UC Irvine

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

Title

Are First-Year Emergency Medicine Residents Still Behind on Level 1 Care-Based Milestones?

Permalink

https://escholarship.org/uc/item/3kn6f0fm

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 24(3.1)

ISSN

1936-900X

Authors

Cueva, Julie
MacCoaghy, Lindsay
Alexeeva, Madeleine
et al.

Publication Date
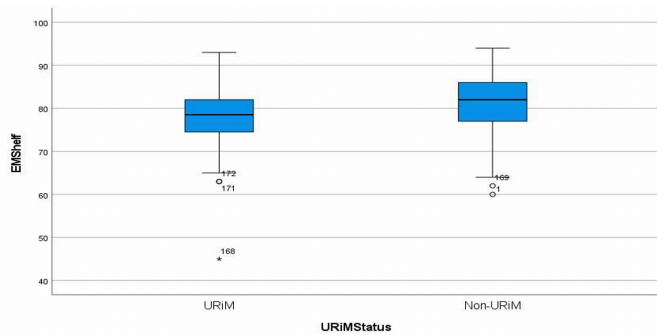
2023

DOI

10.5811/westjem.60997

Figure 2. Combined (GY22 and GY21) EM Shelf score versus URiM status.

Conclusions: There was a statistically significant difference with respect to EM NBME Subject Exam score, which showed that URiM students performed lower than non-URiM; however, there was no statistically significant difference in clinical performance. Clerkship grade differences are mediated by the difference in exam score and raise questions on how to mediate equity concerns around standardized tests in clerkship grade decisions.

6 Applied Mathematics to Predict the Progression of Emergency Medicine Resident Productivity

Matthew Singh, J. Adam Oostema

Background: Throughout training, an emergency medicine (EM) resident is required to expand efficiency and productivity to ensure safe practice after graduation. Multitasking is one of the 22 ACGME EM milestones and is often measured through evaluations and observation. Providing quantitative patient per hour (PPH) data and efficiency projections to both residents and residency administration could improve a resident experience and training in many ways.

Objectives: Our study was designed to analyze various throughput metrics and productivity trends utilizing applied mathematics and a robust data set. The goals of our study were to define the curve of resident PPH over time, adjust for relevant confounders, and analyze additional efficiency metrics related to throughput.

Methods: This analysis used a retrospective, observational design in a single, urban, tertiary care center ED that sees approximately 110,000 adult patients per year from July 1st, 2019 to December 31st, 2021. A total of 49 residents from an ACGME accredited 3-year residency were included in the analysis. Patients under the age 18 were excluded. Data was collected using a secure data vendor and an exponential regression model was created to assess resident PPH data. Additional models were created

accounting for patient covariates such as triage acuity and geriatric populations.

Results: A total of 79,232 patients were analyzed over 30 months. Using an exponential equation and adjusting for patient covariants, median PPH starts at 0.898 and ends at 1.425 PPH. The median PPH by PGY year were 1.14 for PGY1, 1.38 for PGY2 and 1.41 for PGY3. Additional models were created to analyze a resident's progression in other efficiency metrics such as door to decision time.

Conclusion: Productivity metrics such as PPH data are an essential part of working in an emergency department. Our study shows that residents improve with PPH over three years but tend to plateau in the second year.

Table 1. Median PPH by PGY year.

Residents	49
Months	30
Median PPH	
PGY1	1.14
PGY2	1.38
PGY3	1.41

7 Are First-Year Emergency Medicine Residents Still Behind on Level 1 Care-Based Milestones?

Julie Cueva, Lindsay MacCoaghy, Madeleine Alexeeva, Peter Moffett, Nathan Stuempfig

Background: According to the ACGME, Level 1 is described as what is "expected of an incoming resident." A previous study in 2015 was published showing that less than 75% of PGY-1 residents had achieved Level 1 on care-based milestones in the ED. With Milestones 2.0 introduced in 2021 and the impact of the COVID pandemic on UME unknown, we chose to revisit these milestone assessments.

Objectives: To determine what percentage of incoming PGY1 residents have achieved a level 1 as assessed by faculty and themselves for patient care- based milestones (PC 1-7) and to see if there has been an improvement when compared to this previous study.

Methods: Incoming PGY1 residents from 5 collaborating EM residency programs across the United States were assessed by faculty and themselves while on shift during the first month of residency. All were asked to determine whether the resident consistently demonstrated level 1 skills for 9 ED patient care-based sub-competencies. Data were then de-identified and combined between programs. Data were analyzed to determine what

percentage of residents had achieved a Level 1 based on ACGME milestone anchors.

Results: Forty-five residents from 5 programs were included. The percentage who received Level 1 for each milestone ranged from 33% to 83%. Patient care 5-pharmacotherapy was the only milestone where a majority of residents did not reach a level 1 (33%). Over 75% reached level 1 consistently for PC1,2,4,6 and 7. Self- evaluations ranged from 24-89% with only PC1 (89%) and PC6 (80%) being higher than faculty evaluations.

Conclusions: The majority of incoming pgy1 residents reached a level 1 across patient care milestones. These values trend higher than the previous study. In contrast to the previous study, residents scored themselves lower in all but two milestones when compared to faculty assessments.

8 Better Together: A Multi-Stakeholder Approach to Developing Specialty-wide Entrustable Professional Activities for Emergency Medicine

Holly Caretta-Weyer, Stefanie Sebok-Syer

Background: Entrustable Professional Activities (EPAs) are widely used as a framework for assessment. The variability in Emergency Medicine (EM) programs and training settings, however, make it difficult to develop EPAs that are designed to meet the needs of the specialty as a whole. Furthermore, incorporating the perspectives of multiple stakeholders (i.e., supervisors, trainees, and patients) in the development of EPAs is also complex.

Objective: We aimed to define a shared vision amongst all stakeholders in the development of EPAs for EM training.

Method: In an effort to tackle these challenges, we assembled an advisory board of 25 EM faculty to draft and reach consensus on a final list of EPAs using Delphi methodology; consensus was set at 80% over three rounds of voting. These EPAs were further refined based on feedback collated in focus groups from residents (3 groups, 9 participants) and patients (1 group, 8 participants). Data were analyzed using thematic analysis.

Results: 22 EPAs were adopted for EM residency training. The group additionally wrote an EM-specific supervisory scale to represent the unique constant presence of EM faculty and how autonomy is progressively awarded within the specialty. The resident focus groups highlighted differences in the priority of EPAs as well as when these should be achieved throughout residency when compared to faculty. All focus groups described differences in terms of how patients "fit" within the EPAs.

Conclusion: These 22 EPAs create a unified set of expectations for EM residents from the perspective of faculty. Incorporating residents and patients as key stakeholders ensures optimal alignment of priorities and language within the EPAs across all affected by their implementation. It also situates patients as a priority within the assessment of these EPAs. As these EPAs are enacted, all stakeholders must be invested and engaged in the evaluation of their use for assessment both for and of learning.

9 Bounce Backs Quality Improvement Projects Are of Low Yield and Often Lack Meaningful Teaching Points

Brian Walsh, Frederick Fiesseler, Cosimo Laterza

Background: Quality improvement (QI) projects are an important part of EM resident education. Bounce back chart reviews are presumed to be beneficial.

Objective: We sought to classify the likely etiology of bounce back patients in an EM training program in order to determine what lessons can be learned from this project.

Methods: A retrospective observational study at a suburban teaching hospital with 100,000 patients annually. Study period: July 2019 through June 2020. Inclusion criteria: All patients seen by a resident who had a 72-hour return visit and a disposition of "admission" on the second visit. Exclusion: Patients admitted/observed on initial ED visit. Charts were obtained via the EMR. EM residents (PGY1-PGY3) performed chart reviews in both a closed and open questionnaire. Residents were asked to classify the underlying reason for the bounce back as being one of the following: decision making, charting, communication, system issue, lack of oversight, or no issue. Space was further left for narrative.

Results: 2.9% of all ED patients returned within 72 hours with an admission rate of 29%. A total of 261 bounce back patients were included in the analysis. The mean age of included patients was 44 (IQR 22 to 65), 54% were female, and 20% were pediatrics ($</=18$). The underlying reason for the return was determined to be as follows: No issue 79%, decision making 10%, charting 0.3%, communication 5%, system issue 5%, lack of oversight 1%. When asked if there were specific care issues, only 9% (n=24) reported "yes." Of those with a narrative discussing the reason for bounce back, the following were listed: inappropriate/lack of testing 33%, consultant issues 21%, treatment issues 17%, physical exam problems 8%, left without being seen 8%, and unable to be determined 13%.

Conclusion: Patients seen by residents bounce back infrequently. The majority lack a specific reason for bouncing back and lack specific teaching points for the bounce back.