Emergency Medicine Clerkship Assessment Through Simulation

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Rationale

- Improving the care of undifferentiated critically-ill patients is a primary goal for any Emergency Medicine (EM) clerkship.
- In the Emergency Department (ED), however, students are rarely (if ever) allowed to manage critically-ill patients independently, and many critical conditions are uncommon.
- In addition, College-wide Assessment (CWA) wants clerkship PBAs (performance based assessment) to be designed to assess SCRIPT competencies (service, care of patients, rationality, integration, professionalism and transformation) not well assessed by other methods.
- A simulated setting therefore offers several advantages:
  - A safe environment for novice learners to hone their skills without putting patients at risk.
  - Exposure for all students to less common conditions.
  - A consistent experience allowing more objective assessment of student performance.
  - Direct video observation to enhance feedback.

Description of Curriculum

We envision having students taking the EM Clerkship travel to the Sechia Center mid-way through their rotation for a half-day session which might include any or all of the following:
- Standardized patient encounters
- Immersive high-fidelity manakin encounters
- Emergency procedural task training
- Computer-screen-based simulation

These modalities will be used to assess students’ ability to manage the critical chief complaints outlined in the curriculum objectives.

The ten critical chief complaints listed in the model curriculum are as follows: abdominal pain, altered mental status, cardiac arrest, chest pain, gastrointestinal bleeding, headache, poisoning, respiratory distress, shock, trauma. The table below demonstrates how one of these chief complaints could be mapped to MSU-CHM SCRIPT competencies.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Procedure</th>
<th>Use of Evidence in Patient Care</th>
<th>Team Skills</th>
<th>Challenging Interventions</th>
<th>Response to Feedback</th>
<th>Development of Personal Learning Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock</td>
<td>-Altered mental status creates need to seek alternative causes for HR</td>
<td>-Intensive fluid administration in child using simulator</td>
<td>-Placement of central line on simulator</td>
<td>-Patient presenting in shock/use of epi protocol</td>
<td>-Utilizing nurse and other team members to engage patient effectively</td>
<td>-Calling for help</td>
</tr>
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Similarly, this could be used as a template to bring similar curricular innovations to other clerkships. Using General Surgery as an example...

Curriculum Objectives

A model 4th year EM Clerkship curriculum has been developed by the Clerkship Directors in Emergency Medicine (CDEM), an academy of the Society for Academic Emergency Medicine.(1) This curriculum asserts that “The ability to develop risk-stratified (worst-case scenario) differential diagnoses based on a patient’s chief complaint should be part of the armamentarium of all physicians.” It goes on to identify ten critical chief complaints, as well as numerous associated diagnoses that should be considered when patients present with one of those complaints. Our project aims to map these complaints and diagnoses into the MSU-CHM script competency blueprint.

This fits well with CWAs broader goals regarding the use of PBAs to assess SCRIPT competencies. We want students not merely to “know how,” but to “show how.”

Resources and Faculty Development

- The CHM Simulation Center offers the resources necessary to provide a rich learning and assessment environment.
- The Department of Emergency Medicine has the capability of providing the following resources as well:
  - Clinical expertise for developing content
  - Faculty supervision and execution of monthly mid-clerkship assessments
  - Didactic teaching prior to and during these events

Discussion

We believe that this project will integrate well with CWA’s overall plan to use PBAs to assess SCRIPT competencies not readily evaluated using other methods. CWA has set the goal of having clerkship PBAs follow a general “blueprint” with clerkship specific case/exercise choices made within that blueprint. This will enable aggregation of data across clerkships to better inform necessary curricular change.

CWA plans to assist the EM clerkships in the development of this program.

We believe that this project can also serve as a template for expansion of similar innovative simulated experiences for other clerkships as well, and can also be integrated with college-wide assessment’s ‘Basic Blueprint for Clerkship Performance Based Assessment.