician, often requires an intervention (e.g., intubation) to be stabilized	Represents 2% of all patients; 73% of ESI 1 cases are admitted
ESI 2	Potentially unstable patient, must be seen promptly by a physician (within 10 minutes), often requires laboratory and radiology testing, medication, and admission	Represents 22% of all patients; 54% of ESI 2 cases are admitted
ESI 3	Stable patient, should be seen urgently by a physician (within 30 minutes), often requires laboratory and radiology testing and medication, and usually is discharged	Represents 39% of all patients; 24% of ESI 3 cases are admitted
ESI 4	Stable patient, may be seen nonurgently by a physician or midlevel provider, requires minimal testing or a procedure, and is expected to be discharged	Represents 27% of all patients; 2% of ESI 4 cases are admitted
ESI 5	Stable patient, may be seen nonurgently by a physician (or midlevel provider), requires no testing or procedures, and is expected to be discharged	Represents 10% of all patients; 0 of ESI 5 cases are admitted

Source: Reiter M, Scaletta T. On your mark, get set, triage! Emerg Physicians Mon [online]. 2008 Aug 31 [cited 2010 May 25]. Available from Internet: http://www.epmonthly.com/subspecialties/management/on-your-mark-get-set-triage.

4. Once you are ready to see a patient, sign up for the patient and then go to room and begin your evaluation. Do not sign up if you are not yet ready to evaluate the patient. As mentioned previously, you should perform a focused history and exam based upon the patient's chief complaint. Your goal should be to complete the H&P in 5-10 minutes.

5. Students may "pend" orders in eDH. If you have not done so previously, it is recommended that you learn to do this as it will give you good practice in determining the appropriate diagnostic treatment options for your patient. Pended orders are neither visible to the nursing staff nor actionable until signed by an Attending or resident. Consider this an opportunity for you to select items that *you* would order if you were the patient's physician. Your goal should be to have a good idea about the patient's disposition before you leave the patient's room.

6. Do not order laboratory testing or imaging if it will not influence decision-making, treatment or disposition. **The Emergency Department is not the setting for the extensive workup of non-critical problems.**

7. After completion of the H&P and your proposed orders, present the patient to any of the Attendings on duty. Start with the chief complaint, HPI, ROS, PMH, Meds, Allergies, Social Hx, Exam (don't forget the vital signs!), and finally pay special attention to the assessment and plan section where you summarize your findings and your plan (i.e. your proposed orders). For example:

   "Miss Jones is a 58 yr. old female with post-prandial RUQ abdominal pain with a positive Murphy's sign. My differential includes A, B, and C. My plan would be to perform X, Y, and Z. If the results show _____, then I would plan to _____."

   This plan should include the ultimate disposition of the patient (i.e. are they going home?). **You must staff your patient before going to see another patient.** Please see the section *Differential Diagnoses for Common Emergency Department Complaints on page 8***.**

8. After you and the Attending or resident develop a plan, inform the patient and the family of the plan and the expected time to perform testing and determine a disposition. Over-estimate the amount of time, as things usually take longer than expected.

9. As stated above, it is **your** responsibility to follow the patient's progress during their ED stay, including following-up on labs and imaging, pain management, repeat examinations, etc. **Your patients are yours.** After the patient's workup is complete, it will be necessary to generate a patient disposition. If the patient is being discharged, you will need to provide clear discharge instructions, a follow-up plan, and a list of signs and symptoms that should prompt the patient to return to the Emergency Department. If the patient requires specialist consultation or admission, it is expected that the student will, with Attending supervision, call the consultation or to request admission. Please do not call for a consult without speaking to an Attending or resident first.

Notify the Attending immediately if you encounter problems or experience any difficulty in speaking with a consultant.

10. **Every** patient must be seen by an Attending Physician prior to discharge, admission, or transfer. The Attending must be notified immediately if a patient indicates or desires to leave **Against Medical Advice (AMA)** or **Leave Without Being Seen (LWBS)** by an Attending Physician. **Note: Patients leaving AMA or LWBS are high risk patients, please make the attending are aware as soon as you suspect a patient may leave.**

11. Respect patient confidentiality at all times.

Common Chief Complaints in the Emergency Department

A. Chest Pain: For patients with acute chest pain or shortness of breath, please show the ECG to the attending physician immediately. Virtually any patient with the complaint of chest pain should have an ECG performed.

B. Abdominal Pain:

- A pelvic exam is usually indicated in women with abdominal pain unless the pain is clearly non-pelvic in origin.
- Pregnancy tests are mandatory for lower abdominal pain or vaginal bleeding, even in the face of a normal menstrual history or "no chance that I'm pregnant."
- Abdominal pain in the elderly may represent catastrophic disease. Always consider ischemic bowel disease and AAA in older patients.

C. Severe Infection: Patients with suspected septic shock or meningitis should receive antibiotic therapy. Although it is often preferable to have diagnostic testing completed prior to antibiotic administration, do not delay antibiotic administration for blood cultures, lumbar puncture, etc. if so doing will significantly delay treatment.

D. Head Injury:

- Examine and document - loss of consciousness (LOC), associated symptoms, pupils, neurological exam, and cervical spine exam. If you are worried about a cervical spine injury, place them in a collar and discuss with the Attending.
- CT scan should be obtained for any patient with continuing alteration in mental status, abnormal neurological exam, or history of (+) LOC or amnesia.

E. Laceration Care:

- Please document: cleansing, anesthesia, distal neurovascular status, tendons, range of motion, size/depth of wound, presence/absence of foreign bodies, number and type of suture. For finger/hand injuries include: handedness, occupation, prior injury/surgery, 2-point discrimination.
- Watch out for foreign bodies! X-ray if suspicious. Ask the patient! Document wound exploration.
- In general, use Vicryl for deep suture, nylon or prolene for skin, Dermabond is also available for use on very specific wounds—ask the Attending.
- Suture removal: Face 3-5 days, Scalp 5-7 days, Upper extremities/torso 7-14 days and Lower extremities 10-14 days. If the wound margins are under tension, i.e., over a joint or in a web space - 14 days, and consider splinting. Worrisome wounds should be re-checked in 1-2 days.

F. Psychiatric Patients: All patients presenting to the ED with a psychiatric complaint will receive a medical screening exam by the ED physician first. This is usually not the time to address or discuss the psychiatric issues in great detail. The vast majority of psychiatric complaints in the ED do not require medical testing prior to psychiatric evaluation. However, new onset features (psychosis, etc.) in a patient without prior psychiatric history requires a medical workup prior to psychiatric consultation.

- A brief history of the current problem
- History of past psychiatric disease
- A physical examination
- Presence of active medical problems
- Current medications
- History of drug/ETOH use/dependence
- A mental status exam to include: level of consciousness, orientation, mood, suicidal ideation, homicidal ideation, presence of auditory or visual hallucinations, etc.

G. Stroke: If a patient has symptoms of a stroke and the onset of symptoms is less than 3 hours, a stroke alert should be called. Discuss immediately with the Attending.

H. Important: Please keep in mind that some patients may utilize the ED for seemingly non-emergent complaints. But what may seem like a simple or non-emergent issue to you may be an *emergency* to the patient. The ED may be the patient's only option. Always be an advocate for your patient.

Differential Diagnoses for Common Emergency Department Complaints

Abdominal Pain: AAA, Acute appendicitis, bowel obstruction, mesenteric ischemia, cholecystitis, diverticulitis, nephrolithiasis, testicular torsion, PUD/gastritis, pancreatitis, hepatitis, ovarian cyst. In premenopausal women add ectopic pregnancy, ovarian torsion, PID.

Altered Mental Status: hypoglycemia, hypoxia, seizure, syncope, toxicology/overdose, infection, CVA, myocardial infarction, encephalitis/encephalopathy.

Back Pain: AAA, Cord/nerve Compression, Fracture, Retroperitoneal issue, Kidney stone, Infection (epidural abscess, transverse myelitis, discitis), uncomplicated low back pain.

Chest Pain: ACS, aortic dissection, pneumothorax, PE, pneumonia, pericarditis, myocarditis, esophageal rupture/mediastinitis.

Headache: Subarachnoid hemorrhage, subdural hematoma, epidural hematoma, meningitis, glaucoma, migraine, tumor with shift, intracranial hypertension/pseudotumor cerebri, venous thrombosis.

Orthopedic injuries: Neurovascular compromise, compartment syndrome, “the second injury” (i.e. the one you missed on primary survey).

Poisoning/Overdose: Acetaminophen, Carbon Monoxide, opioids, salicylates, tricyclic antidepressants, toxic alcohols, anion gap acidosis, decontamination.

Shortness of Breath: Airway obstruction, heart failure, pneumonia, pulmonary embolus, Asthma/COPD, myocardial infarction, symptomatic anemia, toxins.

Shock: Anaphylactic, obstructive, cardiogenic, hypovolemic (includes trauma), sepsis, neurogenic.

Vaginal Bleeding/Pelvic pain: Ectopic, IUP, miscarriage, placental abruption, placenta previa, ovarian torsion, pelvic infection.

Weak and dizzy: CVA, myocardial infarction, infection, metabolic, intracranial bleed, peripheral/central vertigo, dysrhythmia.

Wound Care: Neurovascular exam, dominance, irrigation, anesthesia, tetanus status, foreign body evaluation.

Dartmouth-Hitchcock

Sample Student Shift Schedule

~ DMS Emergency Medicine Student Schedule ~						
Sun	**Mon**	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**
	1 Start of Rotation 7a-4p **A** 3p-12p **B** 11p-8a **C**	**2** 7a-4p **A** 3p-12p **B** 11p-8a **X**	**3** **12N-4p conference*** 11p-8a **D**	**4** 7a-4p **C** 3p-12p **A** 11p-8a **D**	**5** 7a-4p **C** 3p-12p **A** 11p-8a **B**	**6** 7a-4p **C** 3p-12p **A** 11p-8a **B**
7 7a-4p **D** 3p-12p **A** 11p-7a **X**	**8** 7a-4p **B** 3p-12p **C** 11p-7a **X**	**9** 7a-4p **B** 3p-12p **C** 11p-8a **X**	**10** **12N-4p conference*** 11p-8a **A**	**11** 7a-4p **D** 3p-12p **B** 11p-8a **A**	**12** 7a-4p **D** 3p-12p **B** 11p-8a **C**	**13** 7a-4p **D** 3p-12p **B** 11p-8a **C**
14 7a-4p **A** 3p-12p **B** 11p-8a **X**	**15** 7a-4p **C** 3p-12p **D** 11p-8a **A**	**16** 7a-4p **C** 3p-12p **D** 11p-8a **X**	**17** **12N-4p conference*** 11p-8a **B**	**18** 7a-4p **A** 3p-12p **D** 11p-8a **B**	**19** 7a-4p **A** 3p-12p **C** 11p-8a **D**	**20** 7a-4p **A** 3p-12p **C** 11p-8a **D**
21 7a-4p **B** 3p-12p **A** 11p-8a **X**	**22** 7a-4p **D** 3p-12p **C** 11p-8a **A**	**23** 7a-4p **D** 3p-12p **C** 11p-8a **X**	**24** **12N-4p conference*** 11p-8a **C**	**25** 7a-4p **B** 3p-12p **D** 11p-8a **X**	**26** Last Day 7a-4p **B** 3p-12p **D** 11p-8a **X** **FINAL EXAM time TBA**	**27**
28	**Notes:** ***Intensive Rotation** **Total 15 shifts, 4 overnights, 11 day/evening shifts.** **Wednesday conference is mandatory.** **EMS is optional: through one of our local EMS providers. Contact Nicole Roberts for details.** **Contact Stripe Demarest 603-650-4460 for scheduling issues. Shift swaps must be approved in advance by the Director.**					

V: 12, 8-24-17

Valuable Clinical Resources

- Core rotation reading material: https://cdemcurriculum.com/
- CORD Practice Tests: http://www.cordtests.org. Password obtained from the Director and valid only during your rotation. Valuable practice for final exam.
- DHMC EM Residency site: http://gme.dartmouth-hitchcock.org/emergencymed.html
- Emergency Medicine Residents' Association/EMRA: http://emra.org. Up to date info on topics of interest to EM residents or those interested in EM, including conference schedules.
- ACEP Clinical Policies: https://www.acep.org/Clinical---Practice-Management/ACEP-Current-Clinical-Policies/

- http://academiclifeinem.blogspot.com
- http://www.emcrit.org/practicalevidence/
- http://vimeo.com/aem/videos
- http://emergencymedicineireland.com
- https://umem.org/res_pearls_browse_cat.php
- http://emlyceum.com
- http://www.thennt.com
- http://smartem.org
- http://www.thepoisonreview.com
- http://toxtalk.org
- http://regionstraumapro.com
- http://www.ultrasoundpodcast.com
- http://hqmeded-ecg.blogspot.com/
- http://geiselmed2.dartmouth.edu/emig/events/