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Western Journal of Emergency Medicine:

Integrating Emergency Care with Population Health

CORD EM

COUNCIL OF RESIDENCY DIRECTORS IN EMERGENCY MEDICINE

Innovation · Collaboration · Scholarship

Council of Residency Directors in Emergency Medicine

Advances in Education Research and Innovations

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Penn State Health Emergency Medicine

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Council of Residency Directors in Emergency Medicine

Advances in Education Research and Innovations

The Council of Residency Directors in Emergency Medicine Advances in Education Research and Innovations Forum presented a peer-reviewed selection of emergency medicine graduate and undergraduate educational research and innovations in both oral and poster formats at CORD Academic Assembly 2023. Emphasis was placed on novel research questions and designs. Innovation submissions included curricular designs, computer applications, faculty development, recruitment processes or similar topics.

The *Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health* would like to thank the Council of Emergency Medicine Residency Directors Board of Directors for helping to make this collaborative special issue possible. CORD abstracts are archived at: http://westjem.com/cord-abstracts and http://escholarship.org/uc/uciem_westjem.

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Best Of Best Research and Innovation Abstracts

1 The Value of a Mentored-Peer Review Program to a Medical Education Journal

Jeffrey Love, Wendy Coates, David Way, Chris Merritt, Anne Messman, Jon Ilgen, Douglas Ander

Background: There is a lack of organized training opportunities for budding scholars to learn how to provide peer-review for scholarly submissions. Journals that often struggle to find sufficient quality reviewers are in an ideal situation to create such a program. The XX developed a novel, mentored peer-review (MPR) program in 2020 to provide an opportunity whereby education fellowship directors could mentor their fellows in reviewing journal submissions.

Objective: The purpose of this study was to compare the quality and turnaround time between traditional reviewers and MPRs with a secondary aim of increasing the available pool of high-quality reviewers. We hypothesized that the program would have significant benefit to the journal.

Methods: This was a prospective, observational study deemed exempt by the XX IRB. From 2020-2022, 24 geographically diverse education fellowships participated in the program. Reviews submitted by the journal's traditional reviewers were compared to those of the MPR cohort. Both groups were asked to complete their reviews within two weeks. The review quality was scored by two editors, blinded to one another's scoring and type of reviewer, using a validated scoring rubric. Data were compared using an independent t-test. Turnaround time from manuscript access to submission of a review was tracked. We also tracked the percentage of reviews provided by MPRs, those recognized for their high-quality and the number of participating fellows who subsequently provided independent reviews.

Results: Table 1 provides data related to the quality and turnaround time, comparing traditional reviews to MPRs. Table 2 reflects additional data trends related to the program.

Conclusions: The MPR program provided higher quality reviews than those of traditional reviewers and increased the high-quality reviewer pool without impacting turn-around time.

Reviewer Type	Number of Reviews	Mean Editorial Score/Standard Deviation
Traditional Reviews	256	3.28 +/-1.04
Mentored Peer-Reviews	83	*4.20 +/-0.79
		Mean Turnaround Time (days)
Traditional Reviews	258	9.86 +/-0.59
Mentored Peer-Reviews	84	10.88 +/-0.79

Table 1. Comparison of editorial scoring of reviews (1-5, 5=excellent) and turnaround time (access to submission) between traditional reviews and those produced from mentioned peer-reviews. *P <0.001 level.

Table 2. Additional data trends by year related to the mentored peer review program.

	2020	2021	2022
Percentage of high-quality review recognition represented by MPRs (Based on editors blinded scoring of manuscripts, 1-5 scale, Avg >4.0)	50.0% (10/20)	35.3% (6/17)	81.0% (17/21)
Participating Fellowship Programs in the MPR Program	14	19	24
Percentage of total reviews represented by MPRs	9.7% (16/165)	29.5% (38/129)	42.1% (32/83)
Prior participants of MPR program who have since served as independent reviewers	0	1	7

2 Impact of Form Changes on Consensus Regarding Competitiveness of Standardized Letters of Evaluation

Morgan Sehdev, Caitlin Schrepel, Sharon Bord, Alexis Pelletier-Bui, Al'ai Alvarez, Nicole Dubosh, Benjamin Schnapp, Yoon Soo Park, Eric Shappell

Background: Work reported at CORD in 2023 showed high faculty consensus regarding the competitiveness of standard letters of evaluation (SLOEs) and evidence that algorithms could predict these ratings with high accuracy using the SLOE template retired in 2022. It is unknown if these findings persist when the new version of the SLOE is used.

Objective: Measure consensus regarding competitiveness of SLOEs using the new format introduced in 2022, assess the ability of algorithms to predict consensus ratings, and compare results to previously reported data.

Methods: Using national data from the new SLOE as a blueprint, we created 50 simulated SLOEs representative of the national distribution. Seven experienced faculty from varied geographic regions ranked these SLOEs in order of competitiveness. Consensus was evaluated using levels of agreement established a priori. Two prediction models were tested to determine their ability to predict faculty consensus rankings: a point-based system derived by a senior author and a linear regression model.

Results: were compared to the prior study which used similar methods but with the previous version of the SLOE. A cutoff of +/- 10% was set as the threshold for a meaningful increase/decrease in agreement or prediction. Results Faculty consensus regarding SLOE competitiveness was stable to improved across all agreement levels (range: 1-17% increase in consensus). Prediction model performance was also stable with the only change in prediction >10% in the Exact agreement category for both models (+12% agreement in both cases). Predicted ranking correlation with consensus ranking was also stable, within .01 of previously reported levels for both models.

Conclusions: In a national sample of faculty evaluating simulated SLOEs, the degree of consensus regarding competitiveness and the ability of algorithms to predict consensus ranking was stable despite changes to the EM SLOE.

Figure 1A-C. Consensus rankings compared to individual rankings and predicted rankings.

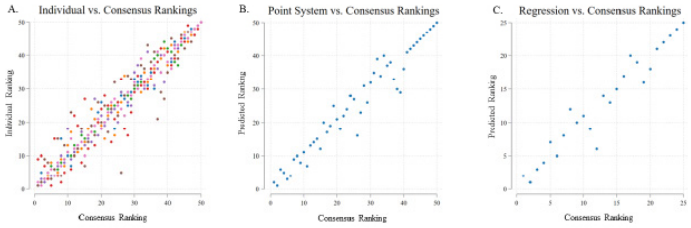


Table 1. Ranking agreement.

	Current Study 2022-2023 SLOE Format			Previous Study 2021-2022 SLOE Format			Difference		
	Consensus: Faculty Ratings	Prediction: Point System	Prediction: Regression	Consensus: Faculty Ratings	Prediction: Point System	Prediction: Regression	Consensus: Faculty Ratings	Prediction: Point System	Prediction: Regression
Exact	22%	24%	32%	21%	12%	20%	1%	12%	12%
Tight	84%	64%	72%	67%	62%	64%	17%	2%	8%
Close	92%	88%	84%	83%	82%	92%	9%	6%	-8%
Loose	97%	92%	92%	93%	90%	96%	4%	2%	-4%
Correlation with consensus	N/A	.97	.97	N/A	.97	.98	N/A	0	-.01

Exact: Percent of rankings where individual/predicted rank is exactly the same as the consensus rank
Tight: Percent of rankings where individual/predicted rank is within ± 4% of consensus rank
Close: Percent of rankings where individual/predicted rank is within ± 8% of consensus rank
Loose: Percent of rankings where individual/predicted rank is within ± 12% of consensus rank

3 Red Light or Green? Did Preference Signals Open Doors for EM applicants in the Match?

Kestrel Reopelle, Erin Hoag, Jonathan Karademos, Peter Tomaselli, Carlos Rodriguez, Dimitri Papanagnou, Jeremiah Ojha

Background: Preference signaling was new in the 2022-23 EM match. While preliminary data has been reported by ERAS, it only includes data extracted from applications. To our knowledge, the literature has not included data collected after the match to examine outcomes related to signaling.

Objective: We hypothesized that all applicants would be more likely to receive interviews at signaled programs (versus non-signaled programs), while competitive applicants would be most likely to match at a signaled program.

Methods: We performed a retrospective cross-sectional study utilizing a convenience sample of applicants who applied to two urban EM residency programs. Applicants were asked to complete a voluntary survey following the 2023 match results.

Results: 427 applicants completed the survey. On average, applicants reported 66.7%(SD 30.9%) of signals resulted in interview invites, compared to 49%(SD 47.3%) for non-signaled programs – a difference of 17.1%(95% CI: 12.1%, 22.1%, p <0.0001). Respondents ranking themselves in the top third of applicants (by perceived competitiveness) received interviews from an average of 79.1%(SD 24.8%) of signaled programs, compared to 59.9%(SD 31.1%) for the middle third and 41.2%(SD 30.4%) for the lower third (table 1)– a significant difference (F =37.5, p <0.0001). 30.3% of the top third group, 41.1% of the middle, and 17.6% of the lower matched a signaled program (table 2)– indicating a relationship between perceived competitiveness and matching a signaled program (X2 =8.57, p =0.014).

Conclusions: Applicants were more likely to receive interviews from signaled programs and perceived competitiveness correlated with interview rates (suggesting some validity in applicant ability to self-assign competitiveness). Applicants who identified as middle third were most likely to match a signaled program. Limitations include retrospective data collection, self-reported data, and the 2023 match climate (i.e., fewer applicants than prior years).

Table 1. Applicant self-assignment by perceived strength of application and percentage of signals sent that resulted in interview invitations.

		Frequency (N = 427)	Percent (100%)	
Perceived competitiveness of applicant:	Top 1/3 of applicants	186	43.6%	
	Middle 1/3 of applicants	189	44.3%	
	Lower 1/3 of applicants	45	10.5%	
	Missing	7	1.6%	
		N	Mean	SD
Percent of signaled programs that turned into interviews for applicants:	Top 1/3 of applicants	178	79.1%	24.8%
	Middle 1/3 of applicants	179	59.9%	31.1%
	Lower 1/3 of applicants	38	41.2%	30.4%

Table 2. Percentage of applicants that matched at a signaled program, categorized by self-reported perceived competitiveness.

Matched with signaled program	Self-reported competitiveness			
	Lower 1/3 of applicants	Middle 1/3 of applicants	Top 1/3 of applicants	Total
Yes	6 (17.6%)	65 (41.1%)	47 (30.3%)	118 (34%)
No	28 (82.4%)	93 (58.9%)	108 (69.7%)	229 (66%)
Total	34 (100%)	158 (100%)	155 (100%)	347 (100%)

4 The Effect of Hospital Boarding on Emergency Medicine Resident Productivity

Peter Moffett, Laura Barrera, Grace Hickam, Scott Huange, Hannah Kissel-Smith, Nathan Lewis, Stephen Miller, Joel Moll, Al Best

Background: Emergency department boarding has escalated to a crisis; impacting patient care, hospital finances, physician burnout, and contributing to error. No prior study has studied the effects of boarding on resident productivity. If boarding reduces productivity, it may have negative educational impacts.

Objectives: We investigate the effect of boarding on resident productivity as measured by patients per hour and hypothesize that increased boarding leads to decreased productivity.

Methods: This was a retrospective observational study at a tertiary urban academic Level I trauma center from 2017 to 2021 with a 3-year emergency medicine residency of 10 to 12 residents per year and annual volumes of 80,000 to 101,000. Boarding was defined as the time between an admission order and the patient leaving the ED. A multivariable mixed model was created with fixed covariates for year, month, day of week, resident experience (total month in residency), shift duration, total daily ED patients, and with residents as repeated measures. The effect of boarding was estimated after covarying out all other factors.

Results: All variables included in the model were significantly associated with changes in productivity (Table 1). Resident experience has the largest effect such that for each month of residency experience, a resident adds 0.012 patients per hour (95%CI 0.010-0.014). Isolating the effect of boarding demonstrated that for every additional 100 hours of boarding, a resident's productivity decreases by 0.022 patients per hour (95%CI 0.016-0.028). In the study the median daily boarding was 261 hours, and if this were eliminated (assuming a resident completes 100, 10-hour shifts annually), a resident could be expected to see 57.4 more patients a year (95%CI 41.8-73.1).

Table 1. Multiple regression results predicting new patients per hour per resident for each variable.

Effect	Estimated New Patients per Hour	Standard Error	95% CI	
Intercept	1.0957	0.0173	1.0616	to 1.1297
Year				
2017	0.1501	0.0122	0.1262	to 0.1740
2018	0.0837	0.0117	0.0606	to 0.1065
2019	[reference]			
2020	-0.0641	0.0137	-0.0909	to -0.0373
2021	-0.1682	0.0156	-0.1987	to -0.1377
Month				
1	0.0635	0.0172	0.0296	to 0.0972
2	0.0776	0.0182	0.0420	to 0.1133
3	0.0496	0.0181	0.0144	to 0.0852
4	0.0840	0.0197	0.0453	to 0.1227
5	0.0750	0.0196	0.0366	to 0.1133
6	0.0585	0.0201	0.0191	to 0.0979
7	-0.0077	0.0219	-0.0507	to 0.0353
8	0.0550	0.0185	0.0188	to 0.0912
9	0.0654	0.0187	0.0288	to 0.1021
10	0.0487	0.0184	0.0127	to 0.0847
11	0.0486	0.0199	0.0095	to 0.0876
12	[reference]			
Day of the Week				
Sunday	0.0587	0.0118	0.0357	to 0.0818
Monday	-0.0312	0.0118	-0.0542	to -0.0082
Tuesday	0.0122	0.0110	-0.0094	to 0.0338
Wednesday	0.1094	0.0123	0.0854	to 0.1334
Thursday	[reference]			
Friday	0.0475	0.0109	0.0261	to 0.0688
Saturday	0.1182	0.0120	0.0946	to 0.1417
Resident months (linear) *	0.0122	0.0010	0.0101	to 0.0142
(quadratic)	-0.0011	0.0000	-0.0012	to -0.0010
(cubic)	0.00003	0.00001	0.00002	to 0.00004
Total Patients Per Day (per 100 patients) *	0.4021	0.0165	0.3697	to 0.4344
Shift duration*	-0.1277	0.0070	-0.1413	to -0.1140
Boarded (per 100 hours) *	-0.0218	0.0032	-0.0280	to -0.0156

The mixed-model also included resident as a repeated-effect with an AR(1) covariance structure.
* Continuous covariates were referenced to the median value. Median resident month=18, total patients per day/100=1.77, shift duration=10 hours, boarded hours/100=2.61

Conclusions: All factors had a significant impact on resident productivity with boarding having a negative impact. Further study is warranted to understand how to mitigate any educational impact.

5 Comparing Scenario-Based Simulation Education to Escape Room Simulation Education with Emergency Medicine Residents

Aubrey Bethel, Sara Dimeo, Vivienne Ng

Background: Gamified education is a modality being incorporated into medical education. Educators have utilized escape room simulation to teach medical concepts in the sim environment by modifying clinical scenarios into clues and activities. No reported study compares the efficacy of escape room simulation (ERS) to scenario-based simulation (SBS) education when teaching medical concepts.

Objectives: We compare SBS to ERS education, hypothesizing that ERS teaches the same medical concepts compared to traditional SBS, while reducing anxiety.

Methods: This is a randomized controlled trial of emergency medicine (EM) residents in a single institution with no exclusion criteria. A peer-reviewed pediatric EM case was modified into a SBS and ERS. Subjects were consented and randomized to the two groups. Primary outcome: acquisition of medical concepts encountered in the sim case, assessed by improvement on a pre- and post-sim quiz. To prevent topic anticipation, the quiz had 15 questions, of which 5 related to the case. Secondary outcome: pre- and post-sim self-reported anxiety levels measured on a 100-point visual analog scale (VAS). Descriptive data and difference of means by two-tailed t test are reported.

Results: 40 residents (of 80 eligible) were enrolled with no loss to follow up. 21 subjects were randomized to SBS and 19 to ERS. Both groups showed improvement on the post-sim quiz, with SBS scores increasing from 73% to 80% (p= 0.016) and ERS from 71% to 79% (p=0.004). There was no statistical difference between the two groups (P=0.665). SBS anxiety levels slightly increased (VAS 50.7 to 52.4) compared to decreased ERS anxiety levels (VAS 52.1 to 31.1), statistically significant at p=0.002.

Conclusions: When comparing SBS to ERS, knowledge acquisition was achieved. Anxiety levels were lower in ERS subjects compared to SBS subjects. Limitations include small sample size and self-report. ERS can teach concepts while improving anxiety in the sim environment.

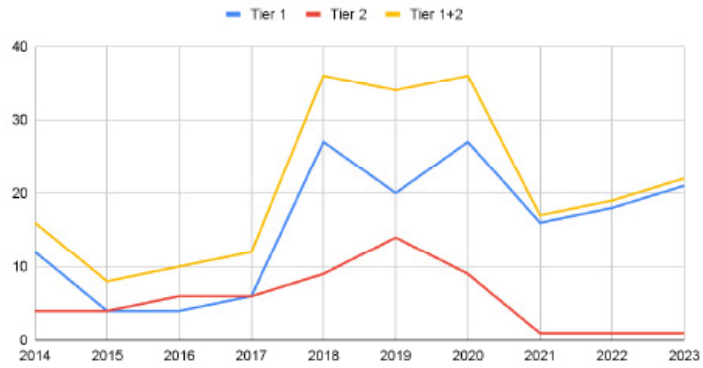


Figure 1. Research projects by tier 2014-2023.

6 Optimizing Scholarly Impact: Implementing the Scholarly Oversight Committee for Elevated Resident Output

Megan Wudkewych, Danielle Turner-Lawrence, Brett Todd

Background/Objectives: Providing an organized approach to resident scholarship is imperative to fostering academic development of residents, cultivating skills for lifelong learning, and contributing to medical knowledge. However, there is no standardized method for oversight and advancement of resident research and scholarship. We aim to introduce a strategy for residency programs to oversee and elevate EM resident scholarship.

Curricular Design: Recognizing the necessity for an organized system to enhance scholarly output, we created a Scholarly Oversight Committee (SOC). The SOC consists of a committee leader, director of EM research, and supporting faculty, who oversee research projects through quarterly meetings. These sessions involve reviewing project progress, identifying potential roadblocks, and providing targeted feedback. The SOC intervenes when residents face challenges in meeting benchmarks, conducts structured meetings with faculty advisors, and formulates tiered guidelines to assure all projects meet minimum standards. The success of the program depends on actively involved faculty, regular updates, and the establishment of clearly defined tiers. Initially, project tracking presented a challenge, leading to the creation of a dynamic living spreadsheet in response, as well as the initiation of a research forum to support a culture of scholarship.

Impact: The success of this innovation was primarily gauged by monitoring the rise in higher-level scholarly output standardized by the tiers and the increase in national or regional presentations. This has led to an overall improvement in the quality of scholarly projects, with a 237% surge in the number of projects published or presented at national or regional conferences per year despite the impact of the pandemic in 2021 (see graph 1). In conclusion, the SOC model, when combined with interested faculty, class-based deadlines, and tiered guidelines, holds the potential for applicability in many programs.

Figure 1. Residents were given 6 question needs assessment survey before and after documentation course. Followng the course, 90% of residents felt they had adequate training on documentation.

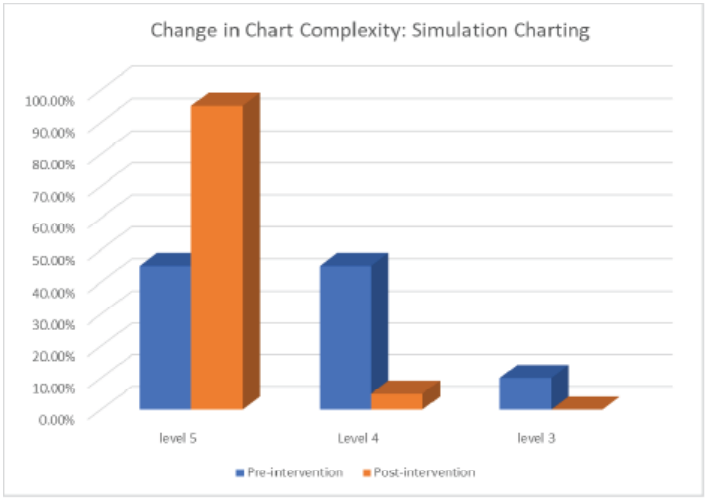


Figure 2. Residents participated in a simulated encounter of a highly complex case and were tasked with documenting to the appropriate coding level, which was a level 5 for both simulations. Prior to the course over 50% of the charts were downcoded from a level 5 to a level 4 compared to only 5% after completion of the course.

7 Enhancing Documentation in Emergency Medicine Resident Education Through Didactics and Simulation: Curriculum Development and Assessment

Jacqueline Dash, Jeremiah Ojha, Michael Buxbaum

Introduction/Background: Accurately documenting patient encounters is a fundamental skill that underpins the

quality of patient care, medical billing, and legal protection for healthcare providers. The education and training surrounding charting and documentation in emergency medicine residency have often been relegated to on-the-job learning, without formal didactic instruction. This deficiency leads to inefficiencies, inconsistencies, and even potential legal vulnerabilities. In response, an innovative curriculum was developed and implemented.

Educational Objectives: The objective of this curriculum is to empower emergency medicine residents with a comprehensive understanding of documentation's critical role in patient care, billing, and legal protection. Through this curriculum, residents gained proficiency in navigating evolving coding guidelines, maximizing relative value units, and implementing best practices to efficiently and accurately document.

Curricular Design: A needs assessment was performed, which showed only 40% of our residents felt they had sufficient training on documentation. Hence, a documentation curriculum was developed which blended didactic lectures with simulated patient encounters. Residents were provided with 6 50-minute lectures, which focused on the requirements for billing, efficiency, and best practices. Residents participated in a simulation case before and after the course, which involved critical care and a medical error. They were required to write a note documenting this case. These notes were evaluated, and feedback was given.

Impact/Effectiveness: A post-intervention survey showed 90% of our residents felt they had sufficient training on documentation. Following completion of the course residents were given another SIM and only 5% of charts were downcoded from a level 5. This curriculum can easily be adopted by other institutions. It was well received by our residents, and it improved their charting competence and confidence.

8 Expanding FOAMed to Voice Activated Artificial Intelligence: Mental Practice of Emergency Medicine Procedures via Alexa

Megan High, Ryan Tabor, Tim Henderson, Ryan McKillip

Background: EM physicians are responsible for performing a variety of life and organ-saving interventions. However, given the infrequency of some high acuity, low occurrence (HALO) procedures, opportunities to hone these skills can be rare. Mental practice (MP), the visualization of a set of actions, has consistently demonstrated a positive impact on performance of medical procedures, but it lacks feedback. Voice activated artificial intelligence (VAAI) (e.g. Alexa, Siri) offers an accessible format for interactive MP.

Objectives: Create an open access VAAI resource to facilitate MP of HALO procedures.

Design: Three experienced EM physicians identified nine HALO procedures via consensus: lateral canthotomy, transvenous pacing, cricothyrotomy, needle cricothyrotomy, pericardiocentesis, resuscitative hysterotomy, thoracotomy, newborn delivery, and cranial burr hole. An Amazon Alexa application was created which guides a user through MP of each procedure. Alexa was selected for its voice interaction features and ability to run on both mobile phones or smart devices. Users select a procedure and then are prompted to visualize the necessary supplies, then the procedure itself and finally potential complications. After each prompt, Alexa allows time for visualization before reading back a script of the appropriate supplies and steps (Figure).

Impact: Since August 2022, use of the application has grown organically, with 16 activations and 65 sessions on mobile (4/65), smart speaker (28/65), or television platforms (26/65). Application performance has been high, with 100% (65/65) appropriate endpoint responses, indicating it has functioned without error. As users grow, a study of its effect on procedure performance is needed. VAAI is an underutilized medium for medical education tools. This project represents a novel format for free open access medical education (FOAMed), and demonstrates an innovative method for enhancing physician proficiency.

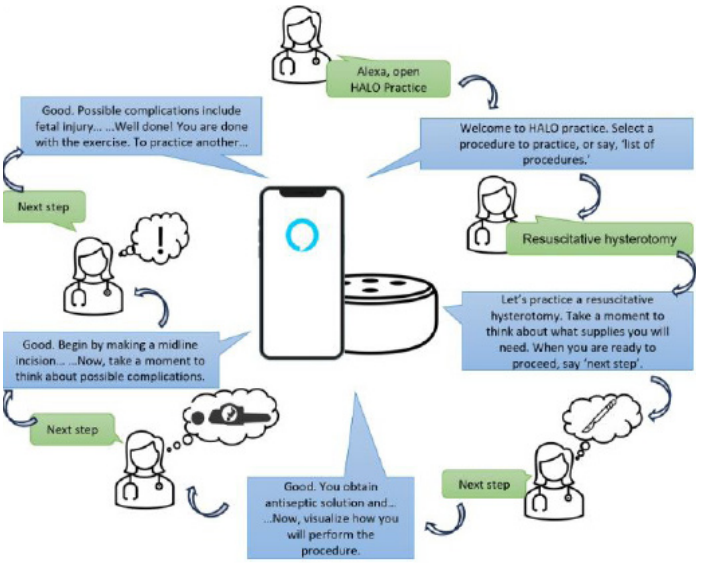


Figure. Example mental practice session. After each prompt, Alexa allows time for visualization before reading back a script of the appropriate supplies and steps.

9 Trauma-Informed Verbal De-escalation Curriculum for Emergency Medicine Residents

Samara Albazzaz, Jeremiah Ojha, Kelly MacKenzie, Jessica Parsons, Erica Harris

Introduction: Use of violent restraints for agitation in the ED contributes to patient morbidity through physical and psychological harm. The process of restraining is also time

and resource consuming. Verbal de-escalation can take 5-10 minutes, is non coercive, and is effective in decreasing patient agitation. Literature exists on best practices of de-escalation, but there is no published formalized training in verbal de-escalation for EM residents.

Educational Objectives: We aimed to create an effective, efficient, trauma-informed curriculum in verbal de-escalation for EM residents.

Curricular Design: We performed a literature review to identify best practices in verbal de-escalation in the ED setting. We assembled a multidisciplinary team to consult on design of our initiative, consisting of an education design specialist, a social worker, and EM faculty and residents. Our curriculum consisted of one 30-minute didactic lecture on verbal de-escalation tools, and one month later, a 30-minute simulation session. The scenario involved a medical resuscitation combined with de-escalation of an agitated parent. A facilitated debrief of the simulation focused on the de-escalation component, further reinforcing the learning points from the didactic lecture.

Impact/Effectiveness: Resident physicians are often the front line in initial attempts at de-escalation however rarely receive formal training on evidence-based techniques in verbal de-escalation. In a post-survey nine months after the curriculum, 95% of surveyed residents reported using the de-escalation tools from the curriculum in the ED, with 68% successfully de-escalating an agitated patient within the last three months. Our curriculum represents a framework for formal training in verbal de-escalation in GME. Our next steps will be a retrospective chart review to evaluate if this training has resulted in reduced restraint use in the ED. We also aim to adapt our curriculum to intern orientation.

10 An Innovative Approach to Addressing Racism, Implicit Bias, and Microaggression (RIM) amongst Physician Trainees

Larissa Fomum-Mugri

Background: Racism, implicit bias, and microaggressions (RIM) occur in healthcare settings on a regular basis and disproportionately affect minority physicians (1,2). Data shows that experienced RIM can lead to increased occurrences of physician burnout, depression, and anxiety (2,3,4). Despite the significant impact of RIM on minority physicians, there is little standardized education within graduate medical education (GME) curricula that addresses RIM amongst physician trainees. The education that currently exists generally lacks interactive and engaging means to address issues of RIM. More formalized and interactive education on RIM will equip physician trainees with the knowledge and tools necessary to mitigate instances of RIM, and has potential to improve interpersonal relationships and resident wellness (5). This project proposes an innovative approach to addressing RIM amongst physician trainees that utilizes simulation and restorative justice practices.

Educational objectives: 1. Utilize didactic teaching and simulation to increase learner understanding and recognition of RIM in clinical practice. 2. Participate in dialogue about RIM-based experiences. 3. Engage in facilitated discourse through restorative justice practices to safely address acts of RIM. Content for the didactic teaching was organized into a powerpoint presentation for emergency medicine and pediatric residents at the University of Chicago. It included concept definitions and content on RIM. Following the presentation, residents were introduced to a simulated encounter of an act of implicit bias. They, then, were introduced to the Triangle Framework to engage in discussion regarding identifying and intervening on witnessed RIM (6). This experience was followed by a restorative justice community circle. Residents completed pre and post surveys with preliminary data reporting increased openness with sharing experiences, increased connectedness among peers, and interest in similar educational sessions.

Research Abstracts

1 Home vs Away Rotation Differences in the Standardized Letters of Evaluation (SLOE) 2.0

Aman Pandey, Cullen Hegarty, Sharon Bord, Kasia Gore, Thomas Beardsley, Sara Krzyzaniak, Sandra Monteiro, Al'ai Alvarez, Teresa Davis, Melissa Parsons, Michael Gottlieb, Alexandra Mannix

Background: The Standardized Letter of Evaluation (SLOE) is important for emergency medicine (EM) resident selection. Prior studies showed biases between some different groups of applicants in the original SLOE. The SLOE was revised recently to create the SLOE 2.0. It's unknown if similar biases exist in home vs away SLOE 2.0s.

Objective: The objective was to look at scoring differences in the SLOE 2.0 for home vs away rotations.

Methods: This was a multi-institution, retrospective, cross-section study looking at SLOE 2.0s from 4-week EM rotations during the 2022-2023 cycle from US medical school applicants that applied to one of the 5 programs in our study. Our exclusions were: duplicates, not written by a faculty group of other qualified person, letter writer wrote <5 SLOEs last year, incomplete data, or subspeciality or OSLOEs. Part A, Part C1, and Part C3 of the SLOE 2.0 were converted to 3-point, 4-point, and 5-point quantitative scales, respectively. We derived SLOE 2.0s' mean scores for Part A, Part B, Part C1, and Part C3 to assess the differences between home vs away SLOEs. We compared the means using a t-test. After Bonferroni correction, p=0.0036 was used for statistical significance.

Results: 1775 applicants (n=3690 SLOEs) were examined. 1216 SLOEs were from students' home institutions; 2368 were from away rotations. This totaled 3584 included SLOEs. 106 SLOEs were excluded due to inability to identify home or away. Table 1 demonstrates the mean scores, standard deviations, and p-values for home vs away rotation SLOEs. Only C3, anticipated rank list (RL) position (p=0.0017) was statistically significant in favor of higher rank for home SLOEs.

Conclusions: This study demonstrated that most of the mean scores on the SLOE 2.0 were not statistically significant between home vs away institutions. The higher scores on the RL questions on home SLOE 2.0s was the only score signifying statistical significance compared to away SLOE 2.0.

Table 1. Mean and standard deviation for each SLOE 2.0 question for home and away rotations.

Question	HOME Mean (SD)	AWAY Mean (SD)	P-Value
A1 Ability to perform a focused history and physical exam (1-3)	2.75 (0.45)	2.72 (0.48)	0.0705
A2 Ability to generate a differential diagnosis (1-3)	2.55 (0.55)	2.52 (0.55)	0.1222
A3 Ability to formulate a plan(1-3)	2.47 (0.55)	2.42 (0.56)	0.0109
A4 Ability to perform common ED procedure (1-3)	2.39 (0.81)	2.38 (0.79)	0.7221
A5 Ability to recognize and manage basic emergent situations (1-3)	2.61 (0.52)	2.56 (0.55)	0.0087
B1 Compassion, sensitivity, and respect towards patients and team members (1-5)	4.30 (0.74)	4.32 (0.72)	0.4355
B2 Receptivity to feedback and ability to incorporate feedback (1-5)	4.27 (0.73)	4.25 (0.76)	0.4498
B3 Dependability, responsibility, initiative, and work ethic (1-5)	4.35 (0.73)	4.34 (0.77)	0.7080
B4 Punctuality, attendance, and preparation for duty (1-5)	4.32 (0.73)	4.34 (0.76)	0.4498
B5 Timeliness and responsiveness in completing administrative tasks (1-5)	4.21 (0.80)	4.20 (0.78)	0.7187
B6 Interpersonal and communication skills with patients and family members. (1-5)	4.31 (0.71)	4.31 (0.73)	0.9709
B7 Interpersonal and communication skills with faculty, residents and healthcare professionals. (1-5)	4.28 (0.78)	4.25 (0.81)	0.2879
C1 Anticipated Guidance (1-4)	3.20 (0.71)	3.16 (0.73)	0.1171
C3 Rank List (0-4)	2.78 (0.89)	2.68 (0.91)	0.0017

SD, standard deviation

2 ChatGPT Editing Effects on Emergency Medicine Residency Personal Statements

Mark Chesebro, Kristen Whitworth, Matthias Barden, Jesse Kellar, Donna Okoli, Christian Kolacki, Barbara Blasko, Matthew Hysell

Background: Use of artificial intelligence (AI) is increasing historically. Potential effects of AI on the emergency medicine residency application process are unknown.

Objective: To determine if reviewers favor personal statements edited by AI.

Methods: We asked AI system ChatGPT to "Edit a personal statement for an emergency medicine program" of ten application essays used by graduated residents. Faculty from six emergency medicine residencies performed blinded review of both original and edited personal statements. Reviewers first recorded which essay they subjectively favored then scored the essays with an objective rubric. This rubric used an anchored one to four scale for domains of clear focus, organization, grammar, creativity/voice, and vividness of reflection such that an essay could maximally score 20 and minimally 4. Chi-squared testing was used to analyze subjective preference, and paired t-test to examine the essays' objective scoring.

Results: Six reviewers averaging 5 years of experience reviewing applications (ranging from 2 through 11 years) reviewed 10 pairs of essays. Overall, in 4/10 (40%) of essay pairs, reviewers preferred the ChatGPT edited version. In 3/10 (30%) there was no preference, and in 3/10 (30%) reviewers preferred the original version. The ChatGPT version was preferred in reviewers' individual responses in 34/60 (57%) of instances, chi-square p=0.144. Eight out of ten essays received a higher rating using the rubric after ChatGPT editing. The ten essays' rubric scores increased from a mean of 13.0 (SD 1.9) unedited to 14.2 (SD 1.8), p=0.028, CI 0.17 – 2.31, after editing. There was 90% agreement between the subjective and objective analysis of each pair of essays, representing substantial agreement, Cohen's kappa 0.793.

Conclusions: Use of ChatGPT to edit essays did increase their scoring on an objective rubric, however reviewers' subjective review of essays was less impacted by ChatGPT editing.

3 EM Resident Clinical and Communication Performance on Simulated Resuscitations is not Correlated when Stratified by Gender

Bryan Kane, Diane Begany, Matthew Cook, Nicole Elliot, Michael Nguyen

Background: Prior papers evaluated multi-source feedback (MSF) and communication of EM residents managing a high-fidelity simulation (sim) case.

Objective: We seek to determine if, based on gender of the team leader, a correlation exists between clinical performance and consultant communication.

Methods: This IRB approved secondary analysis of enrolled EM residents from a PGY 1-4 program reported gender as male or female. Both sims were toxic ingestions. MSF feedback was generated using a Queens Simulation

Assessment Tool (QSAT) from self-evaluation, a junior resident, an EMS provider, nursing, and two EM faculty. In both sims communication to a toxicologist and intensivist were measured using the 5C's model. The summed QSAT and 5C scores were correlated using Pearson's correlation coefficient with Fisher's z transformation; interpreted as weak (<0.3), moderate (0.3-0.7) and strong (>0.7). Significance was set at 0.05. Positive correlation indicates synchronous movement of scores, negative correlation asynchronous movement.

Results: Table 1 presents 32 ACLS sims. There were moderate positive correlations between all MSF and averaged consultant 5Cs [r=0.412, 95% CI (-0.011, 0.710)] in males, and between average faculty QSAT and intensivist 5C [r=0.589, 95% CI (-0.198, 0.914)] in females. The remaining correlations were weak. 34 residents led the PALS sim (Table 2). Surprisingly, there was a moderate negative correlation between the average attending QSAT score and the Intensivist 5C score in males [r=-0.390, 95% CI (-0.697, 0.038)]. The remaining correlations were weak. All correlations in both sims lacked significance.

Table 1. Correlation of QSAT and 5C's Score in adult simulations stratified by resident gender.

QSAT Metric	5C's Metric	Gender	n	Standard Correlation Coefficient (*r*)[a]	Fisher's z Transformed Coefficient (*zr*) (95% CI)[b]	p-value[c]
Average (All Raters)	**Average (Toxicologist & Intensivist)**	**Male**	**22**	**0.412**	**0.438 (-0.011, 0.710)**	**0.0561**
		Female	**8**	**0.103**	**0.103 (-0.649, 0.753)**	**0.8171**
Average (Faculty Only)	Average (Toxicologist & Intensivist)	Male	22	0.190	0.193 (-0.252, 0.566)	0.4014
		Female	8	-0.248	-0.254 (-0.811, 0.553)	0.5708
Average (Attendings Only)	**Toxicologist Only**	**Male**	**22**	**0.178**	**0.180 (-0.263, 0.558)**	**0.4323**
		Female	**10**	**0.056**	**0.056 (-0.595, 0.662)**	**0.8827**
Average (Attendings Only)	Intensivist Only	Male	22	0.067	0.067 (-0.365, 0.475)	0.7693
		Female	8	0.589	0.676 (-0.198, 0.914)	0.1308

[a]4 assessments were missing either the Tox or Int 5C's score, therefore the average score is also missing, which changes the n depending upon the correlation pairing.
[b]Pearson correlation coefficient
[c]Fisher's z transformed Pearson correlation coefficient
[d]p-value corresponds to the Fisher's z transformed correlation coefficient and 95% CI

Conclusions: In this single site cohort, stratified by team lead resident gender, clinical and communication sim performance do not appear correlated. While there were isolated moderate correlations, they were mixed. This suggests that regardless of gender, clinical performance and communication should be independently evaluated.

Table 2. Correlation of QSAT and 5C's Score in pediatric simulations stratified by resident gender.

QSAT Metric	5C's Metric	Gender	n	Sample Correlation Coefficient (*r*)[a]	Fisher's z Transformed Coefficient (*zr*) (95% CI)[b]	p-value[c]
Average (All Raters)	Average (Toxicologist & Intensivist)	Male	19	0.166	0.168 (-0.311, 0.577)	0.5016
		Female	12	0.006	0.006 (-0.570, 0.578)	0.9852
Average (Attendings Only)	Average (Toxicologist & Intensivist)	Male	19	-0.040	-0.040 (-0.485, 0.422)	0.8736
		Female	12	0.149	0.150 (-0.465, 0.666)	0.6522
Average (Attendings Only)	Toxicologist Only	Male	20	0.281	0.289 (-0.185, 0.643)	0.2341
		Female	12	0.090	0.090 (-0.510, 0.631)	0.7867
Average (Attendings Only)	Intensivist Only	Male	22	-0.390	-0.412 (-0.697, 0.038)	0.0727
		Female	12	0.160	0.161 (-0.456, 0.672)	0.6293

[a]4 assessments were missing either the Tox or Int 5C's score, therefore the average score is also missing, which changes the n depending upon the correlation pairing.
[b]Pearson correlation coefficient
[c]Fisher's z transformed Pearson correlation coefficient
[d]p-value corresponds to the Fisher's z transformed correlation coefficient and 95% CI

4 Describing Preliminary Data on Scoring Using the Standardized Letter of Evaluation (SLOE) 2.0 Format

Aman Pandey, Sharon Bond, Sara Krzyzaniak, Teresa Davis, Cullen Hegarty, Kasia Gore, Thomas Beardsley, Sandra Monteiro, Al'ai Alvarez, Melissa Parsons, Michael Gottlieb, Alexandra Mannix

Background: The Standardized Letter of Evaluation (SLOE) is a very important part of an emergency medicine (EM) bound student's application. The SLOE helps provide objective data on students' performances on EM rotations and helps residency programs screen applicants. The SLOE 2.0 introduced changes to the SLOE and so far there is no data to understand distribution of scores using the SLOE 2.0.

Objective: The objective of this study was to describe the initial distribution of scores on the SLOE 2.0.

Methods: This study was a multi-institution, retrospective cross-sectional study using SLOE 2.0 data from the 2022-2023 application cycle from 5 geographically distinct EM programs across the United States. SLOEs from 4-week EM electives were included and duplicate SLOEs from the 5 institutions were excluded. Also excluded were subspecialty or OSLOEs, SLOEs not written by a faculty group of other qualified person, SLOEs from letter writers that wrote <5 SLOEs last year, or SLOEs with incomplete data. Since Part A and Part C were qualitative questions, they had to be converted to a quantitative point system. We assessed the means, medians, and distribution of scores for

each of the questions in Part A and Part B, as well as the anticipated guidance (AG) and anticipated position on rank list (RL) questions in Part C.

Results: We gathered data from 1775 EM-bound applicants, comprising 3687 SLOEs. Table 1 demonstrates the distribution of scores for each component of the SLOE 2.0. The distributions of scores for each question showed a right-skewed distribution for Part A, Part B, and the AG and RL questions.

Conclusion: To our knowledge, we presented the first preliminary data on distribution of scores using the SLOE 2.0. This data will be useful for EM programs to use when learning how to use and analyze SLOE 2.0 scores. This is preliminary data that requires many further studies.

Table 1. Number and percent of SLOE 2.0 scores with varying responses for each question in the A, B, and C sections (n=3,687)

Question	Fully Entrustable # (%)	Mostly Entrustable # (%)	Pre-Entrustable # (%)		
A1 Ability to perform a focused history and physical exam	2744 (74.42%)	905 (24.55%)	38 (1.03%)		
A2 Ability to generate a differential diagnosis	2058 (55.84%)	1531 (41.52%)	97 (2.63%)		
A3 Ability to formulate a plan	1749 (47.44%)	1818 (49.31%)	120 (3.25%)		
A4* Ability to perform common ED procedure	1912 (51.86%)	1495 (40.55%)	55 (1.49%)		
A5 Ability to recognize and manage basic emergent situations	2215 (60.13%)	1391 (37.73%)	79 (2.14%)		
Question	**5 # (%)**	**4 # (%)**	**3 # (%)**	**2 # (%)**	**1 # (%)**
B1 Compassion, sensitivity, and respect towards patients and team members	1710 (46.38%)	1469 (39.84%)	483 (13.10%)	23 (0.62%)	2 (0.05%)
B2 Receptivity to feedback and ability to incorporate feedback	1597 (43.31%)	1535 (41.63%)	504 (16.67%)	49 (1.33%)	2 (0.05%)
B3 Dependability, responsibility, initiative, and work ethic	1860 (50.45%)	1319 (35.77%)	459 (12.45%)	45 (1.22%)	4 (0.11%)
B4 Punctuality, attendance, and preparation for duty	1946 (50.07%)	1317 (35.72%)	486 (13.18%)	34 (0.92%)	4 (0.11%)
B5 Timeliness and responsiveness in completing administrative tasks	1650 (44.75%)	1390 (35.70%)	598 (15.98%)	55 (1.49%)	3 (0.08%)
B6 Interpersonal and communication skills with patients and family members.	1699 (46.08%)	1498 (4.39%)	471 (12.77%)	26 (0.71%)	2 (0.05%)
B7 Interpersonal and communication skills with faculty, residents and healthcare professionals.	1694 (45.95%)	1382 (37.48%)	530 (14.97%)	69 (1.87%)	12 (0.33%)
Question	**Minimal**	**Standard**	**Moderate**	**Most**	
C1 Anticipated Guidance	1289 (34.96%)	1884 (51.10%)	425 (11.53%)	89 (2.41%)	
Question	**Top 10%**	**Top 1/3**	**Mid 1/3**	**Lower 1/3**	**Unlikely to Rank**

5 Verifying the Effectiveness of Gamification as a Teaching Modality Compared to Lecture-Based Didatics

Anthony Sielicki, Chris Riviello, Jessica Parsons, Claire Abramoff, Deborah Pierce

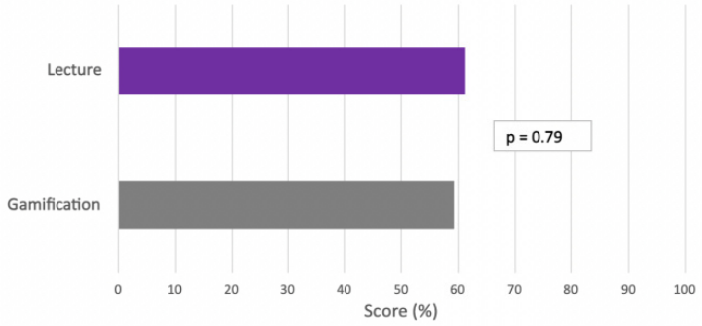
Background: Multiple studies of emergency medicine (EM) learners have demonstrated that gamification improves engagement and enjoyment. Few studies have examined its effectiveness compared to traditional lectures past enjoyment.

Objective: We sought to examine gamification versus traditional lecture focused on the diagnosis and management of postpartum hemorrhage (PPH). We hypothesized that learners who underwent gamification would report more enjoyment and have non-inferior performance in a PPH simulation.

Interventions: This is a randomized, prospective trial of EM residents at a single urban, academic program. A pre-test of PPH knowledge was administered. Residents were randomly assigned to learn about PPH in a 60-minute lecture or board game during weekly didactics. A posttest following the educational intervention was conducted, as was a survey about enjoyment of the learning activity. 6-8 weeks later, residents were grouped according to lecture or gamification and participated in a simulation of PPH. Residents were scored using the validated OBS-PPH tool.

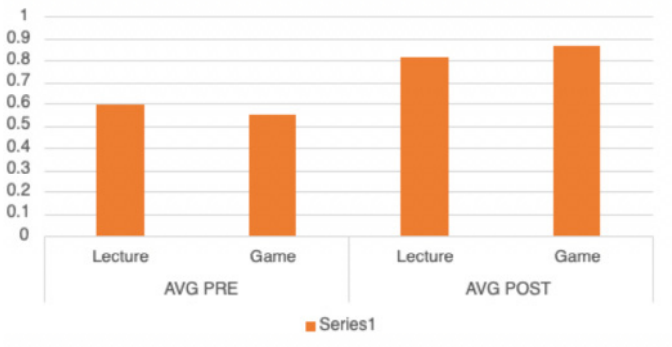
Results: There were no statistically significant differences between pre and post-test knowledge of PPH (p=0.49 and p=0.23, respectively) between groups. Average scores for satisfaction, engagement, enjoyment, and whether they would recommend the session to others was significantly higher for gamification (p<0.05). For the OBS-PPH score, the gamification groups (n=12) had a mean score of 59.43%. Groups who received lecture (n=12) had an average score of 61.40% A two tailed t-test revealed no statistically significant difference between groups (p=0.78).

Figure 1. OBS PPH score.



Conclusions: In the instruction of clinical management of PPH, gamification was viewed more favorably. There were no differences in knowledge gained, or in simulation performance using the OBS-PPH score. This suggests that gamification may serve as a tool to improve learner satisfaction without sacrificing educational value.

Figure 2. Average pre- and post- test scores.



6 Emergency Medicine Clerkship Director Compensation: A National Survey

Jorge Fernandez, Daniel Suto, Doug Franzen, Nicole Dubosh, David Manthey, Emily Pott, Brenna Hogue, Jaime Jordan

Background: There is a lack of current high quality compensation data for Emergency Medicine (EM) Clerkship Directors (CDs) across the United States (US), despite an expansion of medical schools, EM residency programs and economic inflation.

Objectives: To report US EM CD compensation during the academic year 2022-23.

Methods: We performed a cross-sectional study of EM CDs. We identified 355 EM CDs using publicly available data from medical school, residency program, and AAMC websites and invited them to complete a confidential electronic survey, consisting of multiple choice and completion items, after piloting prior to use. Descriptive statistics were reported, and we compared categorical variables with χ-squared tests and continuous variables with t-tests.

Results: 157 CDs (44%), including those from university, county, community, and rural sites, responded from all US regions. For the CD role, 62% receive full time equivalent (FTE) support (mean 21% +/- 17% FTE, 1 SD) and 28% receive a stipend (mean $31,959 +/- $29,076). A wide range of total compensation was reported (mean $257,689 +/- $123,650). There was no correlation between FTE support, stipend, or total compensation and the number of rotating students, training, experience, site, or region. Total compensation was significantly higher in men (mean $278,964) than women (mean $222,140) (p=0.009), despite no significant gender difference in CD FTE reduction or stipend.

Conclusions: FTE reduction, stipends and total compensation vary highly amongst EM CDs, without correlation to the number of rotating students, training/ experience, type of site (university vs. county vs. community) or US region. Female EM CDs report significantly lower total compensation nationally than men, despite no significant gender difference in FTE support or stipend for the CD role itself.

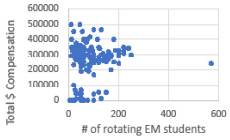
Table 1. 157 EM CDs (44% survey response).

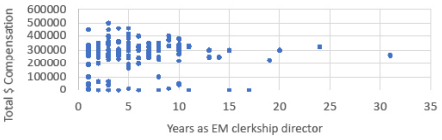
Region	#	Percent	Cumulative Percent
	1	.6	.6
#N/A	3	1.9	2.5
East North Central	29	18.5	21.0
East South Central	6	3.8	24.8
Middle Atlantic	35	22.3	47.1
Mountain	8	5.1	52.2
New England	6	3.8	56.1
Pacific	23	14.6	70.7
South Atlantic	25	15.9	86.6
West North Central	8	5.1	91.7
West South Central	13	8.3	100.0
Total	157	100.0	

- ERAS Geographic regions from Geographic Preferences

Table 2. CD-role specific and total compensation.

- 98 receive FTE reduction (62%)
  - Mean 21.4% (+/- 17.4 1 SD)
  - Median 18% (IQR 20)
  - Range 91%
- 44 receive stipend (28%)
  - Mean $31,959 (+/- $29,076 1 SD)
  - Median $25,000 (IQR 32,500)
- Total $ compensation
  - Mean $257,689 +/- 123,650 SD
  - Median $300,000 (IQR $90,000)





7 Generalizability of Consensus Regarding SLOE Competitiveness: A Validity Study in a National Sample of Emergency Medicine Faculty

Morgan Sehdev, Alexis Pelletier-Bui, Al'ai Alvarez, Benjamin Schnapp, Nicole Dubosh, Caitlin Schrepel, Sharon Bord, Yoon Soo Park, Eric Shappell

Background: Work reported at CORD 2023 showed strong consensus regarding competitiveness of mock standard letters of evaluation (SLOEs) and evidence that algorithms could closely predict consensus ratings. However, this group was small (n=7) and mostly from academic centers. The generalizability of these findings with real SLOEs and in a larger sample more representative of the national population is unknown.

Objective: Measure consensus regarding the competitiveness of SLOEs in a diverse national cohort and the ability of algorithms to predict consensus ratings.

Methods: 50 SLOEs from the 2023 application cycle were selected to match a blueprint of national ratings. SLOE competitiveness was ranked by 25 faculty with self-identified characteristics including: 56% female, 16% URM, 28% clerkship leaders, 78% residency leaders, AAMC regions: 20% central, 32% northeastern, 24% southern, 24% western, and institutions described as academic (56%), community

(32%), county (8%) and military (4%). Consensus was evaluated using levels established in a prior study (Table 1). Two models were tested to determine their ability to predict consensus rankings: a point-based system derived by an author and a linear regression model. Data were compared to a prior study with a cutoff of ±10% as the threshold for a meaningful difference in agreement/prediction.

Results: Faculty consensus in this larger and more diverse cohort was slightly below the level measured previously. However, no differences were above the 10% threshold (Table 1). Predictive models were similarly stable with only Tight agreement exceeding the 10% threshold (Table 1) and strong correlation between predicted and consensus rankings (Figure 1).

Conclusion: Consensus regarding SLOE competitiveness and the ability of algorithms to predict rankings remained strong in a larger and more diverse sample than previously studied. This suggests a common understanding among EM faculty regarding SLOE competitiveness.

Table 1A-C. Correlation between consensus rankings and (A) individual faculty rankings, (B) rankings predicted by the point system, and (C) rankings predicted by the regression model.

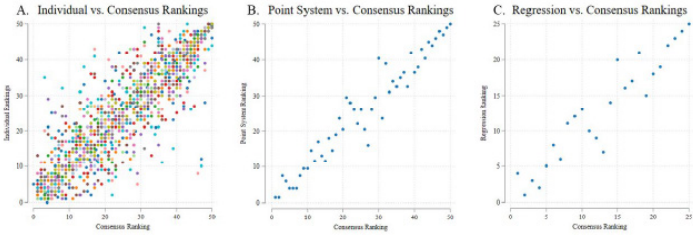


Table 1. SLOE Competitiveness Consensus and Prediction Agreement: Results from a National Cohort and Comparison to Previously Presented Pilot Study Results.

	Current Study: National Sample of Faculty Raters			Previous Study: Author Group Raters			Difference		
	Consensus: Faculty Ratings	Prediction: Point System	Prediction: Regression	Consensus: Faculty Ratings	Prediction: Point System	Prediction: Regression	Consensus: Faculty Ratings	Prediction: Point System	Prediction: Regression
Exact	12%	8%	18%	21%	12%	20%	-9%	-4%	-2%
Tight	71%	80%	76%	67%	62%	64%	+4%	+18%	+12%
Close	81%	88%	88%	83%	82%	92%	-2%	+6%	-4%
Loose	88%	94%	92%	93%	90%	96%	-5%	+4%	-4%
Correlation with consensus	N/A	07	04	N/A	07	08	N/A	0	- 04

Exact: Percent of rankings where individual/predicted rank is exactly the same as the consensus rank
Tight: Percent of rankings where individual/predicted rank is within ± 4% of consensus rank
Close: Percent of rankings where individual/predicted rank is within ± 8% of consensus rank
Loose: Percent of rankings where individual/predicted rank is within ± 12% of consensus rank

8 Distribution of grades and rank lists among Emergency Medicine programs during the 2022-2023 academic year

Morgan Sweere, Thomas Alcorn, Thomas Beardsley, Michael Gottlieb, Alexandra Mannix

Background: The Standardized Letter of Evaluation (SLOE) is a key component for medical students applying to Emergency Medicine (EM) residencies. Elements of the SLOE include grades, rank list, and comments. There have been concerns about the distribution of grades and rank lists. In order to better interpret individual grades and ranks, it is important to understand these in the broader distribution across SLOEs.

Objective: The primary objective was to determine the distribution of grading schemes, grade, and predicted rank list positions across EM programs using the SLOE.

Methods: We performed a cross-sectional study of grade and rank distributions among EM rotations as reported on SLOEs during the 2022-23 application cycle. We obtained SLOEs for all applicants to two geographically distant EM residency programs. All SLOEs with grade or predicted rank data from ACGME-accredited EM residencies were eligible for inclusion. Trained abstractors independently reviewed and extracted data on total number of students on rotation, grading format, grade distribution, and rank distribution reported by the program for the preceding year.

Results: We included 264 residency programs in our analysis with an 87.5% dual extraction rate. The majority of programs (72.2%) used a Honors/High Pass/Pass/Fail grading scheme with 17.5% using Pass/Fail. The mean percent for each grade was: Honors/A 27.6%, High Pass/B 31.1%, Pass/C 40.8%, Low Pass/D 0.2%, and Fail/F 0.3%. The mean percent of all students for each rank list position was: Top 10%: 17.6%, Top Third: 36.5%, Mid Third: 34.1%, and Low Third: 11.8%.

Conclusions: Most programs used a Honors/High Pass/Pass/Fail grading scheme, with most students receiving Honors and High Pass. Over half of applicants received the rank list position of Top 10% or Top Third. Both grades and rank list demonstrated evidence of skewed distribution and score inflation. This study is limited by self-reported data over a single year of applications.

Table 1. Number and percent distribution of students for each grade for various grading schemes at non-Pass/Fail and Pass/Fail programs.

	Non-Pass/Fail Program n=13599	Pass/Fail Programs n=1964
Honors/A	31.6% (4296)	
High Pass/B	35.6% (4837)	
Pass/C	32.2% (4380)	99.9% (1963)
Low Pass/D	0.27% (37)	
Fail/F	0.4% (48)	0.05% (1)

Table 2. The mean and median number of students and mean and median percent of students receiving grades and rank list positions on SLOEs for each program.

	Mean # (SD)	Median # (IQR)	Mean % (SD)	Median % (IQR)
Honors/A	16.4 (22.7)	9.0 (2.0-20.9)	26.9% (0.2)	23.0% (8%-40%)
High Pass/B	18.5 (23.0)	12.1 (1.9-24.8)	30.7% (0.2)	33.0% (8%-40%)
Pass/C	24.2 (32.8)	12.0 (3.3-33.3)	41.7% (0.4)	35.0% (10%-70%)
Low Pass/D	0.1 (1.4)	0.0 (0-0)	0.18% (0.0)	0% (0%-0%)
Fail/F	0.2 (0.7)	0.0 (0-0)	0.25% (0.0)	0% (0%-0%)
Top 10%	4.14 (2.9)	3.00 (2-5)	19.82% (0.1)	16.4% (10.7%-25.2%)
Top Third	8.60 (5.6)	7.00 (5-12)	37.12% (0.1)	36.1% (27.8%-45.1%)
Mid Third	8.04 (6.7)	7.00 (4-11)	32.25% (0.2)	32.1% (25%-41.2%)
Low Third	2.78 (3.3)	2.00 (0-4)	10.80% (0.1)	8.8% (0%-17.3%)

9 A Qualitative Study of the Underrepresented in Emergency Medicine Resident Application Experience

Michelle Suh, Beatrice Torres, Keme Carter, Christine Babcock, James Ahn, Isabel Malone

Background: Increasing racial and ethnic diversity of the physician workforce is a prioritized goal for emergency medicine (EM). Limited studies have focused on the perspective of underrepesented in medicine (URM) trainees in this endeavor.

Objectives: We described URM trainee experiences and preferences with the EM residency application process.

Study Design/Methods: This study was conducted at four urban academic EM programs. Residents meeting the Association of American Medical Colleges definition of URM were eligible to participate. Subjects participated in individual semi-structured interviews. Interviews focused on EM residency application experiences, participant preferences, and DEI efforts. Via a deductive-inductive approach, deidentified transcripts were iteratively reviewed to create a codebook and dominant themes were elicited. Two authors coded subsequent interviews with conflicts resolved through consensus discussion.

Results/Findings: Eighteen residents from four sites participated in the study. Sixteen identified as female and two as male. Fourteen identified as Black, 3 as Latinx, and 1 as Latinx/Afro-Caribbean. Thematic saturation was reached after 7 interviews, indicating adequate sample size. Two themes emerged: 1) applicants reported seeking URM representation among residents and faculty who could be mentors and role models and 2) while applicants noted structured programming for URMs trainees, they valued speaking with URM trainees in organic settings such as socials and 1:1 conversations.

Conclusion: URM applicants value representation and hearing directly from other URM trainees during the application process. Best practices in URM trainee recruitment should highlight opportunities to hear about the URM experience. However, work is needed to minimize the impact of any "minority tax" this imposes on URM residents.

10 Differences in Standardized Letter of Evaluation (SLOE) 2.0 Scoring Between Men and Women as well as Underrepresented in Medicine and Non-underrepresented in Medicine Applicants

Aman Pandey, Kasia Gore, Al'ai Alvarez, Teresa Davis, Melissa Parsons, Sara Krzyzaniak, Sandra Monteiro, Cullen Hegarty, Thomas Beardsley, Sharon Bord, Michael Gottlieb, Alexandra Mannix

Background: The Standardized Letter of Evaluation (SLOE) is vital for application screening in emergency medicine (EM). We previously described differences in SLOEs between men/women and between underrepresented in medicine (URiM)/non-URiM students. SLOE 2.0 is new and its differences in scores between men/women and URiM/non-URiM students has not been explored. Objective: The objective was to assess differences between SLOE 2.0 scores

for men/women and URiM/non-URiM students.

Methods: This was a multi-institution cross-sectional study with 5 EM programs. We analyzed SLOE 2.0 data from the 2022-2023 application cycle of EM applicants who applied to one of the included EM programs. Exclusion criteria are displayed in Table 1. Part A of the SLOE 2.0 was converted to a quantitative 3-point scale, C1 to a 4-point scale, and C3 to a 5-point scale. We evaluated mean and standard deviations (SD) for the scores for men/women and compared them using a t-test. We also did this for the URiM/non-URiM SLOEs. After Bonferroni correction, p=0.0036 signified statistical significance.

Results: 3689 total SLOEs were analyzed from 1775 total applicants. 1709 SLOEs were from women. 1956 SLOEs were from men. 24 SLOEs were excluded because the applicant identified as "other." We also analyzed 691 SLOEs from URiM students and 2963 from non-URiM students. 35 were excluded because they did not answer that demographic question. Table 2 includes the mean and SD for men/women students, as well as URiM/non-URiM students. P-values are included.

Table 1. Exclusion criteria for SLOEs.

Exclusion Criteria
Duplicate SLOEs between the 5 included institutions
SLOE not written by a faculty group or other qualified person
SLOE written by someone who wrote <5 SLOEs the prior year
SLOE with incomplete data
Subspeciality SLOE or OSLOEs

SLOE, Standardized Letter of Evaluation
OSLOE, Off-service Standardized Letter of Evaluation

Conclusions: Our data showed that women applicants had statistically higher mean scores for most of the SLOE 2.0 questions. Non-URiM students had statistically higher scores compared to URiM students for some of the questions. The clinical significance of these findings needs to be explored further. While we explore this data further, it is important for residency programs to be aware of these differences in the SLOE 2.0.

Table 2. Mean and standard deviation for each SLOE 2.0 question based on gender and race for EM applicants.

	Women	Men	P-Value	URiM	Non-URiM	P-Value
Question	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)	
A1 Ability to perform a focused history and physical exam (1-3)	2.76 (0.45)	2.71 (0.48)	0.0012	2.69 (0.49)	2.74 (0.46)	0.0111
A2 Ability to generate a differential diagnosis (1-3)	2.56 (0.54)	2.50 (0.55)	0.0009	2.48 (0.57)	2.55 (0.54)	0.0024
A3 Ability to formulate a plan(1-3)	2.48 (0.56)	2.40 (0.56)	0.0001	2.38 (0.58)	2.46 (0.56)	0.0007
A4 Ability to perform common ED procedure (1-3)	2.38 (0.80)	2.38 (0.79)	1.0000	2.35 (0.78)	2.39 (0.80)	0.2345
A5 Ability to recognize and manage basic emergent situations (1-3)	2.61 (0.53)	2.55 (0.55)	0.0008	2.53 (0.55)	2.59 (0.54)	0.0088
B1 Compassion, sensitivity, and respect towards patients and team members (1-5)	4.40 (0.69)	4.25 (0.75)	0.0001	4.36 (0.73)	4.31 (0.72)	0.1012
B2 Receptivity to feedback and ability to incorporate feedback (1-5)	4.31 (0.72)	4.23 (0.77)	0.0012	4.26 (0.70)	4.27 (0.74)	0.7466
B3 Dependability, responsibility, initiative, and work ethic (1-5)	4.41 (0.73)	4.30 (0.77)	0.0001	4.26 (0.81)	4.37 (0.74)	0.0006
B4 Punctuality, attendance, and preparation for duty (1-5)	4.39 (0.73)	4.30 (0.77)	0.0003	4.27 (0.81)	4.36 (0.74)	0.0047
B5 Timeliness and responsiveness in completing administrative tasks (1-5)	4.30 (0.75)	4.21 (0.81)	0.0005	4.13 (0.83)	4.28 (0.77)	0.0001
B6 Interpersonal and communication skills with patients and family members. (1-5)	4.40 (0.68)	4.24 (0.75)	0.0001	4.34 (0.72)	4.31 (0.72)	0.3241
B7 Interpersonal and communication skills with faculty, residents and healthcare professionals. (1-5)	4.35 (0.70)	4.20 (0.82)	0.0001	4.25 (0.80)	4.27 (0.80)	0.5540
C1 Anticipated Guidance (1-4)	3.24 (0.72)	3.14 (0.72)	0.0001	3.09 (0.78)	3.21 (0.72)	0.0001
C3 Rank List (0-4)	2.81 (0.90)	2.62 (0.90)	0.0001	2.62 (0.95)	2.73 (0.90)	0.0042

SD, standard deviation
URiM, underrepresented in medicine

11 Comparing the Standardized Letter of Evaluation (SLOE) 2.0 with SLOE for Non-residency-based EM Physicians

Amanda Pandey, Thomas Beardsley, Kasia Gore, Sara Krzyzaniak, Sandra Monteiro, Al'ai Alvarez, Cullen Hegarty, Teresa Davis, Melissa Parsons, Sharon Bord, Michael Gottlieb, Alexandra Mannix

Introduction: For emergency medicine (EM) programs the Standardized Letter of Evaluation (SLOE) provides vital data. The SLOE 2.0 and "SLOE for non-residency-based EM physicians (SNEP)" are relatively new. It is unknown if SNEPs have differences in their scoring from the SLOE 2.0. This could impact SLOE interpretation and rank list positions

for EM programs.

Objective: The objective was to explore if there are differences in scores between the SLOE 2.0 and SNEP.

Methods: From the 2022-2023 application cycle data, we performed a multi-institution, retrospective, cross-section study looking at all 4 week EM rotation SLOEs that were submitted to one of the 5 EM programs that were part of the study. Duplicate applicants were eliminated by cross referencing Association of American Medical Colleges numbers among the 5 programs. Exclusions for the SLOEs were: not written by a faculty group of other qualified person, letter writers wrote <5 SLOEs last year, incomplete data, or subspeciality or OSLOE. Since Part A and C1 provided qualitative data, they were converted to a 3-point scale and a 4-point scale to get quantitative data. We calculated mean scores from the SLOE 2.0 and compared them with mean scores from the SNEPs using a t-test. "Anticipated position on the rank list" was not included since SNEPs do not have that question. We applied a Bonferroni correction, resulting in a p=0.00384 for statistical significance.

Results: 1775 applicants (3690 individual SLOEs) were studied. 3520 (95.29%) were SLOE 2.0s; 170 (4.60%) were SNEPs. The means. standard deviations, and p-values for SLOEs and SNEPs are provided in Table 1.

Table 1. Mean and standard deviation for each standardized letter of evaluation (SLOE) 2.0 and SLOE for non-residency based EM Physicians (SNEP) questions.

	SLOE	SNEP	P-value
Question	**Mean (SD)**	**Mean (SD)**	
A1 Ability to perform a focused history and physical exam (1-3)	2.73 (0.47)	2.91 (0.38)	0.0001
A2 Ability to generate a differential diagnosis (1-3)	2.53 (0.55)	2.64 (0.53)	0.0108
A3 Ability to formulate a plan(1-3)	2.44 (0.56)	2.52 (0.54)	0.0685
A4 Ability to perform common ED procedure (1-3)	2.38 (0.80)	2.38 (0.76)	1.0000
A5 Ability to recognize and manage basic emergent situations (1-3)	2.58 (0.54)	2.65 (0.53)	0.0986
B1 Compassion, sensitivity, and respect towards patients and team members (1-5)	4.31 (0.72)	4.58 (0.87)	0.0001
B2 Receptivity to feedback and ability to incorporate feedback (1-5)	4.28 (0.75)	4.49 (0.84)	0.0001
B3 Dependability, responsibility, initiative, and work ethic (1-5)	4.34 (0.76)	4.63 (0.81)	0.0001
B4 Punctuality, attendance, and preparation for duty (1-5)	4.33 (0.76)	4.60 (0.80)	0.0001
B5 Timeliness and responsiveness in completing administrative tasks (1-5)	4.25 (0.79)	4.40 (0.71)	0.0152
B6 Interpersonal and communication skills with patients and family members. (1-5)	4.31 (0.72)	4.54 (0.85)	0.0001
B7 Interpersonal and communication skills with faculty, residents and healthcare professionals. (1-5)	4.28 (0.80)	4.51 (0.86)	0.0001
C1 Anticipated Guidance (1-4)	3.17 (0.73)	3.42 (0.88)	0.0001

SD, standard deviation

Conclusion: The results show that when comparing SLOE 2.0s to SNEPs, most of the questions showed statistically significant higher mean scores on the SNEPs. EM programs who use data from the SNEPs need to be aware of these inherent differences in scores. Further analysis should look at reasons for and implications of these differences.

12 Does Offering CME Credit Increase Emergency Medicine Faculty Attendance at Weekly Resident Conference?

Justine McKittrick, Ralph Ward, Lindsey Jennings, Kathryn Koval

Aim: Prior studies demonstrated that offering continuing medical education (CME) credits increased faculty attendance at resident lectures. The Medical University of South Carolina (MUSC) Emergency Department increased the amount of CME offered to faculty attending resident conference with the hopes of improving attendance.

Objectives: The purpose of this study is to analyze the effect of increasing CME credit hours offered at resident conference on faculty attendance. It is anticipated there will be a positive correlation between faculty attendance with the amount of CME offered.

Methods: This study was a retrospective analysis of the attendance rates of faculty at resident conference at MUSC between July 2021 to June 2022 (year 1: 2 hours of CME offered monthly) and July 2022 to June 2023 (year 2: 3 hours of CME offered monthly) An interrupted time series analysis was used to determine if the intervention led to an immediate and longer-term change in attendance hours per day. Chi-square analysis was used to compare attendance between years.

Results: In year 1, total hours attended per training day for CME and non-CME sessions had similar baseline rates and both rates were gradually decreasing over time. In year 2, CME attendance appeared to jump initially and then gradually dropped to return to the non-CME attendance rate, while total attendance hours per day was flat over time. The large variation in attendance between weeks resulted in no statistically significant values. Total hours of faculty attendance increased between year 1 and year 2 from 533 to 589, and the percentage of attendees at CME training increased from 24.4% to 35.1% ($p<0.0001$). Much of this increase appeared to occur early in year 2, after which attendance patterns gradually reverted to their earlier values.

Conclusions: Increased CME did not appear to be correlated with a long-term shift in faculty attendance. One major study limitation was incomplete logging of attendance.

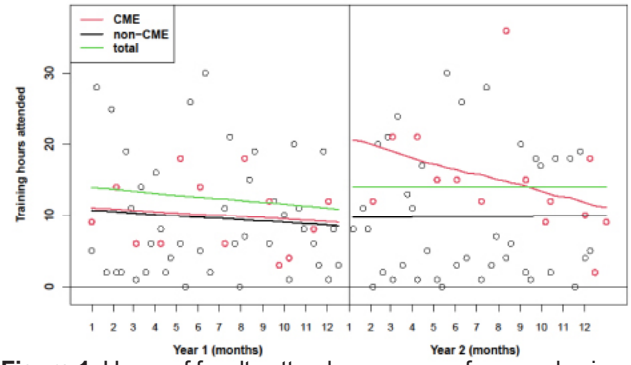


Figure 1. Hours of faculty attendance per conference day in pre-intervention period (Year 1) vs post-intervention period (Year 2).

Table 1. Parameter estimates for Interrupted Time Series Analysis.

Parameter	Estimate	Standard Error	Probability	Confidence Interval Lower Limit	Confidence Interval Upper Limit
Baseline non-CME	10.75365	2.59	<.0001	5.6773	15.83
Slope non-CME first year	-0.05323	0.1033	0.6074	-0.2557	0.1492
Interruption non-CME	1.215265	3.7053	0.7436	-6.0471	8.4776
Slope change year 2 non-CME	0.058925	0.1553	0.7052	-0.2455	0.3633
CME baseline difference from non-CME	0.341894	5.4782	0.9504	-10.3955	11.0792
CME slope difference first year	0.004289	0.2156	0.9842	-0.4184	0.4269
CME interruption difference from non-CME	10.62122	7.8616	0.1797	-4.7875	26.03
CME slope change difference from non-CME slope year 2	-0.24109	0.3048	0.4309	-0.8385	0.3564

13 A Double-Edged Sword: A Qualitative Study of the Minority Tax in Academic Emergency Medicine Faculty

Edgardo Ordonez, Adedoyin Adesina, Annika Bhananker, Moises Gallegos, Dick Kuo, Melanie Molina, Dalia Owda, Vivian Ramont, Ynhi Thomas, Beatrice Torres, Anita Chary

Background: The 'minority tax' is the additional burden placed on minoritized faculty in advancing diversity, equity, and inclusion (DEI). Given the paucity of research, we examined the various impacts of the minority tax in academic emergency medicine (EM) faculty.

Objectives: To investigate the minority tax in academic EM by exploring pathways to DEI leadership, assessing its impact on professional development, personal experiences, and strategies for addressing and mitigating its effects.

Methods: Using a phenomenological framework, we explored the lived experiences of the minority tax by EM faculty through virtual semi-structured interviews. We identified participants through purposive sampling and included 21 diverse academic EM faculty from various academic departments with leadership experience in DEI. We coded transcripts of participant interviews and developed themes via consensus.

Results: Participants reported varied impacts of the minority tax on professional advancement, describing DEI work as often undervalued. Emotional toll and potential for burnout were significant, often related to feelings of tokenism and underrepresentation in leadership roles. However, positive aspects included personal fulfillment and networking opportunities. Most participants actively mentored others, emphasizing mentorship being critical for career progression and personal support. Strategies suggested for addressing the minority tax included increased leadership support, improved compensation for DEI work, and increased involvement of non-minoritized colleagues in DEI initiatives.

Conclusions: The minority tax in academic EM presents a complex challenge with both negative and positive aspects. While it may offer opportunities for academic advancement, it also poses risks for burnout and professional stagnation. Effective solutions require systemic changes, including recognition of DEI efforts in career progression and broader engagement across all faculty demographics.

Table 1. Themes and quotes from qualitative analysis of semi-structured interviews.

Theme	Illustrative Quotes
Pathways to DEI Leadership	"I never set out in the open to be [a DEI leader] one day, it was never the plan ... I feel like my own internal pressure to do it because if I don't, it won't get done." "There was no one else there to do the work. And this is stuff that I'm passionate about."
Professional and Personal Impacts	"You're there representing or at least demographically representing someone, but you don't have voice to do anything different. And when you would raise issues, you would create some tension." "There are these pressures, when you're sort of like managing early, when you see a need, you feel this responsibility to step up, and no one else will or it won't get done."
Strategies to Address and Mitigate the Tax	"People have this assumption that you can only be involved in diversity stuff if you're a minority. And I think that's actually horrible. I think DEI efforts need to be everyone. Equity is something that should apply to literally every single person, that's part of the definition of equity." "I feel like with a lot of diversity things, we talk about them within our diversity circles. So, the same people get it over and over again. I think our allies have to be more engaged ... sometimes you have to put your neck out there to support and help your minoritized colleagues."

14 Visual Estimation of Left Ventricular Ejection Fraction by Emergency Medicine Residents is More Accurate in Emergency Department Patients

Mitchell Guedry, Jeremiah Ojha, William Waite, Jillian Davison, Connor Karr, Steve Leech, Reshma Sharma

Background: Point of Care Echocardiography is frequently performed by Emergency Physicians (EPs) to guide patient care and make clinical decisions by evaluating left ventricular systolic function by calculating ejection fraction (EF).

Objectives: The objective of this study is to compare EM residents' estimations of EF using various described techniques to patients' recent comprehensive echocardiograms (CE).

Methods: This is an observational, prospective, cohort study to evaluate resident accuracy of estimation of EF using the methods of visual estimation (VE), fractional shortening (FS), and E-point septal separation (EPSS). Patients were enrolled at a Level 1 Trauma Center from September through December 2022, and inclusion criteria were patients who were admitted for chest pain or shortness of breath. VE was performed using estimation of change in LV diameter, myocardial thickening, and gross mitral valve excursion. VE was categorized as normal (>50%), mild/moderately depressed (30-50%), and severely depressed (<30%). FS and EPSS were calculated using M-mode in the standard fashion as previously described in the literature. Patients had CE within 3 months and results were compared with residents' findings. Data was analyzed using descriptive statistics and unweighted K.

Results: VE was able to be obtained in 29, FS in 26, and EPSS in 25 patients. VE performed best with 83% accuracy compared to CE, with an unweighted K of 0.71 (95% CI 0.47-0.93). FS was 68% accurate compared to CE, with an unweighted K of 0.37 (95% CI 0.05-0.70). EPSS was 57% accurate compared to CE, with an unweighted K of 0.44 (95% CI 0.15-0.73). Of the three methods performed, 94% of EM residents believed visual inspection was the easiest. Residents were also surveyed on which method they thought to be most accurate, and the results were VE (37%), FS (31%), and EPSS (31%).

Conclusions: VE of EF is easier to perform and is more accurate among novice learners, with better agreement with CE.

15 Don't Get Your Signals Crossed: Preference Signaling in the 2023 Emergency Medicine Match

Kestrel Reopelle, Erin Hoag, Jonathan Karademos, Peter Tomaselli, Carlos Rodriguez, Dimitrios Papanagnou, Jeremiah Ojha

Background: Preference signaling was a new addition to the 2022-23 EM residency match. Applicants were allowed five signals that alerted programs of their interest and were considered by programs when granting interviews. To our knowledge, an examination of the applicant experience around preference signaling in EM has yet to be described in the literature.

Objectives: We aimed to determine how applicants utilized the signals and whether or not the signaling process correlated with applicant anxiety.

Methods: This was a retrospective cross-sectional, survey-based study that examined a convenience sample of all applicants who applied to two urban academic EM residency programs – one on the East Coast and one on the West. Applicants were asked to complete a voluntary survey following the results of the 2023 Match.

Results: 427 survey responses were received (21% response rate). 97% of applicants used all five of their signals. When asked how applicants allotted their signals, the most frequent considerations were a program's geographical location (mean = 4 signals, 95% CI: 3.9, 4.1) and perception of the program's training rigor (mean = 4.4, 95% CI 4.3, 4.5)(table 1). 30.6% of applicants reported that the signaling process decreased anxiety surrounding the match (table 2). The mean change in anxiety level from prior to application submission to after rank list submission was determined to be -1.02 (95% CI: -1.32, -0.73) on a scale of 1-10. A negative correlation between the percentage of signaled programs yielding interview invitations and anxiety after rank list submission was observed (ρ= -0.17; p=0.0018).

Conclusions: Applicants considered a combination of factors when assigning signals to programs. Reduced applicant anxiety correlated with higher interview rates from signaled programs. Limitations include potential confounding variables (e.g., a less competitive match year) as well as the retrospective nature of our data collection.

Table 1. Considerations utilized by applicants when deciding which programs to signal.

Of the 5 signals applicants were allotted, how many were used . . .	N	Mean	SD	95% CI
…for geographical considerations?	377	4.0	1.3	(3.9, 4.1)
…to apply to "reach"/more competitive programs?	365	2.3	1.1	(2.2, 2.5)
…to apply to "safety" programs?	257	1.9	0.9	(1.8, 2.0)
…to apply to programs whose strengths align with applicant's career interests?	348	3.9	1.3	(3.7, 4.0)
…to apply to programs that applicants perceived as offering strong clinical training?	377	4.4	1.0	(4.3, 4.5)

Table 2. Effect of the ability to send program signals on applicant self-reported anxiety during the match.

		Frequency (N = 427)	Percent (100%)
How did the signaling process affect applicants match anxiety?	It did not change my outlook	203	47.5%
	It made me a little less anxious	124	29%
	It made me a little more anxious	54	12.7%
	It made me much less anxious	10	2.3%
	It made me much more anxious	7	1.6%
	Missing	29	6.8%

16 Beyond the Requirement: A Novel Patient-Follow Up Report

Kraftin Schreyer, Jack Allan, Zachary Repanshek, Megan Healy, Michael DeAngelis, Wayne Satz, Jacob Ufberg

Background: Until now, residents were required to perform patient follow-ups as part of practice-based learning and improvement. Most commonly a patient follow-up log (PFUL) was used.

Objectives: We sought to provide residents patient follow-ups in an efficient, value-added manner, and hypothesized that our novel patient follow-up report (PFUR) would be better received than the previous FUL.

Methods: The PFUR, sent monthly via email, is automatically generated based on specific criteria in the electronic medical record. The PFUR includes five non mutually exclusive categories of cases: patients who were discharged and readmitted within 72 hours, patients with certain diagnoses, patients who expired during the hospital stay, and patients who were upgraded to the intensive care unit within 24 hours of admission, and patients independently flagged for inclusion. Pre and post surveys were sent to the senior post-graduate year (PGY) residents. PGY-1s were excluded as they had not used the PFUL.

Results: Four months following implementation, 1436 total cases were included on the PFUR, an increase from the previous average of 105. Across all PGYs, the majority (19.8%) of cases were ICU upgrades, followed by those diagnosis-based (16.7%) and those that expired that encounter (12.3%). On average, 9.57% of total patient encounters met criteria for the PFUR. Fourteen of the eligible 28 residents responded to the surveys. The PFUR had an average value rating of 4.36, compared to the PFUL rating of 1.64. The PFUR was preferred by 90% of the residents, and 82% felt that it impacted the clinical care they provide. Subjective evaluation of the PFUR found it, "consolidated, less forced, and exponentially more helpful for learning."

Conclusion: The novel PFUR has already proven to be more comprehensive, accessible and more highly valued that then PFUL. Programs looking to continue to provide the benefit of patient follow-ups should consider a similar report.

17 Impact of a Departmental Guideline and Educational Intervention on Droperidol Use in the Emergency Department

Christopher Karousatos, Zachary Repanshek

Background: In 2001, the FDA issued a Boxed Warning for droperidol due to concerns for QTc-interval prolongation. In response, its use has decreased and even been abandoned by many EDs. Based on more recent research finding these risks to be overstated, AAEM and ACEP have issued guidelines affirming that droperidol can be safely administered in the ED to treat headache, nausea, and agitation. Departments may be considering the best way to reintroduce this medication to ED practice.

Objectives: This study assesses droperidol use patterns in the ED following a multimodal educational intervention based on a new departmental guideline.

Methods: This is an observational cohort study across 3 EDs in a university healthcare system. Data was collected by electronic medical record (EMR) review. An ED guideline for droperidol use was created (Figure 1) and added to the EMR for reference on shift. An educational session about the history, usage, and safety of droperidol was presented during resident didactics and faculty meeting. A recorded version was added to the departmental YouTube page and emailed to residents and faculty along with the guideline. The primary outcome was droperidol usage five months pre- and post-intervention, with secondary outcome of use by indication.

Results: At five months post-intervention, droperidol use increased significantly: 27 doses in the pre-intervention period to 238 after (p-value < 0.0001). Table 1 shows pre- and post-intervention usage by indication.

Conclusions: Droperidol is an effective medication that fell out of favor because of questionable evidence. Now that the safety of this medication has been demonstrated, departments may consider the best way to reintroduce this treatment to practice and educate providers on its use. In this study, a multimodal educational intervention, coupled with the implementation of a departmental guideline, has led to a significant increase in the appropriate utilization of droperidol in the ED.

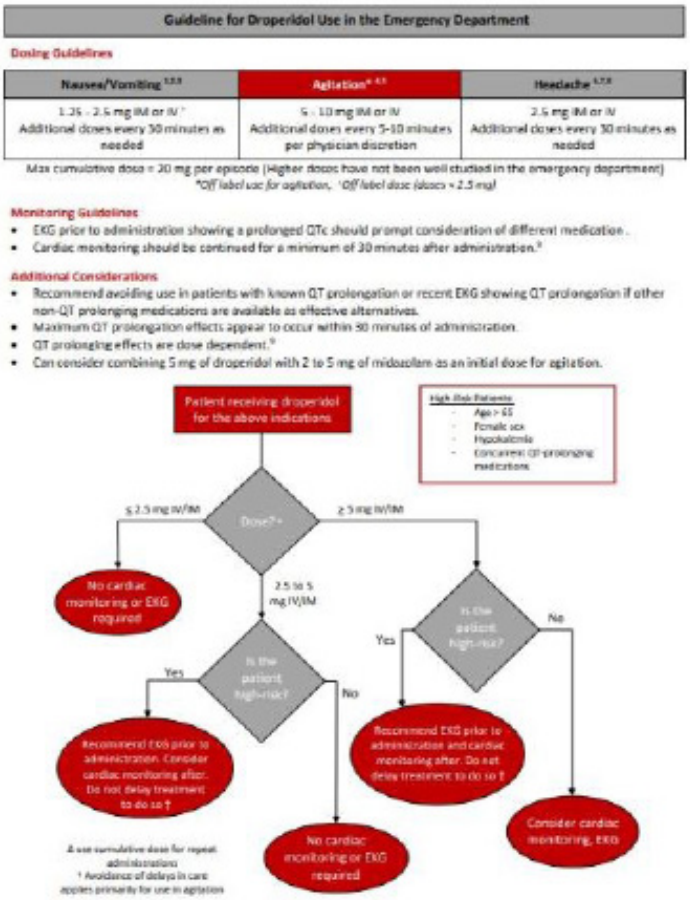


Figure.

Table. Pre and post- intervention droperidol usage by indication.

	Pre-Intervention	*Post-Intervention*
Nausea/Emesis	19	170
Agitation	4	58
Headache	4	7
Other	0	3
Total	**27**	**238**

18 Comparative Analysis of Emergency Medicine Standardized Letter of Evaluation Between Chief Resident vs. Non-chief Resident: A Preliminary Report Based on Objective Domains

Zaid Tayyem, Chaiya Laoteppitaks, Christopher Wetzel, Peter Tomaselli, Carlos Rodriguez, Abagayle Bierowski, Casey Morrone, Ridhima Ghei, Xiao Zhang

Background: Chief residency in EM is a highly competitive leadership position that allows 'chiefs' to represent their co-residents, perform administrative and education functions, and serve as liaisons between the hospital and the residency program. The chief selection process can be rigorous and varies by residency program.

Objective: To determine whether the Standardized Letter of Evaluation (SLOE) can predict which residents are more likely to become chiefs based on their qualifications and global SLOE assessment.

Methods: De-identified SLOEs from 2015 to 2021 at an urban center EM residency were collected for data analysts as part of a retrospective observational study. Each question from 'Qualification of EM' and 'Global Assessment' were given a numeric score, 1 to 4, depending on the number of selectable options (i.e. Above Peers=3, Below peers =1; top 10%=4, lower 1/3=1). For each question, a T-test was used to determine if there was a difference between the mean score for residents selected to be chiefs and all others.

Results: We selected and performed a quantitative analysis of 10 quantitative questions; five had statistically significant differences between the chiefs and non-chiefs. Chiefs were more likely to be ranked in the top 1/3 on the program rank list (2.94 vs 2.541, n=233, T=3.1, P=0.002), more likely to be evaluated in the top 1/3 compared to previous year's applicants (2.904 vs 2.516, n=243, T= 3.056, P= 0.002), more likely to succeed in residency (2.442 vs 2.241, n=243, T=2.361, P=0.019), less likely to need guidance (2.442 vs 2.241, n=243, T=2.361, P=0.019), and more team-oriented (2.712 vs 2.476, n=243, T=2.865, P=0.005).

Conclusion: While there is not a clear predictor of which resident will become a chief resident, preliminary analysis of SLOEs revealed applicants who were more team-oriented, with slightly higher ranking, while requiring less guidance were more likely to become future chiefs.

19 Current State of Social Media Use in Emergency Medicine Residencies

Zachary Repanshek, Lauren McCafferty, Jay Khadpe, Kristy Schwartz, Michael Fink, Abbas Husain

Background: In the 10 years since CORD first published best practices for social media (SM) use, nearly all EM residency programs have had some form of SM presence. Initially focused on education, SM is now a key tool for program branding and recruitment. With recent shifts in the state of SM, including the change in ownership of Twitter (X) and the rise of visual platforms like Instagram (IG) and TikTok, we aim to identify the current trends in EM residency SM use.

Objective: This study describes and quantifies the current usage of various SM platforms by EM residencies. We hypothesize that utilization of IG has become more prevalent compared to that of blogs, Facebook (FB), and X.

Methods: Using the EMRA Match site, 239 unique EM residency programs were evaluated for the presence of six digital platforms, as self-reported by individual programs. We only included platforms which posted novel content during the study period (September 2022-August 2023). An analysis of engagement was performed by quantifying posts for X and IG.

Results: Table 1 shows the prevalence of each platform in EM programs. Our analysis found that most programs maintain a website. X and IG are the most commonly used SM platforms, FB and blogs are infrequently utilized, and TikTok is nearly entirely absent. While the prevalence of X and IG is effectively equivalent, the engagement with IG was higher, with a mean of 60 IG posts/program over the year-long study period vs 36 for X. Figure 1 shows the average monthly posts per platform.

Conclusion: These findings demonstrate that IG is now the most utilized SM platform for EM residencies, a shift from previous studies that identified X as most popular. A limitation of this study is that IG Stories could not be quantified, meaning that utilization of IG is likely even higher than reported. TikTok is rarely used by EM residencies, despite being the most globally downloaded app, and is a potential for future focus.

Figure 1. Average monthly social media posts per EM residency program.

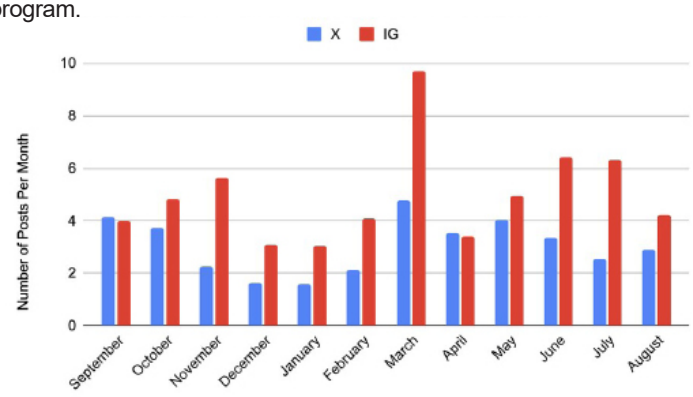


Table 1. Presene of EM residency digital platforms.

	Yes	No	Prevalence (%)
Website	203	36	85
Blog	35	204	14
FB	41	198	17
X	103	136	43
IG	102	137	42
TikTok	1	238	0.004

20 Rapid Cycle Deliberate Practice vs Traditional Simulation for Neonatal Resuscitation Training and Retention of Skills

Jessica Parsons, Deborah Pierce, Anthony Sielicki, Caitlin Boyle, Joseph Pavlik, Kelly MacKenzie

Background: Neonatal resuscitation protocol (NRP) is a required component of EM residency education. As a rare but high acuity event, NRP is often taught and reinforced through SIM. Rapid cycle deliberate practice (RCDP) is a method of SIM that uses frequent interruptions to immediately correct mistakes and provides opportunities for repetitive practice. RCDP may be a better method than traditional SIM for teaching and reinforcing NRP skills.

Objectives: We compared traditional SIM versus RCDP on improvement and retention of team NRP skills. Our hypothesis was RCDP will result in greater improvement of team NRP skills and these skills will be retained at six months.

Methods: Thirty EM PGY1-4 residents were divided into six teams in January 2023. Each team participated in an NRP SIM case that was video-recorded and scored by two blinded raters using a validated NRP scoring tool. Then, three teams had the traditional SIM training with a post-scenario facilitated debrief and three teams had RCDP of NRP. Three days later, all teams had a post-test NRP SIM case. Retention testing occurred in June 2023 and involved testing ad hoc teams of three residents who all had either traditional SIM or RCDP of NRP. The post-tests and retention NRP SIM cases were graded by two blinded raters.

Results: Due to audio error, the pretest for one of the traditional SIM teams could not be scored, so this pretest was excluded. Both the traditional SIM and the RCDP groups demonstrated significant improvement in NRP scores, however, post-test scores were not statistically significant different between the two groups. Average scores for both groups showed significant degradation of NRP skills after six months.

Conclusion: Both traditional SIM and RCDP improved NRP team performance but a study with higher power is required to detect differences between the two types of SIM. Residency should incorporate NRP frequently as there was significant degradation in skills after six months.

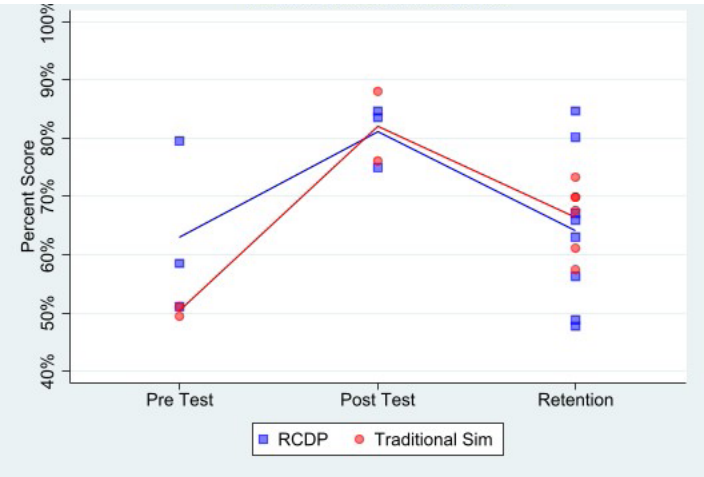


Figure 1. Neonatal resuscitation scores.

21 Humility in Times of Heightened Uncertainty: A Study of Physician Critical Incidents to Prepare Learners for Uncertainty in Clinical Practice

Leela Raj, Dimitrios Papanagnou, Urvashi Vaid, Henriette Lundgren, Karen Watkins, Victoria Marsick, Ridhima Ghei, Barret Michalec

Background: Uncertainty is a pervasive challenge in clinical practice. While the importance of humility in addressing uncertainty has been discussed in the literature, empirical research on this topic is lacking. Our study aimed to examine the presence and role of humility in physicians' experiences with uncertainty during the COVID-19 pandemic.

Objectives: To identify if and how humility was present in physicians' reflections on uncertain situations during the height of the COVID-19 pandemic, and to explore potential roles of humility in managing uncertainty.

Methods: We conducted critical incident interviews with 12 EM and ICU physicians about their experiences with uncertainty while caring for COVID-19 patients. We deductively coded transcripts for key elements of humility based on conceptualizations by Tangney (2000) and Gruppen (2015). We examined code co-occurrence to identify clusters of humility and conducted iterative thematic analysis to uncover potential roles of humility.

Results: Aspects of humility were frequently present in physicians' narratives. Acknowledgment of shortcomings was most common. Acceptance of limitations, openness, and perspective-taking frequently co-occurred. Two key themes emerged: humility allowed physicians to trust their training despite uncertainty, and enabled pivoting and adapting to new information.

Conclusion: Findings suggest humility facilitates managing uncertainty by promoting trust in abilities and enabling flexibility and openness. There are opportunities in undergraduate medical education to include formal training and specific skills development in humility to prepare learners to navigate clinical uncertainty. Further research should explore nuances of humility across clinical situations and types of uncertainty.

22 Personality Traits and Burnout in Emergency Medicine Residents

Brendan Freeman, Lukasz Cygan, Laura Melville, Theodore Gaeta

Background: Burnout is prevalent in medical training. The gold-standard for measurement of burnout is the Maslach Burnout Inventory (MBI), which is a questionnaire that scores three factors: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). EE is most closely correlated with burnout. Studies have shown a link between certain personality traits and burnout markers, but this has not been evaluated in emergency medicine residents. The personality traits openness, agreeableness, extraversion, conscientiousness, and neuroticism can be measured with a 50-item International Personality Item Pool (IPIP) Big 5 survey.

Objectives: To evaluate the association between personality traits and self-reported burnout in emergency medicine residents.

Methods: Observational, cross-sectional study in an urban, level II trauma center, three-year residency program. Participants were emergency medicine residents. Convenience sampling performed via survey. Subjects were consented and administered two sequential online surveys, the IPIP and MBI, over a secure website with anonymity. Raw/mean scores and standard deviations were calculated for each personality trait/burnout measure and compared by Pearson correlation coefficient. This study received IRB approval.

Results: We achieved 100% resident participation (n = 38). Thirty-one percent of the cohort reported high exhaustion, 13% had high depersonalization and 42% had low professional accomplishment. Two of 38 (5%) residents reported the combination of high EE, high DP and low PA. There was a negative correlation between conscientiousness, openness and agreeableness and emotional exhaustion, however only conscientiousness was statistically significant (Pearson's r = -0.40, p = .01).

Conclusions: In our sample, residents who were more conscientious had lower levels of emotional exhaustion. Programs may consider assessing their resident's personality traits to identify predictors of burnout.

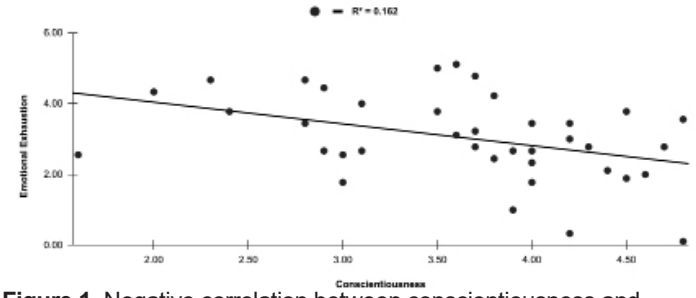


Figure 1. Negative correlation between conscientiousness and emotional exhaustion.

23 Changes in Imposter Syndrome During Intern Year of Emergency Medicine Residency

April Choi, Jeremiah Ojha, Linda Regan

Background: Imposter syndrome (IS) affects residents, causes burnout, and is difficult to overcome alone. Residency programs should be aware of when residents experience IS

to provide support. Interns are of particular interest as IS increases during times of transition. Cross-sectional studies on IS in residents have been done but not studies focused on IS during the intern year of emergency medicine (EM) residency.

Objectives: This study aimed to explore changes in IS levels and factors associated with increased experience of IS during EM intern year. We hypothesized that IS would increase at the beginning and end of intern year.

Methods: This was a prospective, observational, survey-based convergent mixed methods study. Participants were voluntary samples of interns and post-graduate year (PGY) 2 residents from six EM residency programs. The Clance Imposter Phenomenon Scale (CIPS), multiple-choice demographic questions, and open-ended questions on experiences with IS were sent anonymously via email. Interns were surveyed at months zero (July 2023) and one (August 2023) and will also be surveyed at months six and twelve. PGY-2s were surveyed in July 2023 for baseline data on IS after intern year. CIPS scores were analyzed with Mann Whitney U and paired t-tests. Inductive thematic analysis was done on qualitative data.

Table 1. Quantitative survey questions on imposter syndrome (IS) experiences.

	New PGY-2's (n = 20)	Month 0 Interns (n = 24)	Month 1 Interns (n = 11)
Knowledge of IS? n, (%)	n = 20	n = 24	n = 11
No	1 (5)	0 (0)	0 (0)
Yes	19 (95)	24 (100)	11 (100)
Recent IS? n, (%)	*Currently have IS? (n = 15)*	*Currently have IS? (n = 24)*	*Felt IS over past month? (n = 11)*
No	7 (47)	6 (25)	0 (100)
Yes	8 (53)	18 (75)	11 (100)
Past IS? n, (%)	*During med school? (n = 15)*	*During med school? (n = 24)*	*Prior to this past month? (n = 11)*
No	6 (40)	8 (33)	3 (27)
Yes	9 (60)	16 (67)	8 (73)
	Had IS during intern year? (n = 15)		
No	4 (27)		
Yes	11 (73)		
Change in intensity of IS? n, (%)	*During intern year? (n = 11)*		*Over past month? (n = 8)*
Increased	2 (18)		2 (25)
Decreased	8 (72)		3 (37)
No change	1 (9)		3 (37)
Severity of IS experiences based on CIPS n, (%)	n = 17	n = 22	n = 10
Few	2 (17)	0 (0)	0 (0)
Moderate	3 (25)	8 (36)	3 (30)
Frequent	3 (25)	11 (50)	7 (70)
Intense	4 (33)	3 (14)	0 (0)

No statistically significant differences ($p<0.05$) in CIPS scores between new PGY-2's and month 0 and between month 0 and month 1 interns.
IS = imposter syndrome; CIPS = Clance Imposter Phenomenon Scale

Results: 20 PGY-2s, 24 interns at month 0, and 11 interns at month 1 completed surveys. There were no statistically significant differences ($p<0.05$) in CIPS scores between PGY-2's and month 0 interns or between month 0 and month 1 interns. Over half of interns had CIPS scores noting frequent or intense IS experiences. Table 2 lists preliminary themes on factors associated with IS.

Conclusions: Results so far show no significant changes in IS levels over the first month of EM intern year with most interns showing frequent or intense IS experiences. Themes from our qualitative data may inform strategies on alleviating these elevated levels of IS.

Table 2. Factors associated with imposter syndrome during the first month of EM intern year.

Situational factors associated with imposter syndrome	
Themes	**Representative Excerpts**
Physician role: being faced with physician tasks or medical decision-making, difficulty accepting physician identity	"Also when writing my MDM , at times I literally have no idea what to write." "Also, when nurses ask me, can the patient eat? It's literally the hardest question to this day. It makes me feel like I lack knowledge and can't even answer the basic question of eating." "Being called 'doctor' on EMS rotation..."
New professional context: change in clinical setting and/or role	"My first ED shifts..." "...on trauma rotation..."
Limits of clinical ability: when clinical responsibilities exceed perceived or real clinical abilities	"...times when my attending and senior are occupied" "pt nearly coded due to hypotension- my first patient who crashed right in front of me- I felt woefully unprepared" "When I was struggling to keep up with clinical tasks/demands"
External judgment: feeling judged by or against others	"I feel that all eyes are on me as I stand over the patient" "...comparing myself to the way that I perceive others"
Personal/affective factors associated with imposter syndrome	
Self-inadequacy: feeling a personal lack of ability or knowledge irrespective of others	"...usually when I didn't know something that I thought I should" "Lack of knowledge"
Uncertainty: lack of clarity on role, expectations, or the next course of action	"...didn't know how to best handle a situation" "I never know what role I should take" "...being unsure what the expectations are of me"
Isolation: inability to relate to others, feeling that they do not share the same experiences or skills as others	"I feel as if I should just not be there" "...feeling that everyone around me knows more"

24 EM Program Directors' Perception of "Lower 1/3rd" SLOEs in Ranking During the Matching Process

Brian Kendall, Ke Xu, Lillian Amezquita, Or Belkin, Rebecca Kusko, Maehali Patel

Background: The possibility of receiving a "lower 1/3" Standardized Letter of Evaluation (SLOE) from a program is stressful for MS IV Emergency Medicine students. No previous literature addressed how program directors perceive these evaluations and what medical students can do to overcome them. We hypothesize that program directors will still rank and match students with a "lower 1/3rd" SLOE and that students can enhance other parts of their application to overcome a "lower 1/3rd" SLOE.

Objective: Using a pilot study to examine the

Emergency Medicine (EM) Program Director's (PD) view of a "lower 1/3rd" SLOE and ways an applicant can overcome such an evaluation.

Methods: A 15-question survey validated through a modified Delphi technique was constructed and distributed to EM PDs across the country. Each PDs response was assessed and any recurring themes between the responses were noted and analyzed further. Descriptive statistics were obtained to summarize PDs' attitude.

Results: The survey was sent out to 280 program directors, 18.9% (53) responded. Of the 47.0% of PDs who matched a student with a "lower 1/3rd" SLOE in the 2023 Match, 96.0% indicated having a student rotate at their institution was key to overcoming a "lower 1/3rd" SLOE. 64.2% of respondents viewed a "lower 1/3rd" SLOE from a home institution as worse than a "lower 1/3rd" SLOE from an away institution. 96.2% of respondents either agreed or strongly agreed that an improved SLOE from an away institution is positively perceived in the case of a student with a "lower 1/3rd" SLOE from their home institution. 52.0% of respondents reported life experiences, 48.0% reported a personal connection to the region, and 36.0% reported a competitive STEP score as other factors that help them overlook a "lower 1/3rd" SLOE.

Conclusion: A student rotating at their program, and other factors such as an improved SLOE, will help PDs overlook a "lower 1/3" SLOE when creating their rank lists.

25 A Descriptive Analysis of Emergency Medicine Residency Scholarly Tracks Faculty Workforce

Amy Mariorenzi, Allison Beaulieu, Angela Regina, Seth Lotterman, Vytas Karalius, Evelyn Porter, Emad Awad, Arlene Chung, Jaime Jordan

Background: Scholarly tracks typically consist of longitudinal sub-specialty-specific curriculum and resident mentorship. Roughly one in five emergency medicine (EM) residency programs offer scholarly tracks, allowing residents to explore a niche and develop skills to prepare them for their future careers. There is limited information on the faculty workforce that leads scholarly tracks.

Objectives: We sought to understand the workforce characteristics of EM track leaders.

Methods: We performed a cross-sectional survey study of EM faculty track leaders. We identified track leaders through a review of program websites and direct contact of program coordinators. Participants completed an electronic survey consisting of multiple-choice and completion items. We calculated descriptive statistics.

Results: 112 of 276 (40%) track leaders completed the survey, including 63 (57.3%) males and 47 (42.7%) females. The mean age was 42 years. 62.5% had completed fellowship. Participants supervise a mean of 2.6 residents per year and spend a median of 7.6 (4-10.7) hours per month on track activities. 57.1% of participants receive no compensation for their role. Non-monetary benefits included career satisfaction (87.6%), intellectual stimulation (76.4%), departmental recognition (41.6%), and increased scholarly productivity (33.7%). Overall, 71.7% of faculty track leaders would recommend the role to a colleague.

Conclusion: Our study sheds light on the current track leader workforce and highlights that the majority of track leaders are uncompensated for their time and effort, which could be an area for targeted advocacy.

Table 1. Demographics and characteristics of faculty scholarly track leaders.

	Total responses	Min-Max	(Mean +/- SD) or Median (IQR)
Age per year	105	33-66	42.6 +/- 7.5
No of years in role	104	1-28	4.2 (2-6.1)
		Frequency	Percent (%)
Gender	110		
Male		63	57.3%
Female		47	47.2%
Fellowship completed	108		
Yes		70	63.5%
No		38	33.9%
Academic rank	110		
Assistant Professor		52	46.4%
Associate Professor		46	41.1%
Professor		9	8.0%
Others		5	4.5%
Region of residency prog.	108		
Midwest		19	17.5%
Northeast		38	33.9%
South		34	30.4%
West		19	17.5%

Table 2. Faculty scholaraly track leaders effort and compensation.

	Total responses	Min-Max	(Mean +/- SD) or Median (IQR)
No of residents supervised per year	109	1-5	2.6 +/- 0.9
No of hours/month spent on track activities	92	0-63	7.6 (4-10.7)
% of time spent on administrative	94	1-65	12.5 (10-25)
% of time spent on mentorship	94	0-90	20.0 (15-40)
% of time spent on scholarly work	94	0-55	20.0 (10-30)
% of time spent on teaching	94	2-98	35 (15-45)
		Frequency	Percent (%)
Compensation	84		
None		64	57.1%
Time buy-down		13	11.6%
Salary support/stipend		3	2.6%
Other*		4	4.7%

*Specific types of "other" compensation listed include FWOs and core faculty position

26 Analysis of Gender, Effort, and Compensation in Emergency Medicine Residency Scholarly Tracks Faculty Workforce

Allison Beaulieu, Amy Mariorenzi, Angela Regina, Seth Lotterman, Vytas Karalius, Evelyn Porter, Emad Awad, Jaime Jordan, Arlene Chung

Background: In Academic Medicine, women are less likely to hold leadership positions and be promoted to a higher rank when compared to their male colleagues. Scholarly tracks are established pathways in residency education led by emergency medicine (EM) faculty with expertise in specific niches. The gender differences in effort, time, and compensation of faculty who lead these tracks is unknown.

Objectives: We sought to investigate the relationship between gender and faculty effort, and compensation for scholarly track leaders.

Methods: All EM residency programs with scholarly tracks were identified and faculty track leaders were contacted through program websites and coordinators. Participants completed an online survey assessing their attributes, efforts, and compensation. We performed a bivariate analysis to analyze gender differences.

Results: 112 of 276 faculty surveyed responded (M:63, F:47). Female track leaders were more likely to have completed fellowship training and hold a higher academic rank than their male counterparts (Table 1). Female track leaders spent more time on academic track activities per month compared to male track leaders, however, this difference was not statistically significant (Table 2). Female track leaders were significantly more likely to receive compensation for their role including time buydown, salary support, and other forms of compensation (Table 1).

Table 1. Bivariate association between gender and scholarly track leader attributes and compensation.

Variable	Percentage Male (n=63, 57.3%)	Percentage Female (n=47, 42.7%)	*p* value
Completed Fellowship	60.3%	68.1%	<0.001
Academic Rank			
Assistant Professor	50.8%	42.6%	<0.001
Associate Professor	39.7%	44.7%	
Professor	7.9%	8.5%	
Others	0.0%	4.3%	
Regions			
Midwest	12.7%	23.4%	<0.001
Northeast	31.7%	38.3%	
South	39.7%	19.1%	
West	15.9%	19.1%	
Compensation			
None	84.8%	65.8%	<0.001
Time Buydown	10.9%	21.1%	
Salary Stipend	2.2%	5.3%	
Others	2.2%	7.9%	

Table 2. Bivariate association between gender and scholarly track leader efforts.

Variable	Total cohort (n=110)	Male (n=63)	Female (n=47)	*p* value
		Mean or median or percentage	Mean or median or percentage	
No of years in role	4 (2-6)	4 (2-5.75)	5 (3.5-6)	0.24
No of residents supervised per year	3.6 ± 2.9	2.60 ± 1.0	2.57 ± 1.85	0.25
No of hours/month spent on scholarly track activities	7.6 (4-10.7)	6.50 (6-10)	8.5 (5-14.25)	0.42
Percentage of time spent on Administrative Work	13.5 (10-25)	20 (10-25)	11 (17-24)	0.28
Percentage of time spent on mentorship	29.8 (15-45)	33 (10-50)	20 (15-45)	0.30
Percentage of time spent on scholarly activities	20.8 (10-26)	11(7.5-24)	31(10-30)	0.39
Percentage of time spent on teaching activities	35 (15-45)	25 (15-40)	30 (18-45)	0.29

Conclusion: This study identified important gender differences in the scholarly track workforce. Further investigation is necessary to explore the relationship between gender, efforts, and compensation, while accounting for potential influencing factors. In the future, consensus guidelines could be developed to guide the expected attributes, efforts, and compensation for scholarly track leaders to promote equity.

27 Impact of cardiovascular exercise during shifts on emergency medicine resident neurocognitive function

Meriam Deeb, Peter Gould, Philip Salen, Jill Stoltzfus, Holly Stankewicz

Objective: To evaluate the impact of exercise on physician cognition as measured by typing speed and accuracy.

Methods: The prospective, IRB approved, single institution, experimental study design at an urban level 1 trauma center ED assessed a cohort of 35 emergency medicine resident (EMR) ED physicians' cognitive status reflected by typing speed and accuracy at 3-times of day: 0900-day, 1600-evening, and 0400-overnight shift before and after a cardiovascular exercise intervention, ascending and descending 2 flights of stairs twice. EMRs typed randomly generated prepared texts for 2-minutes before and after participating in the exercise intervention based on investigator availability. Characters typed and error rate were tabulated for pre- and post-exercise typing tasks. Data analysis utilizing Wilcoxen Signed Rank Test compared total number of pre-and post-exercise characters typed and error rate.

Results: Investigators screened 35 subjects, the entire cohort of EMRs, twice during day, evening, and overnight shifts. The difference in the general distribution of characters typed by EMRs demonstrates statistical significance with mean characters typed post-exercise 211 (104-506) compared to pre-exercise 190 (100-438; $p < .001$). Regarding typing accuracy, the difference in the general distribution post-and pre-exercise demonstrates statistical significance: percentage incorrect post 0.68% (0-

33.33%) compared to pre 1.30% (0-5.08%; p = .047). The general distribution of post- and pre-exercise transcription errors based on the total number of characters typed achieved significance only for the day shift (p = .001) with fewer transcription errors post-exercise than pre; the difference between post and pre was not significant for evening and overnight shifts (see Table 1).

Conclusion: Cardiovascular exercise during ED shifts can improve cognitive function of EMR physicians as reflected by improved typing output and improved transcription accuracy.

Table 1. Percentage of incorrect responses based on total number of characters typed (median, range) n=35.

Day Shift		Evening Shift		Overnight Shift	
Pre	Post	Pre	Post	Pre	Post
1.01% (0-4.58%)	0.408% (0-2.7%)	1.82% (0.39-5.08%)	0.913% (0-33.33%)	0.895 (0-4.14%)	1.28% (0-3.49%)
P = .001		p= .514		P = .466	

28 Effectiveness of near-peer instruction during emergency medicine clerkships on fourth-year student end-of-year eFAST performance

Meghan Herbst, Drew Beaubian, Michael Taylor, James Grady, Ayesha Gittens, Jeremiah Ojha

Background: Limited trained faculty is a barrier to successful incorporation of the extended Focused Assessment with Sonography in Trauma (eFAST) into undergraduate medical education (UME) ultrasound (US) curricula. Aligning resident skills with UME needs has the potential to be effective and sustainable.

Objective: To evaluate the effectiveness of a resident-led eFAST session administered to 4th-year medical students during their emergency medicine (EM) clerkship by measuring students' end-of-year eFAST performance and confidence.

Methods: This was a single-site cross-sectional study of all graduating medical students exposed to a required vertical US curriculum and enrolled in 4th-year clerkships from May 1, 2022 to April 30, 2023. Exclusion criteria were an excused absence or failure to consent. A 90-minute eFAST session (intervention) was added to students' 4th-year EM clerkship orientation in September 2022, taught by EM residents on their academic site rotation. End-of-year performance and confidence assessments were conducted prior to students' 2023 graduation, using a 20-point objective structured clinical examination (OSCE) and 5-point Likert scale, respectively. The mean OSCE and confidence scores for control and intervention groups were compared using two-sample t-tests. An ANOVA was performed to control for unbalanced additional US experiences with Tukey-Kramer adjusted p-values.

Results: Of 113 anticipated students, 103 students participated; 48 in the control and 55 in the intervention group. The intervention group scored higher on the OSCE than the control, 11.9 ± 4.6 vs 9.9 ± 5.1, p = 0.04; and reported higher confidence, 3.2 ± 1.0 vs 2.8 ± 1.2; p = 0.09. When controlling for additional US experience, results were similar (p = 0.004 for OSCE and p = 0.007 for confidence improvement).

Conclusion: Resident-taught eFAST instruction during UME EM clerkship orientation led to improved end-of-year 4th-year medical student eFAST performance and confidence.

29 The Effect of Excessive Use of Force on the Mental, Physical, and Social Health and Workplace Environment of Medical Professionals

Thomas Medrano, Kevin-Dat Nguyen, Xiaofan Huang, Adedoyin Adesina, Richina Bicette, Titilola Alao, Jessica Jackson, Edgardo Ordonez, Anisha Turner

Background: Exposure to excessive use of force (EUOF) has been linked to several physical and mental health sequelae such as diabetes, hypertension, obesity, PTSD, and depression. While EUOF intersects with the medical system through the interwoven work of emergency medicine physicians (EMPs) and law enforcement officers (LEO) as care is provided to patients who have had encounters with police. The impact of EUOF on the physical, psychological, and social well-being of EMPs has not been studied in depth.

Objectives: The objective of this study is to evaluate the effect of excessive use of force on the psychological health and work environment of emergency medicine physicians.

Methods: This was an observational cross-sectional survey study. The survey was developed by five emergency and psychiatry physicians at Baylor College of Medicine. The survey included demographical questions, questions about work impact, and the Impact of Event Scale—Revised (IES-R) and its' subscales to assess the psychological impact of EUOF on the respondents. Links to the survey were emailed via RedCap to designated points of contact at five Texas-based institutions to be distributed to emergency medicine residents, fellows, and attendings in their emergency departments. Participant responses were analyzed using fisher exact test for categorical questions and Wilcoxon rank sum test for continuous variables. A significance level of 0.05 was used.

Results: Forty emergency medicine physicians (EMPs) responded to the survey. Fifty-three percent of the respondents were attendings, forty percent were residents, and seven percent were fellows. Approximately half (45%) of the respondents reported that incidents of EUOF impacted their work life while thirty eight percent (37.5%) of participants report being mentally impacted by incidents of EUOF. 56% of participants

who indicated their work life had been impacted reported that "[they] avoided letting [themselves] get upset when [they] thought about it or was reminded of it." (p = 0.021); 24% said "[they] felt as if it hadn't happened or wasn't real." (p = 0.045),"; 31% noted "[they] tried not to think about it." (p = 0.043). The median (25%, 75%) score on the intrusion subscale between the agree and disagree group was 6.00 (0.00,11.00) and 1.00 (0.00,4.25) respectively. Analysis produced a p-value of 0.048 between the median scores. 61% of these affected participants said that exposure to EUOF affected the way they care for patients (p = <0.001), 83% reported they interacted differently with police officers (p = <0.001) and 50% said they interacted differently with patients (p = <0.001).50% of respondents who reported that exposure to those same EUOF incidents mentally impacted them indicated that "Any reminder brought back feelings about it" (p = 0.015); 20% reported that it "Affected [their] desired practice setting" (p = 0.046). The median (25%, 75%) score between the agree and disagree/neutral groups on the avoidance subscale were 7 (3.25,16.25) and 3 (0,6) respectively with analysis producing a p-value of 0.039. 47% of mentally impacted respondents reported that they had been made aware of EUOF by law enforcement through personal experience (p = 0.024). 80% of these respondents had either experienced EUOF personally (p = 0.026) or knew a non-family member who had experienced EUOF (p = 0.036).

Conclusion: This pilot survey showed that EMPs are impacted by exposure to EUOF in ways that impact both their psychological state and work environment. This impact extends beyond a personal level by impacting both the way they interact with LEOs and contribute to patient care.

30 Minority Tax in Emergency Medicine Resident Physicians

Dalia Owda, Alexandra Hajduk, Edgardo Ordonez, Tanesha Beckford, Sarwat Chaudhry

Background: The minority tax is defined as the extra responsibilities placed on underrepresented minorities (URMs) to participate in diversity, equity and inclusion (DEI) efforts. In medical students and faculty, it has been associated with decreased wellness and promotion. Little is known about the minority tax experienced by resident physicians.

Objectives: To understand the minority tax experienced by emergency medicine (EM) residents. The primary aim is to compare the time spent on DEI work between URM and non-URM EM residents. The secondary aims are to describe the support received for DEI work and to describe experiences of mentorship, discrimination, and burnout between URMs and non-URMs.

Methods: This is a cross-sectional study of EM residents in U.S. ACGME accredited programs, with data collection from July to November 2023. Five domains were assessed: demographics, DEI involvement, mentorship, discrimination, and burnout. The survey was distributed via the EM Residents' Association (EMRA) newsletter, personal networks, and social media. We performed t-tests for comparisons of normally distributed continuous variables, Wilcoxon tests for ordinal/non-normally distributed continuous variables, and Chi-square for categorical comparisons.

Results: 101 EM residents including 66 URM and 35 non-URM completed the survey. URM residents reported a mean of 5.3 hours doing DEI work compared to 1.8 hours by non-URM (p<0.01) per week. 58% received a titled role, 5% received compensation, and 9% received training for their DEI work. URMs reported less effective mentorship (17.5 vs 14, p=0.01), higher experiences of discrimination (9 vs 6, p=0.02), and similar burnout (7.5 vs 7, p=0.21).

Conclusions: URM EM residents experience a minority tax through increased participation in DEI work and overall, low compensation and training in this work. They also experience less effective mentorship and higher events of discrimination.

31 Demographics, Training, and Longevity of Emergency Medicine Clerkship Directors: a National Survey

Jorge Fernandez, Daniel Soto, Emily Pott, Nicole Dubosh, Doug Franzen, David Manthey, Brenna Hogue, Jaime Jordan

Background: Despite the expansion of medical schools and EM residencies, there is limited current data regarding the characteristics of emergency medicine (EM) clerkship directors (CDs) in the United States (US).

Objectives: To assess the characteristics, training, support, and longevity of US EM CDs directing 3rd and/or 4th year rotations.

Methods: We performed a cross-sectional study of EM CDs identified using publicly available data from medical school, residency program, and AAMC websites who were invited to complete a confidential, piloted, electronic survey consisting of multiple choice and completion items. Descriptive statistics were reported; categorical variables were compared with χ-squared tests and continuous variables with t-tests.

Results: 157 EM CDs (44%) responded representing all US regions. 35% were female. Average years since finishing residency was 10.9 (+/- 7.1, 1 SD) and as CD 5.5 (+/- 4.5), without significant gender difference. 20% earned a Masters or PhD degree, 24% completed fellowship training (14% in medical education or simulation), and 6% an educational certificate program. 58% hold additional leadership, educational or administrative roles. 35% aspire to another position in 5 years (mostly assistant or residency director or assistant/associate dean). Anticipated years remaining as CD are 2.5 (+/- 2.0). Nonfinancial

rewards include positively impacting students, helping to select residents, and intellectual stimulation. Challenges include inadequate compensation for the administrative workload, excessive clinical duties, and managing/remediating struggling students, including those with professionalism issues.

Conclusions: EM CDs have a wide range of training and experience. <20% plan to stay in the role beyond 5 years. Many aspire to different leadership or administrative positions, possibly due to excessive clinical/administrative workload and inadequate support.

Table 1. 157 US EM CDs (44% response rate).

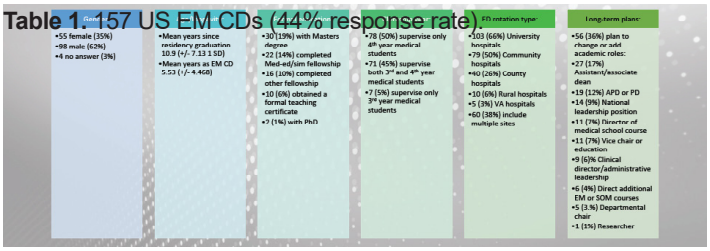


Table 2. EM CD long-term plans.

In how many years do you plan to change or add roles?

# of years	# CDs	% of all survey respondents	% of those CDs planning to change roles
0	5	3.2	9.4
1	14	8.9	26.4
2	12	7.6	22.6
3	7	4.5	13.2
5	12	7.6	22.6
6	1	.6	1.9
8	1	.6	1.9
10	1	.6	1.9
Total	53	33.8	100.0

Median 2 (IQR 4)
Mean 2.7 +/- SD 2.145)

For how many more years do you plan to act as a CD?

# of years	# CDs	% of survey respondents
0	13	8.3
1	15	9.6
2	24	15.4
3	17	10.9
4	5	3.2
5	55	35.3
6	1	.6
8	2	1.3
10	16	10.3
12	1	.6
15	4	2.6
18	1	.6
20	1	.6
25	1	.6
Total	156	100.0

Median 2 (IQR 4)
Mean 2.45 +/- 2.025)

32 Characteristics of Residency Applicants Choosing Virtual versus In Person Interviews

Joseph Alex Thompson, Brittany Jonap, Josef Thundiyil

Background: The COVID pandemic changed the way in which residency interviews are conducted with many programs now utilizing virtual interviews. There appears to be demand for in person or hybrid interviews, but it is not clear what factors may affect this choice and whether this may cause an inherent bias in the interview process.

Objectives: We sought to determine the applicant characteristics that were associated with choosing in person (IP) versus virtual (V) interviews over the past two application cycles.

Methods: This case control study was conducted at a single PGY1-3 EM program with 54 residents. For the past two application cycles, applicants were offered a choice between IP or V interviews. We compared applicant characteristics including gender, self-reported race, preference signal status, proximity of medical school and hometown, and USMLE scores to evaluate for differences between the two groups. Rotating students were excluded from the analysis as they were asked to pick virtual interviews.

Results: 331 applicants were included in analysis with 241 (72.8%) choosing V and 90 (27.2%) choosing IP interviews. Compared to V interviewers, IP were equally likely to be male (57.8%IP v 53.1%V), more likely to have given a preference signal (32.2% v 12.8%; OR=3.2(95%CI 1.8-5.6)), more likely to attend medical school in state (22.2% v 9.5%; OR=2.7(95%CI 1.4-5.1)), more likely to have their hometown in state (17.7% v 9.5% OR=2.0 (95%CI 1.1-4.0)), and less likely to be Black (4.4% v 7.1%). There was no difference amongst applicants who report race as white, Hispanic, or Asian. Mean USMLE Step 2 (V 251 vs. IP 250) scores were equal between groups.

Conclusions: There was no difference between test scores and gender amongst applicants who chose to interview IP compared to V. There were differences in race, proximity, and preference signals. This information can be useful for programs for future interview planning and for reducing bias when making their rank list.

33 Emergency Medicine Residency Website Wellness Pages

Alexandra Sappington, Brian Milman

Background: Resident wellness is a critical part of resident training. The COVID-19 pandemic impacted the way medical students seek residency positions. In 2020, ACGME advocated for virtual interviews. Most EM interviews in 2023 remain virtual. The virtual format for residency interviews will likely persist, causing medical students to rely heavily on the websites of prospective programs. Eliminating the in-person evaluation of perceived wellness amongst residents will require programs to be transparent about resident wellness on websites.

Objectives: To quantify the number of emergency medicine programs with wellness pages on their websites and identify themes portrayed on those pages.

Methods: We analyzed wellness pages from Emergency Medicine websites based on the 2022 NRMP program list. Wellness statements were coded by two authors independently through an inductive process. Codes were revised iteratively until consensus was achieved. Codes were organized into themes.

Results: 278 (100%) emergency medicine residency websites were identified. 57 (20.5%) had a wellness page, 45 (16.2%) linked to an institutional page that discussed wellness, 169 (60.8%) discussed wellness themes on their website, but did not have a dedicated page, and 69 (24.8%) had no direct mention of wellness anywhere on their website. Based on the programs that had a wellness page, the themes identified include community involvement, growth and development, nutrition and health, psychological well-being, social and relaxation activities, wellness culture and environment, wellness curriculum, wellness structure and resources, and work-life

integration. Subthemes appear in Table 1.

Conclusion: Most emergency medicine programs do not have a wellness page on their website. Of the programs that do, important themes are discussed that help applicants identify programs that align with their values.

Table 1. Themes and subthemes identified on EM residency wellness pages and percent of pages that discussed each subtheme.

Community Involvement	
14.3%	National involvement
12.5%	Community service
7.1%	Advocacy
Growth and Development	
30.4%	Professional development
30.4%	Finance
28.6%	Mentorship
16.1%	Professional satisfaction
10.7%	Coaching
7.1%	Contract negotiations
3.6%	Leadership skill development
3.6%	Personal development
1.8%	Achievement
1.8%	Empathy
Nutrition and Health	
55.4%	Physical health
48.2%	Food
16.1%	Spiritual health
Psychological Well-being	
57.1%	Mental health
50.0%	Burnout
41.1%	Resilience and coping
33.9%	Stress
30.4%	Peer support
19.6%	Depression/suicide
16.1%	Destructive habits
14.3%	Self-monitoring
3.6%	Imposter syndrome
Social and Relaxation Activities	
83.9%	Social events
28.6%	Local amenities
23.2%	Relaxation
Wellness Culture and Environment	
41.1%	Culture
12.5%	Definition
3.6%	Harassment
3.6%	Lack of professional fulfillment
3.6%	Legal concerns
Wellness Curriculum	
51.8%	Didactics
7.1%	Scholarship
Wellness Structure and Resources	
53.6%	Institutional structure
42.9%	Resident wellness committee
32.1%	Resources
23.2%	Counseling services
17.9%	Medical health services
8.9%	ACGME requirements
Work-Life Integration	
39.3%	Work-life balance
16.1%	Family and childcare
12.5%	Schedule
10.7%	Efficiency

34 Contemporary Views and Practices on GME Dizziness and HINTS Exam Curricula: A National Survey of Emergency Medicine Residency Program Directors

Mary McLean, Justin Stowens, Ryan Barnicle, Negar Shah, Kaushal Shah

Background: Neurologists and neurology sub-specialists utilize the HINTS exam to rule out posterior stroke, but its diagnostic utility is controversial when used by emergency physicians. Educators lack consensus on best practices for teaching this skill to emergency medicine residents.

Objectives: We aimed to characterize emergency medicine's HINTS educational practices and to develop a formal needs assessment.

Methods: In this cross-sectional study, a survey was emailed to residency directors, the focuses of which included HINTS education perceptions, practices, resources, and needs. Likert scales, frequency distributions, and descriptive statistics were used.

Results: Of 250 possible programs, 201 (80.4%) responded and consented. Of active respondents, 148 (77%) believed the HINTS exam is valuable to teach, 125 (65%) reported HINTS conference sessions, and 148 (77%) reported clinical bedside teaching by faculty. Residency graduates were perceived as more comfortable and confident than faculty. Both parties were perceived as more comfortable than they were competent. Most-effective teaching modalities were clinical bedside teaching, online videos, and simulation (see Figure 1). Teaching struggles included head impulse training, test of skew training, and exam application to correct patients. Teaching barriers were faculty lacking expertise, concern for HINTS reproducibility, and lack of simulation models (see Figure 2). Program directors would dedicate a mean of 2.0 hr/yr (standard deviation 1.3 hr/yr) to implementing a standardized HINTS/dizziness curriculum.

Conclusions: This needs assessment can guide development of a formal, standardized curriculum focusing on residency directors' cited HINTS exam educational struggles, barriers, resources, and perceptions of effective teaching modalities. Limitations include likely non-response bias (49 residency programs did not open or consent to the survey, and no survey item was "required" except consent).

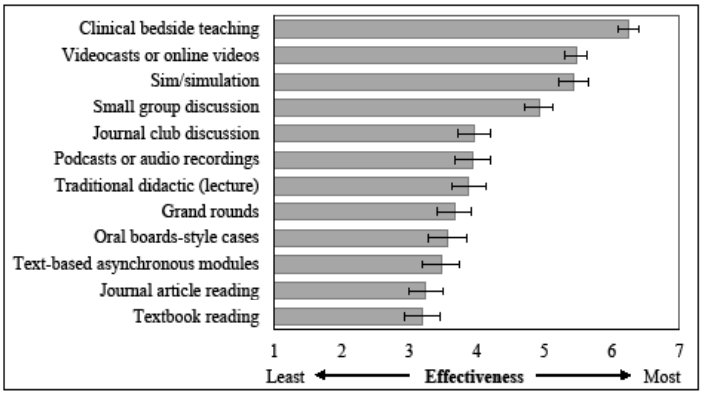


Figure 1. Ranking of educational modalities for teaching the HINTS examination, from most (top) to least (bottom) effective. Effectiveness is based on mean Likert scale ratings and error bars represent the 95% confidence interval of the mean.

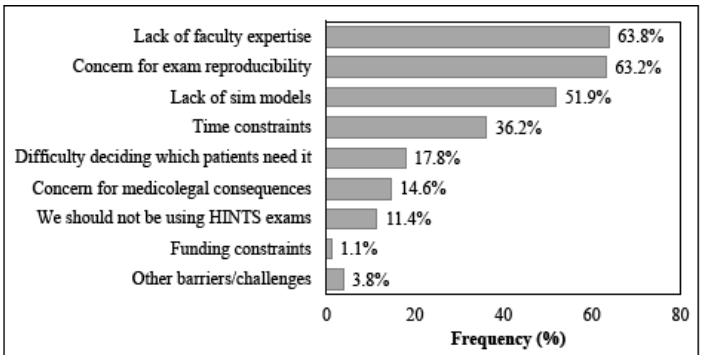


Figure 2. Frequency of residency program director-reported barriers to teaching HINTS examination.

35 A Comparison Between In-Person and Video Conference Lectures on Medical Student Ultrasound Education

Alina Mitina, Alyssa Auerbach, Angela Cirilli, Ellen Kurkowski, Connie Yu, Conor Davenport, David Beckett

Background: Increasing priority has been placed on teaching point of care ultrasound (POCUS) while in medical school. Meanwhile, education has generally been shifting to virtual platforms. Despite some return to in-person learning, it is worthwhile to evaluate the efficacy of virtual learning, which may increase access to ultrasound education.

Objectives: Evaluate if virtual ultrasound lectures deliver information as effectively and increase learner confidence similarly to in-person lectures.

Methods: This cohort study anonymously surveyed medical students from three universities to analyze learner confidence and information retention from both in-person and videoconference lectures about the extended focused assessment of trauma (eFAST) exam. Both 30-minute lectures were given live, with a 10 minute demonstration on a model, and pre- and post-lecture surveys. Neither had hands-on training.

Results: 117 learners were included (38 in-person, 79 virtual). A two-tailed T-test assuming unequal variances indicated significant improvement in percentage correct between pre- and post-tests ($p<.001$), (32.2% in-person and 36.9% virtual). There was no significant difference between the intervention groups' pre- or post-test scores ($p=.23$ and $p=.40$, respectively), indicating both interventions had similar knowledge baseline and gain. Both groups showed an improvement in confidence following the sessions (mean improvement of 1.7 points in-person, 1.8 virtual) which was not significantly different between the groups ($p<.01$).

Conclusions: There was no demonstrated significant difference in learned information or learner confidence between in-person and virtual didactics, indicating students may attain the same content and confidence through both modalities. This study is limited due to non-paired surveys, making it difficult to analyze individual learners. Future work may include repetition with paired surveys, other ultrasound content, and general medical education.

36 A Report on Physician Wellness during the Transition from Community EM Physicians to Faculty in a New Residency Training Program

Robyn Hoelle, Hannah Mishkin, Thomas Bentley, John DiFebo, Joseph Roesch

Background: Physician wellness continues to be an important focus, especially in EM. New residency training sites include community hospitals with new graduate medical education (GME) infrastructure. How does transitioning from a community hospital to a teaching site effect physician wellness? This paper reports demographics and self-perceptions of community physicians who are transitioning to faculty at a new teaching site. We report new faculty member's emotional exhaustion (EE), depersonalization (D) and personal accomplishment (PA) scores throughout the transition.

Objectives: EM physicians who transition from community doctors to faculty in a residency training program will show trends toward improved wellness using the Maslach Burnout InventoryTM (MBI).

Methods: DESIGN: This study is a retrospective observational study. SETTING: Community hospital where GME programs started three years prior to a new EM program beginning. PARTICIPANTS: EM physicians transitioning from community doctors to faculty in a new residency program took the MBI and a survey about their perceptions of the transitions the month before the residents arrived (Y0), one year later (Y1) and two years later (Y2).

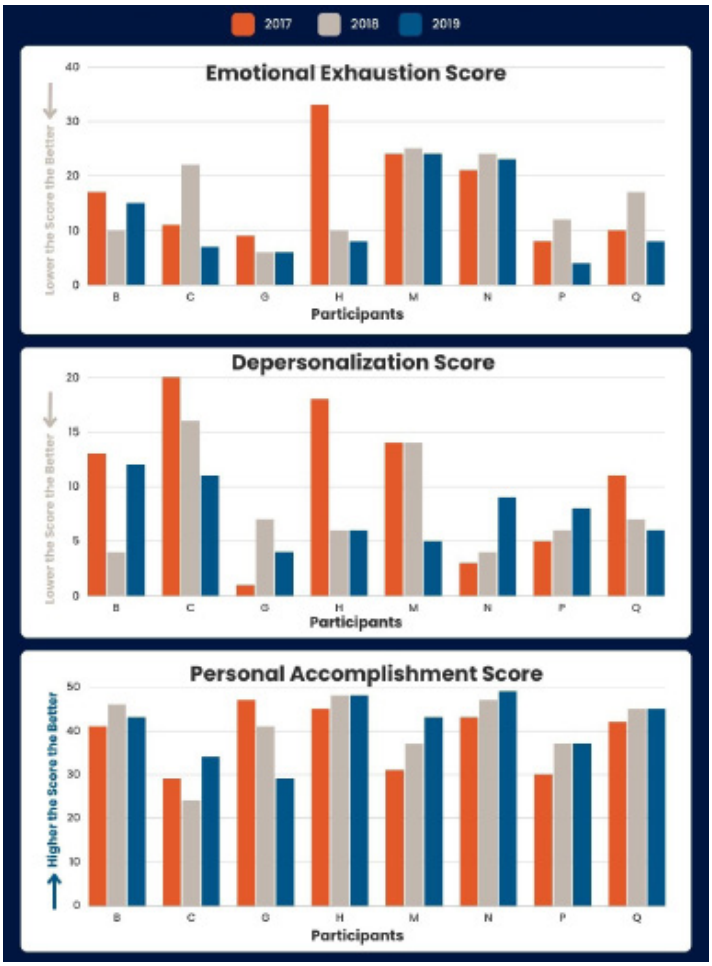


Figure. Maslach Burnout Inventory™ trends for the first three years of transition.

OBSERVATIONS: Results reported with descriptive statistics. Core faculty MBI results are shown comparing Y0, Y1 and Y2 by each participant.

Results: Faculty experienced an average improvement of 4.8 points, 3.0 points and 2.5 in EE, D and PA scores demonstrating trends toward improvement in Wellness. Maslach Wellness Profiles improved in 33% and stayed the same in 53% of participants.

Conclusions: While the sample size is small, this study demonstrates unique insight to faculty wellness during a time of transition. We demonstrated a trend toward wellness improvement.

37 Change in Attendance During a Virtual Emergency Medicine Conference Day

William Dewispelaere, Adane Wogu, Nannan Wang, Spencer Tomberg

Background: Many emergency medicine (EM) residency programs transitioned in-person didactic days to virtual settings during COVID-19 (1). Virtual education has advantages including accessibility and adaptability (2). Downsides include loss of focus and effective learning strategies (3,4,5), however, changes in attendance throughout a virtual education day are not well-studied.

Objectives: This study explored learner attendance in the virtual setting by quantifying learner attrition during virtual conference days. Our hypothesis was that there would be a significant decline in attendance throughout the education session.

Methods: Design: This was a retrospective observational study that spanned 4 months at a single EM residency program where didactic conference runs for 5 hours. Each conference starts with 90 minutes of morbidity and mortality (M&M) and is followed by didactic education sessions. Observations: The number of participants logged into a virtual meeting were calculated at 30-minute intervals. Comparisons in attendance were made between subsequent intervals. We used generalized estimating equations to calculate appropriate incident rate ratios (IRR) and 95% confidence intervals (95% CI) for each time point. Colorado Multiple IRB approval was obtained for the study.

Results: Average attendance peaked at 121 participants during M&M at 8:30am (Table 1). There was a 23% decline after M&M ended at 9:00am ($p<0.001$). There was a decline in participation throughout the rest of the conference day (Figure 1). By the last timepoint, there were an average of 32 participants left in the meeting, which is a 74% decline from peak participation.

Conclusions: This study demonstrates a decline in participation over the five-hour education day. Our findings may support limiting the length, or frequency, of virtual education sessions as emergency medicine residencies choose how to incorporate virtual education into their didactic learning platforms.

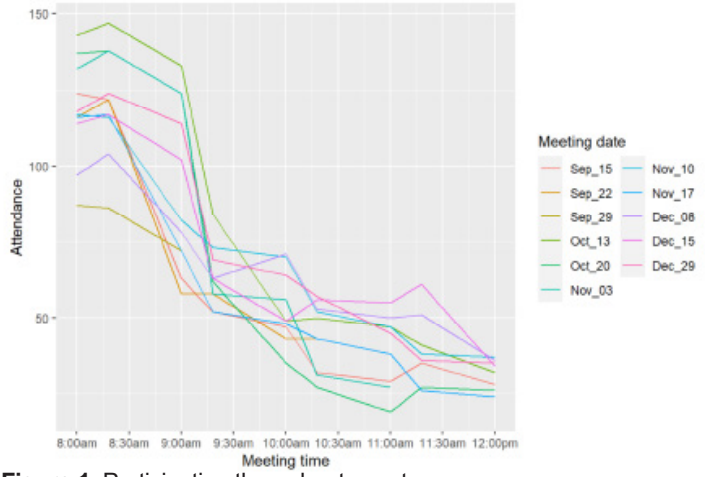


Figure 1. Participation throughout event.

Table 1. Average attendance during M&M.

Time	[min, max]	mean (SD)	IRR (95%CI)	p-value
8:00am	(87, 143)	116.3 (16.3)	-	-
8:30am	(86, 147)	121.0 (16.8)	1.02 (1.01, 1.04)	0.003
9:00am	(58, 133)	92.9 (27.2)	0.77 (0.69, 0.87)	<0.001
9:30am	(52, 84)	63.4 (9.8)	0.48 (0.21, 1.08)	0.077
10:00am	(35, 71)	53.2 (11.8)	1.02 (0.58, 1.80)	0.932
10:30am	(27, 57)	44.4 (11.0)	0.80 (0.66, 0.96)	0.016
11:00am	(19, 55)	39.7 (12.2)	0.68 (0.29, 1.58)	0.370
11:30am	(26, 61)	39.4 (11.8)	1.52 (0.66, 3.51)	0.321
12:00pm	(24, 37)	31.5 (4.9)	0.63 (0.35, 1.12)	0.113

38 Learner-Driven Evaluations and Outcomes During Fourth Year Emergency Medicine Sub-Internship

Allison Beaulieu, Sofia Tuttle, Rowan Kelner, Christine Raps, Robert Stephen, Susan Stroud

Background: A learner-driven feedback model allows learners to take an active role in their growth and development. The model improves the quality and quantity of feedback received; however, it is unknown if it impacts performance.

Objectives: The purpose of this study is to assess the performance outcomes of a learner-driven evaluation model.

Methods: A retrospective observational study was employed to review 2441 evaluations from 141 medical students during a 4-week EM sub-internship at an academic center between 2021-2023. Learner-driven evaluations were completed by faculty and senior residents on a Likert scale (0-4). The relationship between number of evaluations and outcomes was analyzed using correlation and linear regression.

Subgroups were compared using a Welch paired t-test.

Results: Students received an average of 17 evaluations, evaluation score of 3.46, SAEM score of 81.2 and course grade of 3.47 (Table 1). There was a positive and statistically significant correlation between number of evaluations and evaluation score, number of evaluations and final course grade, and number of evaluations and SAEM test score (Figure 1). There was a statistically significant gender difference in the number of evaluations received, average evaluation score, and final course grade (Table 1). There was no statistically significant gender difference in SAEM score or in any outcome between DO and MD students. EM-bound vs non-EM bound students had a statistically significant difference between all outcomes.

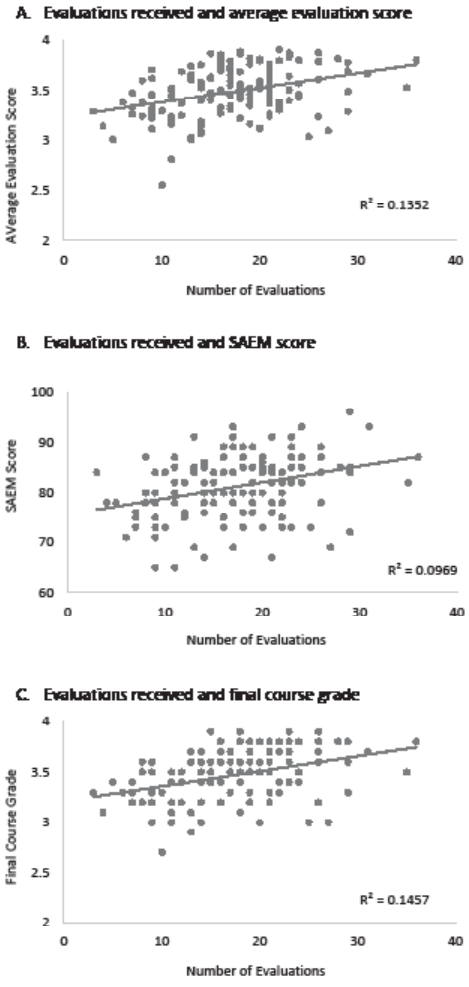


Figure. Linear regression models of number of evaluations received and course outcomes per student, inlcuding R^2 and R (correlation coefficient). **A.** Number of evaluations compared to average avaluation grade, R=0.37*. **B.** Number of evaluations compare to SAEM grade, R=0.31*. **C.** Number of evaluations compared to final course grade, R=0.38*.
**P*-value <0.001.

Table 1. Descriptive statistics and analysis of fourth year medical students their EM sub-internship.

	Number of students	Number of evaluations		Evaluation score		SAEM score		Final course grade	
		mean	95% CI	mean	95% CI	mean	95% CI	mean	95% CI
Identifies as									
Male	83	16.2	14.8-17.6	3.45	3.38-3.48	80.7	79.3-82.1	3.41	3.36-3.46
Female	58	18.9	17.5-20.4	3.57	3.51-3.63	81.9	80.3-83.5	3.55	3.49-3.62
Declared specialty									
EM	108	18.8	17.8-19.9	3.53	3.48-3.57	82.4	81.2-83.6	3.51	3.47-3.56
Non-EM	33	12.3	10.3-14.3	3.35	3.28-3.42	77.1	75.1-79.1	3.32	3.26-3.39
Degree									
MD	114	17.1	16.0-18.3	3.50	3.46-3.54	81.3	80.0-82.5	3.48	3.44-3.53
DO	27	18.2	15.6-20.7	3.43	3.30-3.55	80.8	78.5-83.1	3.41	3.30-3.52
Overall	141	17.3	16.3-18.4	3.49	3.44-3.53	81.2	80.1-82.2	3.47	3.38-3.56

CI = confidence interval
**p < 0.01 via Welch Two-Sample t-test*
***p<2.001 via Welch Two-Sample t-test*

Conclusion: This study identified a weakly positive correlation between number of evaluations and performance. In addition, important gender differences were noted. Further investigation is needed to explore these relationships while accounting for potential influencing factors. Limitations include inability to track evaluations distributed by students. In the future, learner-driven evaluations could be implemented to improve learner engagement and performance.

39 Moving Beyond Talking the Talk: Implementation of Student Competency Assessment in Social EM

Emily Craft, Andrew Golden

Background: EM has placed increasing value on educating trainees on the social determinants of health (SDH). Minimal data exist describing the assessment of trainees on this skill in the workplace.

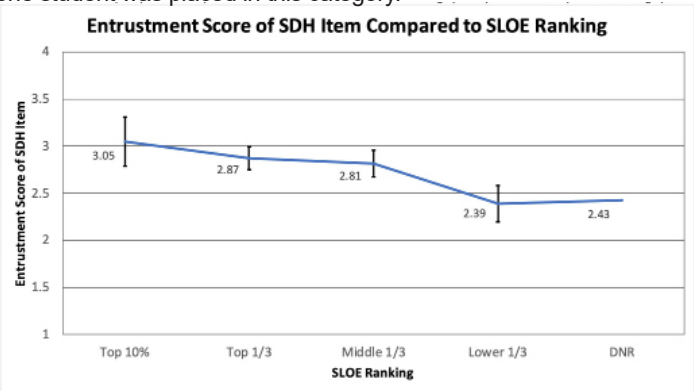
Objectives: The goals of this project were: (1) determine EM faculty members' abilities to assess acting interns (AI) in identifying and mitigating SDH in the ED and (2) evaluate the frequency of entrustment ratings on this task in a cohort of AIs. We hypothesized faculty would have a high rate of being unable to assess AIs in this skill. When assessed, we hypothesized AIs would be rated with lower entrustment scores in this task.

Methods: We previously modified the National Clinical Assessment Tool (NCAT) in EM to include an item about the recognition and mitigation of SDH. Using a retrospective observational design, we examined each assessment for AIs by EM faculty at a single institution between June-October 2023. The number of NCATs completed without answering the SDH question and the frequency of ratings for this item were recorded. ANOVA and Tukey analyses evaluated for differences of AIs' mean scores on the SDH question and their Standardized Letter of Evaluation (SLOE) ranking as determined by our SLOE committee.

Results: Of 177 otherwise complete NCATs, 37 (20.9%) left the SDH item incomplete. When this item was scored, AIs were most frequently noted to be "Mostly Entrustable" (53.5%) in managing SDH. The distribution of AIs' mean scores on the SDH item across SLOE rankings were significantly different (p=0.003). This was driven by lower mean scores in AIs in the Lower 1/3 category compared to all others (Figure 1).

Conclusion: Approximately 20% of faculty members were unable to assess AIs on their ability to clinically address the SDH. Average scores on the SDH item were similar between SLOE rankings, except those placed in the Lower 1/3. Clear guidelines and further faculty development surrounding student assessment of this skill are crucial.

Figure 1. Entrustment score of social determinants of health item (SDH) on modified National Clinical Assessment Tool compared to ranking on Standardized Letter of Evaluation (SLOE). Error bars represent standard deviation. No error bar for DNR category as only one student was placed in this category.



40 Heard it Through the Grapevine: Emergency Medicine Program and Resident Perspectives on the Match

Dora Miller, Jana Ricker, Tania Strout

Background: Emergency Medicine (EM) programs have experienced an increase in unfilled residency positions. Little is known about the underlying causes of this phenomenon, particularly about the contribution of the transition to a video-based interview process.

Objectives: We sought to describe the practices of EM programs and residents around virtual interviews; application and interview guidance residents received from their medical schools; and any differences in practices based upon resident and program characteristics.

Methods: We used a cross-sectional design collecting data via a confidential, web-based survey of EM residency program directors (N=283), interns (N=3011), and PGY-2s (N=2921). Descriptive statistics, $\chi 2$ analysis or the independent samples t-test were used for analysis.

Results: 52 programs, 208 interns, and 165 2nd year residents responded [T1]. Most programs (n=46, 88.5%) reported receiving fewer applications during the last season than previously (mean 196, 95% CI: 158-234 less). Few participated in the Supplemental Offer and Acceptance Program (SOAP) (n=15, 33.3%), an increase over the prior year (n=6, 13.3%). While most residents received guidance on how many programs to apply to and interviews to complete, many did not follow these recommendations [T2]. About half reported applying to more programs due to the decreased travel expenses (PGY-1: n=107, 53.2%; PGY-2: n=85, 53.1%) and many endorsed applying to more for fear that virtual interviews would make it difficult for programs to get to know them (PGY-1: n=103, 54.5%; PGY-2: n=97, 60.6%). Significant differences in program and resident responses were not noted based upon characteristics.

Conclusions: While programs experienced a decrease in the number of applicants, residents reported applying to and interviewing at more programs than recommended by their schools. Residents noted concern about the video interview as rationale for this, in addition to decreased travel-related costs.

Table 1. Characteristics of study participants and programs.

Characteristic	EM Programs n [%]	EM PGY-1s n [%]	EM PGY-2s n [%]
Program Longevity			
1-3 years	4 (8.9)	n/a	n/a
3-5 years	4 (8.9)	n/a	n/a
6-10+ years	37 (82.2)	n/a	n/a
Program Duration			
3-years	38 (84.4)	n/a	n/a
4-years	7 (15.6)	n/a	n/a
Number Positions Annually			
6-10	20 (44.4)	n/a	n/a
11-20	25 (55.6)	n/a	n/a
Conducted Holistic Review			
Yes	50 (96.2)	n/a	n/a
No	2 (3.8)	n/a	n/a
Applicants Interviewed Per Open Spot			
13-20	29 (82.9)	n/a	n/a
20+	6 (17.1)	n/a	n/a
Applications Signaled Interviewed			
5-10	5 (11.6)	n/a	n/a
10-15	7 (16.3)	n/a	n/a
16-20	8 (18.6)	n/a	n/a
20+	23 (53.5)	n/a	n/a
Gender Identity			
Male	n/a	116 (57.1)	80 (50.0)
Female	n/a	85 (41.9)	78 (48.8)
Transgender or non-binary	n/a	2 (1.0)	1 (0.6)
Another gender identity	n/a	0 (0)	1 (0.6)
Identify as URiM			
Yes	n/a	43 (21.2)	31 (19.5)
No	n/a	160 (78.8)	128 (80.5)
Number Programs Applied To			
1-9	n/a	4 (2.0)	4 (2.5)
10-20	n/a	9 (4.4)	12 (7.5)
20-30	n/a	20 (9.9)	24 (15.0)
30-40	n/a	40 (19.7)	22 (13.8)
40-50	n/a	40 (19.7)	25 (15.6)
50+	n/a	88 (43.3)	73 (45.6)
Number of Interviews Completed			
1-9	n/a	26 (12.8)	39 (24.4)
10-15	n/a	54 (26.6)	57 (35.6)
15-20	n/a	69 (34.0)	37 (23.1)
20+	n/a	54 (26.6)	27 (16.9)
Participated in SOAP			
Yes	15 (33.3)	15 (7.5)	9 (5.6)
No	30 (66.7)	186 (92.5)	151 (94.4)

Notes: EM = Emergency Medicine; PGY = Post-graduate Year; URiM = underrepresented in medicine; SOAP = Supplemental Offer and Acceptance Program.

Table 2. Resident reports of and adherence to recommendations from medical school.

Guidance or Adherence to Guidance	EM PGY-1s n (%)	EM PGY-2s n (%)
Received Guidance from School on Number of Programs to Apply To		
Yes	158 (77.8)	122 (76.3)
No	45 (22.2)	38 (23.8)
Received Guidance from School on Number of Interviews to Complete		
Yes	143 (70.4)	120 (75.0)
No	60 (29.6)	40 (25.0)
Adhered to Guidance on Number of Programs to Apply To		
Yes	115 (58.1)	90 (57.7)
No	83 (41.9)	66 (42.3)
Adhered to Guidance on Number of Interviews to Complete		
Yes	101 (51.5)	96 (61.5)
No	95 (48.5)	60 (38.5)

Notes: EM = Emergency Medicine; PGY = Post-graduate Year

41 Broselow Tape vs Provider Weight Estimation in Pediatric ED Patients

Jaryd Zummer, Sameer Desai, Rachel Shercliffe, Madison Reed

Background: The Broselow pediatric emergency Tape (BT) is a color-coded system that uses height to predict a child's weight and determine appropriate equipment size and medication dosages for emergency treatment. More recently, the accuracy of BT weight estimation has been put into question, especially in overweight or obese patients, and in ethnically diverse populations outside of the U.S.

Objectives: Our study aims to determine how BT compares with healthcare providers' estimate of weight based on visual examination alone. We evaluated both provider and patient factors relating to weight assessment. We hypothesized that BT would perform better than providers at predicting weight in pediatric populations.

Methods: This was a prospective cohort study of 200 patients between the ages of 3 weeks and 10 years old seen at a tertiary care pediatric ED between October 2022 and March 2023. A convenience sample of 200 providers recorded their patient weight estimates while initially blinded to the chart. BT height and color measurements were recorded by the primary investigators as well as measured patient weight and demographic information.

Results: When compared with BT, providers were more accurate at predicting patient weight (mean diff 0.06kg, p=0.803 vs mean diff 1.43kg, p<0.001). Both BT and providers were less accurate for patients older than 2 years of age, and those with increasing Body Mass Index (BMI). No significant differences were seen with changing provider factors such as type or specialty, years of experience, and parenthood status.

Conclusions: BT was not as accurate at predicting patient weight as providers' visual estimates. This adds to a body of evidence challenging BT use in subsets of patients and highlighting that alternative methods for weight estimation may be needed in emergent pediatric cases.

Table 1. Comparisons of measured, Broselow and provider predicted weights.

	Measured	Broselow	Difference	P-value
Weight, mean kg (SD)	15.2667(7.76003)	13.84 (6.566)	1.4267 (2.4388)	<0.001
	Measured	Provider predicted	Difference	P-value
Weight, mean kg (SD)	15.2667 (7.7003)	15.2064 (7.7592)	0.0603 (3.41074)	0.803

Table 2. Secondary outcomes-differences from measured weight based on patient characteristics.

Age	Broselow Tape	Provider
≤ 2 years old mean difference, kg (SD)	0.98397 (1.50486)	-0.44983 (2.32576)
> 2 years old mean difference, kg (SD)	2.0381 (3.2358)	0.76476 (4.41938)
p-value	0.006	0.023
BMI*		
Healthy (n=75) mean difference, kg (SD)	0.24 (1.3897)	0.3739 (3.4647)
Overweight (n = 22) mean difference kg (SD)	3.2545 (1.1291)	0.6218 (3.7929)
Obese (n = 21) mean difference kg (SD)	6.2048 (2.5176)	1.6757 (5.6610)
Total (n =118*) Mean difference, kg (SD)	1.8636 (2.8231)	0.6518 (3.9863)
p-value	0.001	0.420

*CDC criteria for BMI calculation includes only patients ≥2 years old

42 Multimodal Acute Pain Management for Fourth Year Medical Students

Jerome Balbin, Amanda Hall, Michelle Kikel

Background: The provision of adequate, safe, and timely analgesia is a basic tenet of ED pain management. There appears to be a gap in medical student education when it comes to applying multimodal pain management. In this study, we focus on the medical student perspectives as well as the impact of the implementation of a novel pain curriculum and didactic series on 4th year medical students rotating in emergency medicine.

Objectives: To assess 4th year medical students' perspectives on knowledge and comfort in utilizing various modalities for pain management.

Methods: This is an experimental survey-based study. Students participated in a novel curriculum dedicated to Acute Pain Management during their emergency medicine clerkship. Students responded to a pain curriculum pre-survey at the start of their rotation. Subsequently each student was sent a follow up survey following their rotation to determine effects of the educational intervention. Both qualitative and quantitative data was obtained.

Results: There were a total of 51 student rotators between August 2023-October 2023. 49 students completed the pre-test survey and 44 completed the post-test survey. There is a noted significant improvement in both their knowledge base and comfort level with acute pain

management in the emergency department. There was an increase in comfort levels of all 5 areas tested. Additionally there was an increase in knowledge base on all 6 questions tested. Overall feedback was that the students appreciated and enjoyed these lectures.

Conclusions: Lectures dedicated to acute pain management improved both knowledge base and comfort level for medical students, filling a gap in current medical education.

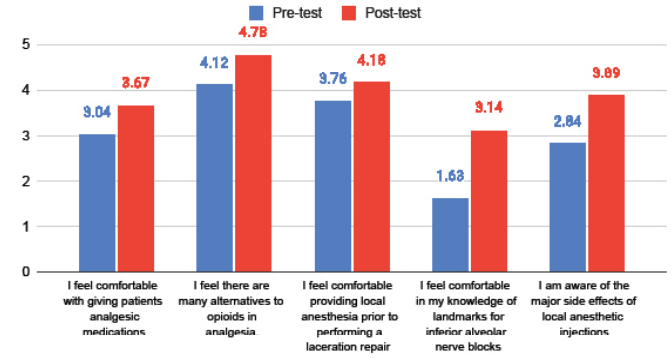


Figure 1. Pre- and post- intervention comfort assessment.

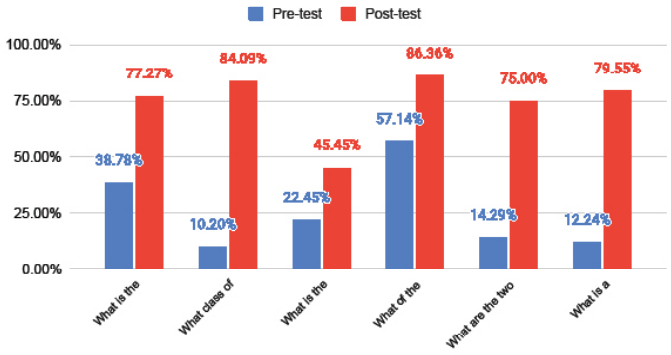


Figure 2. Pre- and post-intervention knowledge assessment.

43 The Impact of a Social Media Campaign on Applications for an Emergency Medicine Acting Internship

Shagun Berry, Lauren McCafferty, Andrew Golden

Background: Applications to EM residencies have been decreasing. We designed a social media (SM) campaign to highlight our education programs in an attempt to increase our acting internship (AI) applicant pool.

Objectives: The objectives were to (1) evaluate the association of a SM campaign to changes in the number and demographics of applicants to our EM AI and electives, and (2) evaluate for temporal trends in applications related to SM posts. We hypothesized our SM campaign would increase the number of applicants to our AI and electives from an increasingly diverse geographic range.

Methods: A 5-video SM campaign was created in March 2023 to highlight our institution's AI experience. Data was collected from the Visiting Student Learning Opportunities on the number of applicants, total applications to the AI and all clinical electives for the 2022 (control) and 2023 (intervention) cycles. Chi-squared analysis was performed for categorical data. Student's t-test was performed for continuous variables. Temporal trends were analyzed as a cumulative frequency graph relative to the dates of publication for the posts.

Results: There were non-significant increases in the number of applicants for the AI (18%, 60 vs 71; X2(1, N=6529)=1.78, p=0.18) and all clinical electives (25%, 69 vs 86; X2(1, N=6529)=3.16, p=0.08). There were also increases in the number of applications for the AI (30%, 131 vs 171) and all clinical electives (53%, 166 vs 254). The geographic distribution of applicants (X2(1, N=131)=0.42, p=0.51) and composition of MD- vs DO-applicants (X2(1, N=131)=0.66, p=0.42) to the AI did not change. Temporal relationships between cumulative number of all applicants and timing of SM posts are seen in Figure 1.

Conclusion: Our SM campaign was associated with an increase in the number of applicants and applications to the AI and electives, although this was not statistically significant. Figure 1. Graph of cumulative applications with video launches.

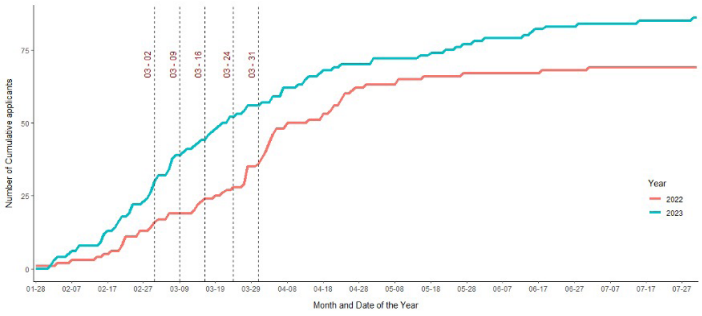


Figure 1. Cummulative applications with video launches.

44 Measures of Clinical Performance and Communication Skills of EM Residents on Simulated Resuscitations are not Correlated

Bryan Kane, Jeremiah Ojha, Diane Begany, Matthew Cook, Nicole Elliot, Michael Nguyen

Background: Prior publications evaluated multi-source feedback (MSF) and communication of EM residents managing a high-fidelity simulation (sim) case.

Objective: This project seeks to determine if a correlation exists between clinical performance and communication.

Methods: This planned secondary analysis of an IRB approved database enrolled EM residents from a PGY 1-4 residency. Both sims were toxic ingestions: an adult ACLS case conducted in the sim lab and a PALS case conducted in-situ in a pediatric ED. MSF feedback was generated using a Queens Simulation Assessment Tool (QSAT) specific to the case from self-evaluation, a junior resident, an EMS provider (adult), a nurse (2 peds) and two EM faculty. In both sims communication to a consulting toxicologist and admitting intensivist were measured using the 5C's model. The summed QSAT and 5C scores were correlated using Pearson's correlation coefficient with Fisher's z transformation; interpreted as weak (<0.3), moderate (0.3-0.7) and strong (>0.7). Significance was set at 0.05. Positive correlation indicates synchronous movement of scores.

Results: In the adult sim, 32 residents were enrolled (Table 1). There was a moderate positive correlation between attending QSAT and intensivist 5C scores [r=0.332, 95% CI (-0.032, 0.618)], the remaining correlation comparisons were weak, and all were without statistical significance. In the ped sims, 34 residents were enrolled. Those correlations, presented in Table 2, were all weak and without significance.

Table 1. Correlation of QSAT and 5C's score in all residents for adult simulations.

QSAT Metric	5C's Metric	n*	Standard Correlation Coefficient (*r*)[a]	Fisher's z Transformed Coefficient (*zr*) (95% CI)[b]	p-value[c]
Average (All Raters)	**Average (Toxicologist & Intensivist)**	**30**	**0.249**	**0.254 (-0.122, 0.559)**	**0.1865**
Average (Attendings Only)	Average (Toxicologist & Intensivist)	30	0.026	0.026 (-0.338, 0.383)	0.8933
Average (Attendings Only)	**Toxicologist Only**	**32**	**0.135**	**0.136 (-0.224, 0.462)**	**0.4639**
Average (Attendings Only)	Intensivist Only	30	0.332	0.345 (-0.032, 0.618)	0.0728

*4 assessments were missing either the Tox or Int 5C's score, therefore the average score is also missing, which changes the n depending upon the correlation pairing
[a]Pearson correlation coefficient
[b]Fisher's z transformed Pearson correlation coefficient
[c]p-value corresponds to the Fisher's z transformed correlation coefficient and 95% CI

Table 2. Correlation of QSAT and 5C's score in all residents for pediatric simulations.

QSAT Metric	5C's Metric	n*	Sample Correlation Coefficient (*r*)[a]	Fisher's z Transformed Coefficient (*zr*) (95% CI)[b]	p-value[c]
Average (All Raters)	**Average (Toxicologist & Intensivist)**	**31**	**0.059**	**0.059 (-0.302, 0.405)**	**0.7554**
Average (Attendings Only)	Average (Toxicologist & Intensivist)	31	0.041	0.041 (-0.318, 0.390)	0.8275
Average (Attendings Only)	**Toxicologist Only**	**32**	**0.224**	**0.228 (-0.135, 0.531)**	**0.2194**
Average (Attendings Only)	Intensivist Only	34	-0.158	-0.159 (-0.471, 0.190)	0.3752

*4 assessments were missing either the Tox or Int 5C's score, therefore the average score is also missing, which changes the n depending upon the correlation pairing
[a]Pearson correlation coefficient
[b]Fisher's z transformed Pearson correlation coefficient
[c]p-value corresponds to the Fisher's z transformed correlation coefficient and 95% CI

Conclusions: Based on this single site cohort, there does not appear to be a correlation between clinical performance and communication skill among EM residents on sim cases. This negative finding could be influenced by the sample size, though use of the Fisher's z transformation was an attempt to control for type two error. If correct, this suggests that residency programs should ensure that clinical and communication skills are measured independently.

45 Time Isn't Your FoCUS, Do Cardiac POCUS!

Austin Barnett, William Hunnicutt, Phillip Barnett, Mirinda Gormley, John Eicken

Background: Point-of-care ultrasound (POCUS) is a powerful diagnostic tool which can improve quality and efficiency of care. Clinicians often cite time as a limitation to performing a focused cardiac ultrasound (FoCUS) exam.

Objectives: The primary outcome of this study was to determine the amount of time to complete a quality FoCUS exam. Secondary outcomes evaluated time differences between different training levels.

Methods: Data came from six EDs within Prisma Health from July 1, 2019 - June 30, 2022. Groups included were EM residents (PGY1-PGY3), EM ultrasound (US) fellows, US fellowship-trained EM attendings, and EM attendings credentialed in US. An equal number of exams were randomly selected and reviewed from each group. Exams must have been performed for clinical purposes and received an image quality rating of 3 (average), 4 (good), or 5 (excellent) to be eligible. All patients were age 18 years or older. Time of acquisition was defined as the time difference between the first and final image clips (clips = 6 seconds). Chi-square, T-tests, analysis of variance, and linear regression were performed to evaluate the data obtained in the study.

Results: Of 600 exams, 34% had 3 views and 55.5% had 4 views. The majority of studies (78.9%) had quality ratings of 4 or 5. Attendings had a higher proportion of exams with a quality rating of 5, while residents had more exams with quality ratings of 3 and 4. The average time for all groups to complete a FoCUS was 3.4 minutes. Further analysis shows that residents took on average 3.8 minutes and attendings took 3.1 minutes. On average, PGY1s took 4.6 minutes, PGY2s took 4.0 minutes, and PGY3s took 2.8 minutes (p = <0.0001).

Conclusions: Our study shows it takes EM physicians on average 3.4 minutes to complete a quality FoCUS exam and residents took only 45 seconds longer compared to attendings. Our findings suggest that time should not be a limitation to perform a FoCUS exam on patients who present to the ED.

46 Developing a Multi-Focal Mass Casualty Drill to Test Surge Capacity of Prehospital and Community Hospital Resources

Joslyn Joseph, Devin Dromgoole, Emerson Franke

Background: Prehospital and emergency department (ED) providers must be prepared to respond to mass casualty incidents (MCI). However, in the modern era of ED boarding and staffing shortages, prehospital and ED personnel must be prepared to manage high volume and high acuity patients with limited resources.

Objectives: Introduce ACGME EMS/Disaster milestones to EM residents and evaluate the response of an academic hospital and community EMS system to a simulated local disaster.

Curricular Design: Participants included EM residents, EMS fellows, EM attendings, state and local EMS providers, local simulation/EMT training programs, nurses, ED techs, and security. The cost of the drill was $550. Prehospital participants were drawn to a scene where a terrorist drove a vehicle through a crowd during a parade. Live actor and manikin patients included both adults and pediatrics. Some patients deteriorated, including two that required intubation/surgical airways. Patients were transported by three ambulances, EMS fellow vehicles, and POVs. In the ED, only two resuscitation bays and four rooms on opposite sides of the ED were put in play to simulate surge capacity. Staff improvised by using fast-track beds for yellow patients and a waiting room area for green patients. Some patients decompensated, necessitating procedures and transfer.

Effectiveness: All 27 patients were triaged, treated, and transported in 76 minutes. Despite challenges, ED staff were then able to disposition all 27 patients from the ED. Following the drill, a survey was sent to participants using a scale of 1 (worst) to 10 (best). 92% of participants rated their perceived preparedness for a future MCI as ≥ 5 (Fig 1). When asked how well the team worked together, 90% of participants responded ≥ 5 (Fig 2). One area to improve includes communication flow during the event, with 37% of participants rating ≤ 5 (Fig 3). Future drills will test different stressors and focus on communication.

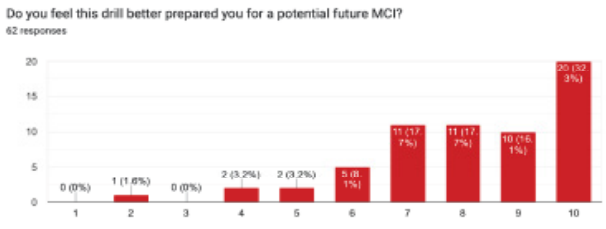


Figure 1. Survey results, scale of 1 (worst) to 10 (best) of preparedness for a future MCI.

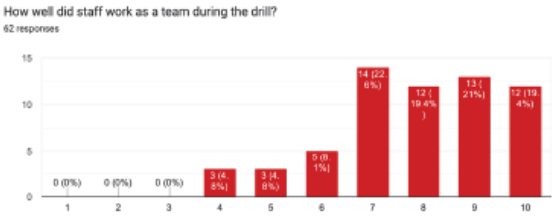


Figure 2. Survey results, scale 1 (worst) to 10 (best) regarding teamwork during the drill.

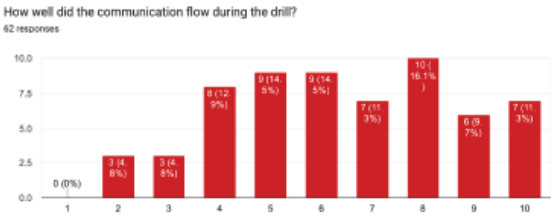


Figure 3. Survey results, scale of 1 (worst) to 10 (best of communication flow during the drill.

47 Social Media Trends By Program Type and Geographic Region in Emergency Medicine Residencies

Lauren McCafferty, Abbas Hussain, Kristy Schwartz, Zachary Repanshek, Andy Little, Manpreet Singh, Pinaki Mukherji, Michael Fink, Sayuri Sayakkara, Jay Khadpe

Background: With the number of EM residencies increasing alongside a decline in applicants from U.S. medical schools, EM programs increasingly compete for student recruitment. Social media (SM) plays a key role in program branding and recruitment. Challenges in the recruitment process are diverse, contingent on both the geographic location and setting of training. Understanding current SM trends relative to these factors is not well-studied.

Objective: This study aims to quantify and describe trends in SM activity for EM residencies based on geographic region and program type. We hypothesize that regions with more programs and those self-described as academic will have a more robust SM presence.

Methods: Using the EMRA Match site, we investigated 239 unique EM residency programs to quantify and analyze SM activity during the study period (September 2022 to August 2023), focusing on Twitter (X) and Instagram (IG). This analysis, based on self-reported data from each institution, factored in both geographic region and program type, which includes academic, community, or county settings. Content, engagement, and composite scores were calculated for each.

Results: Table 1 shows SM activity by geographic region and program type. SM activity correlated with the number of programs in a region; however, certain regions have disproportionately more program-driven activity relative to

engagement (Figure 1). Academic programs have the most prominent SM presence. Compared to X, IG is more frequently used by programs, generates more engagement, and has higher composite scores.

Conclusion: While there is overall favorability of IG over X across programs, academic settings and regions with more residencies have a more prominent SM presence. In addition, program-driven content does not always correlate with engagement, thus highlighting a potential opportunity for growth and further investigation, especially as it relates to recruitment.

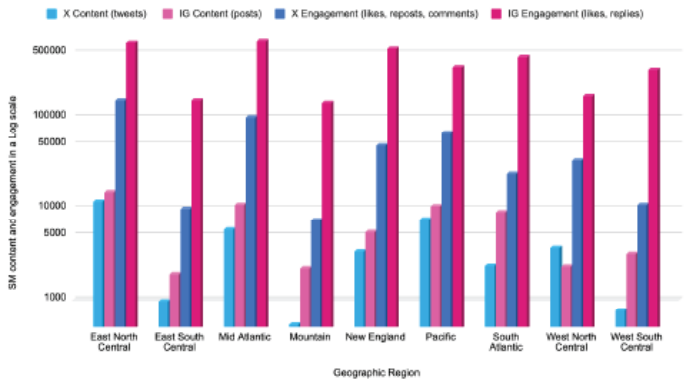


Figure 1. Emergency Medicine Residency social media activity by geographic region.

Table 1. Emergency Medicine Residency Program activity on Twitter (X) and Instagram (IG) by geographic region and porgram type.

Geographic Region	Programs in Region (%)	X Content (tweets)	IG Content (posts)	X Engagement (likes, reposts, comments)	IG Engagement (likes, replies)	X Composite Score (tweets, likes, posts, comments)	IG Composite score (posts, likes, replies)
East North Central	49 (20.5)	1174	1499	15236	65629	16410	67128
East South Central	12 (5.0)	94	185	975	15338	1069	15523
Mid Atlantic	60 (25.1)	572	1072	9903	68283	10475	69355
Mountain	10 (4.2)	52	216	720	14328	772	14544
New England	11 (4.6)	328	540	4878	55518	5206	56058
Pacific	22 (9.2)	745	1046	6707	34366	7452	35412
South Atlantic	41 (17.2)	232	900	2370	44816	2602	45716
West North Central	10 (4.2)	363	226	3294	17041	3657	17267
West South Central	24 (10.0)	76	313	1070	32643	1146	32956
Program Type	Programs (%)	X Content (tweets)	IG Content (posts)	X Engagement (likes, reposts, comments)	IG Engagement (likes, replies)	X Composite Score (tweets, likes, posts, comments)	IG Composite score (posts, likes, replies)
Academic	83 (47.3)	2335	3124	5306	180205	7641	183329
Community	113 (34.7)	632	212	29586	99697	30218	99909
County	33 (13.8)	790	818	10261	64021	11051	64839
Unspecified	10 (4.2)	0	35	0	1485	0	1520

48 Navigating the EM Calendar: An Analysis of EM Residency Programs on Social Media

Michael Fink, Jay Khadpe, Zachary Repanshek, Lauren McCafferty, Abbas Husain, Pinaki Mukherji, Sayuri Sayakkara, Kristy Schwartz

Background: In the decade since publication of CORD best practices for social media (SM) use, EM residency programs embraced SM as more than an educational tool, leveraging it for branding and recruitment. Strategic use of platforms like Twitter (X) and Instagram (IG) by EM programs throughout the academic year remains understudied.

Objective: This study reports monthly X and IG activity by EM residency programs. We hypothesize that fluctuations in SM activity align with key residency calendar events.

Methods: Using the EMRA Match site, 239 unique EM residency programs were evaluated for the presence of and engagement on SM from September 2022-August 2023. A composite score was created to capture overall SM engagement, calculated by the sum of monthly likes, comments and reposts divided by total monthly posts for X and likes and comments divided by total monthly posts for IG. The monthly posts and composite engagement scores were then compared to the EM academic calendar to evaluate for temporal trends.

Results: There were notable variations in SM posts and engagement when compared to crucial milestones in the EM academic calendar. Overall, posting and engagement on IG was higher than X. Both platforms exhibited increased posts at the time of NRPM Match 2023 (Figure 1). X engagement was highest at the end of recruitment season. There was a general trend in increased IG engagement over time, particularly during graduation and when welcoming new interns but not at the time of the match. (Figure 2)

Conclusion: We note a correlation between EM residency SM activity and the academic calendar that varies by SM platform. Strategic peaks during the end of recruitment/match (February/March), and graduation and intern orientation (June/July) highlight thoughtful alignment that may be purposeful to optimize SM engagement. Understanding these temporal trends may aid programs to optimize their SM impact as well as identify opportunities to increase future engagement.

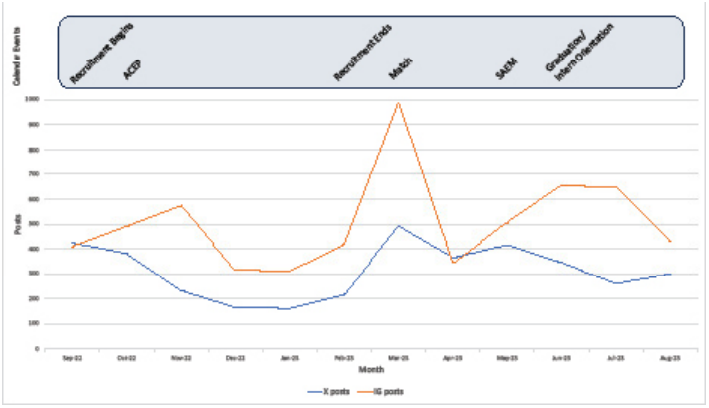


Figure 1. Monthly total posts on Instagram (IG) ad Twitter (X) by Emergency Medicine Residency Program.

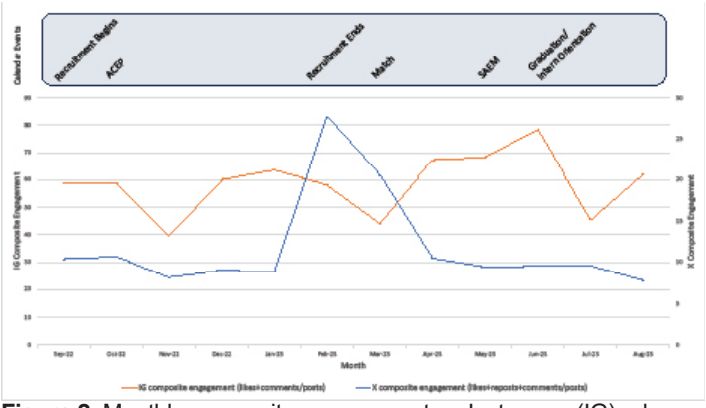


Figure 2. Monthly composite engagement on Instagram (IG) ad Twitter (X) by Emergency Medicine Residency Program.

49 Are We Training Fellows Broadly Enough for Scholarship in Education: A Cross-Sectional Analysis of Education Scholarship Fellowships in Emergency Medicine

Kestrel Reopelle, Jeremiah Ojha, Frances Rusnack, Dimitri Papanagnou

Background: Medical education (MedEd) fellowships offered within the academic emergency medicine community are expected to equip fellows with the requisite skills to engage in research, scholarship, and scholarly inquiry. Despite the growing number of MedEd scholarship fellowships approved by the Society for Academic Emergency Medicine (SAEM), there is no standardized approach offered to programs on specific scholarship-based experiences to be included in formal curricula.

Objectives: We aimed to describe scholarship- and research-based experiences of SAEM-approved MedEd scholarship fellowships that would prepare fellow graduates for independent pursuits in education scholarship.

Methods: We considered Boyer's definition of scholarship (i.e., scholarship domains of discovery, integration, application, and teaching) as a guiding framework for identifying and classifying specific scholarship opportunities. We conducted a holistic review of the last 18 applications that earned SAEM-Approved Education Scholarship Fellowship status. The applications were deductively analyzed by three authors, and the experiences categorized into the appropriate scholarship domains.

Results: 9 of 18 programs require training experiences that cover all four domains of scholarship. 5 programs offer optional opportunities that cover all four scholarship domains. Programs have an average of 4 opportunities to engage in the scholarship of discovery, 1 opportunity for scholarship of integration, 1 for application, and 7 for teaching.

Conclusions: MedEd fellowships offer a variety of preparatory opportunities in all four domains of scholarship but lean heavily towards the scholarship of teaching. There remain many opportunities to engage fellows in the scholarship of discovery, integration, and application. A limitation of our study was the format of the formal application, which has limited prompts to capture the full breadth of scholarly activities offered.

50 What the FIKA?

Hanna Barrett, Jesse Kellar, Ashley Garispe

In emergency medicine (EM) residency programs, didactic conferences play a crucial role in providing residents with the necessary knowledge and skills to deliver high-quality patient care. Much work has been done in recent years to improve the quality of EM conferences, however not much has been targeted to mitigate resident fatigue and decreased attention at the end of the conference session. To address this, we implemented Fika breaks, a Swedish tradition that integrates pastries and coffee during workday breaks, into EM didactics. This study investigated the effects of incorporating Fika breaks into the didactic schedule of EM residencies on resident sleepiness levels during didactic sessions using the Karolinska Sleepiness Scale (KSS). We conducted a two-phased experimental multi-center longitudinal study to determine the association between resident fatigue during conferences with and without a Fika break among emergency medicine residents. There are four participating community hospitals in this study, each with EM residencies. The participants included were EM residents across the four participating hospitals. There was a total of 98 residents participating in the study group. On the intervention days, a 15-minute Swedish Fika break was added into the EM conference after the second hour of conference. On control days, normal breaks occurred if scheduled during EM conference. During both phases, a survey was also then conducted before the last hour of lecture. A paired sample t-test was used to compare the mean KSS of the resident cohort both with and without the implementation of Fika. The average KSS score was 4.6 on Fika days and 5.5 on control days with p-value of 0.004. Results indicated that the inclusion of Fika breaks positively influenced sleepiness levels, thus potentially enhancing the educational experience during residency didactics. The study limitations include a relatively small sample size and a short intervention period.

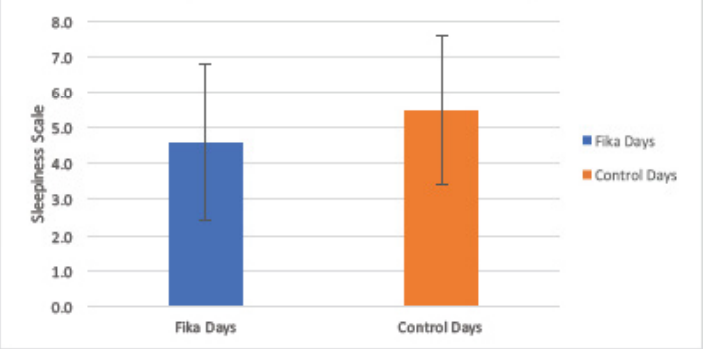


Figure. Sleepiness scale for Fika versus control days.

51 The Current Landscape of Emergency Medicine Resident Scheduling

Brian Walsh, Claire Delong, Frederick Fiesseler, Nicole Riley

Background: The Accreditation Council for Graduate Medical Education (ACGME) and Resident Review Committee (RRC) oversee resident physician work hours with additional specifics for US Emergency Medicine (EM) residency programs. While there are maximum work hours, the regulatory bodies do not describe minimum work hours to achieve competency, leading to variable scheduling practices.

Objectives: This study aimed to understand the current landscape of US EM residency scheduling given the expansion of programs, the evolution of policies, and the increased emphasis on wellness.

Methods: We conducted a cross-sectional study to assess current strategies of US EM residency scheduling. The RedCap survey was sent to all ACGME-accredited EM residency programs across the US via individualized emails between January 10, 2023, and March 15, 2023. Data was combined using Microsoft Excel.

Results: 138 out of 278 (50%) programs responded to the survey. 73.2% of programs were using 13 28-day blocks with the remainder using 12 one-month blocks or reported 'other' block scheduling. The number of blocks in the ED increases with each post-graduate year (PGY). For PGY-1 through PGY-3, the most commonly used shift duration was 9 hours. The mean total shifts per ED block and hours worked per ED block are as follows: 19 shifts and 185.1 hours (PGY-1), 18.2 shifts and 173.9 hours (PGY-2), 17.3 shifts and 163.6 hours (PGY-3), 14.8 shifts and 157.2 hours (PGY-4). Programs provide a median of 4 weeks of vacation per year of residency.

Conclusions: Given the expansion of US EM residency programs, we reevaluated the landscape of resident scheduling. We described scheduling patterns related to night shifts, vacations, requested time off, conference coverage, charting time, and circadian rhythms. Programs should utilize this data as a starting point for setting a clinical experience for their residents.

52 Pre-exposure prophylaxis provided in the Emergency Department: Physician Perspectives

Sarah Guess, Ava Roth, Mirinda Gormley, Prerana Roth, Alain H. Litwin, Jessica Hobbs, Moonseong Heo, Phillip Moschella

Background: While 38% of the population lives in the South, the area disproportionately accounts for 52% of new HIV diagnoses in the US. Effective Pre-Exposure Prophylaxis (PrEP) can reduce HIV transmission by more than 90%.

Objectives: The objective of this study was to assess emergency medicine (EM) clinician knowledge regarding PrEP prescription, as well as willingness to initiate care in the emergency department (ED).

Methods: Individuals were eligible for this IRB-approved survey if they were an EM physician or advanced practice clinician (APC) currently practicing at a Southern academic ED. Participants were asked to complete a survey assessing knowledge of HIV prevention, PrEP prescribing practices, and attitudes towards PrEP prescribing in the ED. Survey was available throughout August 2023. Descriptive statistics described the survey responses.

Results: Fifty-six EM clinicians participated for a response rate of 25.0%. Just under three-quarters (73.2%) correctly identified all methods of HIV prevention. Nearly a quarter (23.2%) of clinicians reported not prescribing PrEP because they felt they lacked medication knowledge or familiarity, while 5 stated PrEP should be handled by primary care. Whereas 52 felt that PrEP could be integrated in the ED, 54 mentioned a potential barrier to implementation. The most common barrier to integrating PrEP into the ED was a lack of information/training, while additional barriers included time and staff constraints.

Conclusion: Despite recognition of the utility of prescribing PrEP in the ED, clinicians identified multiple barriers to providing this essential component of healthcare. Responses indicate that systems in place are not well known, nor being fully utilized. Primary barriers to prescribing PrEP appear to be educational, including medication knowledge and screening. These results indicate that EM clinicians would be willing to prescribe PrEP with appropriate education and connection to care for patients.

53 3-D Printed Models for Pediatric Lumbar Puncture: A Useful Tool

Matt Traxler, Kaila Pomeranz, Yinghui Xu, Alexandra Murra, Kate DuChene Hanrahan

Background: Simulation allows for teaching and evaluating procedures in low-risk, controlled environments.

3-D printing can create high fidelity models for use in simulation. As pediatric lumbar puncture (LP) guidelines have changed, there have been less opportunities for training in a clinical environment. 3-D models can be utilized to assess learner skill and confidence with high acuity procedures.

Objectives: To assess learner confidence and competence using a 3-D printed model for pediatric LP.

Methods: Design: Pilot study Setting: A Midwest level 1 trauma center Participants/Subjects: 28 EM residents, 2 physician assistant (PA) EM residents, 30 family medicine (FM) residents and 4 PA FM residents Intervention: Pediatric LP models were created using an open access model. A 3-hour workshop began with a presentation followed by practice on the models before completing a scenario with a previously validated checklist with dichotomous scoring. The learners completed pre/post surveys assessing the models and procedural confidence.

Results: 23 learners completed the survey, and 32 learners completed the workshop. Learners who participated in the survey were well distributed by year and program. Upon workshop completion, 100% of learners achieved the minimum passing score (85%) for the checklist. After the workshop, resident confidence in positioning, preparation, and performance improved (Table 1). Most (95.6%) felt the model was beneficial.

Conclusion: The 3-D printed model is beneficial for teaching pediatric LP to resident trainees. Our limitations include small sample size and single evaluator for the final testing.

Figure.

Table.

	Pre-Test Score		Post-Test Score		Change in Score	
	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)	Mean	P value
Positioning	2.6 (1.1)	3 (2, 3)	4.0 (0.6)	4 (4, 4)	1.2	<0.0001
Preparation	3.0 (1.4)	3 (2, 4)	3.8 (0.9)	4 (4, 4)	0.8	0.018
Performance	2.1 (1.0)	2 (1, 3)	3.6 (0.7)	4 (3, 4)	1.4	<0.0001
Total	7.9 (3.0)	8 (6, 9)	11.4 (1.7)	12 (10, 12)	3.6	<0.0001

54 Emergency Department Utilization Measured Through Bounce Back Rate is Significantly Higher in Homeless Patients

Sasha Sairajeev, Sameer Desai

Background: The rate of readmission after discharge or bounce back rate can act as a proxy for the efficiency of emergency medical care. The emergency department (ED) is often the only source of healthcare for persons experiencing homelessness (PEH). Discharging PEH with instructions that require stable housing and other resources may result in another visit to the ED. It is important to account for their unique needs in order to provide them with necessary care in the ED.

Objectives: The purpose of this study is to determine whether there is a significant difference between the bounce-back rate of homeless patients in the ED and non-homeless patients.

Methods: To determine how regularly PEH are being readmitted to the ED following discharge, the bounce-back rates of PEH will be compared to non-PEH in this observational retroactive study. Through CCTS, patient data was collected that includes 100 homeless patients and 100 non-homeless patients. CCTS provided access to every chart that has the word “homeless” from 06/05/2021 to 01/01/2023. After confirming which patients were homeless, 100 were randomly selected. If a patient has returned to the ED within 7 or 30 days of another visit, that contributed to the bounce-back rate. The number of patients who have had two ED visits close in time counted towards the bounce-back group in their respective time frames (30-day and 7-day). Using a two-proportion z-test, the bounce back rates (7-day and 30-day) were compared to determine significance.

Results: The homeless sample had a significantly higher 7-day and 30-day bounce-back rate compared to the non-homeless sample ($z=-4.168$, $p<0.0001$).

Conclusions: In this study, the results suggest homeless patients visit the ED more frequently after their initial visit than non-homeless patients. The result of this study call for further research into the care homeless patients receive in the ED and how their unique needs may be better addressed.

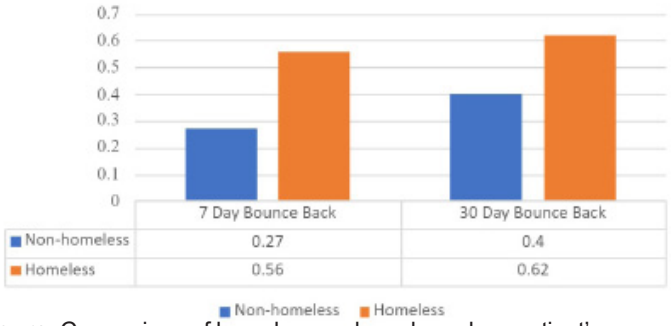


Figure. Comparison of homeless and non homeless patient's bounce back rates.

55 Measurement of the weight of academic performance on the residency interview and ranking

Joel Kravitz, Greg Neyman

Background: Educators agree that no one factor predicts a resident's chance of success in residency and beyond, and academic record is likely the strongest biasing factor in residency selection, though the exact magnitude of its weight is unknown.

Objective: To determine, with respect to medical students applying to residency in emergency medicine, to what degree prior knowledge of the candidate's academic record affects their ranking.

Methods: We undertook a prospective observational study, analyzing ranking scores of all interviewers of applicants to our East Coast academic EM residency program in the 2022-2023 interview cycle. Each applicant underwent 4 separate interviews, but (randomly) one of the three interviewers was blinded to their academic record. Though the applicants were interviewed, it was the interviewers who were the true subjects, and IRB approval was obtained. Applicants were then scored on a ten-point scale and data was stored in a secure database. These scores were then analyzed for inter-observer agreement. A difference of an interview rating score of 10% or greater was considered significant. Data was analyzed using a Student's T-test and Mann-Whitney test to compare data.

Results: 176 interviews were included for analysis. Interview scores between blinded and unblinded interviewers were significant ($p<0.00001$). When the differences were spread out via histogram, the discordances were significant at 1.5 points ($p<0.0001$) and statistically significantly related to percentile scoring on USMLE or COMLEX. The candidates with the highest blind/unblind discordances were associated with more failures in medical school ($p<0.03$)and on standardized exams like the USMLE or COMLEX ($p<0.07$) for poor academic performers.

Conclusions: This data would suggest academic performance accounts for at minimum a 15% jump or drop in rank score when assessing final applicant rank. Expanding this type of study may give insight into both interview biases.

56 Can you do it FAST-ER?: Focused Assessment with Sonography in Trauma Skills During Ultrasound Rotations and the Development of Competency

Gabriel Ceceñas Salas, Jeremiah Ojha, Emily Hillman, Monica Gaddis, Andrew Balk, Kevin O'Rourke, Matthew Cook

Background: The focused assessment with sonography in trauma (FAST) exam is part of trauma evaluation and is sensitive and specific in the identification of free intraperitoneal fluid. Findings can change patient management. EM residents are required by the RRC to complete 150 ultrasound (US) exams to graduate; however, there is no specified number of FAST exams required and no requirement for a dedicated US block. Competency is often assumed based on rotation completion.

Objective: To evaluate FAST exam competency outcomes of our 4-week ED US rotation for EM PGY-1 residents.

Methods: This was a pre-post study at a single institution. We assessed 12 PGY-1 EM residents' FAST exam competency using a previously published, validated objective assessment tool consisting of a task-specific checklist (TSC) and global rating scale (GRS). Residents were assessed during residency orientation, at the beginning, and end of their required 4-week US rotation. Three US fellowship-trained faculty performed the one-on-one assessments. Scores of 18/24 (TSC) and 27/40 (GRS) were used as a measure of competency.

Results: Post-rotation performance had a significant improvement when measured against pre-rotation and baseline scores (figures 1 and 2). A repeated measures ANOVA was used to compare the TSC and GRS scores from orientation, pre-rotation, and post-rotation. There were statistically significant differences in the scores at each measure (TSC: $F=63.169$, $p<0.001$; GRS: $F=38.87$, $p<0.001$). Multiple comparisons with Bonferroni Correction confirmed the significance of each measure (TSC: $p<0.001$; GRS: $p\leq0.002$).

Discussion: All residents had significant improvement in GRS and TSC scores when compared with baseline, and all had improvement in GRS or TSC when comparing pre-US rotation and post-US rotation. This study demonstrated the feasibility of incorporating a FAST exam assessment into an EM residency ultrasound curriculum to evaluate learning outcomes and curricular effectiveness.

Learner	TSC - Baseline	TSC - Pre-Rotation	TSC - Post-Rotation
1	10.5	18	21
2	7.5	20	20
3	5.5	21	20
4	6	22	24
5	22	22	22
6	6	18	23
7	11	21	24
8	5.5	21	22
9	15	22	24
10	7	17	22
11	7	18	23
12	12	17	24
Median	8	20.5	22.5
Mean ± SD	9.12± 3.612	19.667 ± 1.923	22.417± 1.505

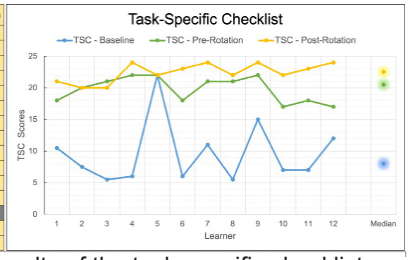


Figure 1. Table and graph results of the task-specific checklist (TSC) scores obtained during orientation (baseline), pre-rotation and post-rotation.

Learner	GRS - Baseline	GRS - Pre-Rotation	GRS - Post-Rotation
1	19.5	35	29
2	10	22	29
3	17	26	38
4	18	32	37
5	31	27	36
6	11	19	36
7	23	30	38
8	18	25	30
9	24	28	31
10	20	21	38
11	11	24	38
12	22	29	37
Median	18.75	26.5	36.5
Mean ± SD	18.7083 ± 6.099	26.50 ± 4.661	34.75 ± 3.793

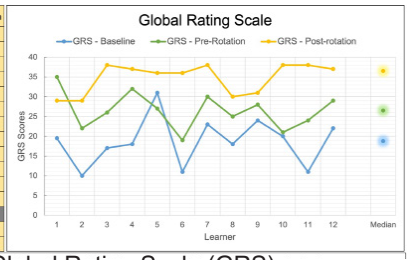


Figure 2. Table and graph Global Rating Scale (GRS) scores obtained during orientation (baseline), pre-rotation and post-rotation.

57 Identifying Barriers to Providing Effective Feedback to Emergency Medicine Residents

Rebecca Eager, Harsh Sule, Ilya Ostrovsky, Ariel Sena

Background: Feedback is an important aspect of medical education. The clinical arena of the emergency department poses additional obstacles to providing successful feedback to residents. This was recognized by The Council of Residency Directors in Emergency Medicine (CORD) and their Best Practices committee established recommendations regarding effective feedback. Like other institutions, faculty and residents anecdotally report challenges regarding feedback at our academic, tertiary care institution.

Objective: To identify barriers to delivering feedback to Emergency Medicine residents at our institution.

Methods: Emergency Medicine faculty completed a voluntary, anonymous survey identifying ways in which feedback is delivered to residents and the barriers they believe exist in delivering effective feedback. All residents were asked to complete a similar, voluntary survey but about how they receive feedback. Responses were collected on a five-point Likert scale. Medians were analyzed and data compared using the Mann Whitney U test to determine significance.

Results: A total of 21/40 faculty and 30/37 residents completed the respective surveys. Figures 1 and 2 demonstrate the results. There were no statistical differences in the ways in which faculty and residents report giving and receiving feedback as well as on 5/8 potential barriers. Residents and faculty disagreed on perceptions of appropriate space on shift for delivery of feedback, discussing critical feedback and training regarding feedback.

Conclusion: While this study is limited by the small sample size, it provides a baseline for potential areas to improve feedback delivery and reception at our institution. We hope to obtain grant funding to help observe our faculty and residents in real time to help identify barriers more objectively and employ strategies to improve this process for our program.

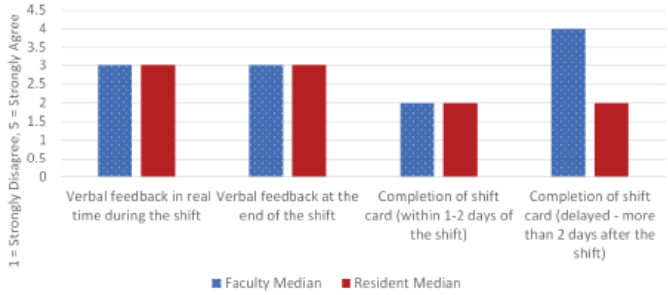


Figure 1. Delivery of feedback.

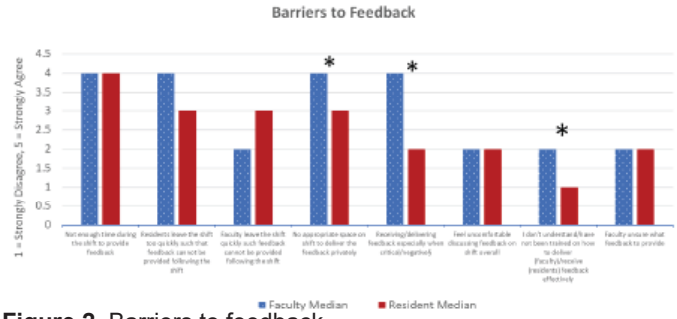


Figure 2. Barriers to feedback.

58 Comparative Thematic Analysis of Emergency Medicine Standardized Letter of Evaluation Narrative Sections Between Chief Residents and Non-Chief Residents

Christopher Wetzel, Chaiya Laoteppitaks, Zaid Taykyen, Peter Tomaselli, Carlos Rodriguez, Abagayle Bierowski, Casey Morrone, Ridhima Ghei, Rosemary Frasso, Xiao Zhang

Background: Along with their clinical responsibilities, chief residents take on managerial and educational roles and represent their co-residents to leadership. Previous literature has revealed characteristics that distinguish chief residents from non-chief residents. However, no studies have examined Emergency Medicine (EM) standardized letter of evaluation (SLOE) narratives to identify characteristics (traits, skills, etc.) unique to eventual chief residents.

Objectives: To qualitatively analyze EM SLOE narratives to explore evaluator-identified characteristics of

eventual chief and non-chief residents.

Methods: Narratives were collated from de-identified SLOEs from 2015 to 2021 at an urban EM residency program. Thematic analysis was employed to identify and compare themes between narratives of eventual chief and non-chief residents. Data were coded line-by-line while blinded to chief selection status. The codebook was developed from a priori codes based on existing literature and iteratively refined based on emerging themes identified in these data.

Results: Preliminary analysis of 243 SLOE narratives revealed several characteristic domains of eventual chief and non-chief residents. These included "leadership qualities," "clinical knowledge and skills," "work ethic," "teamwork abilities," and "multitasking abilities." Additionally, "dependability and trustworthiness" was remarked upon by SLOE evaluators for both groups. However, key differences emerged between the groups, including the abundance of remarks, level of detail regarding those domains, and applicants' station within those domains relative to their peers.

Conclusions: This analysis highlights differences in SLOE evaluator-identified characteristics between eventual chief and non-chief residents. These results may have implications for chief resident selection and contribute to our understanding of leadership potential assessment within undergraduate medical education.

59 EM Was My First Clerkship: Suggestions from Third-Year Medical Students to Optimize the EM Learning Experience

Leela Raj, Maria Poluch, Dimitrios Papanagnou

Background: Third-year medical students face a significant challenge when transitioning to clinical clerkships, particularly for the high-intensity emergency medicine (EM) clerkship. Minimal research has addressed the impact of EM as the first clinical clerkship on students, leaving a gap in understanding how this initial exposure shapes their learning and psychological well-being. We address this gap by exploring student experiences after completing EM as the first clerkship to create recommendations for clerkship leadership.

Objectives: Provide recommendations to enhance learning outcomes and support the psychological safety of early third-year medical students.

Methods: Third-year medical students who completed EM as their first clerkship were interviewed 1-2 weeks post-rotation. An interview protocol was developed and piloted to prompt reflection on the clerkship experience. Interviews were virtual over Zoom. Recordings were transcribed with Sonix software. Inductive analysis was facilitated through NVivo software. A primary coder developed codebooks, and a master codebook was applied to all transcripts by primary and secondary coders. Intercoder reliability was calculated with a fixed kappa statistic.

Results: Thirteen students were interviewed. Codes fell within three thematic categories: first clinical rotation challenges, EM-specific challenges, and clerkship enablers (Figure 1) with frequencies listed in Figure 2. Fixed kappa between coders was 0.84. Students often noted role ambiguity during the clerkship, contributing to trauma. Incorporating additional simulation practice for frequent ED events (e.g., cardiac arrest) was suggested to mitigate lack of role clarity.

Conclusions: Student feedback revealed insights about student challenges and enablers during the early transition to clerkships with EM. Findings may inform interventions to mitigate student trauma and promote a supportive learning environment in the ED.

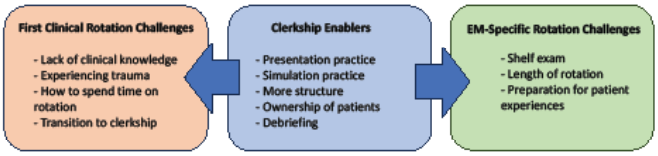


Figure 1. Visual Diagram of themes found in student interviews.

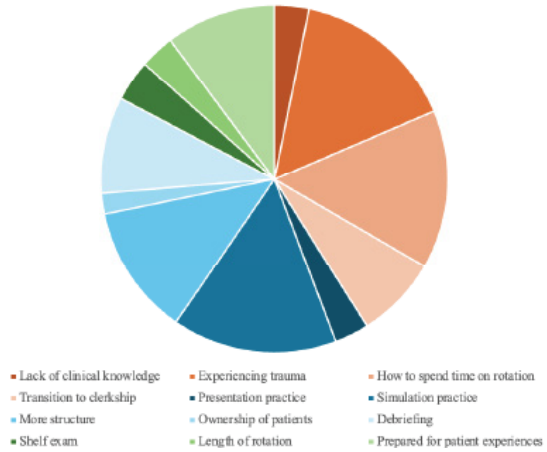


Figure 2. Breakdown of code frequency represented in student feedback. First clinical rotation challenges are represented in orange. Emergency medicine clerkship specific challenges are represented in green. Clerkship enablers are represented in blue.

60 Prevalence and Characteristics of Group Standard Letters of Evaluation in Emergency Medicine: A Cross-Sectional Observational Study

Eric Shappell, Morgan Sehdev, Daniel Egan, Sharon Bord, Cullen Hegarty, Jeremiah Ojha

Background: The standardized letters of evaluation (SLOE) for emergency medicine (EM) is a well-established tool for residency recruitment. While previous work characterizes

the utility and outcomes related to SLOE use, less is known about SLOE authorship patterns and trends.

Objective: Measure the prevalence of group SLOEs in EM, characterize the role groups represented in group SLOEs, and compare the rating practices of groups of authors versus single authors.

Methods: SLOE data from 2016 through 2021 were obtained from the CORD database. An algorithm was developed to process SLOE author fields to accomplish 3 tasks: (1) determine whether the SLOE was written by an individual or a group, (2) determine the number of named letter writers on group SLOEs, and (3) identify roles of individuals listed on group SLOEs. 150 SLOEs were randomly selected for review by the study to use as a standard to which algorithm performance was compared. Mean ratings for the Qualification for Emergency Medicine and Ranking questions were compared for Individual vs. Group SLOEs.

Results: 40,218 SLOEs met inclusion criteria. The algorithm performed well detecting individual vs. group SLOEs, author count, and author titles. Institutions submitting only SLOEs written by a group of authors increased from 31.4% to 54.5%. This trend was complemented by a decrease in institutions submitting a mix of both individual and group authored SLOEs (44.8% to 23.8%). Authors per group SLOE increased from 3.4 in 2016 to 4.0 in 2021. Clerkship directors, program directors, and assistant/associate program directors were the most common titles identified in group SLOEs.

Table 1. Algorithm performance in identifying SLOE characteristics.

Task 1: Identify Individual vs. Group SLOEs			
		Raw Agreement	Kappa
Individual vs. Group		93% (140/150)	.84
Task 2: Identify Number of Named Authors			
		Raw Agreement	Mean absolute value of discrepancy
Number of authors		88% (132/150)	1.4
Task 3: Identify Common Named Roles of Authors			
Role identification	N	Sensitivity	Specificity
Clerkship Director	93	92%	98%
Assistant / Associate Clerkship Director	13	62%	100%
Program Director	77	97%	97%
Assistant / Associate Program Director	53	83%	100%
Chair or Vice Chair	14	100%	100%
Dean or Vice / Assistant / Associate Dean	1	100%	100%
Fellow	0	N/A	100%
Coordinator	0	N/A	99%

Table 2. Characteristics of Standard Letters of Evaluation in Emergency Medicine (2016-2021).

	2016	2017	2018	2019	2020	2021
Total SLOEs and Institutions						
SLOEs	6,619	7,182	7,401	8,037	4,941	6,036
Unique Institutions	223	236	233	248	272	286
SLOE types at each institution						
Individual only	23.8%	28.4%	25.8%	20.2%	24.3%	21.7%
Group only	31.4%	34.7%	39.9%	44.0%	53.3%	54.5%
Individual and Group	44.8%	36.9%	34.3%	35.9%	22.4%	23.8%
Authors per SLOE						
Authors per group SLOE writing group (mean +/- SD)	3.4 ± 1.9	3.6 ± 1.7	3.8 ± 1.8	3.8 ± 1.9	4.0 ± 2.0	4.0 ± 1.9
Author titles in Group SLOEs (%)						
Clerkship Director	72%	74%	73%	72%	72%	72%
Program Director	69%	68%	65%	64%	68%	65%

Conclusions: Prevalence of group SLOEs is increased throughout the study period. Grading practices appear similar across SLOEs authored by individuals and groups.

61 Multiple Patient Simulation Tests Different Milestones Than Single Patient Simulation

Thomas Barker, Kristen Whitworth, Matthew Hysell

Background: Historically, simulation focuses on a single patient. Far less is known about asking learners to treat multiple simulation patients in multiple rooms.

Objectives: Evaluate if a simulation requiring multiple patient encounters tests different skills than simulation with a single patient encounter.

Methods: Interns at a community EM residency program participated in both single and multiple patient simulations (MPS) in an accredited simulation lab. Single patient cases included infant mid-gut volvulus, pancreatitis with ARDS, eclampsia, and upper gastrointestinal bleed. The MPS pulled interns from room to room treating acute myocardial infarction, blunt trauma, hyperkalemia, acute stroke, and suicidal ideation. Some of the MPS cases could be immediately dispositioned, others required learners to circle back and reassess. Immediately following clinical debriefing of either simulation type, semi-structured interviews using 8 questions based on ACGME milestones for emergency stabilization, reassessment, multitasking, systems resources, communication were carried out. Interview content was analyzed using inductive thematic analysis.

Results: Over two years 13 interns took part. While both MPS (Table 1) and single patient cases (Table 2) gave

opportunities to practice implementing medical knowledge, residents felt that MPS pushed them more out of their comfort zone in terms of pacing and mental preparation. The frequent interruptions of MPS felt more similar to practice in the ED. Communication with the patient in MPS was more challenging not knowing when they would be pulled onward. MPS also required them to communicate with their team and delegate more than a single patient simulation. Finally, MPS stressed interns to feel wider roles in their leadership than did single encounters.

Conclusions: Multiple patient simulation pushed residents much harder in multi-tasking and team and patient communication than single patient encounters.

Table 1. Multiple patient simulation topics, themes, and sub-themes.

MPS Topic	Theme	Sub-theme
Patient stabilization	Preparation	Pulled into rooms without being able to mentally prep
		Thinking had to be more dynamic
		Good opportunity to treat common emergencies not yet encountered
	Pace	Out of comfort zone
		A little out of control
Learner Role	Leadership needs	Captain
		Triage
		At risk of making wrong choice
		Medical leadership
		Didn't realize how much nursing is doing in real life
Multi-tasking	Focus	Constant interruptions
		Pushed by acuity to make dispositions quicker
	Keeping track of multiple patients	Keep checklists in the back of your mind
		Had to choose the right room to reassess
Communication	With patient	Easy to get distracted by all the orders
		Worked on using less jargon
	With team	Had to use specific closed loop communication
		Had to lay out a plan a few steps ahead as was pulled to other rooms

Table 2. Single patient simulation topics, themes, and sub-themes.

Single Sim Topic		
Patient Stabilization	Patient directed	Recognize unstable vitals
		Recognize worsening responses
		Could take step-wise approach
		Good practice for unfamiliar disease
	System directed	Use of system protocols
		Appropriate involvement of consultants
Learner Role	Physician	Leading team
		Communicating with patients
Multi-tasking	Balancing resuscitation with history taking	
Communication	With patient	Had to guide patient through very stressful time
	With team	Use of closed loop communication

62 Resident Physician Documentation Practice Changes as a Result of Focused Training on the 2023 Evaluation and Management Coding Guidelines

James Chan, Tamer Yahya, Jacob Walling, Danielle Doyle, David Toro, Emily Barbee, Edwin McMillan

Background: Emergency Medicine (EM) coding and billing levels have historically been tied to checking boxes to accumulate history, review of systems and physical exam elements. One of the overarching goals behind the 2023 Current Procedural Terminology (CPT®) guidelines is to reduce documentation burden of clinicians. This project predicted that if we train residents to understand the implications of the new changes, they could chart more efficiently and productively. The hypothesis is that the training cohort would write shorter notes compared to control.

Methods: This prospective observational study consists of 18 residents, of which half were randomized to receive specialized EM documentation training on the 2023 rules. The primary outcome is note length (number of words). Secondary outcome variables include patient age, gender, Emergency Severity Index (ESI) and PGY levels. 10 % of each resident's charts were sampled during three time periods: 3 months before rule change, first and second 3-month blocks after.

Results: Multivariate analyses, which accounted for the random effect of individual residents, showed that the median word length (interquartile range or IQR) was 1713 (1405, 2110) for training group versus 1553 (1240,1923) for control ($p = 0.02$). Median note length was 1887 (1566, 2344) for ESI 1 & 2, 1619 (1330, 1972) for ESI 3 and 1202 (1026, 1495) for ESI 4 & 5 visits ($p < 0.001$). In addition, female gender yielded a median length of 1680 (1343, 2088) versus 1563 (1238, 1939) for males ($p < 0.001$).

Conclusions: Based on prospective data from a single site, focused training of EM residents on 2023 coding changes had the unintended effect of increasing documentation length in the training group compared with control. Multivariate analysis confirmed the efficacy of the training session in increasing note length by 10.3 %. In short, contrary to the intentions of CPT® changes, note bloat actually worsened in our prospective cohort.

Table 1.

	Before		3 Months After		6 Months After	
	Control	Training	Control	Training	Control	Training
No. Charts	287	269	344	282	349	391
Female	152 (53.0)	156 (58.0)	188 (54.7)	152 (53.9)	196 (56.2)	201 (51.4)
Age < 18	40 (13.9)	40 (14.9)	38 (11.1)	25 (8.9)	46 (13.2)	62 (15.9)
Age 18-49	84 (29.3)	82 (30.5)	120 (34.9)	96 (34.0)	116 (33.2)	141 (36.2)
Age 50-65	58 (20.2)	61 (22.7)	71 (20.6)	72 (25.5)	71 (20.3)	72 (18.5)
Age >= 65	105 (36.6)	86 (32.0)	115 (33.4)	89 (31.6)	116 (33.2)	115 (29.5)
ESI 1	17 (5.9)	12 (5.5)	9 (2.6)	12 (4.3)	10 (2.9)	16 (4.1)
ESI 2	61 (21.3)	57 (21.2)	74 (21.5)	56 (19.9)	95 (27.2)	87 (22.3)
ESI 3	161 (56.1)	150 (55.8)	205 (59.6)	170 (60.3)	193 (55.3)	228 (58.3)
ESI 4 or 5	48 (16.7)	50 (18.6)	56 (16.3)	44 (15.6)	51 (14.6)	60 (15.4)

Data are presented as n (percentage of charts in the column).

Table 2.

	# charts	Median Total Words (IQR)	P-value for Main Fixed Effect Ignoring Effect of Resident	P-value for Main Fixed Effect Adjusting for the Random Effect of Resident (18 residents)
Intervention			<0.001	0.02
Training	673	1713 (1405, 2110)		
Control	693	1553 (1240, 1903)		
PGY Level			0.003	0.59
PGY 1	348	1577 (1239, 1975)		
PGY 2	459	1647 (1317, 2022)		
PGY 3	559	1643 (1299, 2049)		
ESI Category			<0.001	<0.001
ESI 1&2	359	1887 (1566, 2344)		
ESI 3	796	1619 (1330, 1972)		
ESI 4&5	211	1202 (1026, 1495)		
Gender			0.003	<0.001
Male	629	1563 (1238, 1939)		
Female	737	1680 (1343, 2088)		
Age (years)	1365	correlation r=0.52	<0.001	<0.001

63 Topical Oxygen Therapy in the Treatment of Non-Healing Chronic Wounds: A Systematic Review

Adam Pearl, Katherine O'Neil

Background: Chronic wounds are a significant economic and physical burden on both patients and the health care system. Although new therapies have shown efficacy, many have high costs, are not readily available, and are not feasible for most patients' lifestyles. A promising emerging therapy is topical oxygen, which delivers concentrated oxygen directly to the non-healing wound.

Methods: A systematic review was conducted via PubMed between 1979 and July 2022, yielding 215 articles. After a full-text review, articles discussing other therapies for chronic wounds were excluded. Fourteen papers were included.

Results: In the treatment of non-healing diabetic foot ulcers, topical oxygen therapy demonstrated rates of complete closure of 80% for Stage II and 50% for Stage III, compared to 0% for standard of care. Additionally, flora transitioned from anaerobes to a flora rich in aerobic species. In non-diabetic foot ulcers, topical oxygen demonstrated increased rates of closure and decreased rates of infection, particularly noted in MRSA infections.

Conclusion: This systematic review demonstrates that topical oxygen is efficacious at increasing chronic wound healing rates and time, decreasing hospital stay rates and duration, and decreasing amputation and recurrence rates. Topical oxygen is less expensive than many treatments, fits virtually all patient lifestyles, and has even shown bactericidal/bacteriostatic properties.

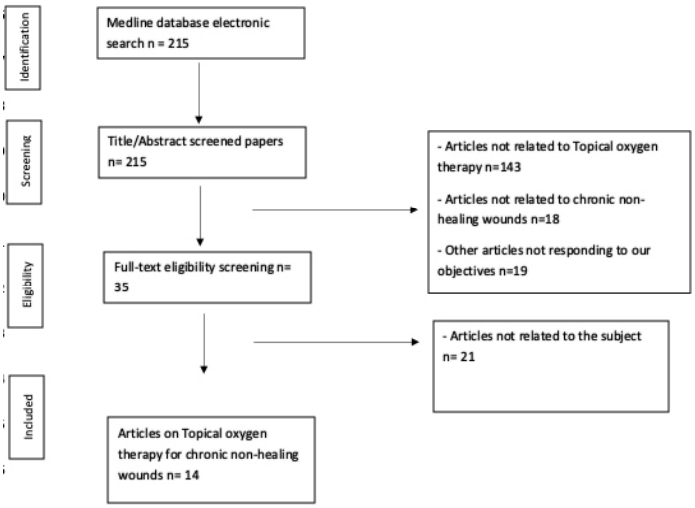


Figure 1. PRISMA flowchart for article selection process.

64 Enhancing Toxicology Teaching with Escape Rooms

Mason Jackson, Emily Grass, Sara Dimeo

Background: Gamification of medical education has proven to increase learned engagement and retention. Escape rooms, a gamification strategy, have been demonstrated to increase medical student clinical reasoning and information retention while increasing learner motivation. No published work exists regarding the application of gamification or its efficacy to toxicologic concepts.

Objective: To assess the efficacy of escape rooms in teaching basic toxicology concepts to medical students and residents. It is hypothesized that implementation of toxicology-based escape rooms will improve the learner's understanding of the concepts presented.

Methods: Over a one-year period, third- and fourth-year medical students and PGY 1-3 emergency medicine residents from various allopathic and osteopathic programs participated in toxicology-based escape rooms which were followed by a short debriefing lecture. In this IRB approved study, three iterations of the escape room were presented. Participants were given a survey to assess their knowledge of concepts presented both before and after the escape room using a 1-5 Likert scale where 1 corresponded to "very poor", 3 corresponded to "average" and 5 indicated "excellent".

Repeat participants were excluded from analysis. Students t-test was employed to assess for significance.

Results: 51 participants were included in the analysis. The average pre-test score was between poor or average (2.83). After completing the escape room and debrief session, the post test score significantly increased to between average and above average (3.9) (p=0.0015). Anecdotal feedback indicated all ubiquitously enjoyed the escape room format as compared to traditional lecture across training levels.

Conclusions: Escape rooms can be formatted for various toxicology concepts for undergraduate and graduate medical education and can generate substantial shifts in perceived content mastery across various levels of training.

65 Emergency Medicine Resident Scheduling: A Survey of Processes and Satisfaction

Jamaji Nwanaji-Enwerem, Tori Ehrhardt, Brittney Gordon, Hannah Meyer, Maurice Selby, Bradley Wallace, Matthew Gittinger, Jeffrey Siegelman

Background: EM resident scheduling practices are important contributors to resident wellness while also placing time and financial demands on residency program leadership. Very little literature exists describing EM resident scheduling platforms.

Objective: We sought to summarize current EM residency scheduling practices.

Methods: We conducted a cross-sectional, convenience sample survey of EM residency programs in the summer of 2023 using Qualtrics. Subjects were recruited via two emails to the CORD listserv. Questions were piloted with program directors whose data were not included in analysis, with edits made for clarity based on feedback. We collected information on manual versus automated resident scheduling practices and resident and scheduler satisfaction. We examined relationships between resident and scheduler satisfaction using Spearman correlations. Relationships between satisfaction and scheduling software and characteristics were examined using Mann-Whitney U tests. Survey questions without answers were coded as "Unknown."

Results: We received 19 survey responses, representing all geographic regions. Two programs (11%) reported scheduling manually. ShiftAdmin was the most popularly reported scheduling software (53%). Resident and scheduler satisfaction were modestly correlated (Spearman Rho = 0.38). Compared to the other software-based scheduling platforms and automated scheduling, manual scheduling had the lowest resident satisfaction score. Programs with <30 residents reported the highest levels of satisfaction. None of these relationships reached the threshold for statistical significance. Common dissatisfiers with software-based scheduling included cost, suboptimal automation algorithms, and steep learning curves that new chief residents encounter annually.

Conclusions: Although satisfaction with manual scheduling was low, dissatisfiers with automated scheduling highlight a dire need for improvement in existing technologies.

Table 1. Relationships of schedule platforms and characteristics with resident and scheduler satisfaction.

	Resident Satisfaction mean (median)	P-Value	Scheduler Satisfaction mean (median)	P-Value
Overall				
Study Sample (n = 19)	3.2 (3)	-	3.4 (3)	-
Scheduling Platform				
Manual (n = 2)	2.5 (2.5)	reference	3 (3)	reference
MedRes (n = 2)	3.5 (3.5)	0.67	3 (3)	0.99
MetricAid (n = 1)	4 (4)	0.99	4 (4)	0.99
Qgenda (n = 3)	3 (3)	0.99	2.3 (3)	0.99
ShiftAdmin (n = 10)	3.3 (3)	0.73	3.7 (3.5)	0.82
Qgenda/ShiftAdmin (n = 1)	4 (4)	0.99	4 (4)	0.99
Scheduling Format				
Manual (n = 2)	2.5 (2.5)	reference	3 (3)	reference
Automated (n = 7)	3.3 (3)	0.76	3.4 (3)	0.99
Combination (n = 9)	3.2 (3)	0.71	3.2 (3)	0.99
Unknown (n = 1)	5 (5)	0.67	5 (5)	0.99
Scheduling Practice Length				
< 2 years (n = 4)	2.8 (3)	reference	2.8 (3)	reference
2 – 4 years (n = 7)	3.7 (4)	0.28	3.3 (3)	0.83
4 – 6 years (n = 3)	3.3 (4)	0.58	3.3 (3)	0.89
>6 years (n = 5)	3 (3)	0.79	4 (4)	0.20
Number of Residents				
≤ 30 (n = 4)	4 (4)	reference	3.75 (3.5)	reference
> 30 (n = 10)	3.4 (3.5)	0.25	3.2 (3)	0.50
Unknown (n = 5)	2.4 (2)	-	3.4 (3)	-

P-Values from Mann-Whitney U tests with manual scheduling, scheduling practice length < 2 years, and programs with ≤ 30 residents as the references.

66 Use of Preferred Learning Styles in an Emergency Medicine Residency Academic Remediation Program

Anthony Sielicki, Dylan Krause, Jessica Parsons Claire Abramoff, Deborah Pierce

Background: Many trainees encounter difficulties with the acquisition of fundamental knowledge or skills necessary to practice independently. The ACGME requires remediation plans that are tailored to the individual needs of the struggling learner. Few resources are given to help generate these required tailored plans.

Objectives: We aimed to examine the effectiveness of Kolb Preferred Learning Styles in the development of learning plans for EM residents on academic remediation. We predicted that it would be more effective in preparing residents for success on the In-Training Exam (ITE) compared to education-as-usual.

Methods: This is a prospective study at an academic, urban hospital. Residents who scored less than the 30th percentile on the ITE were placed on academic remediation. All took the Kolb Learning Styles Inventory V. 3.1 to discover their preferred learning style. A learning contract was generated using activities that fit with their style. Their ITE scores in the following year were compared to their initial ITE score.

Results: 14 residents in the 2020-2021 academic years

were included in the control group. 10 residents in the 2021-2022 academic years were included in the experimental group. There were no significant differences in the mean percentile on their initial ITE (control 18.1, experimental 13.8, p=0.09). There was significant improvement in the experimental group compared to control group using a one-tailed t-test (control 13.4, experimental 27, p=0.047).

Conclusions: Individualized learning contracts with activities fitting the Kolb Preferred Learning Style yielded a higher percentile improvement on the ITE when compared to educational activities-as-usual in the prior academic year. This supports the ACGME requirement for individualized learning plans and should be considered for more widespread use.

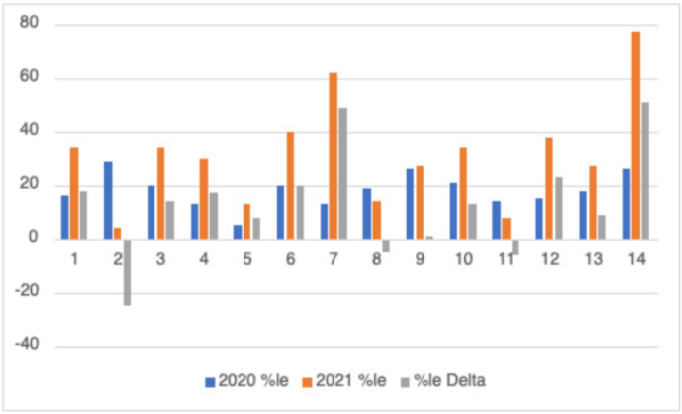


Figure 1. Academic yers 2020-2021 ITE scores.

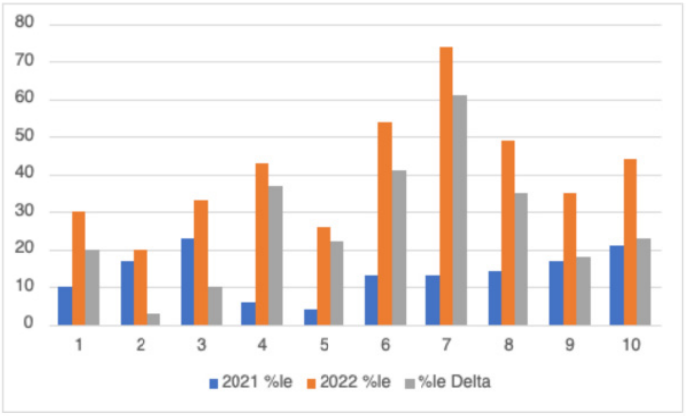


Figure 2. Academic years 2021-2022 ITE score.

67 Informed Consent Practices in an Academic Department of Emergency Medicine

Sarah Russell, Nancy Jacobson, Jamie Aranda, Matthew Chinn, Ashley Pavlic, Kathleen Williams, Mary Lewis, Morgan Wilbanks, Ronny Otero

Background: Sparse literature exists on informed consent (IC) practices in adult emergency departments (ED). In one study, half of patients undergoing lumbar puncture had IC documented. In simulation, EM residents obtained adequate IC, but performed poorly on assessing capacity.

Objectives: We aim to assess current IC practices for residents and faculty in the Department of Emergency Medicine (EM). It was hypothesized that practices would be highly varied.

Methods: This is a cross sectional survey study of EM faculty, residents, and advanced practice providers (APPs) at a single site in an academic ED. Respondents indicated their IC practices for common procedures, the time taken for IC, and their comfort level with assessing capacity and obtaining IC. Responses were compared using the fisher's exact test and t-test.

Results: 84 responses were received, representing a response rate of 68.9%. 69.1% (n=58) were EM faculty, 23.8% (n=20) were EM residents, and 7.1% (n=6) were APPs. Practices for obtaining IC were variable. Most reported taking 6-10 minutes to obtain written consent (53.6%; n=45) but only 1-5 minutes to obtain verbal consent (96.3%; n=79). 75.9% (n=63) reported being somewhat or extremely comfortable assessing capacity. However, practices for assessing capacity varied. The most common barriers to IC were the paper form (33.1%; n=46) and on shift bandwidth (51.1%; n=71). There were significant differences between residents and faculty due to a greater proportion of faculty reporting the paper form as a barrier (p=.002) and a greater proportion of residents reporting knowledge of process as a barrier (p= .03). There were no other significant differences between resident and academic faculty responses.

Conclusion: In a single, academic ED, practices for IC and assessing capacity are variable. Future quality improvement efforts are necessary to evaluate the effectiveness of education interventions and systems.

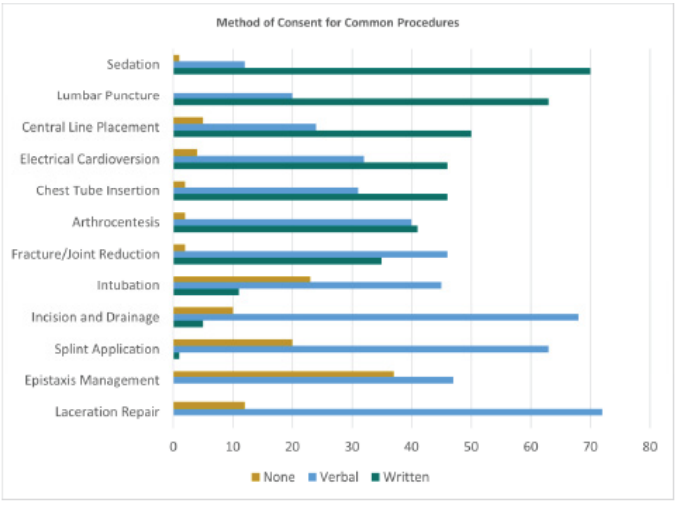
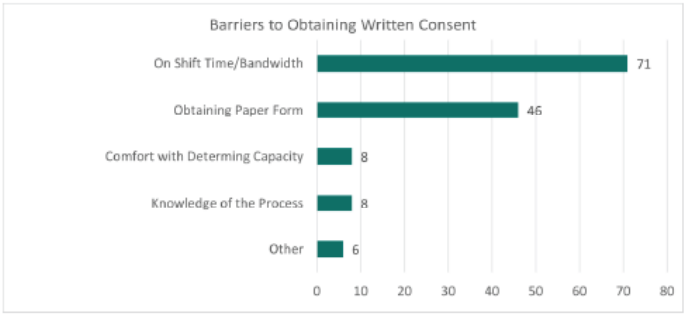


Figure 1. IC practices for common procedures.



Figue 2. Reported barriers to IC.

68 Under Pressure: Stress Inoculation Training as a Simulation Tool

Blakeley Hudson, Jaron Raper, Benjamin von Schweinitz, Andrew Bloom

Background: Emergency Medicine residents are often tasked to make rapid, high stakes decisions with limited information and resources. Understandably, this work can be inherently stressful. While residents get considerable training in patient management, formalized stress management is not a standard curricular requirement.

Objectives: We aimed to utilize a simulated case to load cumulative stress in order to assess response and performance under stress.

Methods: We created a low fidelity stress inoculation simulation which introduced sequential stressors common to working in a high-acuity emergency department. 18 residents were given 10 minutes to complete a series of patient encounters of advancing complexity. Simulated clinical interruptions were introduced, forcing learners to make rapid decisions. Proficiency was measured via completion of 19 critical actions. Resident heart rates (HR) were also monitored throughout the case. Following the simulation, a survey was conducted utilizing the National Aeronautics and Space Administration Task Load Index on a 10 point Likert-type scale.

Results: All participants noted prior experience in stressful clinical situations, but only one learner reported any prior stress management training. All participants felt satisfied with the simulated case, would be worthwhile to continue and would be helpful in the future. Post-intervention data noted a direct relationship between HR variation and perceived stress. We observed no correlation between level of stress reported and number of critical actions completed. Realism of the experience was rated 9.37. Ability to recognize cognitive overload was rated 8.84.

Conclusion: While we observed no correlation between stress experienced and clinical performance, stress inoculation training resulted in a heightened awareness of cognitive overload. Future curricula should consider integration of simulated stress inoculation to identify and mitigate stressors.

Table 1-3.

Table 1	Percentage who answered "yes"
Do you think it would be helpful to simulate stressful situations before you face them?	100%
Do you think this simulation would be worth continuing	100%
Prior to this workshop, I have experienced a stressful situation while working clinically	100%
Prior to this workshop, I have received formal training in stress management	5.60%

Table 2	Average	95% CI
Prior to this workshop, rate your comfort with stressful medical situations (scale 1-10;10 being very comfortable)	6.54	5.92-7.17
This simulation complimented my learning style (10=Strongly agree)	9.53	9.21-9.84
My knowledge of the presence of cognitive stress improved after this workshop:	9	8.60-9.40
My ability to recognize cognitive overload improved after this workshop:	8.84	8.44-9.25
This workshop would be useful for future ED residents and providers to participate in (10=Strongly agree)	9.47	9.24-9.70
I am satisfied with the overall simulation experience:	9.58	9.35-9.81
Do you think this simulation was directly related to your work?	9.53	9.18-9.87

Table 3	p-Value
Change in Heart Rate vs Perceived stress during simulation	0.1
Change in Heart Rate vs Critical actions correct	0.5

69 Audition Rotations: Factors Affecting Quality and Program Perception

Madeline Cook, Colleen Hagopian, Brieana Rodriguez, Kalee Morris, Kaitlyn Pereira, Simon Watson, Jeffrey Bush, Lindsey Jennings

Background: Clerkships provide 4th year medical students the opportunity to gain clinical knowledge, procedural skills, and comfort with the ED workflow. They also allow students to network and determine if a program is the right fit for their residency training. Understanding what factors students value in their education may improve learner experience.

Objectives: This study aims to assess the perceived impact of dedicated resident teaching shifts and organized social events on the student experience.

Methods: We reviewed survey responses of 4th year students at the end of their audition month in the ED. De-identified surveys assessed satisfaction with availability of social events and teaching shifts during rotation. Open ended feedback was summarized using thematic analysis to highlight commonly cited themes for improvement. Students were also asked if inclusion of these experiences would have a positive or negative impact on the program's position on their residency rank list.

Results: All surveys, completed by 93% of rotating students, reported attendance at a resident social event during the rotation. 100% felt inclusion of the events positively influenced the program's spot on their rank list and helped determine if the program was a good fit. Only 46% of respondents were scheduled for a teaching shift with a resident. However, 74% of all respondents reported having teaching shifts in the rotation would positively influence the program position on their rank list. The other 26% responded it would not make an impact. Average satisfaction ratings for events and teaching shifts were 8.9 and 8.6 respectively on a 10-point scale.

Conclusions: Our findings suggest resident teaching shifts and organized social events positively impact the educational experience and perception of the rotation. Inclusion of these experiences were reported by all respondents to positively impact the program's position on their residency rank list.

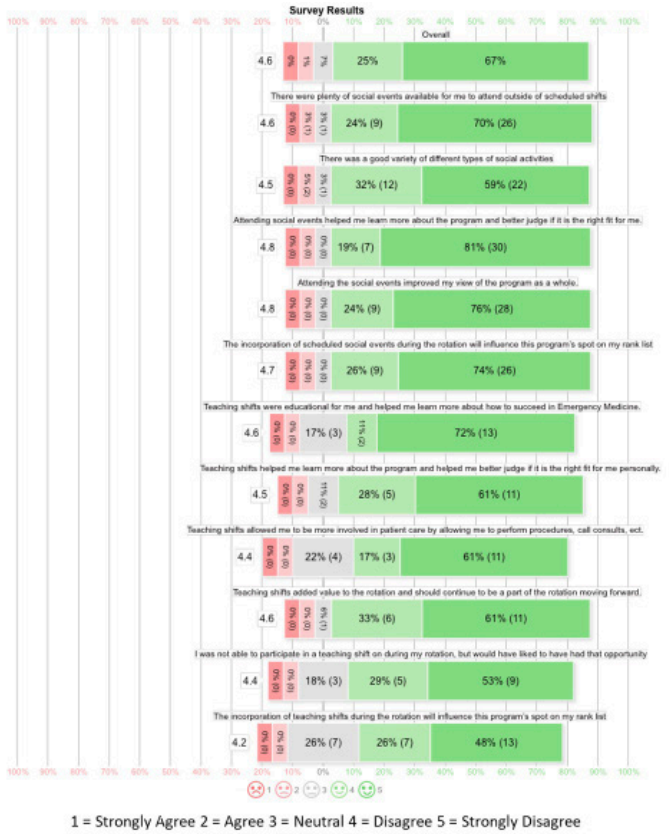


Image 1. Student survey results for Likert Scale questions.

Table 2. Open-ended feedback results.

Suggestions for Improvement	Count of Students with this Suggestion
More teaching shifts	2
More variety in social events	1
Local events highlighting local culture/food	2
Less medical student shifts scheduled during teaching shifts	1
More social events with attendings	3

70 Virtual Interviews Correlate with Higher In-State and In-Region Match Rates

Christine Motzkus, Casey Frey, Aloysius Humbert

Background: Incorporating virtual interviews into future recruitment efforts could help to diversify access to residency programs across the country while also reducing cost involved with travel and lodging. Programs may be more likely to rank students they have met in-person at an interview (or an away rotation) when compared to unknown virtual applicants.

Objectives: Characterize in-state and in-region match rates to emergency medicine residency programs for fourth year medical students with the switch to virtual interviews.

Methods: NRMP data available to the program director was used to identify medical school and match location of fourth year medical students who interviewed at a large emergency medicine residency program in the Midwest from 2020-2023. Students' medical schools and ultimately matched programs were mapped to ERAS geographic regions.

Results: From 2020-2023, there were 964 applicants with match information available. The percent of students matching to an in-state institution increased over the first 2 years of virtual interviews rising from 23.5% in the 2020 match to 30.8% in-state matches for the 2022 match. This decreased slightly for 2023 with 29.0% of students matching in-state. In-region matches increased from 43.9% in 2020 to 49.8% for 2021. However, in-region matches fell to 42.6% with the 2022 Match before increasing again to 44.5% for the 2023 Match.

Conclusions: Virtual interviews changed the landscape of residency interviews. In-state and in-region matches may be more likely for applicants with a virtual interview as both programs and applicants are more familiar with programs in geographic proximity to each other. Virtual interviews allow applicants to save costs associated with travel to in-person interviews and may allow them to complete additional interviews. It is unknown what effect virtual interviews may have on recruiting a diverse emergency medicine residency and this remains an area of significant need for study.

71 Assessment of Gender Bias of Emergency Medicine Resident Physicians

Nileena Johnkutty, Amanita Setari, Alicia Rouff, Courtney Knieriem, Chiamaka Eneh, Corinne Espinosa, Greg Neyman

Background: The perception of female physicians in Emergency Medicine plays a crucial role in shaping the opportunities in a demanding medical specialty. Studies show female residents experience lack of mentorship and difficulties in establishing credibility. Initiatives have developed across residencies to promote diversity and we question whether they have been successful at implementing change.

Objectives: The purpose of this study is to assess the perception of gender bias within the emergency department, with an emphasis on female resident physicians.

Methods: A structured online, anonymous survey distributed to residents, advanced providers, and attending physicians involved in a 3-year emergency medicine program. They were asked to rate statements on a scale

from 1-7 (1 is a strong disagreement and 7 is a strong agreement).

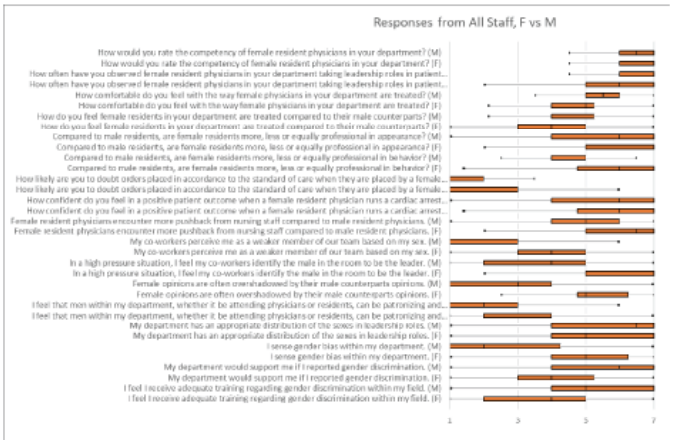
Results: were tabulated with counts, medians, IQRs, Mann Whitney U testing. Results Data from 48 participants, 50% identified as each gender and 56.3% are residents. The following questions were statistically significant in difference (p values 0.05-0.00007). Females were perceived more professional in behavior than men, men within the department can be patronizing to females (p=.001) and females opinions are overshadowed by males (p =.0009). Females felt co-workers perceived them as weaker members (p=.003) and males were seen as the leader in high stress situations (p=.00007). Females reported confidence was affected by how peers perceived them (p=.007), more gender bias (p=.001) and pushback from nursing (p=.003).

Conclusions: Despite the emphasis on creating an inclusive environment, providers in emergency medicine still hold mixed perceptions of female emergency medicine physicians and data suggests female gender bias is present and may be a potential threat to female education. Further research is instrumental to determine steps necessary to create an equitable learning environment.

Table 1. All staff, female versus male.

Question	Female	Male	p Value
How would you rate the competency of female resident physicians in your department?	7 (6 - 7)	6.5 (6 - 7)	0.773
Female resident physicians in my department demonstrate the same level of medical expertise as their male counterparts	7 (7 - 7)	7 (7 - 7)	0.103
How often have you observed female resident physicians in your department taking leadership roles in patient care situations?	6 (5 - 7)	6 (6 - 7)	0.446
How comfortable do you feel with the way female physicians in your department are treated?	5 (4 - 5.25)	5.5 (5 - 6)	0.073
How do you feel female residents in your department are treated compared to their male counterparts?	4 (3 - 5)	4 (4 - 5.25)	0.194
Compared to male residents, are female residents more, less or equally professional in appearance?	7 (5 - 7)	6 (4 - 7)	0.741
Compared to male residents, are female residents more, less or equally professional in behavior?	6 (4.75 - 7)	4 (4 - 5)	0.005
How likely are you to doubt orders placed in accordance to the standard of care when they are placed by a female resident physician vs. a male resident physician?	1 (1 - 3)	1 (1 - 2)	0.68
How confident do you feel in a positive patient outcome when a female resident physician runs a cardiac arrest resuscitation compared to a male resident physician?	6 (4.75 - 7)	6 (4 - 7)	0.398
Female resident physicians encounter more pushback from nursing staff compared to male resident physicians.	6.5 (5 - 7)	5 (4 - 6)	0.004
My co-workers perceive me as a weaker member of our team based on my sex.	4 (3 - 5)	1 (1 - 3)	0
In a high pressure situation, I feel my co-workers identify the male in the room to be the leader.	7 (5 - 7)	4 (2 - 5)	0
Female opinions are often overshadowed by their male counterparts opinions.	5 (4.75 - 6.25)	3 (1 - 4)	0
I feel that men within my department, whether it be attending physicians or residents, can be patronizing and condescending to the female members of the team.	4 (2 - 4)	2 (1 - 3)	0.001
My department has an appropriate distribution of the sexes in leadership roles.	5 (4 - 7)	6.5 (4 - 7)	0.127
I sense gender bias within my department.	5 (4 - 6.25)	2 (1 - 4.25)	0.001
My department would support me if I reported gender discrimination.	4 (3 - 5.25)	6 (4 - 7)	0.007
I feel I receive adequate training regarding gender discrimination within my field.	4 (2 - 5)	5 (4 - 7)	0.007

Table 2. Responses from all staff female versus male.



72 Point of Care Ultrasound Use Following Ultrasound Simulation In Emergency Medicine Conference

Travis Masood, Danielle Biggs, Mary Rometti, Jeffrey Greco, Greg Neyman, Hrant Gevorgian

Background: Point of care ultrasound (POCUS) is crucial in caring for Emergency Department (ED) patients. Limited studies exist that demonstrate its application in simulation (SIM) labs and impact on enhancing clinical skills. A well-structured POCUS curriculum leads to clinical proficiency, but the process of achieving competency remains uncertain. SIM has enabled learners to refine critical skills while simultaneously reducing risks and enhancing patient safety.

Objective: To determine if providing education on POCUS skills during EM Resident Conference SIM days results in more POCUS exams being performed in the ED.

Methods: During EM resident conference, SIM stations reviewed a POCUS exam. The number and type of scans performed in the ED during the 3 weeks following the SIM review were compared with the 3 weeks prior. Inclusion criteria involved completing a study worksheet on the Butterfly Enterprise platform. Incomplete worksheets were excluded. Sample size justification was based on a targeted 10% increase in studies of interest. Data was collected from Butterfly with further analysis conducted post-collection.

Results: During the study period, 1831 exams were performed. 931 studies were logged in the pre period, and 900 in the post. Pre/post exam types included eFAST 38/18; ECHO 62/105; Biliary 16/7. 11% were performed by PGY1s, 35% by PGY2s, 20% by PGY 3s, and the remainder by attendings. Table 1 shows the number of exams performed by level, pre/post SIM session, relative risk, confidence intervals, and p values. Figure 1 shows the difference in the post and

pre period as relative risk.

Conclusions: While there was not a statistically significant increase in the total number of POCUS scans, the study prompts additional research questions and alternative ways to measure a successful intervention. Further research could evaluate the quality of POCUS scans performed or confidence of the sonographer before and after the SIM.

Table 1.

	Percent of Studies			Count of All US		
Period	eFast	Echo	Biliary	eFast	Echo	Biliary
	All					
Pre	11%	25%	5%	339	261	341
Post	6%	30%	3%	294	352	254
	PGY1					
Pre	0%	0%	8%	0	2	71
Post	0%	34%	7%	1	76	43
	PGY2					
Pre	14%	29%	4%	148	56	111
Post	7%	33%	1%	96	133	88
	PGY3					
Pre	16%	35%	5%	76	46	60
Post	6%	36%	6%	74	77	36

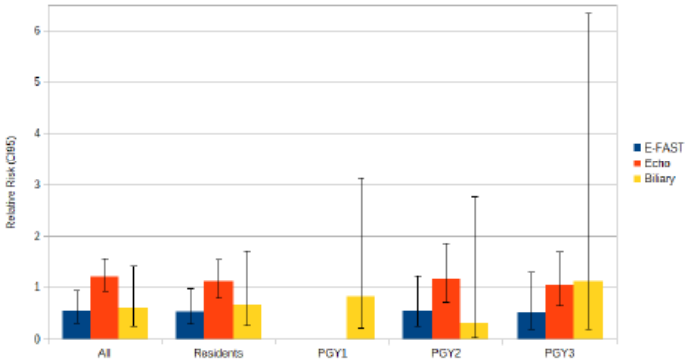


Figure 1. Change in US rate by type, level.

Innovation Abstracts

1 Assessing the Inconsolable Infant: Look Everywhere!

Damian Lai, Julianne Blomberg, Jeremiah Ojha, Kristen Oliff, Brent Becker

Introduction: A crying infant is a common presentation in the Emergency Department. Resident physicians in the early stages of training express discomfort when dealing with pediatric patients, due in part to the inability of infants to relay their own history. We designed a simulation emphasizing the importance of a comprehensive head-to-toe physical exam and maintaining a broad differential in assessing inconsolable infants.

Objectives: Identify non-obvious causes of inconsolable crying by performing a complete and thorough infant physical exam.

Curricular Design: Residents from a 3-year emergency medicine residency program participated in a simulation activity involving three infant task trainers with various causes of inconsolable crying. The simulated patients had the same baseline presentation: 8-month-old child, born at 40 weeks with an uncomplicated birth history presenting with normal vitals and inconsolable crying starting 2 hours prior. Participants were tasked with using a history and physical examination to identify pathology including a hard palate burn from hot milk, recent vaccination, eyelid foreign body, buccal stomatitis, rectal fissure, corneal abrasion, cellulitis, diaper dermatitis, hair tourniquet, and nasal foreign body. We recorded the time required by each participant to identify all 10 causes.

Impact: Participants, especially interns, valued the emphasis on a thorough infant physical exam and appeared to gain the most from the activity. Junior residents tended to search for higher acuity cardiopulmonary causes. We observed that senior residents were more organized, resulting in more efficient completion of the activity. Notably, the identification of eye pathology took the most time to diagnose. This activity also facilitated discussions on exam findings relevant to non-accidental trauma. We plan to integrate this activity into our new intern boot camp sessions.

2 FoEM Clerkship: An Open-Access Case-Based Flipped Classroom Curriculum for Emergency Medicine Clerkships

Max Berger, Stephen Villa, Steven Lindsey, Howard Choi, Megan Henn, Kristen Grabow Moore

Background: Over 75% of EM residency programs use Foundations of Emergency Medicine's (FoEM) free, open-access, learner-centric, level-specific curricula to teach EM core content to residents. In a 2022 survey of FoEM users, 59% of participating programs reported use of Foundations I (PGY-1 course) to teach students, and 54% confirmed interest in a specific FoEM Clerkship course. With an increasing number of schools requiring EM clerkships and demonstrated interest, we built FoEM Clerkship to support level-specific didactics for EM clerkship students.

Educational Objectives: Course objectives include 1) identify "can't-miss" differential diagnoses for common ED presentations; 2) build a framework for determining "sick"

versus "stable"; 3) recognize the "EM Mindset", including initial stabilization/workup and "worst-first" mentality.

Curricular Design: Using Kern's model, our team of expert faculty refined topics in the CDEM Curriculum, established module objectives, and created templates for a development team including EM residents as authors, and Clerkship Director and medical student stakeholders as editors. Modules were adapted from existing Foundations I cases, with added emphasis on determination of stability and development of the differential, and de-emphasis of advanced management. After iterative stakeholder and expert review, 13 cases (Table 1) were paired with curated asynchronous resources (e.g., book chapters, blog posts) to support flipped classroom learning and an "Essential Learning" summary to support spaced repetition.

Impact/Effectiveness: Since publication of the curriculum and implementation resources (Table 2) on the FoEM website in July 2023, 66 programs serving 2,750 students have registered to use FoEM Clerkship. To investigate effectiveness and fuel improvement, we will obtain survey data from program leaders and learners in 2024. We hope that FoEM Clerkship provides an effective national tool for EM clerkship learning.

Table 1. FoEM Clerkship Curriculum Topics..

Chest Pain	Back Pain
Shortness of Breath	Toxic Ingestion
Abdominal Pain	Trauma
Pediatric Fever	Syncope
Vaginal Bleeding	Dizziness
Altered Mental Status	Sepsis
Headache	

Table 2. Resources for FoEM Clerkship Module 1: Chest pain.

Implementation Resources	Didactic Resources	Asynchronous Resources
• Clerkship Course Director Implementation Guide • Clerkship Small Group Instructor Guide • Clerkship Learner Guide • Foundations Case Note Sheet	• Case 1 • Essential Learning Summary	Text Based: • Tintinalli's (9e), Chapter 48 • Rosen's (10e), Chapter 22 FOAMed: • CoreEM: Chest Pain • EM in 5: Approach to CP • NuMose: Chest Pain Podcasts: • EM Basic: Chest Pain • EM Clerkship: Chest Pain

*Active links for all resources can be found at www.foundationsem.com.

3 Cased-Based Imaging Curriculum: Filling an Educa

Katrina D'Amore, Michael Fucci, Raymond Isenburg, Christine Ju, Matthew Kuhns, Hyunjoo Kuhns, Anthony Sielicki, Scott Hamlin, Kristen Gabrow Moore, Eric Steinberg

Introduction/ Background: Emergency medicine (EM) physicians are expected to be competent in radiographic interpretation. Despite this, radiology training is variable in EM residency programs. Foundations of Emergency Medicine (FoEM) is a free curriculum that currently serves 245 EM sites globally. According to the 2020 FoEM needs assessment survey, 63% (80/126) of programs did not have a formal radiology curriculum. An average of eight hours of conference time per year was dedicated to radiology.

Educational objectives: Within the established FoEM platform, we sought to create a high-quality curriculum for EM radiology that was clinically relevant, able to be delivered asynchronously, and had elements appealing to all learning styles.

Curricular Design: Case-Based Imaging is a two-pronged curriculum targeting EM residents. High yield topics were identified to complement the existing Foundations of EM content. The first prong consists of a recorded lecture. While viewing, the learner is expected to complete a worksheet. The second prong consists of learner-driven interactive radiology cases on Pacsbin, a cloud-based picture archiving and communication system (PACS). Quizzes contain questions with both static and dynamic radiographic images. Quizzes were reviewed by EM and radiology faculty and piloted prior to release. All content is available at foundationsem.com/case-based-imaging/.

Impact/Effectiveness: To date, 14 modules have been published, accumulating 4,541 views from 2,000 unique viewers. This likely underestimates true viewership as modules may be viewed in group settings. 453 unique users completed self-assessment quizzes. Our five most popular modules ("Pneumonia," "Appendicitis," "Head Trauma," "Pulmonary Embolism," and "Small Bowel Obstruction," had mean pre-test scores of 80, 67.9, 82.9, 78, and 70.5, respectively, and post-test scores of 87.3, 83.4, 96.6, 84.3, and 75.2 respectively, suggesting curricular effectiveness.

4 Safer Stimulant Use: Harm Reduction Curriculum for Emergency Medicine (EM) Residents and Faculty

Alexa Van Besien, Karrin Weisenthal, Samantha Johnson, Laura Welsh

Introduction: Concurrent with the opioid epidemic, there is a significant rise in stimulant use-related Emergency Department (ED) visits with a similar increase in morbidity and mortality. Abstinence counseling is insufficient as many patients who use stimulants (PWUS) do not want to stop using stimulants, and there are no FDA-approved treatments for stimulant use disorder. Employing harm reduction techniques in the ED can improve the health and safety of PWUS and reduce mortality rates, but no formal curricula exist on the subject. Thus, we designed a curriculum to empower EM physicians to utilize these strategies using

clinical scenarios and structured group case discussions.

Educational Objectives: To improve EM physicians' knowledge and comfort with identifying patterns of use and employing harm reduction strategies when caring for PWUS.

Curricular Design: This was a two-hour in-person workshop for EM residents and faculty. It consisted of a 30-minute didactic session and small group case discussions of two clinical scenarios. Each case aimed to highlight patterns of stimulant use and allow the learners to apply content from the lecture. An attending physician led each small group and was equipped with a facilitator guide and harm reduction supplies to direct the discussion. The content of the lecture and case discussions were informed by a comprehensive literature review and designed by two EM physicians, one with addiction medicine fellowship training. The need for this content was established during a similar curriculum addressing opioid use. A curriculum evaluation was distributed to all participants.

Impact/Effectiveness: A total of 23 of 28 participants (82%) completed the evaluation. All respondents reported a high likelihood of incorporating harm-reduction techniques into their future practice, and all found the curriculum to be highly effective. Additionally, participant confidence in every category increased after the curriculum (Table 1).

Table 1.

Confidence in Ability to	Mean Baseline Score	Mean Postcurriculum Score	Mean Difference (99% Confidence Interval)	P value
Counsel on harm reduction techniques for patients who smoke stimulants	1.95	3.86	1.91 (1.44 to 2.37)	<0.0001
Identify a "crashing" patient?	2.50	3.82	1.32 (0.70 to 1.94)	<0.0001
Counsel patients on harm reduction techniques for people who inhale/sniff stimulants.	1.72	3.72	2.00 (1.49 to 2.51)	<0.0001
To discuss cardiac risks among people who use cocaine with or without alcohol.	2.91	4.18	1.27 (0.66 to 1.88)	<0.0001

Rated on 5-point Likert scale: (1= Not at all confident, 5= Extremely Confident)

5 Utilizing a Graduated Responsibility Model for Emergency Medicine Resident Disaster Response Education

Kalee Royster, Frank Forde, Jordan Singer, Jehanne Belange, Jason Zeller, Regina Yaskey, Jeffrey H. Luk

Background: Disaster preparedness is an essential component of Emergency Medicine residency education. Although professional societies outline disaster medicine topics that should be taught to EM residents, the most effective method remains unknown, leading to variability in knowledge and skills among EM physicians. With an increasing number of mass casualty events, it is more important than ever to design and implement an effective and more standardized training model.

Objectives: For EM residents to attain comfort with mass casualty management using a graduated responsibility model, by learning and applying disaster medicine concepts based on assigned roles.

Design: Residents were divided into three groups based on training year, each group with a specific training role for the disaster exercise. Before the drill, all residents attended a class-specific introduction lecture. PGY1 residents were tasked with triaging patients. PGY2 residents were responsible for receiving and treating disaster patients, utilizing simulation manikins and procedural training systems to mimic real life management in a surge environment. PGY3 residents practiced managing ED, hospital and system-wide coordination and disposition of patients. Several models of education were utilized during the session, including SIM, procedural training, tabletop, and mannequin patients to recreate a realistic ED environment during a disaster patient surge.

Impact: Our curriculum has received positive feedback from residents, specifically in terms of feeling more prepared for mass casualty events. Having a graduated responsibility approach creates a standardized method that can be applied universally among trainees, and allow for residents to learn multiple roles to best prepare them for future disaster responsibilities. Pre- and post-test competency evaluations assessing knowledge and comfort level will continue to be incorporated and analyzed in future disaster simulation training exercises.

Table 1.


Image.

6 Sick or Not Sick? Teaching Medical Students to Identify Patient Acuity and Prioritize Tasks

Adam Payne, Meghan Mitchell, Zoe Listernick, Jenna Fleming, Lindsay Koressel

Background: One entrustable professional activity (EPA) identified by the AAMC is the ability to recognize a patient requiring urgent or emergent care and initiate evaluation and management. The critical skills in residency of task prioritization and acuity recognition are rarely explicitly taught in undergraduate medical education.

Educational Objectives: We created a simulation-based mastery learning (SBML) curriculum for senior medical students targeting key aspects of EPA 10 including task prioritization, evaluating clinical changes, and management.

Curricular Design: A group of clerkship directors and educators created a SBML "sick or not sick" curriculum for fourth year students. After a literature review, a group of experts used a modified Delphi approach to create an ideal performance checklist. A second group then used the Mastery-Angoff method to set a minimum passing standard for the checklist which was employed to assess student performance in a simulation baseline assessment (BA). For the BA students were presented triage information on three patients and had to choose which required attention first. After managing the patient, they selected the next most urgent patient to see. During each encounter, students received pager notifications about other patients that required triaging. After the BA, students completed an interactive asynchronous module designed by the facilitators with clinical scenarios and a multiple choice exam. Students then participated in an in-person workshop consisting of a didactic portion and facilitated simulation with rapid cycle deliberate practice. The final portion of the curriculum was a post-test simulation structured like the BA.

Impact: Initial implementation was successful. In the initial pilot, all participants identified the curriculum as helpful and recommended its use. Next steps include a larger pilot to assess effectiveness, adding varied simulated cases, and embedding it within the fourth year curriculum.

7 Emergency Physicians Evaluation of Second and Third Trimester Pregnancy Using Point of Care Ultrasound: A Pilot Study

Reshma Sharma, Mitchell Guedry, Jillian Davison, Steve Leech, Anna Harper, Max Trojano

Introduction/ Background: Emergencies in the second and third trimester of pregnancy can be life threatening. With implementation of protocols that prioritize triaging patients towards obstetric hospitals rather than emergency departments, emergency medicine physicians encounter fewer of these critical cases. We considered the need for learners to practice a focused 5 step approach to point of care ultrasound (POCUS) for patients in their second or third trimester to gain rapid answers to clinically important questions.

Educational Objectives: The primary objective of our study was to assess learners' knowledge and ability to accurately perform a focused POCUS on second and third-trimester pregnancies before and after instruction.

Curricular Design: This workshop offered both lecture and hands-on training on obtaining the five components of second and third-trimester POCUS: assessment of fetal presentation, fetal heart rate, fetal biometry, placental location, and evaluation of amniotic fluid volume. After a brief didactic presentation, learners were divided into 3 stations: hands-on training, two oral board style cases, and a whiteboard talk to reiterate the important components of second and third-trimester POCUS. Learners completed pre- and post-session assessments assessing comfort and medical knowledge.

Results: 21 residents participated in our workshop. Results are reported as mean, (95%CI). Learners were able to identify 2.6 (2.1-3.1) of the 5 components of the US protocol prior to instruction, vs 4.7 (4.4-5.0) after instruction. Learners' confidence in performing and interpreting the US protocol improved from 3.65 (2.54-4.76) to 7.86 (6.60-9.12) on a 10-point Likert scale. Finally, learners' knowledge as measured with 5 clinical questions on the pre-and post-quiz improved from 3.3 correct (2.8-3.8), to 4.7 (4.4-5). We

believe this was an effective workshop to review and practice a clinical skill that can improve patient care and save lives.

8 Shifting the Scale: Using Narrative Medicine to Navigate the Complexity of Pain in the ED

Suchismita Datta, Lyncean Ung, Yash Chavda, Neil Dasgupta, Carmelina Price

Background: The pain scale is taught as a method to quantify and acknowledge the perception of pain. The result is a subjective construct built by both the patient and clinician; therefore, its treatment is inherently complicated. In the absence of a formalized curriculum, the emergency medicine [EM] residents are not provided with adequate tools to have effective dialogues with their patients about pain. Appropriate communication skills are just as important as technical knowledge. Narrative medicine [NM] is an effective educational tool to teach empathy skills, specifically perspective-taking and engaged listening, and help EM residents learn how to effectively navigate conversations around pain.

Objectives: Design and implement a didactic session that illustrates the complexity of assessing pain. Apply the NM framework to teach the concepts of engaged listening and perspective-taking. Evaluate the impact of this session on learner perceptions.

Curriculum Design: NM is grounded in critical pedagogy and transformative learning theory. The essay "The Pain Scale" by Eula Biss was used to accomplish the three pedagogical steps of NM: close reading, critical reflection, and group discussion during a two-hour resident conference session. Learners were provided with materials to create their own pain scale and then share their artwork. ADDIE (Analysis, Design, Development, Implementation, Evaluation) framework was used for instructional design. Content experts were recruited to ensure the authenticity of the educational material. A survey was designed to assess the impact on learners' perception of the pain scale and was piloted amongst stakeholders to increase its situational validity.

Table 1. Pain scale activity pre-survey responses.

Question	n=34	
What is your role?		
Faculty	4	11.8%
Medical student	8	23.5%
PA Student	1	2.9%
Resident physician	21	61.8%
When did you first learn about the pain scale?		
Medical School	13	38.2%
College/Undergrad	7	20.6%
Other	14	41.2%
How often do you use the pain scale to assess your patient?		
Always	5	14.7%
Frequently	16	47.1%
Rarely	8	23.5%
Sometimes	5	14.7%
Have you ever been asked to describe YOUR pain on a scale?		
No	9	26.47
Yes	25	73.53

Table 2. Pain scale activity post-survey responses.

Question	n=28	
How did this session change your perception of the pain scale?		
Response indicative of change in perception	25	89.3%
Response indicative of no change in perception	3	10.7%
What did you like about this session?		
Interactive/Sharing/Discussion	12	42.9%
Impact on Perspective	3	10.7%
Medical Humanities	11	39.3%
Blank/Missing	2	7.1%
What could have been done differently to make this session better?		
No change/Great session	24	85.7%
Change	4	14.3%
Go through shorter reading		
If possible, it would be helpful to read the whole piece beforehand		
More interactive if possible, it keeps things interesting and people energetic		
More time for pain scale creation		
What is your role?		
Faculty	3	10.7%
Medical Student	6	21.4%
PA student	1	3.6%
Resident physician	18	64.3%
Are you going to use this scale differently with your patients?		
Maybe	1	3.6%
No	3	10.7%
Probably	11	39.3%
Unsure	2	7.1%
Yes	11	39.3%

Impact/Effectiveness: 89% of participants reported a change in their perceptions of the pain scale after the session. The empathy skills learned from this session can help physicians take better care of their patients and are applicable to both the UME and GME landscapes.

9 Development of a SLOE Review Committee to Limit Bias in SLOEs

Bryanne Macdonald, Liza Smith

Introduction: The Standard Letter of Recommendation (SLOE) is a key factor used to stratify candidates for residency interviews. Multiple studies have demonstrated biases within each section of the SLOE. Acknowledging the well described pervasive nature of these biases and the importance of SLOEs in interview and ranking decisions, it is imperative methods are employed to limit unintended bias.

Educational Objectives: We developed a SLOE review committee process aimed at limiting potential implicit bias in our departmental SLOEs. Specific objectives for the committee included identifying SLOEs with content that did not fairly represent a student or that might perpetuate a stereotype, as well as those with potential for controversy. Curricular Design: We designed a standardized process for review and revision of all audition clerkship SLOEs. A SLOE committee composed of education faculty, medical education fellows, and select senior residents was formed. All

drafted SLOEs were independently reviewed by three SLOE committee members who provided one of three protocolized decisions: no revision suggested; agree with content but offer minor revisions; or referral to the SLOE review committee. The full committee then met for discussion and revision of all SLOEs referred for more substantial review until consensus was reached. Impact: This process has been utilized for three application cycles. In the initial year, 8(27%) SLOEs received at least one request for revision with 4(13%) referred to the review committee. In 2022, 6(25%) SLOEs were flagged for revision with 3(13%) referred to the review committee. In 2023, 13(43%) received a request for revision with 4(13%) referred for review. These data show our committee identified a small but consistent subset of SLOEs that may have unintentionally disadvantaged certain students. Introduction of such a committee provides a low-effort, high-reward method to identify and rectify unintentional messaging or biases.

10 Empowering Future Healers: Integrating STOP THE BLEED® Training Into the Medical School Journey

Michael Kaduce, Erik Coll, Jordan Brafman, Natasha Wheaton, Michael Kaduce

Introduction: Exsanguination continues to be the leading cause of preventable death in trauma patients, according to the World Health Organization. The American College of Surgeons' STOP THE BLEED (STB) course teaches lay rescuers to recognize life-threatening bleeding and utilize direct pressure, tourniquets, and wound packing to control severe bleeding. Despite medical students' education primarily focusing on hospital care, exsanguination too often occurs in the prehospital setting. Thus, we evaluated the effects of including a hands-on STB course in the first-year medical school curriculum.

Educational Objectives: 1. Prepare medical school students to recognize and intervene in the event of severe bleeding. 2. Compare the likelihood of intervention before and after the STB course.

Curricular Design: Basecamp, the orientation course for first-year medical students at UCLA, is an introduction to medical school and the student's future as physicians. During this course, students are provided both education and a mindset for success through self-inventory, reflection, small group discussion, online activities, and lectures. During the month-long course, students participated in a 60-minute STB course, including didactic and skills practice.

Impact/Effectiveness: 172 students became STB-certified and completed the post-course survey. Ten percent reported having taken a previous STB course. Before the course, 55% reported being somewhat/very likely to attempt to control severe bleeding. Following the course, that number increased to 99%, representing an 80% increase (Figure 1). Similarly, 41% were somewhat/very likely to use a tourniquet before the course. Following the course, that number increased to 100%, representing a 143% increase. Post course, 96% reported it is somewhat/very important to have a campus-wide STB training program and 97% reported it is somewhat/very important to have bleeding control equipment available in public spaces on campus (Figure 2).

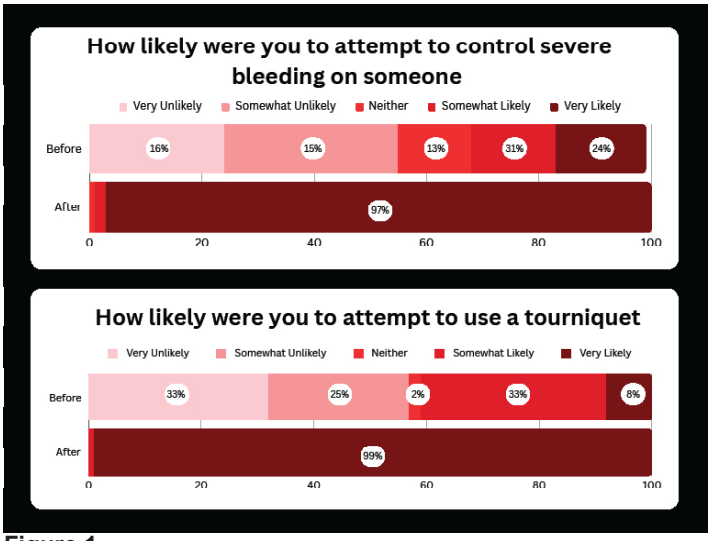


Figure 1.

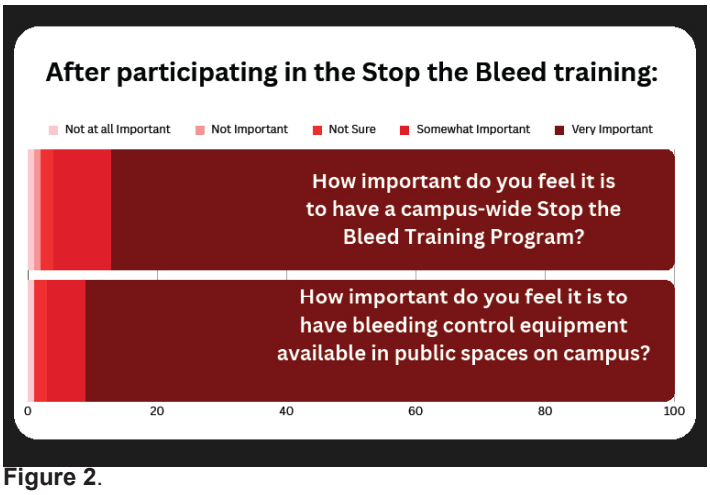


Figure 2.

11 Decreasing Risk and Stigma Among Patients Who Use Drugs: Creating an ED-Based Harm Reduction Curriculum

Karrin Weisenthal, Jeremiah Ojha, Samantha Johsnonm, Zoe Weinstein, Jessica Taylor Taylor, Laura Welsh

Introduction: People who use drugs (PWUD) represent 10% of ED visits nationally; many delay seeking care

due to discrimination in medical settings. Evidence-based medications for opioid use disorder are not equitably or universally available, and not all PWUD want to stop their drug use. Harm reduction is part of the U.S. Health and Human Services Overdose prevention strategy. Yet, beyond naloxone distribution, few EM residents receive any training, and no curricula exist in the literature.

Educational Objectives: To improve EM residents' ability to incorporate harm reduction principles into the care of PWUD, including counseling on ways to decrease the risk of fatal overdose, techniques to lower infection risk, and indications for PEP/PrEP.

Curricular Design: We created a 2.5-hour workshop delivered to EM residents during their weekly didactic. The workshop consisted of 2, 30-minute lectures, each followed by case-based learning to allow for active learning and application of content provided in the lecture. Small groups worked through a total of 2 cases under the guidance of EM faculty members who were equipped with a facilitator guide. We included a demonstration by a peer counselor on proper injection techniques to provide context for harm reduction advice. All content was informed by a literature review and was designed by EM and Addiction Medicine physicians and addiction peer counselors. The curriculum was first piloted on EM faculty members and altered based on feedback.

Impact: The curriculum was evaluated using a post-workshop survey with a 100% response rate. All participants (23/23) reported increased confidence in their ability to employ harm-reduction strategies addressed in the curriculum (Table 1). All participants rated the workshop as highly effective. To our knowledge, this is the first curriculum to address risk reduction for PWUD not interested in stopping drug use and can be adapted for many settings based on local regulations.

Table 1.

Confidence in Ability to:	Mean Baseline Score	Mean Post-Curriculum Score	Mean Differnece (95% CI)	P-value
Counsel patients on ways to decrease the risk of overdose	2.52	4.13	1.61 (1.26-2.10)	<0.001
Counsel patients on ways to decrease the risk of infectious complications of drug use	2.61	4.22	1.61 (1.08-2.13	<0.001
Discuss safer injection drug use techniques	2.43	4.23	1.79 (1.00-2.22)	<0.001
Identify when PEP vs PrEP is indicated	2.96	4.3	1.35 (0.97-1.73)	<0.001
Order the appropriate pre-PrEP blood work	2.3	4.09	1.78 (1.28-2.28)	<0.001

Rate on 5 point Likert scale: 1= Not at all confident, 5= Extremely confident

12 Using Change Management to Implement a Novel End of Shift Assessment for Emergency Medicine Residents

Kelsey Boyne, Ryan McKillip, Ravi Chacko, Ryan Tabor, Elise Lovell

Background: Feedback is a crucial component of resident development and is most impactful when relevant and timely. Resident assessments have historically been based on ACGME Milestones, which describe expected qualities of trainees, but do not directly relate to daily medical practice. Entrustable professional activities (EPAs) are observable units of work which allow for the translation of Milestones into clinical practice. A set of EPAs was recently developed for EM, however changing a residency program's existing assessment system poses significant challenges.

Objectives: Successfully implement a novel EPA based end of shift assessment in an EM residency program.

Design: To overcome potential resistance and encourage collaboration among stakeholders, we utilized Kotter's 8-Step Process for Leading Change. We established urgency by identifying faculty dissatisfaction and poor assessment completion rates; created a guiding coalition by inviting two junior faculty members to operationalize the new assessments; developed a vision that the EPA based assessment would be intuitive, quick, and satisfy ACGME requirements; communicated this vision via email and town hall sessions at our department meeting and resident conference; enabled action by posting QR code links in charting rooms; generated short-term wins by running a two-week trial with core faculty; sustained acceleration by linking EPAs to Milestone data that were then submitted to the ACGME; and anchored change by collaborating with a national network of EM programs implementing EPA based assessments.

Impact: The majority of faculty and residents responding to a department-wide survey preferred the new EPA based assessment over the prior system (30/38, 78.9%), and emphasized its timeliness, ease of use, and intuitive nature. This system has facilitated active feedback between faculty and residents. Compliance is extremely high, with 1,451 assessments collected over the initial six months of implementation.

13 Creation and Assessment of an Innovative, Portable Nasopharyngoscopy Education Module

Alexandra Nordberg, Patric Gibbons, Michael Sherman

Introduction: Airway management advances have prompted the adoption of sophisticated techniques to mitigate

risk. It is crucial for Emergency Departments (ED) to proactively educate physicians on these advanced methods to ensure proficiency and stay at the forefront of patient care. Our goal was to develop an introductory advanced airway curriculum, starting with nasopharyngoscopy, that could be taught portably or in-situ, outside of a prototypical simulation (sim) lab.

Objectives: 1. Create an expert consensus checklist of laryngoscopy techniques. 2. Develop a didactic and sim for difficult airway training, with focus on nasopharyngoscopy. 3. Assess the feasibility and participant experience with skill acquisition and feedback.

Curriculum Design: Following Kerns model of curriculum design, an anonymous needs assessment demonstrated that 89.9% of residents and faculty in our ED had no formal nasopharyngoscopy training, and only 2% used it in their practice. A 1-hour didactic and 2-hour sim session were held for emergency medicine residents and faculty using portable Ambu aView and Trucorp Airsim products purchased with an institutional grant. Following competency-based education methods, participants then attempted a nasopharyngoscopy sim and were assessed with an expert consensus checklist developed by an in-house multidisciplinary team. A post-course evaluation was then distributed to participants.

Impact: After the session, all 30 participants were able to successfully complete a nasopharyngoscopy sim without assistance. The post-course evaluation showed 73% of participants felt adequately prepared and felt comfortable performing the procedure. Consequently, we felt that this educational intervention is a feasible, portable teaching modality with skill acquisition and favorable participant experience. With ongoing similar education, perhaps with smaller groups and increased frequency, this has the potential to form the basis of a portable advanced airway curriculum.

14 Look at That! A Visual Aid-Based Intervention to Improve Patient-Centered Communication Among Emergency Medicine Residents

Eleanor Birch, Patrick Bedard, Justine Stremick

Introduction/ Background: Visual aids are pictorial-based tools that have been used to facilitate patient education and shared decision-making. They have been found to improve patients' understanding, risk perception, and satisfaction with provider communication. Using visual aids to aid patient communication is an important skill, but residency training may not provide adequate training or experience with these tools. This intervention was created to provide experience applying visual aids tools to discussions with patients and family.

Educational Objectives: 1. Apply visual aid tools to facilitate patient-centered communication.

Curricular Design: In this intervention, printed visual aids with a pictorial representation of the PECARN Head CT rule were placed in the ED. At each change of shift, the resource was highlighted to encourage its use for appropriate patients. The topic was chosen because pediatric head injuries are a common complaint with well-established guidelines for evaluation. The visual aid used was adapted from one developed by the ALiEM, CanadiEM, and PECARN research team. Modifications to this reference image were made based on resident feedback to tailor it for bedside use. Data were collected via an online survey on experience using the aid and feedback for improvement and additional aid development.

Impact/Effectiveness: The implementation of this visual aid was widely accepted, with 100% of respondents reporting that the visual aid was helpful and responding affirmatively that they would use it again. Additional visual aids covering antibiotic stewardship, imaging for low back pain, and radiation risks, among others, have been developed based on feedback. Future directions include evaluation of the effect of the intervention on communication skills. This is a low-resource intervention that could be implemented easily in other residencies to provide exposure to the use of visual aids as a patient-education tool.

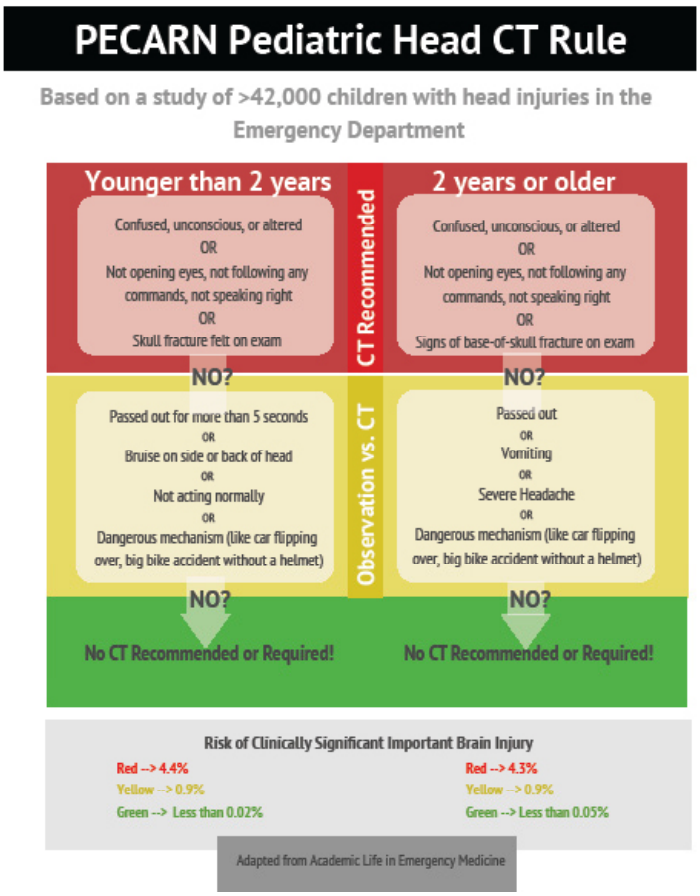


Figure.

15 "I Heart ECGs: A Novel ECG Curriculum Designed for Adult Learners"

Brian Smith, David Simon, Timothy Khowong, Anita Lui, Nao Yoneda, Saumil Parikh

Introduction/ Background: Emergency Medicine residents learn more from interactive, case-based, self-directed, and experiential learning strategies over traditional lecture-based didactics. Integration of an ECG curriculum grounded in these adult learning principles can facilitate a learning environment that maximizes engagement and skill acquisition.

Objectives: We implemented an ECG curriculum tailored to adult learners to meet our residents' needs. We hypothesize this will bolster residents' confidence in ECG interpretation skills.

Curricular Design: A problem-centered general needs assessment found that our residents lacked confidence in ECG competency and were dissatisfied with the ECG curricula. A multifaceted targeted needs assessment uncovered residents' knowledge gaps. We designed the "I Heart ECGs" curriculum to address identified needs. On Mondays, residents receive an ECG, case vignette, and 2-3 open-ended questions. During weekly conference, residents and faculty openly discuss appropriate triage, potential diagnoses, and optimal management. Faculty then unveils the diagnosis and leads a debrief on recognition, management, and clinical insights.

Impact: "I Heart ECGs'' has gained popularity with residents and enhanced confidence in ECG interpretation, yielding benefits at both Kirkpatrick levels 1 and 2. Residents completed a 5-point Likert scale survey before curriculum implementation and one year after. Pre-implementation, 76% strongly agreed that an interactive ECG curriculum would be beneficial for their education. This rose to 100% post-implementation. Pre-implementation, only 19% of residents reported confidence in ECG interpretation skills. Post-implementation, this surged to 100%. Similar improvements were seen in confidence identifying and managing various ECG subcategories, showcasing advancement in learning. Future research will explore the curriculum's impact on resident ECG competency and patient outcomes (Kirkpatrick levels 3 and 4).

16 Documentation Curriculum for Emergency Medicine Residents

April Choi, Lisa Saffire, Jeremiah Ojha, Linda Regan

Introduction/ Background: Documentation is a key skill for emergency medicine (EM) physicians and part of Accreditation Council for Graduate Medical Education (ACGME) milestones. Much literature on resident documentation curricula focuses on billing and coding and does not incorporate 2023 American Medical Association (AMA) Current Procedural Terminology (CPT) coding changes. We sought to fill the need for comprehensive and updated resident documentation training by creating a curriculum addressing documentation around 2023 AMA CPT codes, defensive documentation, and medical decision-making (MDM).

Educational Objectives: By the end of our curriculum, residents will be able to: 1. Correctly code EM charts 2. Analyze charts for defensive documentation elements 3. Report increased confidence in documentation for billing and coding, defensive documentation, and MDM 4. Evaluate self and peer charts for documentation best practices

Curricular Design: Our needs assessment showed residents felt least confident documenting for MDM, defensive documentation, and billing and coding and preferred case-based learning. Our curriculum featured case-based synchronous sessions on 2023 AMA CPT codes with simulated charts and on high-risk documentation areas with historical medicolegal cases. We also included longitudinal asynchronous chart review with new self and peer chart assessment forms. This promoted active learning, which is integral to successful resident documentation curricula.

Impact/Effectiveness: Pre/post-session surveys showed statistically significant increases in self-confidence in our targeted documentation areas. A majority of residents felt the case-based format promoted learning. Residency leadership accepted the chart assessment forms as a formal part of program requirements. Future plans include sessions tailored for interns and assessment of chart review compliance. This curriculum can be implemented broadly to help train EM residents in documentation.

Table 1. Average Likery Scale ratings of agreement on pre-/post didactic surveys

	Pre-survey (n = 14)	Post-billing and coding session (n = 14)	Post-medicolegal session (n = 10)
I feel confident in my ability to document for different levels of billing and coding.	2.2	4.1*	NA
I feel confident in my ability to document my medical decision making.	2.5	3.9*	3.4*
I feel confident in my ability to document defensively.	2.4	NA	3.3*
This session added to my documentation skills as an emergency medicine physician.	NA	4.4	4.6
The format of this session was conducive to my learning about documentation.	NA	4.6	4.6
The duration of this session was appropriate for the content.	NA	4.5	4.3
I would recommend having this session again next year.	NA	4.5	4.7

Likert statements were rated on a 5-point scale with 1 = strongly disagree and 5 = strongly agree.
*Statistically significant difference compared to pre-survey data at $p < 0.05$

Table 2. Post-didactic narrative feedback.

Post-billing and coding session	"Real notes and why they got down coded would be helpful. Very helpful!"
	"Actually ways for PGY 1 to know how to write an MDM like the different ways and what's bets for efficiency and billing. Great session!! Truly helpful"
	"Incredibly done!!"
	"Let's brainstorm some note templates together that would at their most basic, cover these standards!"
Post-medicolegal session	"We need more time! Great topics and worth more time for discussion"
	"Having a session to understand more about what goes into MDM especially as PGY1's having a session where we create a templates for chief complaints would be great too"

17 Procedure Passports: The Journey to Procedural Competency

Meghan Mitchell, Matthew Klein, David Salzman, Abra Fant

Background: Competency in bedside procedures is crucial in emergency medicine. Frequently changing teams and variable levels of direct observation make assessment and subsequent entrustment challenging. Additionally, the ACGME CLER process recommends that staff have easy access to determine when trainees are entrusted to independently perform bedside procedures. To our knowledge, there are no prior efforts to create a standardized process for assessing, determining, and broadcasting entrustment on bedside procedures in EM residents.

Educational Objectives: We implemented a procedure passport for PGY1 EM residents to enhance direct observation and feedback to the learner and provide an objective indicator of competency to supervising physicians and staff.

Curricular Design: By consensus, senior educators identified 8 procedures that PGY2 EM residents could perform without direct supervision for all portions of the procedure. Previously developed and validated local checklists or published validated checklists were adapted via an iterative process and compiled into Qualtrics. All 15 PGY1 EM residents were given a badge buddy with the procedures as a punch card and a QR coded Qualtrics link (Figure 1). Supervising physicians completed the checklists while directly observing the learner in the clinical environment. Each assessment with all checklist items marked as 'done correctly' received a punch. Residents were considered entrustable after 3-5 punches, depending on the procedure. Interns and supervisors were surveyed on their opinions after 4 months.

Effectiveness: Implementation was successful; all residents completed at least 1 assessment, and several are entrusted on multiple procedures. Overall interns and supervisors found it helpful (Table 1). Potential changes moving forward include improving access to written feedback and increasing awareness amongst nursing staff.

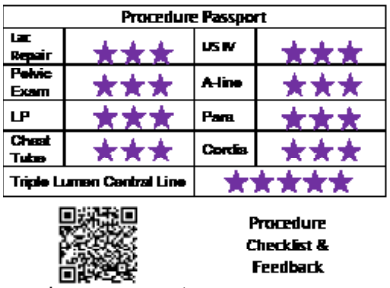


Figure 1. Procedure passport.

Table 1. Representative survey comments.

Intern Comments	Supervisor Comments
"A good way to get good feedback and gain confidence in procedural skills"	"It ensures interns have adequate supervision especially given that they are coming from different medical schools"
"Improved the quality of feedback received on procedures"	"The procedures are very important and reminds you that not every learner starts off being great at any procedure (even lac repairs)"
"A great vessel for procedural observation"	"A good reminder of what steps to ensure are done when you are supervising someone"

18 Constructing a Cloud-Based End-of-Shift Entrustable Professional Activity Assessment System

Amber Akbar, Ryan Tabor, Elise Lovell, Ravi Chacko, Ryan McKillip

Background: The use of competency based entrustable professional activities (EPAs) is transforming the approach to resident assessments across medical disciplines. However, as programs consider transitioning to EPA based assessments, they face the important problem of how to collect and monitor data to promote usage and ensure quality. The solution must be efficient, secure, and support ACGME Milestone reporting.

Objectives: Construct a secure and digital end-of-shift assessment system to increase the frequency and timeliness of feedback to residents; provide an efficient and accessible format to faculty; and include a backend infrastructure to translate EPA data to ACGME Milestones for use by the Clinical Competency Committee.

Design: Utilizing a set of 22 EPAs developed for EM, we designed a resident assessment system using Microsoft's SharePoint cloud platform (Figure). This was chosen for its ease of use and secure sign on capability. QR codes posted in charting rooms enabled access to a Microsoft Form on mobile devices. To assess a resident, faculty members select an EPA on the form and enter the required level of supervision and free text feedback on strengths and areas for improvement.

A Microsoft Excel file linked to the form is immediately updated with each submission. Outcomes are sent to individual residents weekly. Using programmed formulas, a resident's mean EPA levels are automatically calculated and mapped to Milestones. Faculty tended to favor certain EPAs, but the system facilitated periodic rotation of EPAs to ensure a broad distribution of assessments.

Impact: Fifty-one faculty members completed 2,151 assessments from February 15 to October 31, 2023, out of 2,999 resident shifts (71.7%). Most assessments (62.4%) were submitted by next day. The average time of completion was 5.6 minutes (median 2.6). We created an efficient and secure system that provides timely feedback to residents and comprehensive assessments across EM EPAs and Milestones.

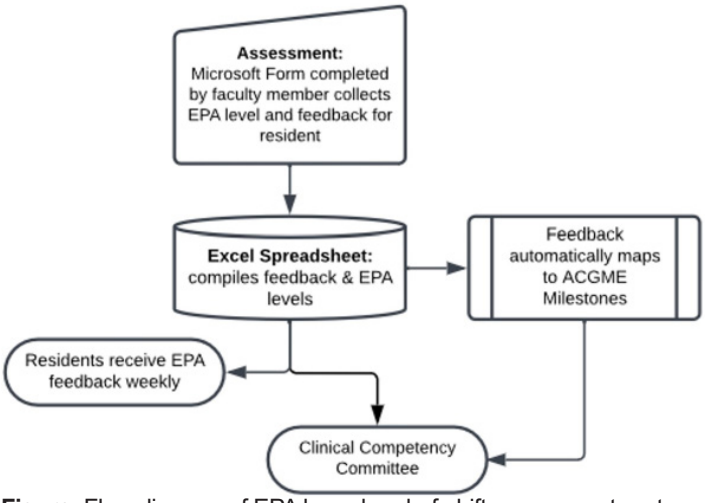


Figure. Flow diagram of EPA based end-of-shift assessment system.

19 Trauma-Informed Care Simulation Workshop for EM Residents

Laura Janneck

Introduction: Many patients come to the ED in the acute post-traumatic period. EM physicians must understand and recognize the impact of trauma, work to mitigate trauma responses, and avoid re-traumatization in the ED. Trauma informed care (TIC) is an approach that incorporates an understanding of the effects of trauma on patient's presentations, experiences, and care. There are few published examples of TIC education for EM physicians.

Objectives: 1. Improve EM residents' confidence in using trauma-informed language and maneuvers in clinical scenarios. 2. Improve EM residents' knowledge of TIC and applications for ED patients.

Curricular Design: A consensus group of EM faculty and simulation center staff met to develop the two-hour workshop, which was conducted with residents during regular conference time. The workshop began with a 35-minute lecture reviewing basic concepts in TIC. The residents then divided into three groups and rotated between three scenarios for 20 minutes each. Each scenario had a faculty facilitator, who guided discussions and highlighted key points. The scenarios were: 1. 20 yo male presenting with agitation and paranoia. 2. 21 yo female who presented to the ED after sexual assault. 3. 30 yo male who presented with abdominal pain, for whom a history of trauma led him to react negatively to questioning and physical examination. After rotating through each of these scenarios, the residents returned to the large group for a 25-minute discussion of key takeaways.

Impact: Each resident filled out a survey before and after the 2-hour session. We compared responses on baseline knowledge, levels of confidence and agreement, and knowledge and skills between the pre-test and post-test. Initial indicators and verbal feedback from residents were positive. Residents noted increased comfort using verbal de-escalation with agitated patients. We will incorporate the TIC workshop into our standing curriculum.

20 Building, Delivering, and Evaluating a Longitudinal Global Health Curriculum for Emergency Medicine Residents

Blake Stacey, Alexandra Digenakis, Jeremiah Ojha, Elizabeth DeVos, Justin Myers

Background: Interest in global health among emergency medicine (EM) residents continues to increase. Recent research reveals that EM residency applicants are interested in programs that offer global health clinical experiences, yet nearly half of EM residency programs in the United States (US) do not offer global health training or formal education. With a goal to fill this educational gap, we created a novel, online, lecture-based curriculum.

Objective: This curriculum aims to increase accessibility to global health education for EM residents, increase resident preparedness for international clinical experiences, and provide longitudinal exposure to a global EM career path. We intend for the curriculum to be sustainable, delivered yearly, and offered more broadly across US.

Design: We developed an online ten-month "Global Health Curriculum for EM Residents" offered to residents at three separate institutions. Each month a salient global EM topic (e.g., Disaster and Humanitarian Response) was discussed by an expert on that topic. Video presentations were offered asynchronously, to account for participants' stochastic clinical responsibilities. Additionally, virtual

conference-based journal clubs and optional meetings with institution-specific global health faculty mentors were included. All content was hosted through a public centralized website: sites.google.com/view/global-em-resident-curriculum.

Impact: During the first year, participants completed pre- and post-curriculum surveys. Of 17 respondents to our pre-curriculum and five respondents to our post-curriculum survey, a majority of participants reported being dissatisfied with their current global EM educational opportunities, felt more confident with global EM topics reviewed within the curriculum after completion, and felt satisfied with the content thus far. Survey responses informed curriculum evolution, and in our second year we have enrolled 27 EM residents from eight training programs across the US.

CORD Innovations Submission

Building, Delivering, and Evaluating a Longitudinal Global Health Curriculum for Emergency Medicine Residents

Alexandra Digenakis, DO; Blake Stacey, MD; Elizabeth DeVos, MD; Justin Myers, DO

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Figure.

21 Bringing the Power of Story to Emergency Medicine - An Introduction to Narrative Medicine

Suchismita Datta, Lyncean Ung, Neil Dasgupta, Yash Chavda, Carmelina Price

Introduction: Narrative medicine [NM] is the practice of medicine with narrative competence - which is the ability to elicit the patient's story and critically interact with it. In terms of scholarly innovation, evidence suggests that NM currently exists in the upward "slope of enlightenment" phase of the Gartner Hype Cycle. Emergency medicine [EM] is relatively behind in its adoption of this educational tool. One of the first studies on NM in EM was just published in 08/2023. This is despite NMs appeal to multiple competencies including practice-based learning and improvement, professionalism, and interpersonal and communication skills. The purpose of this innovation was to create an introductory session on NM for EM faculty and residents.

Educational Objective: The objective of this innovation was to design, implement, and evaluate an introduction to NM session for EM residents and faculty.

Curriculum Design: NM is grounded in critical pedagogy and transformative learning theory. It falls within the humanistic educational paradigm and takes a critical constructivist approach to knowledge. Content experts were recruited to help design a theory-informed curriculum. During the session, instruction was provided on the core concepts of narrative competence, narrative humility, and the patient as the educator with the help of the three pedagogical movements of NM (close reading, critical reflection, group discussion). ADDIE (analyze, design, develop, implement, evaluate) framework was used for instructional design. Anonymous post-session surveys were created using a modified intrinsic motivation scale. Surveys were piloted with stakeholders for feedback to further increase situational validity.

Impact: 89% of survey respondents felt that NM was important or very important to their medical education. 83% felt that they knew NM or knew NM very well. UME and GME learners should have early and consistent exposure to NM so that they may build a reflective practice.

Table 1. Introduction to narrative medicine pre-session survey responses.

Question	N = 45
What year of training are you in?	
Attending Physician	8 (18%)
Medical Student	14 (31%)
PA Student	1 (2.2%)
PGY 1	5 (11%)
PGY 2	2 (4.4%)
PGY 3	5 (11%)
PGY 4	5 (11%)
Transitional Year [TY]	5 (11%)
How much exposure have you had to formal narrative medicine curriculum before today?	
A little exposure	10 (22%)
Consistent exposure	3 (6.7%)
No exposure	32 (71%)
How well do you understand what narrative medicine is?	
A little	18 (40%)
I understand what it is	1 (2.2%)
I understand what it is very well	2 (4.4%)
Not at all	24 (53%)
How important do you think narrative medicine is to your medical education?	
I feel neutral about it's importance	23 (51%)
Important	13 (29%)
Somewhat important	6 (13%)
Very important	3 (6.7%)

Table 2. Introduction to narrative medicine post-session survey responses.

The following questions were answered on a Likert scale of 1 – 7 (1=Not true, 4=Somewhat true, 7=Very true)	N	Mean	SD	Median	25th Pctl	75th Pctl	Min	Max
Regarding your interest/excitement around the session:								
I enjoyed doing this activity very much	18	5.83	1.15	6.00	6.00	6.00	2.00	7.00
This activity was fun to do.	18	5.78	1.26	6.00	5.00	7.00	2.00	7.00
I thought this was a boring activity.	18	2.28	1.53	2.00	1.00	3.00	1.00	6.00
This activity did not hold my attention at all.	18	2.00	1.33	2.00	1.00	2.00	1.00	5.00
I would describe this activity as very interesting.	18	5.83	1.26	6.00	6.00	7.00	2.00	7.00
I thought this activity was quite enjoyable.	18	5.78	1.31	6.00	6.00	7.00	2.00	7.00
While I was doing this activity, I was thinking about how much I enjoyed it.	18	4.83	1.86	5.50	4.00	6.00	1.00	7.00
Regarding your perceived competence with narrative medicine:								
I think I am pretty good at this activity.	17	4.88	1.58	5.00	4.00	6.00	1.00	7.00
I think I do pretty well at this activity, compared to other students.	17	4.53	1.43	4.00	4.00	6.00	1.00	6.00
After working at this activity for a while, I felt pretty competent.	18	4.94	1.44	5.00	4.00	6.00	1.00	7.00
I am satisfied with my performance at this task.	17	5.00	1.41	5.00	4.00	6.00	1.00	7.00
I was pretty skilled at this activity.	17	4.65	1.27	5.00	4.00	6.00	1.00	6.00
This was an activity that I could not do very well.	17	3.29	1.93	2.00	2.00	5.00	1.00	6.00
How did you feel about the value and usefulness of this activity?								
I believe this activity could be of some value to me.	18	5.72	1.32	6.00	5.00	7.00	2.00	7.00
I would be willing to do this again because it has some value to me.	18	5.94	1.16	6.00	5.00	6.00	1.00	7.00
I believe doing this activity could be beneficial to me.	18	5.72	1.32	6.00	5.00	7.00	2.00	7.00
I think this is an important activity.	18	5.00	1.83	6.00	5.00	7.00	1.00	7.00

question	N = 18
Please type in how you feel about the usefulness and value of this activity in some sentences:	
	13 (72.2%)
Helps to focus me on track	1 (5.6%)
I felt very useful in ED setting as we see patients at their worst time. Allows us to step back and approach pt's from humanistic side especially for frequent flyers.	1 (5.6%)
I think that my medical training prepared me to assist and improve patient care. It never equipped me with the tools to improve my personal care. We are secondary patients in the medical scheme and if we are ill, our patients will not receive quality care. This is a simple and great way to give ourselves some self-healing. It may not be for everybody but it is a path.	1 (5.6%)
Too many times we are stuck in our own story. It has amplified me to focus on everything	1 (5.6%)
Useful	1 (5.6%)
I think that doing this activity is useful for:	
	11 (61%)
Approaching patients from humanistic side rather than lab values and imaging	1 (5.6%)
Avoiding pre-conceived prejudices	1 (5.6%)
Empathy, understanding, empathy, self-healing, and self-preservation	1 (5.6%)
Helping to take get more out of pt encounter	1 (5.6%)
Mental health	1 (5.6%)
Reflection and gain some insight to yourself	1 (5.6%)
Talking to other patients at seminar	1 (5.6%)
I think this is important to me because it can:	
	12 (66.6%)
Help improve patient interaction	1 (5.6%)
Help me introspect and evaluate	1 (5.6%)
Hear all better with of management	1 (5.6%)
Leverage the thriving	1 (5.6%)
Make me and pt feel better	1 (5.6%)
Offer me different perspectives and a means to speak for myself and others through a creative manner.	1 (5.6%)
I think doing this activity could help me to:	
	12 (66.6%)
Be a better physician	1 (5.6%)
Be present and listen to myself and others better.	1 (5.6%)
Clear my head	1 (5.6%)
Connect more with my patients	1 (5.6%)
Learn about myself	1 (5.6%)
Manage patients from what they need not just from medical aspect	1 (5.6%)
Would you like to learn more about this topic?	
	3 (17%)
Absolutely!	8 (44%)
Definitely not	1 (5.6%)
Maybe	6 (33%)
Is there any other feedback you would like to give us on this session?	
	14 (78%)
No	1 (5.6%)
I believe this activity would be better to perform if it were done in smaller groups	1 (5.6%)
It was a good session	1 (5.6%)
Just for the survey, the display boxes are a little small to read while typing. Otherwise, I love it!	1 (5.6%)
What level of training are you at?	
Attending Physician	6 (33%)
Medical Student	2 (11%)
PGY 1	2 (11%)
PGY 3	2 (11%)
PGY 4	3 (17%)
Transitional Year (TY)	4 (22%)
How well do you understand what narrative medicine is?	
A little	3 (17%)
I understood what it is	11 (61%)
I understand what it is very well	4 (22%)
How important do you think narrative medicine is to your medical education?	
I feel neutral about its importance	1 (5.6%)
Important	10 (56%)
Somewhat important	1 (5.6%)
Very important	6 (33%)

22 Simulated Model and Ultrasound Trainer for Measuring Transrectal Diameter in Pediatrics

Jaron Kurian, Thomas Sanchez, Dylan Nguyen, Ellen Chow, Hannah Park, Richard Shin

Background: While Emergency Medicine (EM) residents are appropriately trained to use point of care ultrasound (POCUS) to investigate the bladder, they are less familiar with identifying the rectum. The AAP is recommending decreasing use of abdominal X-rays in children (1). Ultrasound is an accurate test and useful adjunct that may help reduce those radiographs (2). A simulated task trainer is not available commercially and is needed to develop the skills necessary to accurately identify the important anatomical structures to measure transrectal diameter to evaluate for constipation.

Objective: Our aim was to create a simulated model of pediatric pelvic anatomy using inexpensive and readily available materials. Creating an open-source, reproducible, and durable model would allow for effective teaching and familiarization with this skill for all EM residents.

Design: We used a block of ballistic gel, a 3D printed plastic model of a pelvis and two water balloons. One balloon was round and filled with water (representing the bladder), and the other balloon was elongated and filled with a mixture of water, ultrasound gel, and starch (representing rectum). The melted gel was layered sequentially to create a TRD model.

Effectiveness/Impact: The model was approved and evaluated by ultrasound faculty prior to its utilization and its use was integrated to teach a scheduled resident conference day. 100% of residents surveyed before and after reported that the model was an effective teaching tool and that they felt more confident in their ability to evaluate and measure TRD after the session. We aim to allow for all EM educators to be able to construct this model to augment education for evaluation of TRD utilizing POCUS.

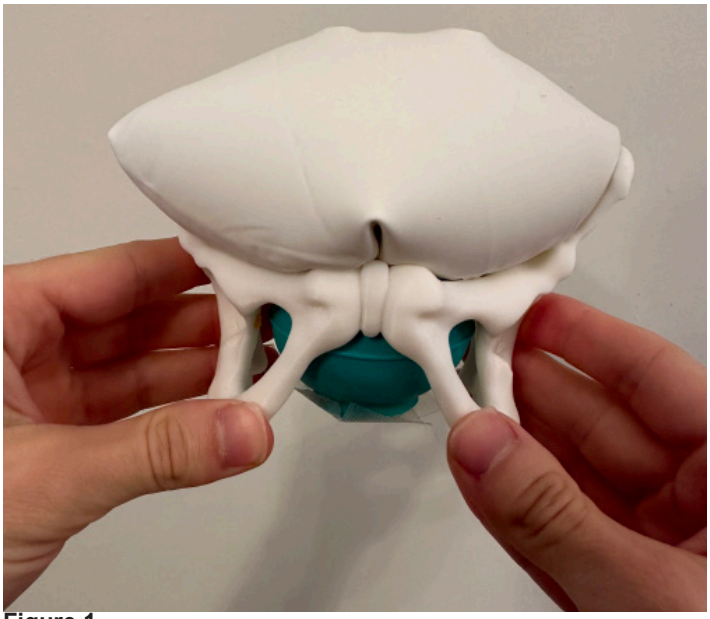


Figure 1.

23 Trauma Team Activation (Interdisciplinary Class-Specific Didactics): A Collaborative Educational Endeavor

Nao Yoneda, Anita Lui, Timothy Khowong, Kallie Combs, David Simon, Joel Aguilar, Rozalyn Hesse, Michael Levine

Introduction: Trauma resuscitations are often co-managed by Emergency Medicine (EM) and Surgery. This multidisciplinary approach recognizes that trauma patients have complex needs requiring expertise from multiple fields. We have also found that educational activities are more effective when they are tailored to the learner's level of education. Here, we present a structured 1-day workshop for surgery and EM residents, separated by postgraduate year (PGY), to teach the

knowledge and skills of trauma management. By the end of the session, EM and surgery residents should be able to: Describe advanced principles of trauma resuscitation Delegate and assume roles during a trauma resuscitation Identify and manage resources available for a trauma resuscitation or mass casualty incident Appreciate the role of interdepartmental collaboration in trauma care.

Curricular Design: A multidisciplinary simulation training session was held during weekly dedicated resident didactics and included a combination of 45 EM and surgery residents, divided by PGY year. Each class experienced an interactive small-group didactic and a simulated patient case. PGY1s focused on role assignments, trauma decorum, and basic trauma evaluation. PGY2s reviewed advanced resuscitation techniques. PGY3s and 4s focused on an MCI scenario which required allocation of resources. The educational simulation was preceded and followed by pre and post surveys.

Impact/Effectiveness: We instituted this class-specific, multidisciplinary session hypothesizing an improvement in resident knowledge and familiarity of trauma concepts and thus evaluated it on Kirkpatrick levels 1 and 2. There was an overall increase in learner knowledge-based exam scores from 55.6% to 91.8% ($p<0.01$). Residents rated the sessions with respect to quality of education received and applicability to their own practice highly with an average Likert score of 4.62. Our success in this endeavor will lead to other multidisciplinary didactics.

Figure 1.

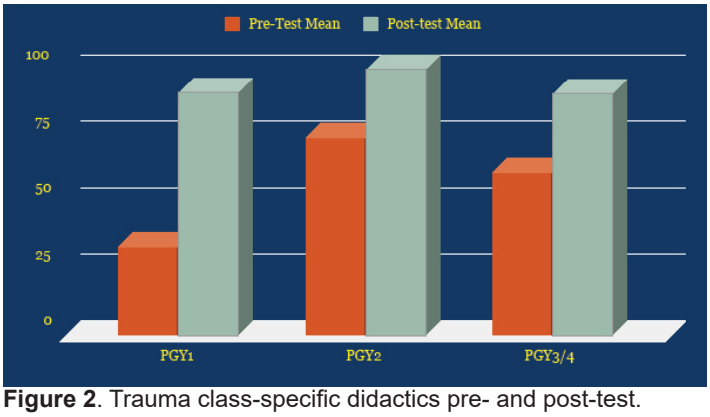


Figure 2. Trauma class-specific didactics pre- and post-test.

24 Does Trauma Informed Care and Debriefing Help Emergency Medicine Residents Process Secondary Traumatic Stress?

Donna Okoli, Thaer Ahmad, Oyinkansola Okubanjo

Introduction: Trauma Informed Care (TIC) is a holistic framework that seeks to realize and recognize the signs, symptoms, and impacts that trauma has not only on the patient but on all members of the care team. Secondary traumatic stress is a phenomenon that is described as stress from helping or wanting to help a traumatized person. There are limited studies on the implementation of TIC as a means of addressing resident secondary traumatic stress.

Objectives: Implement the principles of trauma informed care to help residents identify secondary trauma; Demonstrate effective coping mechanisms and communication skills to manage secondary trauma, specifically the skill of debriefing; Assess resident receptiveness to this type of training.

Design: A 4-part curriculum was designed and implemented for 42 EM residents from Nov 2022 to Feb 2023 during conference to ensure that all residents were available for the education. Part 1 provided a brief overview of TIC to acclimate residents to new terminology and overarching concepts. Part 2 was an in-depth overview of TIC, given by Dr. Ken Yeager, a leading expert in the field. Part 3 was an interactive debrief session facilitated by the hospital Spiritual Care team. Part 4 involved residents learning how to integrate TIC into their practice of medicine. Residents were surveyed before and after the curriculum. All 4 lectures can be easily adapted to fit the resources available at any given training site.

Question	t-value	p-value
Q1	2.33	0.027
Q2	1.98	0.062
Q3	2.01	0.054
Q4	1.97	0.063
Q5	-2.50	0.019
Q6	-3.28	0.003
Q7	-2.35	0.027
Q8	1.47	0.154
Q9	0.45	0.657
Q10	-2.33	0.027

Figure 1.

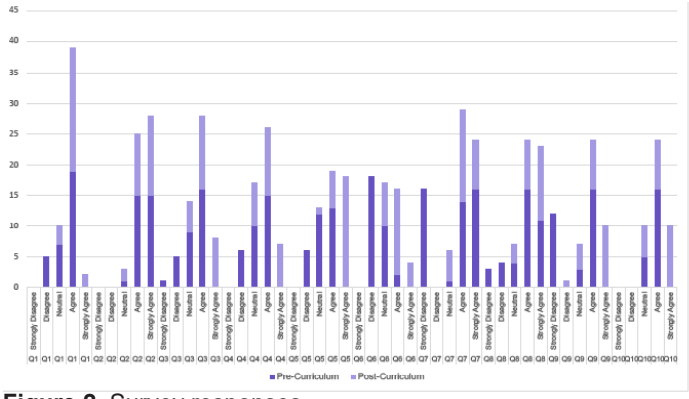


Figure 2. Survey responses.

Impact: Survey responses indicate that the TIC curriculum had a positive effect on residents. Residents reported increased understanding of principles of TIC, ability to identify symptoms of secondary traumatic stress in themselves and their colleagues and that the curriculum gave them the skills to effectively debrief difficult cases. Next steps included implementation of standardized debriefing tool and to measure change in resident performance and practice.

25 A Little Fun, A Big Impact - Gamification Doubles the Number of Procedures Logged by Emergency Medicine Residents

Natalie Diers, Stephanie Cohen, Maria Tassone, Shayne Gue

Introduction: Gamification has been a growing strategy to provide interactive learning. Our program has heavily utilized gamified sessions to engage our residents in core emergency medicine content. However, we had not previously translated this method to other required tasks, such as procedure logging. Previous research has indicated that poor compliance in this domain is one of the most frequent reasons for ACGME citations. Thus, we sought to investigate whether gamification could help improve compliance with these ACGME requirements.

Educational Objectives: The goal of this project was to determine whether adding elements of gamification to resident procedure logging would increase the timely and accurate reporting of procedures performed.

Curricular Design: Our program implemented "The Goblet of Gamification", a longitudinal innovation that added elements of competition to our existing curricular content. Residents were split into three teams, with an equal number of residents from each class. They earned points for their teams by logging ACGME-required procedures, and the leaderboard was updated monthly to reflect the current standings. At the end of the academic year, points were totaled, and awards were distributed to the team with the highest score as well as top performers.

Impact: We evaluated the number of procedures logged during two consecutive academic years before and after the implementation of gamification. The number of procedures logged by residents increased to nearly 200% of pre-gamification totals. During this period, the overall number of procedures billed in the department remained relatively stable, leading us to the conclusion that residents often forgot to log procedures (or stopped logging additional procedures after meeting minimum graduation requirements). These results supported our hypothesis that gamification would lead to a significant improvement in compliance with the documentation of ACGME-required procedures.

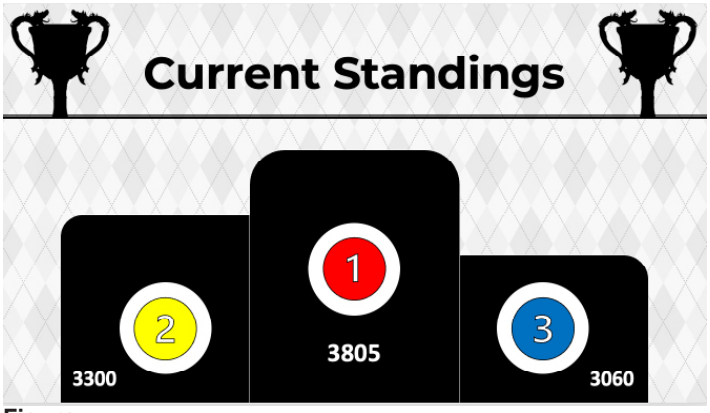


Figure.

26 Forging Stronger Emergency Medicine Leaders: Adaptation of a Clinical Leadership Curriculum to Emergency Medicine

Anjeza Cipi, Christina Gates, Rupa Kapoor, Heather Newton

Background: The need for Emergency Medicine (EM) leaders is clear, but the development of Graduate Medical Education curricula in this field is lacking. On a needs assessment framed by Kern's 6-step curriculum development model, leadership training gaps were identified at Eastern Virginia Medical School (EVMS). A resident Clinical Leadership Curriculum (CLC) was then developed and integrated into the EVMS pediatric residency program in 2018. Our EM program implemented this CLC in 2021. Developing a curriculum demands time and resources so our goal is to introduce a proven and easily adoptable EM leadership curriculum.

Objectives: 1. Cultivate clinical leadership skills among EM residents through constructive peer-to-peer dialogue as a means to approach clinical challenges. 2. Implement evidence-based strategies to address the training gap in

clinical leadership. 3. Equip prospective facilitators with the tools for tailored implementation of the CLC to their programs while ensuring the fidelity of the curriculum.

Design: Our CLC features 10 monthly 1-hour clinical leadership modules and provides facilitator training. Sessions are structured as peer-to-peer discussions during didactics' lunchtime. Facilitators have access to a guide and information for each session (Figure 1), thus reducing preparation efforts and ensuring the fidelity of the CLC delivery. We expanded the curriculum's reach to include EM residents at all postgraduate year levels, transitioned from lengthier end-of-curriculum assessment surveys to shorter ones for each session and have effectively adapted this CLC to an EM audience.

Impact: Data from our assessment surveys reveal positive feedback. Through addressing an important training gap and its ease of implementation, this CLC has gained national traction and is being adopted by an increasing number of programs in various specialties (Figure 2). We remain committed to data collection to assess if any further adjustments are necessary.

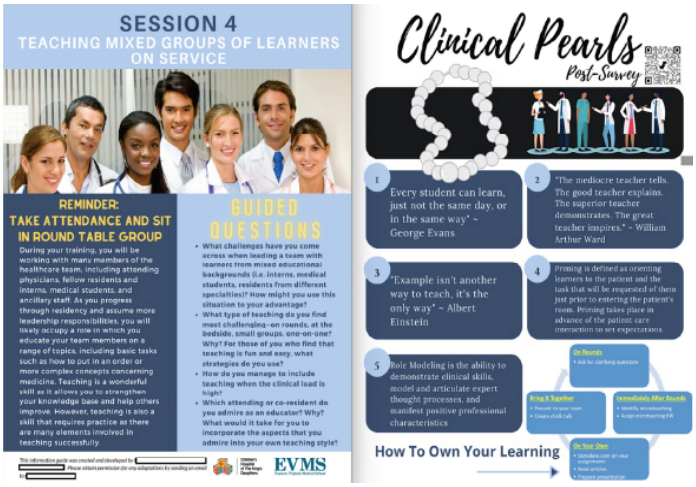


Figure 1. Facilitator guide example.

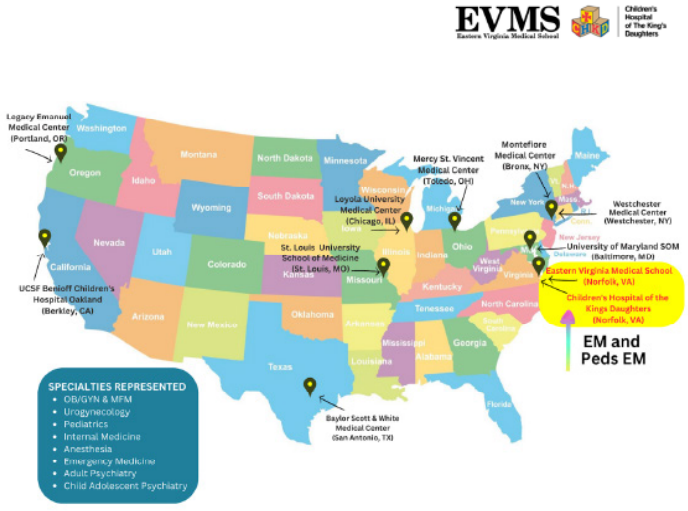


Figure 2.

27 Take 5 – Enhancing Education with a Tool for Timely Teaching

Kimberly Alford, Bracken Franklin Roberts, Allison Schiller

Background: Providing focused and structured teaching for the revolving door of learners in a busy emergency department poses many challenges, most importantly lack of time. Academic attendings have been reported to spend an average of 6% of their shift time teaching, however, with the myriad of other responsibilities, teaching can get lost. While medical students are focused on learning the art of medicine on shift, the reinforcement of core EM concepts is also vital.

Educational Objective: Our project aims to provide and standardize on-shift teaching of core content for medical students using a tangible educational tool. The goal is to improve performance on gastrointestinal (GI) system topics with intent to improve National Board of Medical Examiners (NBME) EM shelf exam scores.

Curricular Design: In 2022 we noted an increase in NBME EM shelf exam failures. Targeting the lower performing subject areas on the exam, Take 5 was developed to deliver high yield content in 5 minutes. We focused on the CDEM curriculum and the EM model of clinical practice. Each card set consisted of 5 cards targeted to one disease process. The cards served as an on-shift aid utilized on the established teaching rotation. The teaching resident began each shift using the cards to guide students through 6 disease processes. The card sets remained in the clinical space and were available for self-directed learning throughout their rotation.

Impact: Take 5 provides a structured educational format that can be used to promote learning, whether guided or self-directed. While the goal was to improve shelf scores, Take 5 was noted to positively impact student and teaching resident perception of education on the rotation. The overall shelf scores did not show statistical improvement, but when Take 5 was used an improvement was seen in the GI subject content area of the exam. Future plans include expanding Take 5 content as well as comparing the effectiveness of guided vs self-directed learning.

28 Rapid Cycle Deliberate Practice Simulation of Cardiac Arrest Resuscitation as a Single Provider

Shayne Polley, Ashley Iannantone, Travis Hase, Matthew Aronson, Ryan McKillip

Introduction: The resuscitation of an acutely ill patient often requires an emergency physician to perform multiple lifesaving interventions while maintaining cognitive focus.

In academic training centers, these responsibilities are frequently divided among multiple medical providers on a team. Yet many residents go on to practice at smaller EDs where they will manage resuscitations as a single provider (SP), creating an important training gap.

Educational Objectives: Teach residents a systematic approach to cardiac arrest resuscitation as a SP. Residents will use this approach to efficiently obtain a history, examine the patient, assess airway and CPR, and perform ultrasound, all while directing the code.

Curricular Design: We developed a rapid cycle deliberate practice (RCDP) simulation of an adult patient who arrives at the ED in cardiac arrest with pulseless electrical activity. A week before the simulation, the resident is provided an outline for a stepwise approach to managing a cardiac arrest case as a SP (Figure 1). During the simulation, the resident can access U/S and airway equipment. An EM faculty member and a simulation specialist act as supporting ED staff. The case uses a high-fidelity mannequin, a mechanical CPR device, and speakers to simulate the sound of alarms and CPR. Consistent with RCDP technique, portions of the case may be repeated until the resident achieves predefined objectives (Figure 2). A second EM faculty member observes and provides direct feedback throughout the case. After implementation, a didactic on evidence-based cardiac arrest management was added prior to the simulation to aid in focusing the learning during RCDP on the specific mechanics of leading the code.

Impact: Written resident feedback has described the curriculum as a high yield experience which should be offered to all residents before graduation. The RCDP format allows the resident to actively incorporate constructive feedback from faculty in an iterative fashion.

Timeline	Pre-arrival	Arrival (ER CPR Round 1)	Pulse/Rhythm Check #1	CPR Round 2	Pulse/Rhythm Check #2
Room activity	Team in room	EMS arrival, transferring patient to ED cart, getting patient on defibrillator, nurse starting IV, CPR ongoing	10 second pause	CPR ongoing	10 second pause
Physician actions	- Ensure RN & RT aware - US ready (turned on, gel on cardiac probe) - Airway ready (glide, ET tube, suction) - IO kit ready - Mental prep "Do we have someone who can work on an IV and someone who can do compressions?"	**Brief history** - What happened? Med history? - Down time? - Rhythm? - IV/IO Access? - EtCO2? - Last time epi given? Shocks given? Other meds given? - Family on the way? Code status? **Focused exam** - Bilateral breath sounds? (PTX) - Dialysis patient? (HyperK) - Unilateral leg swelling? (PE) - Recent surgery? (PE, hypovolemia) - Signs of toxins or trauma? **Readiness for pulse check #1** - Patient on monitor? - US probe on chest, finger on pulse "Once the patient is on the monitor we'll do a pulse & rhythm check and take a look with ultrasound"	- Finger on pulse - US probe on chest - Eyes on monitor - Pulse? Shockable rhythm? "PEA on the monitor" - Cardiac activity on US? "No cardiac activity on ultrasound. Resume compressions."	- EtCO2 level? "Our end-tidal is 20" - CPR quality? "Good compressions" - Appropriate access? "How is our access?" - If no IV, place IO ...consider calcium, TPA, or IV fluids ...consider US for DVT **Readiness for pulse check #2** - Head of bed for airway - Assign team members for pulse and rhythm check	- Exchange/confirm airway - Check rhythm and ask about pulse "Patient is intubated with a 7.5 tube, 23 at the teeth. Rhythm is PEA. No pulse, let's resume compressions."

Figure 1. A selected portion of the systematic approach to the resuscitation, which is provided as sudy material to each resident prior to the simulation.

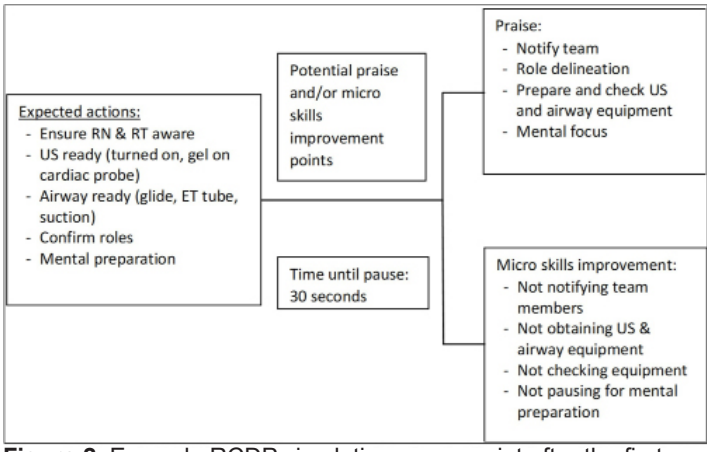


Figure 2. Example RCDP simulation pause point after the first pulse and rhythm check of the case.

29 Validity of a Novel Entrustable Professional Activities Based End of Shift Assessment

Dima Jaber, Elise Lovell, Ryan Tabor, Ravi Chacko, Ryan McKillip

Background: Entrustable professional activities (EPAs) are being introduced in GME as a means for translating ACGME Milestones into clinical practice. To ensure a valid framework for decisions regarding resident advancement, it is critical that EPAs accurately reflect resident competency.

Objectives: Determine if an EPA based assessment of EM residents provides sufficient validity to support its utility for ACGME reporting.

Design: A novel end of shift assessment system was implemented using a set of 22 EM EPAs. Faculty members assessed level of required supervision (entrustment) on a scale of 1 to 5, from "I had to do it" to "I did not need to be there at all," and provided written feedback. Two elements of Messick's validity framework, relations to other variables and internal structure, were used to assess validity. For relations to other variables, mean entrustment levels were compared between PGY classes. Analysis of variance was used to determine if differences in entrustment between classes were significant and demonstrated logical progression. To validate internal structure, because residents were assessed in unequal frequencies across EPAs, data were applied to an unbalanced random-effects model with expected phi-coefficient > 0.3. At the end of the biannual assessment cycle, EPA results were mapped to ACGME Milestones to yield reportable data.

Impact: From February 15 to October 31, 2023, 2,151 assessments were completed by 51 faculty members: 549 for PGY1, 631 for PGY2, and 971 for PGY3 residents. Positive feedback averaged 21.1 words and constructive feedback 16.6. Mean entrustment levels were 3.1 (SD 0.90), 3.8 (SD

0.87), and 4.5 (SD 0.71) (Figure) for PGY1, PGY2, and PGY3s, respectively (P<0.001). The phi-coefficient was 0.31, providing evidence that differences in entrustment were due to residents, not faculty members. Results indicate validity of the EPA based assessment and support its use by the clinical competency committee for ACGME reporting.

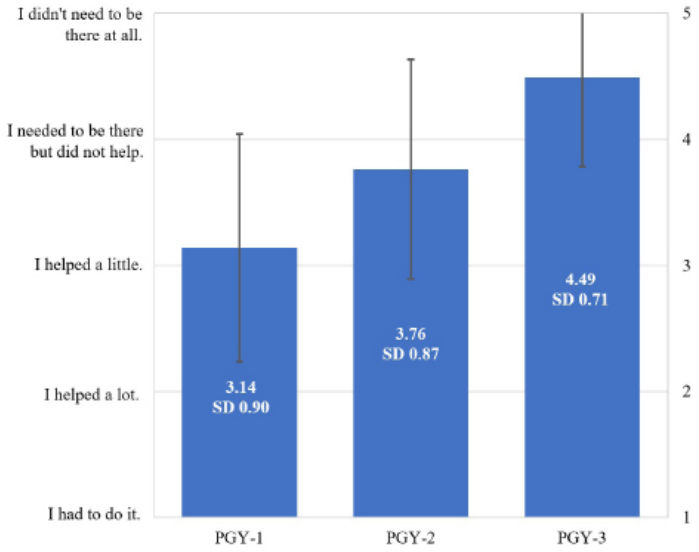


Figure. Mean intrustment level by post-graduate year class.

30 Guess Who: Toxicology and Pharmacology

Lynn McGowan, Avery Michienzi

Bakcground: Over one million Emergency Department visits are made each year due to poisonings. Approximately 40% of reported poisonings are secondary to pharmaceuticals. Given the increasing incidence and high morbidity associated with drug ingestion, it is critical that new and engaging methods are available for educators to teach these subjects.

Educational objectives: 1. Review the mechanism of action, indications and side effects of emergency medications. 2. Differentiate between common drug and environmental poisons. 3. Use gamification to engage learners and improve wellness.

Curricular design: We created Pharmacology and Toxicology versions of the classic board game Guess Who in order to challenge learners to recall unique characteristics and commonalities between toxidromes and drug mechanisms. Each matching pair of boards included a total of twenty-four drugs or toxins with a corresponding mystery card deck. The goal is to correctly identify a mystery card randomly selected by your opponent. Each turn, a player may ask one yes/no question to eliminate items on the board that do not fit the mystery card description. The best strategy is to ask a question that allows you to eliminate the largest number of items from your game board, thus challenging players to identify commonalities between the items. Each team was provided with a reference guide which included high yield facts about each of the items on the board. Use of this guide limited the need for multiple facilitators without risking transfer of misinformation.

Impact/effectiveness: Pharmacology and Toxicology Guess Who has been incorporated into EM resident conferences and used for a wider audience at two regional EM conferences in Pennsylvania. Toxicology Guess Who is also played by medical students, residents and fellows from multiple specialties who are rotating through a medical toxicology service. The game has received overwhelmingly positive feedback from players.

31 Low Tech, High Impact: A Tabletop Escape Game for Toxicology Review

Darielys Mejias, Shayne Gue

Introduction: Intentional and accidental drug overdose and exposure to toxic substances are commonly seen in the Emergency Department. There are multiple toxic substances that are rarely seen but are associated with high morbidity and mortality. It is important that emergency medicine physicians are effectively trained to identify and manage such cases. Our innovative Toxicology Escape Room utilized interactive gamification for residents to review challenging toxicology cases not frequently encountered.

Educational objectives: The goals of this innovation were 1) to promote collaboration and gain consensus among residents while reviewing high-yield toxicology concepts in preparation for the in-training exam; and 2) to recognize and differentiate signs and symptoms of specific intoxications to provide high-quality emergency stabilization and treatment.

Curricular Design: This escape room-style activity was comprised of a series of interconnected puzzles necessitating solutions. 19 participants were divided into 3 teams, racing against one another to solve the puzzles in the fastest time. The first puzzle involved matching medications with their respective drug classes, yielding a numerical code unlocking the next stage. This stage involved a crossword puzzle of clinical presentations of toxicities, antidotes, and other associations. Selected letters from the crossword puzzle were used in an unscramble exercise to find the final clue to unlock the mystery box. We allotted 20 minutes for the exercise, with an additional 10-minute debrief to review key points and clarify questions.

Impact: Learners completed pre- and post-activity tests and a post-activity survey. Results showed a significant increase in knowledge translation (37.9% to 89.5%, p<0.0001). All 19 participants reported that the Toxicity Escape Room was engaging and challenging and 94.7%

of participants reported satisfaction with this educational strategy compared to traditional methods.

Figure 1.

Figure 2.

32 Charting new waters: Navigating Resident Quality Improvement Curriculum Using Documentation Review

Ashley Rider, Shashank Ravi, Kelly Roszczynialski, Carl Preiksaitis, Al'ai Alvarez, Luz Silverio

Background: Residents must demonstrate competency in quality improvement and patient safety (QIPS). Existing curricula focus on knowledge acquisition and lack practical application of QIPS. This gap is evident in case review processes, which are crucial for continuing medical education.

Objective: Learners will use a peer-supported QIPS lens to reflect on their own documentation and medical decision-making.

Curriculum: From 2021-2023 an educational didactic series was piloted as part of a new longitudinal QIPS curriculum. Guided by Billett's Theories of Workplace Learning to provide indirect guidance for workplace activities, along with our institution's QIPS processes, we designed a 12-session curriculum for senior residents. Residents reviewed initial and return ED visit charting of bounceback cases, with a focus on 1) inter-physician communication 2) legal ramifications 3) patient perspectives, and 4) billing. During a "Patient Perspective" session, residents reviewed patient letters and drafted responses. Presenters facilitated sessions, encouraging critical thinking about each portion of the record, following Kolb's experiential learning cycle to prompt reflection. Learning points were summarized and disseminated.

Impact/Effectiveness: In an anonymous participant survey (8/31, 26% response rate), responses were positive. On a scale of 1 (not at all valuable) to 5 (essential), participants reported the sessions were quite valuable (median=4) to their growth as physicians, and also reported that the curriculum changed their practice (almost always-12.5%, often-37.5%, sometimes-50%). Reported strengths of the session included improved clinical documentation and practical applicability of lessons. Areas for improvement included prioritizing in-person sessions and case selection. This innovative curriculum uniquely integrates theoretical QIPS knowledge with practical clinical application.

33 Guided Community Tour for Emergency Medicine Interns to Improve Systems-Based Practice and Health Equity

Sophia Bylsma, Benjamin Liotta, Brenna Hogue, Katherine Wilson, Michael Oca, Daniel Massillon, Jorge Fernandez

Introduction/ Background: Emergency medicine (EM) physicians often refer underserved patients to available local resources. There is scant literature regarding curricula to improve systems-based practice (SBP) for EM interns arriving for residency in potentially unfamiliar environments, particularly public and private health settings outside the hospital, and there are no national standards for trainee proficiency in SBP or health equity training.

Educational Objective: This innovation was designed to promote health equity and increase EM intern SBP knowledge and understanding regarding local community health resources, transportation, and housing for underserved patients.

Curricular Design: To address gaps in formal education and knowledge, we developed an immersive experience to expose incoming EM interns to local community-based health programs. A mini-delphi method was used by residency program leadership, chief residents, and social workers to identify the most frequently utilized public and private sites

accessed by vulnerable emergency patients. During their orientation, EM interns were guided on an 8-hour tour of 6 key sites (student-run free clinic, federally qualified health center, downtown homeless shelter's associated health clinic, county mental health hospital, county jail clinics, and downtown urgent psychiatric clinic), where an EM faculty, social worker, and/or community program representative shared information about services offered and limitations. Participants traveled by public transportation similar to patients accessing these sites.

Impact/Effectiveness: We evaluated effectiveness using a survey instrument administered to EM interns pre- and post-intervention. Results, limited by poor survey response, demonstrated significantly increased familiarity and comfort with each visited site. Similar educational initiatives focused on health equity and exposure to local resources could be implemented at residency programs nationally.

34 Adapting to the Structured Interview - A Novel Implementation for Emergency Medicine Residents

Timothy Khowong, David Simon, Kallie Combs, Sheetal Sheth

Introduction/ Background: Recently, ABEM has introduced a new format to the oral board exam known as the structured interview and has increased the number of cases it represents on the exam. Due to the recency of this change, example cases and curricula on the structured interview are limited. We present our experience in the creation and the implementation of structured interview cases into our existing oral boards curriculum.

Educational Objectives: By the end of their mock oral examination sessions, learners should be able to: 1. Identify the structured interview when taking the oral exam 2. Describe the format and components of the structured interview 3. Describe the grading structure of the structured interview 4. Utilize prior knowledge to complete a mock structured interview.

Curricular Design: Four structured interview cases were developed by core academic faculty at our institution. These were modeled after the Candidate and Examiner materials provided on the ABEM website and were reviewed internally for validity and objectivity. They were then integrated into the pre-existing case rotation of our mock oral exam sessions that we hold with residents every 3 months. A pre-survey was sent out prior to the start of the session assessing resident knowledge and comfort with the traditional oral exam format and the new structured interview format. Residents then participated in their mock oral exam day. Upon finishing the case, residents were educated on the structured format and its grading. A post-session survey was then distributed afterwards.

Impact/Effectiveness: The integration of new structured interview cases into our oral boards practice was extremely effective in increasing awareness and understanding of structure and grading of the new format. Improving resident awareness of and education surrounding the new structured interview can be as simple as adding new cases to a rotation for mock oral boards.

35 Look at That! A Visual Aid-Based Intervention to Improve Patient-Centered Communication Among Emergency Medicine Residents

Eleanor Birch, Patrick Bedard, Justine Stremick

Introduction/ Background: Visual aids are pictorial-based tools that have been used to facilitate patient education and shared decision-making. They have been found to improve patients' understanding, risk perception, and satisfaction with provider communication. Using visual aids to aid patient communication is an important skill, but residency training may not provide adequate training or experience with these tools. This intervention was created to provide experience applying visual aids tools to discussions with patients and family.

Educational Objectives: 1. Apply visual aid tools to facilitate patient-centered communication.

Curricular Design: In this intervention, printed visual aids with a pictorial representation of the PECARN Head CT rule were placed in the ED. At each change of shift, the resource was highlighted to encourage its use for appropriate patients. The topic was chosen because pediatric head injuries are a common complaint with well-established guidelines for evaluation. The visual aid used was adapted from one developed by the ALiEM, CanadiEM, and PECARN research team. Modifications to this reference image were made based on resident feedback to tailor it for bedside use. Data were collected via an online survey on experience using the aid and feedback for improvement and additional aid development.

Impact/Effectiveness: The implementation of this visual aid was widely accepted, with 100% of respondents reporting that the visual aid was helpful and responding affirmatively that they would use it again. Additional visual aids covering antibiotic stewardship, imaging for low back pain, and radiation risks, among others, have been developed based on feedback. Future directions include evaluation of the effect of the intervention on communication skills. This is a low-resource intervention that could be implemented easily in other residencies to provide exposure to the use of visual aids as a patient-education tool.

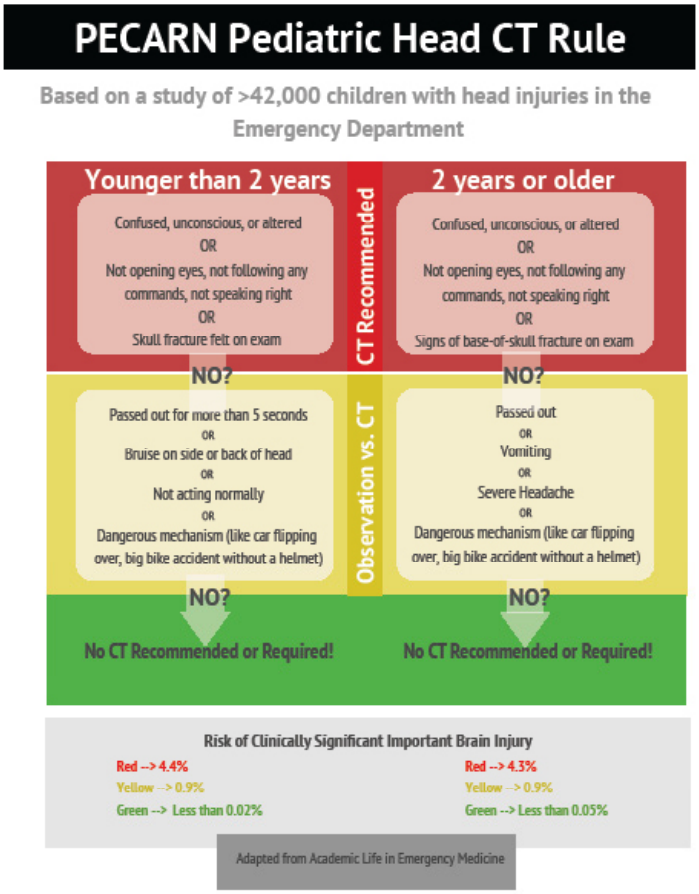


Figure.

36 Use of a film curriculum in a multidisciplinary setting to further resident understanding of unrepresented communities in the United States

Kathleen Williams, Mary Elizabeth Schroeder, Amber Brandolino, Alicia Pilarkski

Introduction/ Background: Cultural competency impacts care by improving physician therapeutic effectiveness, improving patient physiologic response and shortening hospital stays. Educational programming focused on improving empathy and cultural competency is a common need for all specialties. Few opportunities exist for trainees to learn about shared populations across specialties. There is limited literature describing best practices for teaching these principles. While film curriculums have been utilized to teach empathy and communication to students, this educational platform has not been previously described for resident learners.

Educational Objectives: We aimed to further knowledge and understanding of diverse communities served at our institution utilizing a series of documentary films with accompanying panel discussions. These sessions were open to all graduate trainees and students on campus.

Curricular Design: Four films were chosen to highlight underrepresented populations within our community and streamed for resident learners and students for one week. Panel discussions, with representatives from the community, were held to highlight themes of the film and create dialogue about these populations.

Impact/Effectiveness: Surveys were utilized to assess knowledge and comfort approaching the group represented in the film before and after the sessions. Open ended questions were utilized for self-reflection. A delayed survey was conducted to determine sustained impact. After the sessions, trainees reported improvement in comfort (table 1) and knowledge (table 2) approaching the patient populations. On reflection, learner comments focused on themes regarding community mistrust of healthcare systems and ways to improve communication. Delayed survey data revealed this impact was sustained. Future directions include determining ways this curriculum may translate into clinical care provided.

Table 1. Learner self assessment of comfort before and after the sessions.

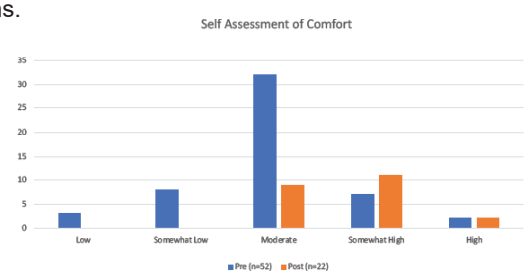
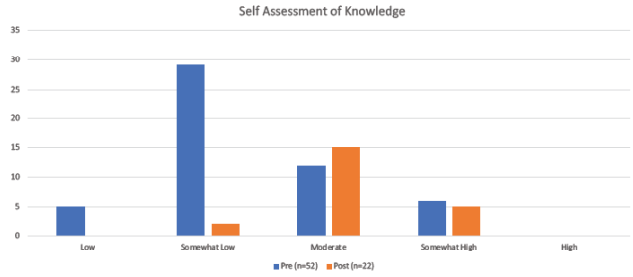


Table 2. Learner self assessment of knowledge before and after the sessions.



37 How Do I Find the Answer? Resident Learning Simulation of the Master Adaptive Learner Planning Phase

April Choi, Jeremiah Ojha, Kathryn Lorenz, Jeremy Branzetti, Laura Hopson, Mike Gisondi, Linda Regan

Introduction/ Background: Emergency medicine (EM) residency programs must strive to teach adaptive

expertise (AE) so that graduates can navigate new challenges. Master Adaptive Learner (MAL) is a framework for the development of AE that can inform curricular design. Prior work shows that successful resident learners share skills in approaching the planning phase of the MAL cycle. However, we do not understand with what skills novice learners enter residency.

Educational Objectives: The objectives of our innovation were to observe how interns process the steps of the planning phase and to provide a controlled setting for interns to work through these steps.

Curricular Design: Simulation is an established educational strategy leveraging experiential learning. We developed a learning simulation guiding interns through the steps of the MAL planning phase. In our simulation, 57 EM interns at two academic centers in 2021 and 2022 were given a scripted case scenario of an intern presenting an intoxicated patient with facial trauma and a bloody airway to an attending. Interns were asked to list and prioritize their knowledge gaps and then fill their top gap using any resource until satisfied. Each intern then explained their gap prioritization and resource selection. These prompts led learners through the steps of the MAL planning phase: gap identification, gap prioritization and resource selection.

Impact: In our simulation, participants most often prioritized factual followed by conceptual knowledge, reinforcing the idea that foundational knowledge must precede practical application. Table 2 shows participants' top rationales for gap prioritization and resource selection. This data reinforces past findings about resident decision-making in learning, with 90% of participants able to fill their identified knowledge gap. This shows that in a controlled setting, novice learners can be led through the MAL model to direct their thoughts and learn from their community.

Table 1. Top gaps and types of knowledge.

Top overall and priority #1 gaps selected by participants
1. LeForte Fractures
2. Airway Management
3. Anterior Neck Injuries
Types of knowledge associated with overall and priority #1 knowledge gaps in descending frequency
1. Factual Knowledge
2. Conceptual Knowledge
3. Procedural Knowledge
4. Metacognitive Knowledge

Table 2. Top rationales for gap prioritization and resource selection.

Top rationales for selection of #1 priority gap in order of decreasing frequency
1. Airway as a time-sensitive decision and recognized knowledge gap (2-way tie)
2. Knowledge gap impeding clinical decision-making
3. Ability to communicate with others
Top rationales for resource selection in order of decreasing frequency
1. Familiarity/comfort from prior clinical rotations/experiences
2. Pathway to single comprehensive resource
3. Efficiency
4. Perceived to be credible
5. Need for visual information
6. Preferred learning style, provides evidence support, tailored for EM, and user friendly (4-way tie)
7. Pathway to other possible resources
8. Information that is up to date and convenience/readily accessible (2-way tie)

38 Give Me a Break

Sadie Robinson, Lauren Wendell, Sarah Hirner, Rebecca Bloch, Amanda Deutsch, Loice Swisher

Background: When emergency medicine (EM) residents were polled, only 1 in 3 took a break to eat on shift, 1 in 6 didn't go to the bathroom, and 1 in 10 took a break longer than 10 minutes, according to a multi-institutional study presented at the 2023 SAEM meeting. EM is known for long, busy shifts. There are known negative cognitive and emotional impacts when people are dehydrated and hungry, yet emergency residents are working under these conditions almost daily. Maine Medical Center explored a framework to confront this practice and incorporate a break for residents.

Objective: Implement a system to allow emergency medicine residents a 15-minute break.

Design: A coverage system was developed to allow residents 15 minutes to step off the floor during ED shifts. A chart was used to outline which residents would cover specific roles. Attendings were notified and helped to facilitate the break. This plan was presented to the department, residency leadership, and residents, who all approved and supported this project. A survey was designed for residents to complete at the end of each shift to collect data on whether a break was taken, barriers to taking a break, and emotional well-being at the end of each shift. IRB determined this project exempt.

Impact: 61 survey responses were collected over the month of October 2023. 23 of 61 respondents took a break on shift (37.7%), 38 reported no break (62.2%). The barriers preventing an on-shift break were competing priorities (44.7%), feeling like a break wasn't needed (26.3%), and feeling uncomfortable leaving with the state of the department (18.4%). Those who did not take a break were more likely to feel emotionally drained, 52.6%, compared to those who did, 26.1%. Understandably, there are many confounding factors that play into one feeling emotionally drained when leaving shift. This project clarified how frequently residents take breaks and barriers that can be addressed to help provide space for resident breaks.

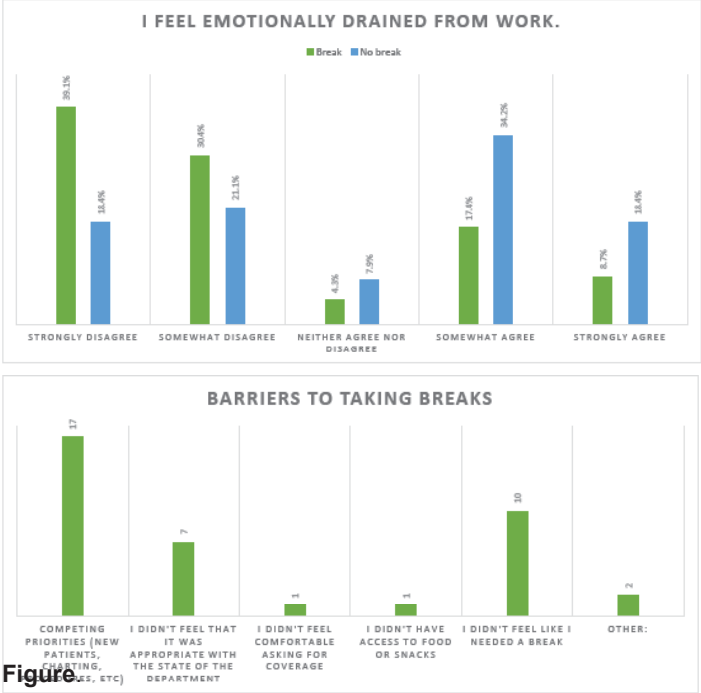


Figure.

39 A Novel Model for Erector Spinae Planar Nerve Block Simulation

Karl Bischoff, Jeremiah Ojha, Nikitha Ashok, Danielle Biggs

Background: The Erector Spinae Plane (ESP) Block is a fascial plane block proven to be effective for management of pain associated with rib fractures. Inadequate management of rib fracture pain can result in poor patient outcomes. Emergency medicine physicians receive extensive training in ultrasound-guided procedures. With these skills physicians can employ nerve blocks to manage patients' pain and improve outcomes. Few models for the ESP block have been described, limiting the opportunity for safely educating residents on performance of this nerve block.

Educational Objectives: Simulation provides a controlled educational setting prior to implementation of unfamiliar procedures. The goal of this project was to create an easily reproducible model enabling simulation of the ESP block for resident education.

Curricular Design: Pork loin bone-in whole full case was selected for the model as it is a readily available cut. It is a midline cut through the spinous process which includes all of the anatomically important landmarks required for the ESP block. The cut permits visualization of ribs, transverse process, and the spinous process. The model was cut along the inferior edge of the rib and cleaned in order to provide direct visualization of the landmarks. The landmarks were then demonstrated under ultrasound guidance to each resident group. 22 ga needles were advanced in-plane in order to demonstrate proper ultrasound-guided technique and needle visualization. Flushes were used to demonstrate the lifting of the erector spinae muscle group essential to this block. Each resident was able to perform this block and was given live feedback using the model.

Impact: The model was effective in demonstrating anatomy both visually and under ultrasound guidance. Residents were able to practice proper technique and felt more prepared to perform the block on patients. This model will continue to be used in our residency program's nerve block education.

Figure.

Figure.

40 Implementing A Climate Change and Sustainability Curriculum for Emergency Medicine Physicians

John Quinn, Kristie Taguma, Kavita Gandhi, Hilary Ong, Kevin Rolnick, Guy Shochat, Caroline Lee, Francesco Sergi, Esther Chen

Introduction/ Background: The effect of climate change on health is a growing concern and disproportionately impacts vulnerable populations. Emergency Medicine (EM) physicians will increasingly be called upon to manage climate-related health emergencies and engage in sustainable practices. However, climate and sustainability training are absent from the 2013 Model Curriculum.

Educational Objectives: In an effort to fill this gap in our residency curriculum, we implemented a four-part climate lecture series during the 2022-2023 academic year. The objectives were to 1) prepare trainees to better manage climate health emergencies, 2) integrate social and racial justice issues into climate discussions, and 3) engage trainees in clinical sustainability quality improvement projects.

Curricular Design: We chose a lecture format developed with input from faculty and other content experts to streamline integration into our existing didactic structure. Topics included "Climate Change, Health, and Equity", "Climate Medicine; from Practice to Policy", "Healthcare Sustainability", and "Climate Medicine: Extreme Heat and Wildfires". Feedback from attendees was collected and aggregated via MedHub.

Impact/Effectiveness: Feedback was positive, and many felt that the lecture series addressed a gap in training, though some requested more clinically applicable content. Following the lecture series, EM residents formed a Green Team which introduced sustainability practices to our university hospital emergency department (ED). At our county hospital ED, residents implemented an instrument-recycling program. After one month, 17% of instruments were recycled, improving to 62% in month two. These outcomes suggest success in motivating residents to participate in sustainable clinical practices. We plan to expand to a 2-year curriculum focusing on the health impacts of climate change while continuing to emphasize experiential learning with climate sustainability projects.

41 "Rapid Recall in Resuscitation"

Taylor Ingram, Lindsey Picard, Julie Pasternack, Maia Dorsett, Kate Kokanovich, Fabiola Enriquez, Rachel Gartland, Joseph Pereira, Linda Spillane

Introduction/ Background: A physician's ability to order resuscitation medications proficiently is critical to patient care. Recall, pocket references and phone applications, and support from clinical pharmacists are common practice. Faculty identified gaps in residents' ability to order such medications or use available resources efficiently without pharmacist support.

Educational Objectives: Simulate a high-pressure environment to evaluate residents' ability to order commonly used resuscitation medications. Identify gaps in knowledge or ability and allow for direct formative feedback. Use the identified gaps to guide curricular change.

Curricular Design: A scenario-based oral exam was developed in response to a faculty survey in which critical resuscitation medications were identified. The quiz was reviewed by physicians and pharmacists for accuracy. Faculty administered the quiz to individual residents from all post-graduate years during the program's annual comprehensive assessment. Residents had 20 minutes to provide medication names, doses, and administration

parameters in 16 resuscitation scenarios. Learners were instructed to bring pocket references and phone applications utilized in clinical practice and were allowed to use only these resources during the quiz. A score was provided based on number of correct answers. Faculty discussed the final score, any incorrect answers, and provided individual feedback.

Impact/Effectiveness: Quiz results demonstrated scores trended higher with each year of training, though within all PGY classes there remained outliers. The results informed faculty of individual resident practice or knowledge gaps and allowed for feedback, with themes including familiarity with resources, need for review of less commonly encountered scenarios, and confidence. Curricular adjustments included simulations with residents requiring further intervention and permanent implementation of a similar quiz in future assessments for repetitive practice.

42 Global Health Conference – Simulation Increases Knowledge and Learner Satisfaction Amongst Interprofessional Teams

Abigail Alorda, Taylor Cesarz, Jonathan Littell, Kiana Hashemi, Rifa Ali, Marianne Sia, Anela Carrazana, Stephanie Cohen, Shayne Gue

Introduction: Given technological advancements and growing research supporting its widespread use, medical simulation is becoming integrated across the field of medical education. Simulation provides hands-on experience in interprofessional teamwork for learners of all levels, as well as improves clinical reasoning skills. Despite widespread implementation, educational gaps persist. One identified gap in medical student education is exposure to natural disaster management. Simulation offers one solution in a risk-free, psychologically safe environment.

Objective: To evaluate the impact of a post-hurricane disaster simulation scenario on medical knowledge, teamwork, and clinical skills in a group of interprofessional learners.

Curricular Design: The simulation was conducted in the Clinical Skills and Simulation Center at the University of Central Florida College of Medicine. Learners in the simulation included medical students, graduate students, undergraduate students, and nursing students. After triaging as one large group, learners were split into two groups to complete evaluation and management of two patients from the disaster scene.

Impact: A total of 27 learners participated in the post-hurricane disaster simulation. Results of the pre- and post-test revealed statistically significant increases for each medical knowledge item (36.4% to 78.6%, $p<0.001$) regarding START Triage. Additionally, learners reported increased levels of agreement with statements regarding the importance of working as part of interprofessional teams, the importance of disaster medicine, and the effectiveness of simulation exercises as an education tool for disaster preparedness. Therefore, we concluded that medical simulations for disaster management, such as the one conducted in this study, allow learners to enhance their critical thinking, develop hands-on clinical skills, and gain confidence as they better understand real-life disaster scenarios in interprofessional settings.

Figure 1.

Figure 2.

43 Call of the Wild - Gamification of Simulation in Wilderness Medicine

Taylor Cesarz, Stephanie Cohen, Mitchell Voter, Shayne Gue

Introduction: Medical education has come a long way from traditional lecture-based residency didactics. Recently, there has been a push for gamification to captivate learners. As we see an influx of learners who have grown up during rapid technological advancement, it is important to evolve how we teach, including the use of gamification, to more actively engage learners and solidify knowledge. We have started to see the incorporation of simulation gamification with events such as SAEM SimWars, however, we have yet to examine the impact of simulation gamification on resident education.

Educational Objectives: We created an innovative team-based simulation competition, with a focus on wilderness medicine to assess the impact simulation gamification has on resident engagement, motivation, challenge, and overall perception of education efficacy.

Curricular Design: We designed an interactive race that consisted of six stations, including five simulations and one trivia station with board-style review questions. The five sim stations included team-building, simulation, as well as procedural challenges. Teams were scored based on the completion time of each station, with time penalties added for missed critical actions. To evaluate our race, pre- and post-intervention surveys were administered, with both multiple choice and perception questions utilizing a Likert scale.

Impact: We included two emergency medicine residency programs in Central Florida, analyzing data from 23 learners with matched pre- and post-test results. There was a statistically significant increase in medical knowledge assessment (62 to 80%, $p < 0.001$). Respondents also agreed with statements indicating increased levels of motivation, engagement, and challenge with this educational strategy compared to other modalities. Finally, 100% of respondents indicated they "agreed" or "strongly agreed" that the event was an effective educational tool for wilderness and environmental emergency training.

Figure.

Figure 2.

44 The Sooner, The Better – "Intern Bootcamp" for Senior Medical Students

Abigail Alorda, Taylor Cesarz, Tracy MacIntosh, Stephanie Cohen, Shayne Gue

Introduction/Background: Simulation is an effective strategy for educating learners of all levels. Moreover, it is an invaluable tool for teaching difficult topics in a psychologically safe environment. The transition from medical student to resident physician is stress-inducing in many ways. Many graduate medical education programs have developed "Intern Bootcamps" to help ease this transition and build upon the core entrustable professional activities (EPAs) expected for new interns having completed undergraduate medical education. We sought to explore the implications of shifting "Intern Bootcamp" into the pre-residency phase, focusing on senior medical students.

Educational Objectives: To evaluate the impact of a novel, one-day "Intern Bootcamp" on medical knowledge and self-reported perception of comfortability among senior medical students at our institution.

Curricular Design: We created a one-day "Intern Bootcamp" for the six graduating senior medical students at the University of Central Florida who matched into

emergency medicine residency programs. Our innovation utilized simulation-based education, to create an engaging learning environment, where students worked through cases that might be expected of a new intern. There were a total of six simulated cases, utilizing high-fidelity mannequins and live actors, which included procedural and medical knowledge learning objectives.

Impact/Effectiveness: Overall, there was a statistically significant improvement in both medical knowledge scores (with an increase in scores from 50 to 70% ($p<0.05$)) as well as reported comfortability in procedure performance with scores on a 5-point Likert scale increasing from 2.16 to 4.2 on orotracheal intubation, 2.5 to 3.8 on central line placement, and 1.83 to 3.6 for chest tube placement.

45 Implementation of a Novel Senior Resident "Life Curriculum"

Danielle Kerrigan, Jeremiah Ojha, Michelle Myles, Amy Mariorenzi

Resident education primarily focuses on medical knowledge, patient care, and scientific inquiry as required by the ACGME. However, as senior residents prepare for the transition to attending physician, many questions arise that fall outside of this scope and there is a paucity of literature on strategies to mitigate this. The few published curricula within this subject all focus on a single topic. Our literature search has not yielded any comprehensive curricula to address this transition. To our knowledge, this curriculum is the first of its kind. Our objective was to create a novel curriculum for senior residents to prepare them for life after residency by addressing areas in which residents are expected to be competent upon graduation but are often not explicitly taught. Following Kern's six-step approach, we conducted a needs assessment which showed most residents did not feel our current curriculum sufficiently prepared them for the transition from resident to attending. We designed a "life curriculum" for senior residents covering commonly cited areas of need including: documentation, medicolegal topics, personal finances, and self-reflection. Each session was led by EM faculty or other content experts during existing conference time. Delivery methods were tailored to the topic and included small group discussions, hands-on workshops, and traditional didactics. This curriculum was delivered longitudinally over the course of an academic year. Participants were surveyed before and after each session rating their knowledge and confidence on a five-point Likert scale. Every session showed an improvement in both reported knowledge and confidence, suggesting that residents felt more prepared for life as an attending after participating in the sessions. This curriculum is currently continuing for its second year. In the future, we hope to implement additional topics based on ongoing residency needs and the changing landscape of emergency medicine nationally.

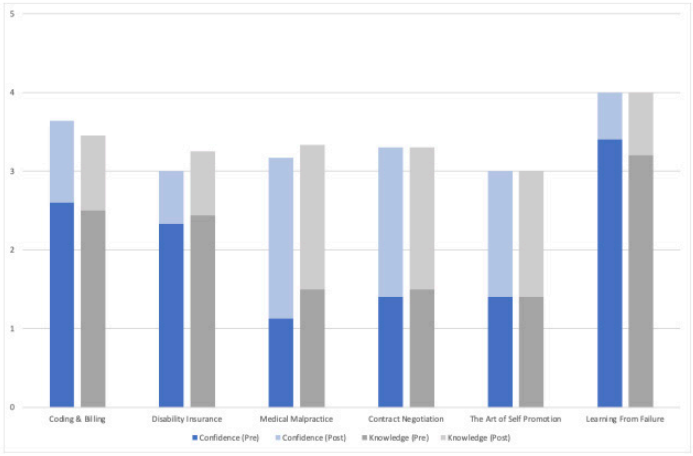


Figure 1. Results.

Table 1. Life curriculum sessions.

Coding and Billing
Finances: How to Plan for Retirement
Disability Insurance
Medical Malpractice
Contract Negotiation
The Art of Self Promotion
How to Find Passion Outside of Medicine
Learning From Failure

46 The Patient Experience: An In Situ Simulation

Jeanne Rabalais, Melissa Parsons, Alexandra Mannix, Aman Pandey, Alexander Howard

Introduction/Background: As a county safety-net hospital, there are many stress points in an ED visit for our patients. As physicians, we often do not realize these stress points. Prior work links empathy and positive physician-patient relationships to improved healthcare outcomes. New learners would benefit from understanding common patient frustrations, worries, and fears as the patient navigates through the ED.

Objectives: Increase understanding of patient flow through the ED - Recognize patients' challenges and frustrations during their ED visit - Enhance communication skills to effectively address patient concerns and alleviate anxieties -Reflect on personal biases and assumptions that may impact patient care -Improve teamwork and collaboration by understanding the roles and perspectives of different healthcare professionals involved in patient care.

Curricular Design: The project started with a needs assessment of the PGY-2 class. We queried familiarity with locations in the ED, patient processes, ED services, and causes of patient frustrations. We used this information as targeted learning points for our curriculum. PGY-1s were given a pre-survey. They were put into groups to go through an in situ simulated patient experience in different areas of our ED. The simulation consisted of triage, bed placement and monitor hook-up, registration, transportation to imaging, etc. A debriefing session was conducted and the post-survey was given.

Impact: PGY-1s reported they had an increased understanding of ED patient flow, contributing factors to patient frustrations, and the connection between patient experiences and patient outcomes. All participants selected that this experience will positively impact their ability to relate to patients and be valuable to their medical education. Conducting an in situ patient experience simulation is a practical and effective way to develop empathy in residents and increase their responsiveness to patients' needs and concerns.

47 Development of a Social Determinants of Health Curriculum for Emergency Medicine Residents

Rachel Miller, Hyunjoo Lee

Background: Social determinants of health (SDH) encompass factors such as race, gender, living situation, economic status, access to food, and access to healthcare. The impact of SDH has been shown to play a larger role in people's overall well-being and health than the medical care that physicians provide. Understanding the impact that SDH has on patients will allow Emergency Medicine (EM) physicians to provide more comprehensive and patient-centered care.

Educational Objectives: A curriculum was created to teach residents about a variety of SDH issues with the goal of making them more informed, comfortable with the associated terminology and concepts, and emphasizing the need to address SDH while caring for patients in the emergency department.

Curricular Design: The curriculum consisted of four one-hour long lectures, given during the orientation month for incoming Stony Brook EM interns. Didactics were structured using powerpoints, videos, and data from peer-reviewed literature. The lectures covered topics of food insecurity, racial disparities, sexism/gender disparities, gender identity and sexual orientation. Pre- and post-lecture surveys were obtained to assess the residents' changes in their understanding and knowledge base.

Impact: EM residents are mandated to receive training in SDH, but the method and manner of this education is highly variable. The development of our curriculum allowed for dedicated time to address SDH training. Survey results support that this curriculum significantly improved residents' understanding of key concepts, comfort level addressing these concepts with patients, and confidence integrating concerns about SDH into treatment plans. Though additional topics will need to be covered as the curriculum evolves, this current curriculum can serve as an initial template for other residency programs in the development of their own SDH curriculum.

48 Escaping the Wilderness Using a Gamified Team-Based Learning Curriculum

Timothy Khowong, Kevin Hon, Aurora Jin, Vidhi Rao

Introduction/Background: Emergency Physicians must be equipped to perform emergency stabilization in the variety of situations that people may find themselves ill, ranging from cities to remote places. However, some residents may have little exposure to patients suffering from environmental disorders. To address this problem, we developed a structured, evidence-based curriculum for a wilderness workshop for our residents that utilized gamification to increase engagement and foster communication.

Educational Objectives: By the end of the course, learners should be able to recognize, identify risk factors, triage, describe pathophysiology, predict complications, and develop treatment plans in patients suffering from ingestions and envenomation, mass casualty incidents, altitude and submersion incidents, temperature-related illness, radiation and blast emergency, and wilderness trauma.

Curricular Design: Our curricular design modified the commonly used team-based learning (TBL) framework with gamified elements. The individual readiness assessment test was created with a series of 36 MCQs and was given just prior to the start of the session. We designed a gamified group readiness assessment test in the style of an escape-room with parallel puzzles that were topic-relevant. Participants were then divided into four teams and competed to complete each of the stations.

Impact/Effectiveness: Learner feedback to the session was overwhelmingly positive with an average 4.7/5 Likert rating for relevance and amount of information covered. Their question bank assessments at the end of the year showed a significant increase in mean scores on environmental topics from 59% to 65% ($p<0.05$). Our development of a wilderness curriculum can be applied to other programs with similar needs looking to supplement their education. Additionally, the modification of the existing TBL framework with gamified elements showed significant improvement in resident learning of a difficult topic.

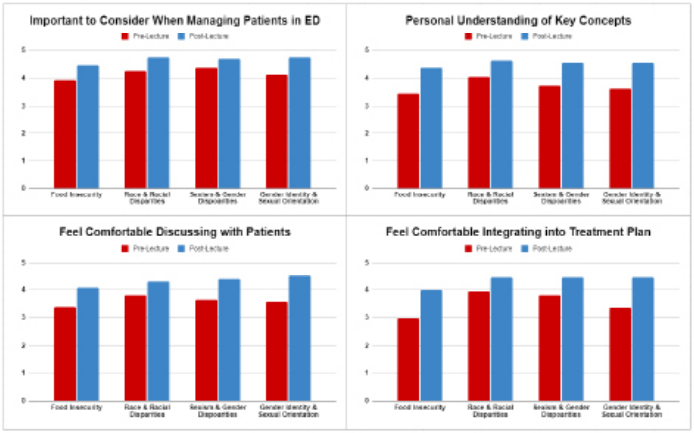


Figure. Impact of social determinants of health curriculum on resident education.

49 Filling Knowledge Gaps Through Gamification: A Community Academic Program's Approach To Teaching Basic Splinting

Lorie Piccoli, Joel Atwood

Introduction/ Background: Splinting is an essential skill for emergency medicine (EM) physicians. We identified a knowledge gap among surveyed EM residents from four regional EM programs in Pennsylvania. Despite 81.5% reporting formal splinting training as residents, most had placed 3 or fewer ulnar gutter, sugar tong, and thumb spica splints. To enhance clinical proficiency and resident confidence in splinting, we taught essential splinting skills at a combined regional conference attended by multiple EM residency programs.

Educational Objectives: 1) Host small group splinting conferences for hands-on learning. 2) Challenge residents to apply appropriate splints for clinical fracture scenarios. 3) Offer real-time grading and feedback on splint quality and appropriateness. 4) Evaluate training effectiveness and knowledge retention through a post-splinting survey.

Curricular Design: This 20-minute curriculum accommodated a diverse group of learners and was repeated eight times. Groups were presented with a simulated arm fracture case and tasked to diagnose the injury, gather necessary splinting materials, and apply splints to live team members. Splints were graded on: 1-Appropriate immobilization of the affected joint, 2-Proper joint positioning, 3-Aesthetic quality of the splint, 4-Comfort and prevention of skin breakdown, and 5-Timeliness. Teams competed for the title of "Best Splinters".

Impact/Effectiveness: This hands-on, small group teaching approach with real-time feedback empowered learners to acquire vital splinting skills. We provided residents with a tangible understanding of how to correctly apply a splint. Real-time feedback allowed them to rectify mistakes and refine their skills. A comparison of pre- and post-training survey results via Mann-Whitney U testing confirmed improvement in median comfort scores from 2 to 3 (on a 1-4 Likert scale) for all three types of forearm splints (p=0.004, 0.020, 0.001).

50 Early Warning Signs: Incorporating Objective Structured Clinical Examinations into EM Orientation

Matthew Mullins, Matthew Stull

Introduction/Background: The continuum of medical education is often fractured without a learner hand-off. Residency programs must rapidly assess trainee preparation to appropriately balance supervision and autonomy. EM interns spend considerable time on off-service rotations, challenging programmatic assessment. Underperforming learners may not be identified until late in the year, placing a resident well behind their peers. An early identification system for EM core competency-based performance may help programs implement coaching sooner. Utilizing Objective Structured Clinical Examinations (OSCEs) reflecting competencies during EM Orientation can provide this valuable information.

Educational Objectives: First, we sought to assess the feasibility of implementing a level-appropriate OSCE applying the core competency framework for EM interns. In addition, we sought to validate a standardized assessment tool for learners on common EM procedures. Lastly, we aimed to implement OSCEs that informed our Clinical Competency Committee (CCC).

Curricular Design: Utilizing Kern's model, we identified our need for an assessment tool early in intern year. We aimed to create an early warning system to identify areas for improvement, optimizing the time for targeted coaching. OSCEs were chosen as a validated tool to assess performance. We mapped the core competencies to common aspects of EM cases and procedures (i.e., utilizing the PERC rule earned points for systems-based practice and placement of ultrasound-guided IVs for patient care). Residents were scored for each competency in three cases by a trained-faculty member.

Impact/Effectiveness: Implementation of an early assessment program can aid in early detection of residents who may need additional support and will assist in the longitudinal development of residents. Our next steps include better connecting performance on OSCEs with progression through EM milestones based on CCC's impressions.

51 The Game Is Afoot!: A Simulation Designer's Implementation of Escape Rooms In Graduate Medical Education

Michael DiGaetano, Mary McGoldrick, Michael Jong, Colleen Donovan

Introduction: Medical education escape rooms (ERs) are experiential, game-based simulations (sim) that have grown in popularity over the last decade. While ERs are fun and motivating for learners, they challenge sim designers to step out of their comfort zones to deliver quality experiences. Emergency Medicine (EM) ER design must include an engaging storyline and automated-feedback puzzles (e.g., incorrect solutions prevent forward progress), while testing critical EM concepts. We sought to develop an in-person ER that requires teams to apply key EM milestones to solve a mystery and escape in under 40 minutes.

Educational Objectives: -Challenge learner clinical reasoning and procedural skills within the EM scope of practice -Recreate the excitement of a commercial ER -Integrate wellness activities into core curricular learning.

Curricular Design: EM residents and sim directors designed an ER as an engaging, multimodal teaching experience. Station skills were derived from ACGME requirements including toxin identification, pathologic image recognition, cardioversion, ultrasound, CPR, management of shock states, suture tying, incision and drainage, and airway management. The ER consisted of modular stations that targeted desired skill retention. Participants were surveyed regarding their comfort with each task and their perceived value of an ER as an educational tool. This exercise achieved results consistent with Level 2 of the Kirkpatrick model of evaluation.

Impact/Effectiveness: Learners performed integration of key practical skills and medical decision making in order to complete trials under time constraints. 100% (16/16) of learners successfully escaped the room and agreed or strongly agreed that this exercise was a good use of their

Figure 1.

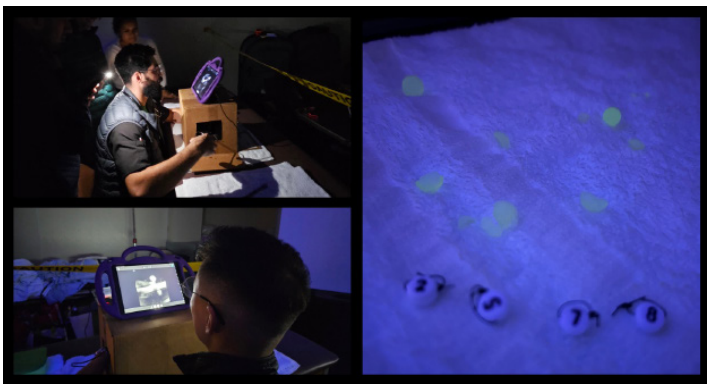


Figure 2.

educational time. Almost all expressed strong interest in future ER learning. We intend to expand and encompass additional skills noted in ACGME requirements while having fun and tackling burnout.

52 The Simlympics: A Novel Gamified Simulation Competition for Emergency Medicine Residents

Thomas Sanchez, Jessie Chen, Brian Smith, Sheetal Sheth, Anika Nichlany, Kallie Combs, Anita Lui, Rozalyn Hesse, Michael Levine, David Simon, Catherine De Guzman, Richard Shin

Introduction: Experiential and interactive learning methods can benefit EM residents over lecture-based curricula. Incorporating gamification into didactics promotes participation from learners. We created a simulation-based competition for our learners as an alternative to typical simulation-based learning which involves case-based learning and procedure labs.

Objectives: Our goal was to redesign a simulation-based conference to incorporate gamification and teamwork amongst the residents. This provides a novel approach to case-based learning and procedure labs while maintaining a dynamic, engaging learning environment.

Curricular Design: 4 30-minute stations targeted EM resident skills. To foster communication and leadership skills, 2 case-based stations were created. For procedural training, 2 task-trainer stations were used. The first station was a "fast-track relay" where learners practiced skills like hemorrhoidectomy and nail bed lacerations. The next station stressed communication, as team members were forced to hand off care every 60 seconds to advance the sim case. The third station was a race with airways of increasing difficulty. The final station was a case in which a blind-folded leader ran a resuscitation relying only on verbal communication. Each station was assessed for accuracy and time to completion. A winning team was selected by the faculty judges.

Impact: Residents completed an anonymous post-conference survey which used a 5-point Likert scale. 100% reported the event was educational, appropriately timed, and covered EM-relevant topics. Residents reported enjoyment in the stations between 4.3- 4.75/ 5 on the Likert scale highlighting a Kirkpatrick level 1 impact. Learners report increased confidence in skills in airway procedures, fast track procedures, leadership, communication, and handoff demonstrating Kirkpatrick level 2 impact. We hope this project will continue annually and demonstrate higher levels of impact for the learners.

53 Creating a Leadership Skills Assessment Tool for Use in Medical Simulation: A Quality Improvement Project

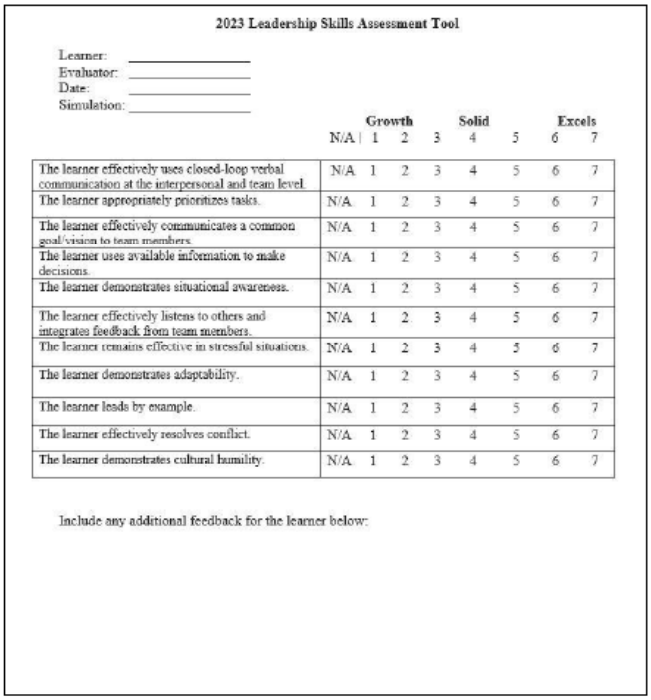
Bridget Matsas, Erin Barry, Scott Szymanski, Dedra Tolson

Introduction: Emergency physicians frequently lead complex resuscitations. Residency programs are increasingly recognizing the importance of leadership training, yet there are limited methods of evaluating leadership performance. As part of a quality improvement project, we developed a leadership skills assessment tool for use during emergency medicine (EM) simulation exercises.

Educational Objectives: We sought to develop an assessment tool that improves how educators evaluate and provide focused feedback on residents' leadership skills during simulated resuscitations.

Curricular Design: This project was approved as quality improvement by our institution's Human Research Protections Office. We identified a leadership assessment tool published in 2021 for use in medical schools. With permission from the primary author to recreate aspects of the original tool, we used the modified Delphi method with key stakeholders to develop a consensus on the most important skills for resuscitation leadership. We finalized and incorporated the tool (Image 1) into our program's monthly simulation training. As EM residents rotated through simulated resuscitations, EM faculty evaluated the assigned team leader using the tool. The simulation team subsequently gave the completed assessment to the learner after the exercise ended.

Impact: There is a dearth of methods to assess and develop resident leadership skills, and this tool provides a way to evaluate leadership skills during simulated resuscitations. We evaluated the tool's effectiveness using a 7-point Likert scale survey. The tool has been received positively by learners thus far, as shown in Table 1. The tool was implemented into our existing curriculum with minimal barriers, and both learners (n=10) and faculty (n=4) on average reported the tool did not impede learning. This tool has been an effective method of evaluating resident leadership skills during simulated resuscitations, and we continue to implement it.



2023 Leadership Skills Assessment Tool

Learner: _____
Evaluator: _____
Date: _____
Simulation: _____

	Growth			Solid			Excels	
	N/A	1	2	3	4	5	6	7
The learner effectively uses closed-loop verbal communication at the interpersonal and team level.	N/A	1	2	3	4	5	6	7
The learner appropriately prioritizes tasks.	N/A	1	2	3	4	5	6	7
The learner effectively communicates a common goal/vision to team members.	N/A	1	2	3	4	5	6	7
The learner uses available information to make decisions.	N/A	1	2	3	4	5	6	7
The learner demonstrates situational awareness.	N/A	1	2	3	4	5	6	7
The learner effectively listens to others and integrates feedback from team members.	N/A	1	2	3	4	5	6	7
The learner remains effective in stressful situations.	N/A	1	2	3	4	5	6	7
The learner demonstrates adaptability.	N/A	1	2	3	4	5	6	7
The learner leads by example.	N/A	1	2	3	4	5	6	7
The learner effectively resolves conflict.	N/A	1	2	3	4	5	6	7
The learner demonstrates cultural humility.	N/A	1	2	3	4	5	6	7

Include any additional feedback for the learner below:

Figure 1. The leadership skills assessment tool used during simulated resuscitations.
*Adapted from the leader development tool created by Erin Barry, John McManigle, and John E. McManigle, entitled "A Self-Assessment and Peer Feedback Tool for Leader Development" and published in 2021 in the *Journal of Leadership, Accountability, and Ethics*.

Table 1. Mean resident responses on rating effectiveness of the leadership skills assessment tool using a 7-point Likert Scale.

Question	Mean[a] (N=10)	Standard Deviation
The leadership skills assessment tool was an effective way to deliver feedback on my leadership skills	6	0.94
The leadership skills assessment tool improved my understanding of my own leadership skills	5.9	0.74
The leadership skills assessment tool was easy to understand and interpret	6.6	0.70
The leadership skills assessment tool did not impede other parts of my simulation learning	6.6	0.52
It is important to me to receive feedback on my leadership performance during medical and trauma resuscitations	6.7	0.67
The leadership skills assessment tool includes leadership skills I feel are important to leading medical and trauma resuscitations	6.3	0.95
I would like faculty to use the leadership skills assessment tool in future simulation exercises	6.2	0.79

[a] Rated on a 7-point Likert Scale (1 = Strongly Disagree, 7 = Strongly Agree)

54 Defining And Measuring Variance in Clinical Productivity Metrics By Training Level

Eric Shappell, Sangeeta Sakaria, Derek Monette, David Peak, Daniel Egan

Introduction: Previous studies have characterized

resident clinical productivity in the form of new patients assigned per hour, however they do not assess variability in productivity by year nor do they account for patients assumed in passoff. We also lack data regarding resident clinical productivity distributions for contextualization of resident performance compared to peers.

Objectives: (1) Report variability in resident clinical productivity as measured by standard deviations (SD) from class mean in new patients per hour and patients assumed in passoff per hour (2) Compare differences in variability across training levels to determine if an intervention should be considered to prevent the exaggeration of productivity differences across class years (eg improve low performers if differences are greater at higher levels).

Methods: We obtained all residents assigned and notes written for all patients at an urban academic emergency department from 7/2022 - 6/2023. Credit for a new patient required both assignment to the patient and writing a full note. Credit for assuming a patient in passoff required assignment as a subsequent resident for ≥30 minutes. Resident schedules were merged to derive per-hour values. We calculated descriptive statistics, compared variances using Levene's test, and plotted deviations from mean performance by class.

Results: 139,731 encounters were analyzed. SD in new patients per hour and patients assumed in passoff per hour did not increase with training level (Table 1). Class differences in variance of new patients per hour was statistically significant and highest for 2nd year residents. Most residents are within 1 SD of class means and outlier residents (>2 SD from mean) were uncommon ~1 per class (Figure 1A-B).

Conclusions: Most residents' metrics are close to class means and deviation was not greater at higher training levels. Future work may focus on other factors such as patient complexity and addressing low outlier performers.

Table 1. Standard deviations in new patients per hour and patients assumed in passoff per hour by level of training.

	EM 1	EM 2	EM 3	EM 4	p*
New patients per hour (SD)	0.06	0.12	0.05	0.06	.03
Patients from passoff per hour (SD)	0.04	0.08	0.06	0.08	.26

* P value from Levene's test for equality of variances
EM = Emergency medicine training year
SD = standard deviation

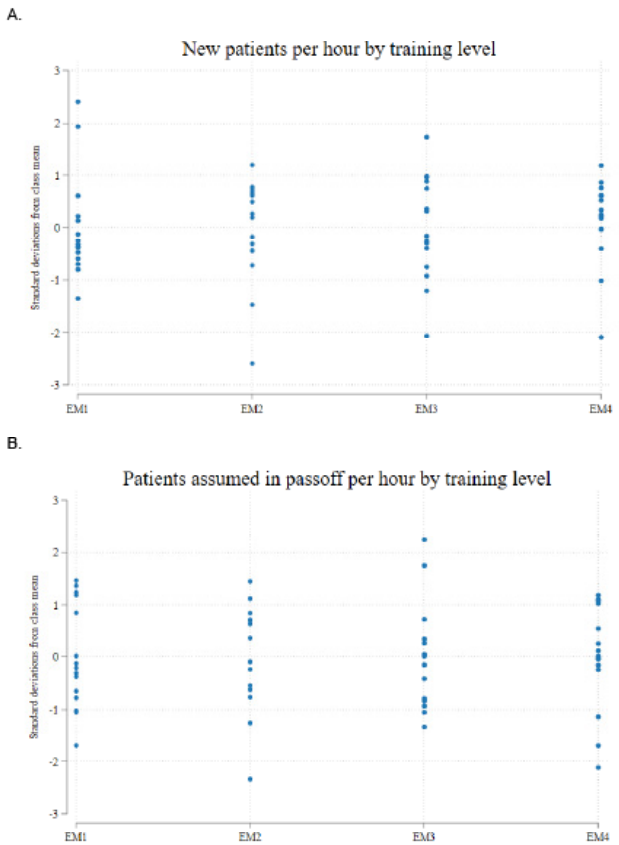


Figure 1A-B. New patients per hour and patients assumed in passoff per hour by training level as standard deviations from class means.

55 Innovative Teaching Format: Chemical, Biological, Radiological, Nuclear, Explosive Emergencies

Jeremiah Ojha, Chrissy Van Dillen, Josef Thundiyil, Linda Papa

Introduction/Background: Given the increasing frequency of mass casualty incidents and the persistent threat of terrorist attacks, our curriculum committee developed a teaching module for Emergency Medicine (EM) residents to better prepare for chemical, biological, radiation, nuclear, explosive (CBRNE) events. Studies and experience demonstrate that clinician preparedness is a critical piece in an effective response to CBRNE events. We sought to evaluate whether an interactive CBRNE education module would improve knowledge among learners about how to respond to these emergencies. Educational

Objectives: 1. To improve knowledge of CBRNE events 2. To understand the role of antidotal therapy and decontamination in CBRNE emergencies 3. To practice resuscitation in simulated CBRNE cases

Curricular Design: This module was developed by content expert teams in conjunction with a disaster management educational programmer to teach CBRNE emergencies. The teams sought to improve knowledge, skills, and attitudes for six emergency topics: Personal Protective Equipment (PPE), nerve agents, botulism, airway irritants, radiation, and cyanide. The sessions utilized various teaching methods including simulation-based resuscitations, hands-on practical training, case-based presentations, and table-top discussions. This was taught over a 2.5-hour session at a single accredited EM Post Graduate Year (PGY) 1-3 Residency Program to EM residents.

Impact: There were 36 learners given 14 objective content questions pre- and post-curriculum implementation. We received 35 responses to the pre-test and 22 responses to the post-test. The average score on the pre-test was 43% and 77.6% on the post-test (34.6% improvement). There were significant improvements in scores overall with a mean difference of 4.9 (95%CI 3.7-6.0) (p<0.001). See table 1. Conclusion: Implementation of CBRNE educational curriculum significantly improved knowledge at every PGY level on CBRNE-related emergencies.

Table 1.

	Pre-test	Post-Test	Confidence interval	Mean difference
PGY1	32.7%	74%	3.6-8.1	5.9
PGY2	47.5%	77.6%	2.9-5.9	4.4
PGY3	46.7%	81.4%	21.5-8.7	4.6

56 Local Anesthetic Systemic Toxicity (LAST) and Fascia Iliaca Compartment Block (FICB) Simulation: A Pilot Study

Katherine Griesmer, Jaron Raper, Briana Miller, Maxwell Thompson, Andrew Bloom

Introduction/Background: Regional anesthesia, including fascia iliaca compartment blocks (FICB), are increasingly falling into the scope of Emergency Medicine (EM) given the increasing training and proficiency with ultrasound-guided procedures. Though rare, local anesthetic systemic toxicity (LAST) is estimated to occur in 0.03% of peripheral nerve blocks, with a different ACLS algorithm in the event of cardiac arrest. We present a novel curriculum for a combined simulation and procedural simulation for LAST and FICB.

Objectives: Recognize clinical signs and symptoms of LAST. Develop an appropriate treatment algorithm for LAST and manage potential outcomes including cardiac arrest. Perform FICB successfully and troubleshoot complications. Determine proper lidocaine dosing to prevent LAST.

Curricular Design: 19 emergency medicine residents performed two separate but contiguous simulations with one being a LAST simulation with cardiac arrest and the other a procedural simulation involving setup for and performance of a FICB. Pre and post surveys were obtained to gauge previous comfort level and expertise compared to following the simulation.

Impact/Effectiveness: Residents reported improved comfort and knowledge in recognizing and managing LAST, as well as performing FICB. Perceptions towards recognizing and treating uncommon causes of cardiac arrest, including LAST, improved following simulation (5.11 vs 6.21, p=0.003; 3.89 vs 6.16, p=0.008). While many residents felt confident in their ultrasound skills (6.77, SD 2.23), ultrasound-guided nerve blocks were rated lower with regards to knowledge and procedural techniques prior to the simulation (4.47 vs 9.25, p <0.001). Comfort with performing FICB had a positive trend following the simulation (3.47 vs 8.56, p <0.001). Residents perceived ultrasound-guided nerve blocks, in particular FICB, as a useful skill (9.63). Figure 1. LAST perceptions Figure 2. FICB perceptions

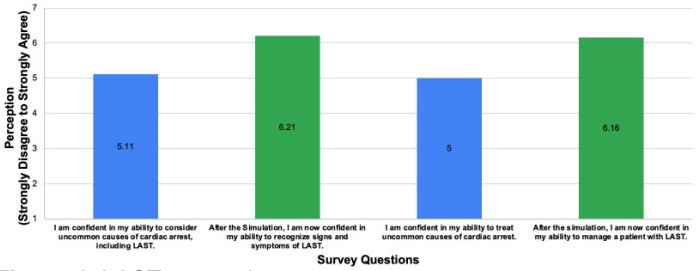


Figure 1. LAST perceptions.

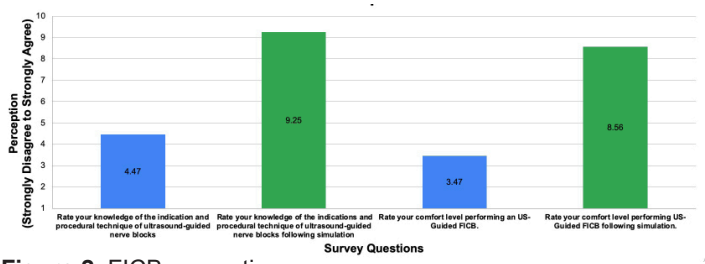


Figure 2. FICB perceptions.

57 "Heads Up!" Toxicology

Elspeth Pearce, Jeremiah Ojha

Background: Gamification is a popular way to increase engagement in didactics and motivation to learn. Another way to increase engagement is having learners teach topics as near-peers. This allows the learner-as-teacher to solidify their knowledge of a particular topic. Using both gamification and near-peer teaching I sought to enhance our toxicology content review through a small group activity.

Objectives: Determine the unknown toxin or toxic exposure from prompts such as toxidrome, antidote, patient presentation, or other signs or symptoms. Collaborate in a small group to teach and review toxicology topics.

Design: As part of an ongoing didactic initiative to increase interactive sessions I planned a review based on the word-guessing game "Heads Up!". The cohort was divided into 4 groups of about 5-6 learners each. Each group had an identical deck of cards with a toxin or toxic exposure on each card. Players took turns guessing the toxin based on clues provided by the group. This educational method allows individuals to share their understanding of key clinical facts while building on others' descriptions. The player guessing may rapidly identify the toxin based on a "buzzword" or require many clues to come to an answer. After a minute of guessing cards there was a brief group review period and then the next player would take a turn guessing. The game was played for an hour and a post-event survey was used for evaluation.

Impact: The "Heads Up!" game is easy to play with any level of learner and any topic that utilizes similar cognitive matching. The session content and delivery were found to be "very good" or "excellent" by all survey respondents (n=13). Outside of the planned objectives, faculty observed the senior residents sharing their toxicology resources, including phone applications and websites. This session was highly effective at disseminating toxicology educational tools within the residency.

58 Beyond the Flashing Lights: Incorporating EMS Education Into an Emergency Medicine Clerkship Curriculum

Michael A. Kaduce, Max R. Berger, Stephen Villa, Leila So Hyun Park

Introduction: Emergency Medical Service clinicians are the primary healthcare providers for those calling 911 and around 17% of ED patients arrive at the hospital via EMS. Since 2010, EMS has been a subspecialty of EM however there is little documented about the incorporation of EMS into medical school curriculum. We created an "EMS Day" experience within our EM core clerkship to introduce medical students to the EMS system and its interaction with EM.

Educational Objectives: 1. Improve awareness by including an EMS experience in the EM core clerkship. 2. Improve understanding of patient assessment and care in the prehospital setting. 3. Perform basic prehospital skills such as Epi-Pen and naloxone administration and tourniquet application.

Curricular Design: The 4-week required EM clerkship engages students to think critically about emergency complaints, acute management, and the bridge between EM and definitive care. The clerkship gives direct exposure to emergent evaluation of patients and development of diagnostic frameworks. For EMS Day, we utilized EMS educators and developed 6 simulations, each with an associated skill. In each simulation, one student played the patient and was treated by a fellow student as if they were the first arriving medical provider. Scenarios included chest pain on a plane, opioid overdose of a neighbor, and anaphylaxis during a sporting event. Each simulation was followed by a debrief specific to caring for a patient in the prehospital setting, teaching points on the EMS system, and students practiced prehospital skills including administering an Epi-pen and naloxone, controlling hemorrhage, and completing a head-to-toe assessment.

Impact/Effectiveness: Students were surveyed following the experience using a standard clerkship evaluation about the effectiveness, relevance, and educational value. Survey results were overwhelmingly positive (Table 1). EMS Day has been continued in the next year of the clerkship.

Table 1. EMS day survey results.

Question	Mean (Scale 1-5)	Standard Deviation
This was a positive learning experience and an effective use of my time.	4.47	0.79
The course content was relevant to my training level or practice.	4.55	0.75
The staff and instructors were helpful and responsive.	4.75	0.64
I learned information/skills that I would incorporate into my practice.	4.61	0.65
I would recommend this course to my peers.	4.48	0.81
The instructor was enthusiastic and engaging.	4.95	0.21
The instructor created a comfortable and safe learning environment.	4.91	0.46
The instructor was knowledgeable about the subject.	4.97	0.17
The instructor was overall an effective teacher.	4.94	0.3

59 Pediatric Emergency Bootcamp Pilot: Targeted Procedural and Simulation Skills for The Developing Physician

Alexa Curt, Raylin Fan Xu, Kelsey Miller, David Schoenfeld, Jason Lewis

Introduction/Background: Medical students should have a foundational level of knowledge for managing common pediatric emergencies regardless of what specialty they pursue. Often pediatric patients are treated by providers without dedicated pediatric training who have varying levels of comfort. Simulation-based training provides an opportunity to practice initial management steps for common pediatric emergencies in realistic settings.

Educational Objectives: We developed a simulation-based pediatric EM (PEM) bootcamp for students to increase their comfort level in performing common procedures in pediatric

emergencies.

Curricular Design: Bootcamp skills were selected by surveying peers, literature review, and a focus group of PEM faculty to include airway management, intraosseous placement, fracture management, nursemaid's reduction, FAST, and ultrasound guided peripheral IVs. We partnered with PEM faculty to develop each station and reviewed materials for appropriate developmental level. Each station consisted of a brief didactic introduction followed by high signal simulation on mannequins or skill trainers. All 2nd, 3rd, and 4th year students at our institution or 1st years with extensive previous experience were offered to participate. Participants completed pre- and post-workshop surveys assessing self-reported comfort levels using a Likert scale. We also elicited feedback for how to improve future sessions.

Impact/Effectiveness: 13 students participated in the pilot. Pre and post confidence levels were assessed using a Fisher's exact test. Confidence levels increased significantly for all procedures after participation in the bootcamp ($p<0.05$ for all domains). This pilot suggests that the bootcamp increased comfort in managing a subset of pediatric emergencies. Participant feedback was overwhelmingly positive. Future iterations are necessary to confirm these findings and adjust the program to fully address all student's needs.

60 A Novel Points-Based Curriculum for Scholarly Activity

Olivia Victoriano, Erick Torres, Stephen Hayden

Background: The ACGME requires residency programs to facilitate resident scholarly activities to further their understanding of evidence-based medicine. For many established residency programs with robust academic publishing backgrounds, these requirements are often met through original studies.

Curricular design: Our 3-year community-based residency program had its inaugural year in 2021 and is set to graduate its first set of residents in 2024. This allowed for the opportunity to establish a curriculum to strengthen the scholarly characteristics of this new program. We pioneered a point system for scholarly activity that took effect in 2022 to encourage resident involvement in various projects including IRB-approved original research studies, publication of a book chapter, case reports, poster or abstract presentations, and representative positions in professional committees. Original research including studies, chapters, and QI projects were given more weight and earned 5 points, the maximum allowed for a project. Surveys were collected annually from the residency class to inquire about project involvement.

Results: Within the first year of the implementation, the PGY3 class was surveyed at the beginning of their final year to assess status of meeting these scholarly activity requirements. 90% of the PGY3 class met the minimum 5-point requirement entering their 3rd year. 60% of the class held 10 or more points, and 30% of the class held 15 or more points.

Conclusion: We believe this points-based system allows residents to diversify their interests in scholarly activity and allows freedom to engage in multiple small projects or one large project. This liberal system that presents multiple options for scholarly activity encourages collaboration between faculty and residents and may be adopted in newer or established residency programs.

Table 1.

Type of Scholarly Activity	*# of Awarded Points*
IRB-approved original research study: prospective (RCT or Cohort) or retrospective (registry or chart review) complete and submitted (acceptance not required)	First/second author: 5 points Third author: 3 points
Completion of a resident research grant	PI: 4 points Other investigator: 2 points
Original review article, systematic review/meta-analysis using accepted guidelines/methodology	1st and 2nd author: 4 points 3rd author: 2 points
QI project that tests a hypothesis or clinical/administrative question, is written and disseminated in health care system	5 points
Creation of a NEW educational curriculum	5 points
Official Board officer for National EM Resident Organization	5 points
Publication of a book chapter or section (e.g. Corependium, 5 Minute EM consult)	NEW Chapter; 5 points Revision of chapter: 3 points
Written Case Report submitted for publication	First/second author: 4 points Third author: 2 points
Submission to regional/national/international conference (no acceptance)	1st or 2nd author: 3 points
Posters and oral presentations of original research at a Society meeting (e.g. SAEM, ACEP)	National: 4 points Local: 2 points
Creation of NEW electronic learning tool (MDCalc, WikEM) (approved by PD)	4 points
Board member for National EM Organization	4 points
Creation of de novo innovation in medical education	3 points
Reviewer for JEM: minimum of 3 reviews	3 points
Critically Appraised Topic submitted to peer-reviewed journal (JEM)	2 points
Posters and oral presentations to home institution	2 points
Educational publications disseminated to physician group (CME tidbits submitted to EMA group)	2 points
Service on professional committee (EMRA program representative, RAMS, RSA, SAEM, ACEP etc)	2 points
Published podcast, educational or procedural video, other new online learning module	2 points

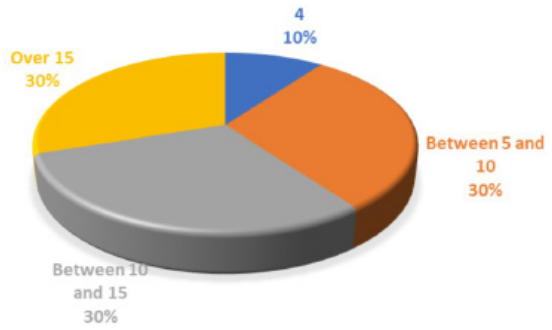


Figure 1. Number of scholarly activity points accumulated in PGY3 class.

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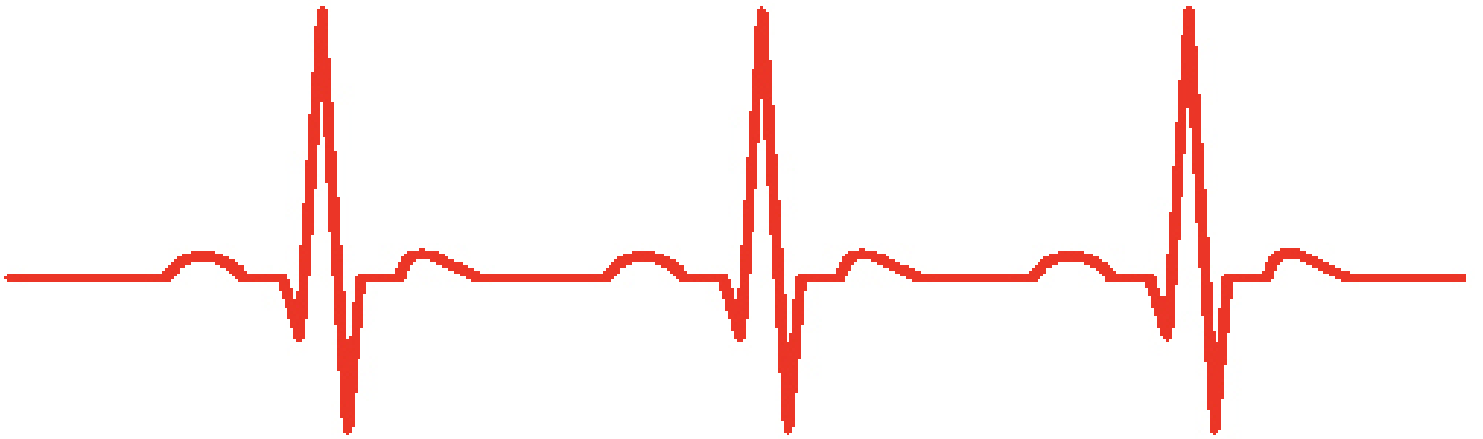

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