Title

Analysis of Emergency Medicine Clerkship Grades by Identification as URiM vs. non-URiM

Authors

Walsh, Kevin
House, Jospeh
Hopson, Laura
et al.

scores for the graduating class of 2019 were above the mean in all but 9 categories, overall (15%). Three content areas were also underrepresented in the didactic curriculum as well.

Conclusions: This needs assessment of the curriculum reveals that, when compared to the ABEM blueprint, a significant number of core content areas were underrepresented in the curriculum, with two being almost absent. The content areas identified represent an area in which the didactic curriculum can be improved to remain in accordance with published guidelines.

4 A Snapshot of Exam Usage in Emergency Medicine Clerkships

William Alley, Iltifat Husain, David Story

Background: Emergency Medicine (EM) clerkships often use a written exam to assess the knowledge gained over the course of an EM rotation. Clerkship Directors (CDs) may choose the NBME EM Advanced Clinical Exam (ACE), the SAEM M4 exam, which has two versions, or locally developed exams. There is little consensus on their optimal usage.

Objective: This survey-based study was designed to collect data regarding the use of common available EM exams during clerkships.

Methods: The authors designed a cross-sectional observational survey to collect data from EM CDs on exam utilization in clerkships. The survey population comprised the list-serve of the academy of CDEM on the SAEM website and a manual search of the EMRA Match website. 87 programs (42% response rate) completed the survey between August 2019 and February 2021. Data obtained include clerkship characteristics, exam utilized, weight of the exam relative to the overall grade, and testing alternatives if the preferred exam was previously taken.

Results: Of the 87 responses, most (82%) were completed by a CD. 53% of institutions require an EM rotation, of which 52% occur in the 4th year, 26% in the 3rd, and 22% occur in either. Students are tested in 74% of required EM clerkships and 69% of EM electives. In required rotations, 57% use the NBME EM ACE, while 51% of EM electives use the SAEM M4 Exam. A majority of programs (57%) weigh the exam score at 11-30% of the final grade. Data for extramural rotations mirrors that of EM electives.

Conclusion: This survey elucidates exam usage among EM clerkships. An EM clerkship is required at a majority of our sample, with a significant majority using an exam to evaluate medical knowledge, and while national EM exams are frequently used, there are several programs that use departmental exams, and the weight of the exam score relative to the final grade varies widely. Further scholarship on the best use of these exams to provide the most reliable assessment is needed.

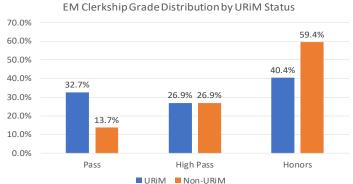# 5 Analysis of Emergency Medicine Clerkship Grades by Identification as URiM vs. non-URiM

Kevin Walsh, Joseph House, Laura Hopson, Elizabeth Holman

Background: Previous studies have identified racial differences in both core clinical clerkship evaluations and components of residency applications, including the MSPE and SLOE. To our knowledge, no study has investigated the impact of Underrepresented in Medicine (URiM) status on EM clerkship grades.
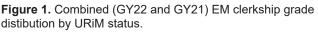
Objectives: To determine whether there is a difference in EM clerkship grades and its components (NBME exam scores and clinical assessments) between URiM and non-URiM medical students.

Methods: This retrospective sample was drawn from University of Michigan Medical School (UMMS) students in Graduation Year (GY) 2021 or 2022 who completed the required EM clerkship. Using a non-parametric Mann-Whitney U-test, we compared the overall composite score on the EM clerkship, the EM NBME Exam score, and clinical assessments between URiM and non-URiM identifying students.

Results: 334 students completed an EM rotation in GY 2021 and 2022. 11 students with "Missing" race data were excluded. 52 (16.1%) identified as URiM while 271 (83.9%) identified as non-URiM. There was a significant difference between URiM and non-URiM groups in performance on NBME Subject Exam (p=0.0001), where the non-URiM group outperformed the URiM group (Non-URiM Mean = 81.2; URiM Mean = 77.6). There was no statistically significant difference for clinical performance (p=0.057). Overall clerkship grades differed, as URiM students had a higher percentage of "Pass" grades (32.7%) and lower percentage of "Honors" grades (40.4%) than non-URiM students (13.7%, 59.4%).

Figure 1. Combined (GY22 and GY21) EM clerkship grade distibution by URiM status.
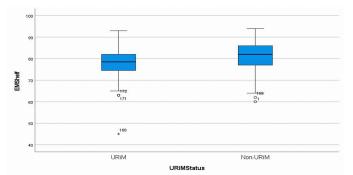
Figure 2. Combined (GY22 and GY21) EM Shelf score versus URiM status.

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