

# EFFECTIVE PRECEPTOR SERIES

## Using the Electronic Medical Record to Precept Medical Students

### USING THE ELECTRONIC MEDICAL RECORD TO PRECEPT MEDICAL STUDENTS

Since the Institute of Medicine strongly urged electronic medical record (EMR) use to improve patient safety and quality of care, medical schools have noted challenges in integrating the EMR into clinical teaching of trainees. Students need permission to use hospital/ambulatory site computers, obtain passwords, and are regulated regarding access abilities. The Alliance for Clinical Education (ACE) survey of clerkship directors indicated 64% of institutions allowed medical student use of the EMR with one-third of institutions not allowing note-writing abilities. The use of templates and clinical decisional support (CDS) systems (e.g. vaccination and allergy alerts) could theoretically limit reasoning skills for students. Furthermore, the length of EMR training and turn over time for activating passwords are additional perceived barriers. In 2010, 93% of medical education deans in the US and Canada felt that the limitations to students' notes in patients' charts had a negative impact on student education. Despite these barriers, many solutions exist that enhance undergraduate medical education by use of the EMR as an additional tool.

### What Is Our Responsibility To Medical Students?

The Liaison Committee on Medical Education (LCME) mandates that medical schools prepare students for entry to residency, including specific instruction in communication skills. In addition, the AAMC learning objectives for medical students' education must ensure that students demonstrate the ability to communicate effectively (oral and written) with patients, families, colleagues and others in the health team. A collaborative statement from

ACE recommends that students document, practice, and have notes reviewed in EMR. They also emphasized the importance of student exposure to utilization of decision aides, and recommend that schools develop competencies related to charting in EMR. Finally, the United States Medical Licensing Examination (USMLE) evaluates students' ability to write notes during USMLE Step 2 CS. With these requirements and recommendations, the education of student EMR use falls upon preceptors to ensure effective and appropriate practice and preparation for residency and beyond.

### Orienting The Learner

Whether in the ambulatory outpatient setting or inpatient unit, assessment of students' knowledge and prior utilization of EMR at the start of teaching sessions is important. Does the student have access (username and password) to the EMR? Are there enough computers available for their use or will they be sharing a computer? What EMR use (chart/lab/notes reviews, note entry, order entry) has the student experienced before? If there are rotation-specific learning objectives regarding EMR use, reviewing these in advance would be helpful. Before the student sees a patient, orienting the student to the EMR and how you incorporate it into your daily work-flow can be beneficial. Show the learner where to best access important data such as prior notes, consultants' recommendations, and laboratory/radiologic findings. Medical students can be taught to review patients' records prior to the start of clinic or before rounds. For example, in the clinic setting, the student might be able to locate when a patient's last pap smear, cultures, mammogram, bone density scan, or colonoscopy were performed and what the results were. In the inpatient setting, the student

should be able to review a patient's vital signs, input/output, morning lab results, nursing entries, consultant reports, and any overnight events that might have occurred. Finally, explicit instruction on what the student can and cannot do in terms of writing notes or orders should be spelled out at the onset of the learning activity (clinic/ rounds). Setting expectations regarding how students will use the EMR will minimize improper use and frustrations for both teacher and learner.

### ACGME COMPETENCIES

The EMR presents an excellent opportunity for medical educators to incorporate its use both as a teaching tool to achieve Accreditation Council for Graduate Medical Education (ACGME) competencies and an evaluation and assessment tool for learners both in the ambulatory and inpatient setting.

### Patient Care

The EMR has the potential to positively affect how medical students learn to care for patients. Various components of the EMR can enhance patient care delivery.

- Ease of access to vital signs, I/O, nursing notes, allied health notes, SW notes, consultation notes, demographic information, pharmacy information, prescription writing, and communication with consultants and pharmacy.
- Automated creation of sign-out documents support the teaching of handoffs, resulting in improved patient care.

### Knowledge

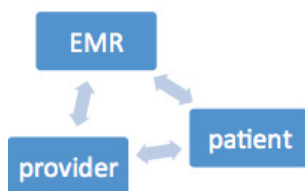
Novice learners can improve acquisition of key elements in the history by using templates for particular diseases. The CDS systems within EMR incorporate tools that have the potential to enhance trainees' fund of knowledge.

- CDS systems help guide learning efforts and yield positive educational outcomes for the learner's quality of clinical care.
- Preceptors should work alongside learners to address how to appropriately use alerts and to prevent alert fatigue if there are many clinically insignificant alerts.
- Many CDS systems allow easy access to the medical literature allowing learners to draw on this information as they formulate management plans.

### Interpersonal And Communication Skills

The EMR provides an opportunity for faculty to model how to effectively build therapeutic relations while documenting in EMR. Often referred to as the "third person in the room," the computer/EMR should be introduced and incorporated in a meaningful way.

- Introduce self
- Introduce computer
- Triad placement



- Place computer in a position so that the physician/student is able to face the patient while entering data as well as show patient information on computer screen.
- Teach student to involve patients in their care by using the EMR as a teaching tool (e.g. show laboratory trends, verify medications and problems, review imaging and reports, online patient education materials).

### Professionalism

The EMR reshapes how physicians interact with patients and other medical professionals. Preceptors can demonstrate how to negotiate between competing interests.

- Sharing passwords
- Confidentiality (access medical records of family members, classmates, celebrities)

- Note authenticity (cut/paste)
- Many health systems allow patients to access the EMR. This is an opportunity to teach students to write notes that are objective and accurate without inflammatory or negative connotations, especially now that there is more transparency.

### Practice-Based Learning And Improvement

Preceptors can use EMR to teach learners to investigate and evaluate their care of patients, thus demonstrating how it contributes to self-assessment.

- Review pap smear results for satisfactory collection of endocervical cells.
- Facilitate 'just in time' education – apply evidence-based medicine in the clinical context.
- EMR – integrated clinical registries can teach important concepts in quality improvement.
- Automatic primary care screen alerts such as immunizations, pap smear and mammogram history.

### Systems-Based Practice

The electronic medical record can be used to help teach students optimization of resources and teamwork within the health care system to provide optimal care to patients. Preceptors can introduce systems-based practice topics such as cost-effective care.

- Review prior labs obtained by other providers before recommending additional tests.
- Integration of cost into Computerized Order Entry (COE).
- Easier access to consultants and other care provider notes.
- Understand the complexity of the career provider network.
- Review outcomes of populations and generate lists of specific medical conditions for:
  - Quality improvement
  - Research
  - Outreach
  - Reduction of disparities

### Evaluation

'The RIME Scheme' can be systematically applied to teaching and evaluating EMR-specific skills using ACGME core competencies. Examples include accurately gathering and assimilating

data within the EMR, formulating and discussing differential diagnoses, and independently creating a problem list. In addition, the EMR allows for various options to evaluate learner performance.

- Creating customized templates with decreased auto fill and auto text allows preceptors to evaluate student history taking skills.
- Queries by author type/name allow preceptors to review medical student clinical notes.
- Facilitates the process of tracking and reporting of trainee's exposure to patient diagnosis and procedures, provides written documentation of achievement of patient care milestones, and identifies areas of deficiency more efficiently than paper-based systems.
- EMR "playground" with simulated patient records to review, find information, and demonstrate appropriate documentation and use of decision support tools.
- RIME/EMR Scheme has been described and applied to evaluating EMR-specific skills:
  - Reporter: records own finding, rather than cut and paste. Reviews medical history in EMR for relevant conditions.
  - Interpreter: independently constructs problem list, discusses clinical assessment and diagnostic possibilities.
  - Manager: inserts images and text into EMR to complement plan.
  - Educator: uses embedded clinical support tools to access current evidence related to patient care.

Although the rapid incorporation of EMR into clinical care has raised concerns regarding EMR as a barrier to student involvement in patient care, student learning of effective communication skills and faculty assessment of student clinical reasoning and documentation, there are numerous opportunities to enhance and facilitate student education with EMR. Orienting the student to EMR use and preceptor involvement in EMR working groups can prevent and address concerns as they arise. The EMR improves the efficiency in which

learners retrieve patient data and access prior notes, potentially enhances their fund of knowledge, allows for documentation and evaluation of student performance, improves patient safety, and teaches cost effective care.

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Original Author: Samantha Buery-Joyner, MD, VCU School of Medicine, Inova Campus; John L. Dalrymple, MD, University of Texas, Houston

The Effective Preceptor Series is a project of the Association of Professors of Gynecology and Obstetrics (APGO) Undergraduate Medical Education Committee (UMEC):

Nancy A. Hueppchen, MD, MSc, Chair  
Johns Hopkins University School of Medicine

Jodi F. Abbott, MD  
Boston University School of Medicine

Samantha D. Buery-Joyner, MD  
VCU School of Medicine, Inova Campus

Alice W. Chuang, MD  
University of North Carolina-Chapel Hill

Amy J. Cullimore, MD, MSc, BEd  
McMaster University

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University of Texas, Houston

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This publication is part of the APGO Effective Preceptor Series – a group of pamphlets intended to educate practitioners and learners about the apprentice system or preceptorship. The quality of learning that occurs in an established relationship between the teacher and the student often meets the challenge of educating physicians in today's chaotic health care environment. It allows doctors in training to practice as much like doctors as good medical practice will allow, and it provides a setting in which some of the best medical education in our nation takes place.

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Association of Professors of Gynecology and Obstetrics (APGO) • 2130 Priest Bridge Drive, Suite #7 • Crofton, MD 21114  
Phone (410) 451-9560 • Fax (410) 451-9568 • www.apgo.org