Teaching Medical Students in the Emergency Department

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BACKGROUND

Objectives of this session:

- List the advantages for all students to take an EM course, regardless of specialty choice.
- Describe appropriate learning objectives for medical students at different stages of training.
- Outline the components of a typical medical student curriculum for the senior year elective.
- List several methods for the educator to maximize medical student learning.
- Be familiar with ways that medical student education can lead to academic advancement for the educator.

Why should students take an EM elective?

- Macy Foundation reported on needs of undergraduate medical education.
- All students who graduate from medical school should be capable of handling emergency situations.
- Information learned in EM clerkship is not available elsewhere in the undergraduate curriculum.
- Good recruitment tool for residency program.


What can we offer to medical students that is unique to our specialty?

- Basic Life Support skills
- Assessment of the undifferentiated patient
- Procedural skills
- “Independence” in patient care

Section References: ACEP 1997, Lawrence 1997
How can the curriculum be adapted for pre-clinical or junior medical students?

- **1st Year** – basic first aid, CPR, understand how EMS system works.
- **2nd Year** – Relate EM teaching to second year medical school curriculum (pathophysiology). Reinforce physical diagnosis skills.
- **3rd Year**
  - History and physical exam skills
  - Basic management of routine ED patients
  - Learn to develop a simple differential diagnosis.
- Professionalism – Foundation for future conduct around patients and other health care personnel.


**OPTIMIZING THE SENIOR CURRICULUM**

What are the basic components of a senior EM elective?

- Planning the course
  - Decide what content is important and how each topic can best be learned in given clinical setting.
- Orienting the faculty
- Orienting the students
- Didactic portion
- Clinical experience
- Evaluation/Feedback

Learning objectives for the EM elective.

- Objectives should be measurable and attainable by a medical student at the targeted level of training.
- Students at any level progress through stages of mastery at their own pace

- Levels of Knowledge:
  - “Knows” Objective = “List”
  - “Knows How” Objective = “Describe”
  - “Shows How” Objective = “Explain”
  - “Does” Objective = “Demonstrate”
Method of assessment must be planned while learning objectives are being developed.

- Procedural: Demonstration
- Knowledge: Objective testing
- Management: Observation, Simulation


DIDACTIC COMPONENT OF THE EM SENIOR ELECTIVE

- Lectures for students only
  - Basic content
  - Resident involvement
- Departmental Lectures
  - Access to faculty
  - Showcases the state of the art EM information
- Student Presentations
  - Presentation to faculty and peers.
  - Requires student to synthesize information for presentation.
  - Allows faculty to evaluate thinking skills.
- Procedure Labs.
- Problem Based Learning (PBL) or simulation.
- Reading List/Syllabus for independent learning
- On-line educational resources

CLINICAL COMPONENT OF THE SENIOR EM ELECTIVE

Planning and Tracking

- Clinical Objectives – In planning the curriculum, the clinical environment can be utilized to teach or reinforce important learning objectives.
  - Required clinical encounters
    - Level of responsibility
  - Logbook/PDA (HIPAA regulations)
    - Track student progress
    - Attendance
    - Comparison among students

Bedside Teaching

- Allow for student independence and decision-making. This is a progressive process that can be adapted to each student’s needs.
  - Select patient and prepare for encounter.
  - Student H&P with patient. (Time limit)
  - Student Presentation
    - Expect quality presentation of H&P
    - Allow student to develop differential diagnosis. Expand as necessary.
    - Allow student to formulate treatment plan. Revise as necessary.
    - Expect student to predict disposition and final diagnosis.
  - Follow-up of patient treatment course
  - De-briefing student and planning for next time.
  - Charting review

- Observe students taking care of patients
  - Immediate feedback on skills and professionalism.
    - Planned observation
    - “Secret” observation
  - Provide role model for student
  - Highlight physical exam findings

- Interesting patients in the ED
  - Not the student’s primary patient
  - “Mystery” diagnosis
  - Sample a wide variety of clinical situations without administrative responsibility
- Major Resuscitations
  - Observation
  - Minor participation – Prepare student in advance
  - De-briefing and education
  - Allows access to EMS calls and understanding of the EMS system, base station responsibilities, etc.

ED Teaching Rounds

- Students present their cases
- Educational cases – start with student
- Independent student education after resident work rounds


EXPERIENTIAL COMPONENT OF SENIOR EM ELECTIVE

These are experiences that expose the students to aspects of emergency medicine that cannot be taught in the usual setting.

- EMS experience – Paramedic ride-alongs, air ambulances
- Other clinical sites – different ED setting, poison center
- Journal Club – a chance for students to learn how to interpret the medical literature
- Social events

FEEDBACK AND EVALUATION

- Evaluation of students by faculty and residents
  - Initial expectations at clerkship orientation
  - Midterm evaluations
  - Final evaluation to include comments of faculty and residents, objective testing, attendance, other requirements for specific clerkship.
- Evaluation of clerkship by students
- Evaluation of faculty by students
  - For dossier
  - For faculty development

OTHER DUTIES OF EM EDUCATORS

- Career advising (Virtual Advisor Program)
- Standard Letter of Recommendation (SLOR) writing
- EM Student Interest Group (EMIG) liaison
- Research mentors
  - May lead to future commitment of student to an academic career.
  - Assistance with projects


ACADEMIC ISSUES AND MEDICAL STUDENT TEACHING

- Better teachers teach better
- Academic status of the department (in the dean’s eye)
  - Satisfied with faculty teaching, but academic productivity was overall lower than other departments.
- Professional development (promoting yourself)
  - Medical school committee service
  - Pre-clinical courses
  - Special project advisor
  - Publications


FUTURE QUESTIONS…

- National standard for curriculum
- National standards for testing
- Academic promotion for clinician educators

FINAL WORD


Gendy M, Coates WC, Gill AM. The emergency medicine sub-internship: can we provide a standard clinical experience for all students? Acad Emerg Med. 2002;9:430-431.


Mahadevan SV, Garmel GM. The outstanding student in emergency medicine. Acad Emerg Med 2001;8:402-403.


