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20 (O-D6) CP-"R" You Ready for Residency

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Objectives: The use of simulation to assess medical student competency of the AAMC Core Entrustable Professional Activity (EPA) 12: demonstrating competency in performing core procedures in providing basic patient care.

Background: EPAs are standards established by the AAMC, with the goal to identify competencies that medical students must meet prior to their initiation into residency. EPA 12 involves the demonstration of competencies in key patient care procedures, including cardiopulmonary resuscitation (CPR) and bag and valve mask ventilation. There is a paucity of studies on how to evaluate medical student competencies, especially in regard to EPA 12. This project evaluates the utility of high-fidelity simulation as a standardizable assessment tool for EPA 12 in medical student education via its use within a transition to residency program.

Methods: 62 fourth-year medical students received a lecture on Advanced Cardiac Life Support (ACLS) and then participated in a simulated case of a patient with multiple comorbidities who initially presented with chest pain and was found to have a ST-elevation myocardial infarction that deteriorated into ventricular fibrillation requiring ACLS management. Evaluators observed groups of students for performance of critical actions, such as performing the technical skills of CPR and bag-mask ventilation (PC1) and communication with the patient's family (PC7, ICS6, P6, PPD7, PPD1). A post transition-to- residency course survey was conducted to assess student confidence.

Results: Upon review of the date, 69.6% of the participants performed CPR technical skills adequately after a standardized lecture. After a debrief and individualized procedural teaching, 82.8% of the participants felt comfortable performing CPR.

Conclusion: High-fidelity simulation is an effective tool to measure a student's ability within the EPA 12 framework. By utilizing checklists with critical actions, we were able to effectively quantify team performance during a resuscitation. By interpreting the results of this checklist in real time, we were able to tailor the procedural stations portion of the course to match the students' needs. This has a high relevance to transition-to-residency courses that are typically run prior to students starting their emergency medicine residencies. Future studies can be conducted to further evaluate learner readiness for residency using this modality.

EPA 12 Checklist

Procedures to be assessed in this simulation:
- **Basic CPR**
- **Bag-mask ventilation**

PC1: Demonstrate technical skills required for the procedure
- Demonstrates necessary preparation for performance of procedures
- Correctly performs procedure on multiple occasions over time

	Yes	No
CPR		
Does the team identify that the patient requires initiation of CPR?		
Does the team use 2 rescuer CPR?		
Does the team use 15:2 compression to breath ratio?		
Does the team switch roles every 2 minutes?		
Does the team have depth of compression at least ⅓ of the depth of the chest or around 2 inches?		
Does the team place the defibrillator pads on the patient?		
Bag Valve Mask		
Does the team apply jaw-thrust maneuver to open the airway?		

PC1: Understand and explain the anatomy, physiology, indications, contraindications, risks, benefits, alternatives, and potential complications of the procedure
- Demonstrates and applies working knowledge of essential anatomy, physiology, indications, contraindications, risks, benefits, and alternatives for each procedure
- Knows and takes steps to mitigate complications of procedures

	Yes	No

Figure 1. Checklist for Critical Actions to Assess EPA 12