

UC Irvine

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

Title

Intubations, Central Lines and EKGs, Oh My: Competency Based Education in Emergency Medicine Residency Procedures

Permalink

<https://escholarship.org/uc/item/0zq7f9cf>

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 26(3.1)

ISSN

1936-900X

Authors

Mitchell, Christopher
Schlicksup, Kevin

Publication Date

2025-06-21

DOI

10.5811/westjem.48731

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Females (M= 3.52 vs 3.63; SD=0.46 vs 0.41; p=0.02) and between URM and Non-URM (M=3.41, 3.6; SD=0.43, 0.44; p=0.003). After the committee's formation, no statistically significant GP differences were found between Males and Females, URM Male and Non-URM Male, URM Male and URM Female. A difference persisted for overall URM and Non-URM (M=3.41, 3.58; SD=0.44, 0.43; p=0.003) as well as a newly emerging difference between URM Females and Non-URM Females (M=3.41 vs 3.60; SD=0.44 vs 0.42 p=0.007).

Conclusions: Grading committees have promise as part of an overall strategy to address assessment inequities on a fourth-year EM clerkship. More study is needed to discover how confounders affect the committee's impact.

32 Intubations, Central Lines and EKGs, Oh My: Competency Based Education in Emergency Medicine Residency Procedures

Christopher Mitchell, Kevin Schlicksup

Introduction: Emergency Medicine (EM) training requires consistent proficiency in essential procedures. Competency-based education (CBE) frameworks address the variability in procedural exposure that residents face during training. Research shows gaps in procedural experience, with Hayden and Panacek (1999) noting the need for standardized skill assessments across programs to ensure quality training. Simulation-based remediation, as outlined by Nadir et al. (2019), bridges skill gaps, while Antonoff et al. (2012) highlight the effectiveness of preparatory CBE courses in procedural skill acquisition. At Darnall Army Medical Center, our EM residency program employs a blend of simulation, cadaver labs, and structured checklists to address these needs, closing competency gaps and ensuring readiness.

Objective: Our program aims to:

- Ensure procedural proficiency through structured testing across training stages.

- Facilitate skill retention with progressive, interval-based assessments.

- Identify skill deficits early, offering remediation through simulation and cadaver-based practice.

- Promote self-reflection, reinforcing procedural mastery.

Curriculum Design: Our CBE curriculum combines simulation, cadaver-based labs, and checklist-based evaluations. Interns are checked off on airway management and intubation, while second-years undergo assessments for chest tube and central line placements. EKG interpretation and ultrasound competency assessments begin in the intern year. Required resources include cadaver specimens, simulation equipment, and standardized checklists, with oversight by faculty and senior residents. We identified a "proximity bias," as testing occurs soon after training,

potentially affecting long-term retention. In response, we are considering additional mid-year and end-of-year check-offs to reinforce retention.

Impact: Our program has led to high success rates in check-offs, with about 70% of residents passing EKG interpretation on their first attempt. 100% of second year residents successfully completed their skills checkoffs. This model contributes broadly to GME by demonstrating how structured, multi-modal CBE frameworks enhance procedural readiness. Future evaluations will monitor long-term skill retention, adapting the program to meet evolving EM training needs.

33 Implementation of Cost Effective Care Education in an EM Residency Curriculum: A Multimodal Approach

Adam Roussas, Sean Dyer, Tarlan Hedayati

Introduction: The ability to provide cost effective care is an ACGME core competency and reflected upon the ACGME annual survey. Yet, there are no best practices on how to incorporate this into residency education.

Educational Objectives: To increase awareness of the cost of labs and imaging for common ED complaints and the economic and financial systems that support ED care.

Curricular Design: We utilized a 3-pronged approach with case based learning, academic lectures, and on shift reference materials. First, we utilized a pre-existing small group, case-based clinical curriculum and created tables of the out-of-pocket costs of all possible ED testing and treatment related to cases on syncope, bronchiolitis, and low back pain. Instructors were given standardized guidance to ask residents to estimate costs of the visit and then compare their estimates with actual costs provided in the tables and engage in discussion regarding the cost. Three lectures were also given over the course of the academic year on topics related to ED economics, billing, and hospital financial services. Lastly, a reference sheet of the cost of common ED orders was made available in our clinical departments.

Impact/Effectiveness: Residents participating in cases were given pre-post surveys. After participating in the case session, 100% of residents indicated they had an improved understanding of the cost of care and 80% indicated they had improved confidence in making cost effective choices. 100% of residents indicated that seeing the actual costs of items was "very helpful" on a Likert scale. The year following implementation, our department's ACGME survey data showed an increase in resident's perception of being taught cost effective care from 67% to 81%. For faculty, this number increased from 77% to 100%. Learners further considered lectures and departmental reference materials valuable in their education of how to deliver cost effective care