

**Background:** Adoption of milestones by the Accreditation Council for Graduate Medical Education and American Board of Emergency Medicine represents a major change in the standards by which emergency medicine residents are evaluated. Guidance is limited in regards to the efficacy of available assessment tools used to compare residents against these standards. The ubiquity of electronic medical records (EMR) provides a potentially valuable resource through which program directors relate assessments to specific patient encounters, resulting in a more accurate assessment of the resident's clinical skills.

**Objectives:**

- Propose a novel means of milestone assessment utilizing EMR
- Align resident evaluation with patient care
- Accurately measure resident and program-wide deficiencies to provide targeted curricular improvement

**Design:** Currently, attending-level mandatory questions in the EMR are necessary to complete a patient encounter. Using our EMR, capable of branching to other questions based on yes/no answers (skip logic), a series of milestone based questions will be added to this section. In 3 clicks, attendings will be able to evaluate resident performance based on each encounter. Each week a different milestone will be evaluated. Data collected over many encounters will ensure real-time evaluation data, but will be collected in a separate database and not part of the patient's record.

**Impact:** Our innovation adds to the evolving process of graduate medical education milestone assessment in two ways: 1) Demonstrate a simple method for integrating formative evaluations into every patient encounter, creating more accurate measures of resident performance. 2) Skip-

logic evaluations provide an intuitive method for faculty to assess resident performance across a broad range of knowledge, behaviors and skills that is more in line with the goals of the Next Accreditation System compared to traditional Likert scale scoring. This method provides more concrete feedback, less range restriction, and allows for easier identification of residents at risk and specific areas of concern.

**Curricular Innovations Oral Presentations**

**88 An Expert Educator Teaching Shift Used as a Method to Assess Milestones in Students**

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**Background:** Our institution implemented a competency-based curriculum in 2011 called the Lead. Serve. Inspire (LSI Curriculum). Coinciding with this is the development and publication of twenty-four competency-based emergency medicine (EM) clerkship milestones for fourth-year medical students. In response to both low student evaluations of our direct observation of competence requirement and the development of these milestones, our clerkship implemented an expert educator shift.

**Educational Objectives:** To use an expert educator teaching shift as a way to improve direct observation of competence and assessment of the newly published medical student milestones in EM.

**Curricular Design:** One of 3 expert educators

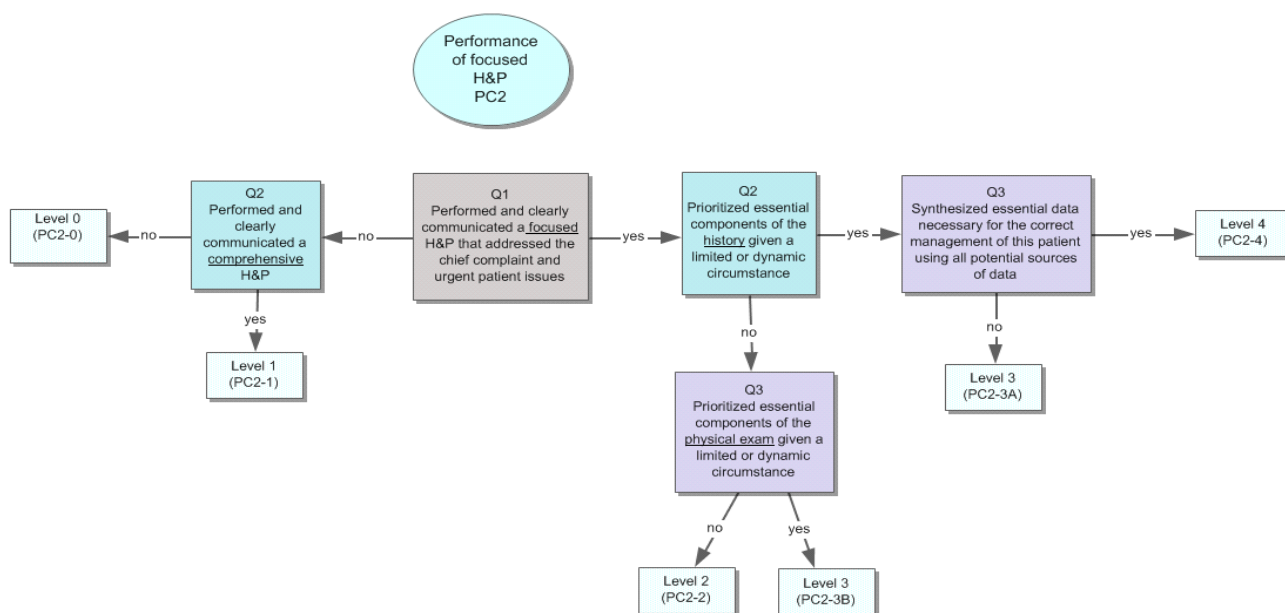


Figure 1.

completed two 4 hour teaching shifts per month with two to four medical students. During these shifts, the expert educator did not have direct patient care responsibilities, focusing solely on student education. For the first three hours, the group focused on clinical care of emergency department patients during which the fourth year students were encouraged to pick up new patients and present them to the teaching attending physician, similar to a conventional shift. Each student was directly observed and assessed by the teaching physician during the patient encounter on a predetermined set of objectives corresponding with ten of the medical student milestones in EM (Table 1). The remaining hour was allotted for direct individual feedback and an informal didactic session, which is in addition to the core medical student lecture series.

**Impact/Effectiveness:** We have seen an improvement in student perception of our direct observation of competence exercise and have shown the expert educator shift can be effectively used to directly assess ten of the 24 medical student milestones for EM.

## 89 Can an ECG Elective be Developed that Meets the FAIR Principles?

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**Introduction/Background:** Learning to interpret electrocardiogram (ECGs) is an important skill for medical students. Emergency physicians are expert in clinical interpretation of ECGs and the emergency setting is an

excellent environment to be exposed to a variety of complaints and medical conditions that require ECG interpretation. The challenge is to develop an elective rotation that encompasses all the “FAIR” Principles of effective learning described by Harden and Laidlaw: Feedback, Active Learning, Individualized, and Relevant.

**Educational Objectives:** To create a successful clinical ECG elective that meets the “FAIR” principles.

**Curricular Design:** Medical students are taught to interpret ECGs over a 2 week course through the following methods: (1) 10 mini-lectures (30min-1 hour in duration) on ST elevation, bradycardia, ST elevation mimics, syncope, extracardiac manifestation of ECGs, toxicology and electrolytes, wide complex tachycardias, tachydysrhythmias, aortic valve replacement, and pediatric ECGs; (2) “ECG Shifts” where students spend 4 hours reviewing all ECGs performed at triage and present the clinical history and ECG interpretation to an emergency physician; (3) observation in the Cardiac Catheterization Lab; (4) participate in two cardiology ECG noon conferences designed for cardiology fellows; (5) self-study. Mini-lectures are given by emergency physicians, pediatric emergency fellows and emergency medicine residents. The course is offered six times per year with a maximum of 6-8 students in each session.

**Impact/Effectiveness:** Over the course of one year, 40 medical students completed the Clinical ECG Interpretation Course and gave the following average ratings on a scale of 1-5: Feedback 4.30, Active Learning 4.90, Individualized 4.65 and Relevant 4.98. The elective is highly coveted. The course has been 100% filled with at least one person on the waitlist for each session at all times. We have developed a popular and effective ECG elective run completely by emergency physicians.

**Table 1.** A list of medical student milestones assessed during an expert educator shift.

Milestone description
1. Recognizes abnormal vital signs.
2. Recognizes when a patient is unstable requiring immediate intervention.
4. Performs and communicates a reliable, comprehensive history and physical exam.
5. Performs and communicates a focused H&P which effectively addresses the chief complaint and urgent patient issues.
10. Constructs a list of potential diagnoses based on chief complaint and initial assessment.
11. Formulates basic diagnostic and therapeutic plans based on a differential diagnosis.
15. Establishes rapport with and demonstrates empathy toward patients and their families.
18. Demonstrates behavior that conveys caring, honesty, patient confidentiality, genuine interest and tolerance when interacting with a diverse population of patients and families.
19. Demonstrates basic professional responsibilities such as timely reporting for duty, appropriate dress, conference attendance, and timely completion of clerkship documents.
21. Effectively listens and communicates with patients and their families.

H&P, history and physical