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Integrating Emergency Care with Population Health

COUNCIL OF RESIDENCY DIRECTORS IN EMERGENCY MEDICINE

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Council of Residency Directors in Emergency Medicine

Advances in Education Research and Innovations

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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 2025. 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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1 Core Competencies in Trauma Informed Care for Emergency Medicine: A Modified Delphi Consensus

Kathleen Joseph, Manuel Montaño, Maria Moreira, Ashlea Winfield, Danielle Miller

Background: Trauma informed care (TIC) is a framework to recognize trauma, prevent re-traumatization, and promote resilience. Trauma is a common reason for emergency department (ED) visits and has long-term impacts on health, yet many physicians lack appropriate training in TIC.

Objective: To use a modified Delphi process to build consensus of core competencies in universal precautions of TIC for emergency medicine (EM) post-graduate education.

Methods: We recruited geographically diverse, national experts in TIC via snowball sampling in 2023. Panelists ranked the importance of competencies on a 5-point Likert scale through an electronic survey. Threshold for consensus was defined as a mean score of 3.75. Thematic analysis was performed on free text using inductive and in vivo codes.

Results: Sixteen panelists across 12 institutions participated in the modified Delphi and 49 initial competencies were proposed. During the first round, all (100%) of the competencies met or exceeded the consensus level, but many panelists offered comments on consolidation and suggested edits. Thus, we conducted two virtual panel discussions and re-organized the proposed competencies into 19 competencies in Round 2 and further narrowed to 16 competencies in Round 3. There were no major changes proposed by panelists after Round 3 and all competencies exceeded the consensus level.

Conclusions: We achieved consensus on 16 core competencies for universal precautions of TIC (Table), which can be used to develop simulation and education interventions for EM resident physicians with the goal of advancing awareness and application of TIC principles.

Table 1. Final core competencies and associated sub-competencies in trauma informed care for emergency medicine clinicians developed through a modified Delphi process.

Core Competency	Sub-Competencies
Medical Knowledge	
Define trauma	1. Define trauma using a model including individual, interpersonal, collective, and structural levels. 2. Describe the stress trauma continuum. 3. Describe at least one specific example of trauma's long-term effect on neuropsychiatric/physical health and wellbeing.
Describe the widespread impact of trauma on health	1. Describe the short- and long-term sequelae of acute or chronic trauma and how health systems can retraumatize and activate individuals. 2. Describe the disparate burden of trauma felt by historically marginalized communities and groups that disproportionately experience stigma and bias.[1] Describe the role that structural and institutional systems play in contributing to this disparity. 3. Describe the range of symptoms of an acute trauma activation and effect on health care engagement.
Define trauma informed care	1. Define trauma informed care, specifically the 6 guiding principles of trauma informed care as defined by SAMHSA.[2] 2. Describe at least one way that trauma informed care principles impact the care clinicians deliver. 3. Describe universal precautions of trauma informed care.
Patient Care – History Taking	
Creates a safe physical and psychological space for bi-directional communication	1. Sits down or otherwise maintains eye level to avoid standing over the patient. 2. Considers patient preference regarding visitor presence during history taking.[1] 3. Uses open ended questions. 4. Appropriately limits scope of history taking to patient's comfort and clinician role.[2] 5. Encourages patients to share as much or as little as they are comfortable. 6. Is transparent about situations that would require breaking confidentiality.[3] 7. If taking history for known traumatic event (e.g., assault) minimizes number of times history is taken[4] and aims to limit the number of people in the room to those with essential roles. 8. Avoids history taking in public spaces.[5] 9. Utilizes universal precautions to maintain safety[6] in all patient encounters. 10. Understands the principles and skills associated with de-escalating a patient and strategies to promote safety during an encounter with a dysregulated patient.
Demonstrates effective communication skills,	1. Describes their name, role, time that they will spend with the patient and why.

Table 1. Continued.

reflective listening, and cultural awareness	2. Asks the patient how they would like to be addressed or reconfirms name and pronouns from the chart. 3. If visitors (e.g., friends, family members) are present, asks the visitor names and their relation to the patient. 4. Asks patient preferred language and communication means. Uses a certified medical interpreter when not certified in the patient's primary language. 5. Demonstrates active listening through verbal and non-verbal cues. 6. Asks about lived experiences, customs, and preferences.[7] 7. Provides an opportunity to correct or add additional information. 8. Uses shared decision making to discuss next steps collaboratively.
Patient Care – Physical Examination	
Outlines exam steps for all patients	1. Asks permission before initiating physical exam. 2. Explains rationale for exam.[1] 3. Explains the role and uses a medical chaperone during sensitive exams and provides opportunities for patient input where appropriate. 4. Ask the patient privately whether they would like to have their support person (e.g., friend, family member) present for the exam. 5. Informs the patient that we will stop or pause at any point per their request during the physical exam or procedures. 6. Asks the patient if they would like to be informed of next steps. If they answer affirmatively, explains any transitions during the physical exam. 7. Asks the patient if they would like to be informed of what the examiner is observing during the exam. If they answer affirmatively, the resident narrates what they are examining and why. 8. Shares relevant findings of physical exam at completion of exam based on patient preference.
Maintains patient dignity and privacy	1. Exposes and re-drapes sensitive areas as they are being examined.[2] 2. Allows the individual to put their clothes back on at the earliest possibility. 3. Checks in regarding patient comfort and monitors for signs of trauma activation or re-traumatization.
Professionalism and Interpersonal Skills/Communication	
Professionally and empathetically responds to disclosures of trauma	1. Approaches trauma-related topics with empathy, respect, and dignity.[1] 2. Displays empathy, gratitude, and professionalism when a patient makes a disclosure of trauma. 3. If a patient discloses past trauma to the clinician, balances inquiring about medically necessary information while avoiding redundant sensitive questions to reduce re-traumatization.
Demonstrates the ability to collaborate with patient's families and social networks	1. When applicable, demonstrates the ability to collaborate with patient's social support networks and/or other supporting resources such as social work, community organizations, etc.
Uses neutral, objective, professional language	1. Expertly uses neutral language.[2] 2. Avoid pejorative or stigmatizing language in documentation.[3]
Systems Based Practice	
When possible, considers patient preferences when arranging for further care	1. Considers that certain locations may be activating or re-traumatizing for the patient and asks about preferences for outpatient referrals, pharmacies, etc. 2. Considers patient specific cultural and religious practices.[1]
Engages appropriate referrals and resources	1. Demonstrates the ability to collaborate with the full spectrum of healthcare team members.[2] 2. Appropriately identifies referrals and resources within hospital system for next steps.[3] Demonstrates understanding and acceptance if the patient refuses resources. 3. Identifies social determinants of health that may be affecting a patient. 4. Engages harm reduction practices and referrals when applicable.
Practice Based Learning and Improvement	
Demonstrates knowledge of effect of trauma on oneself	1. Describes the effects of trauma on clinicians. 2. Utilizes a structured debrief to process effects of secondary trauma on oneself and other team members. 3. Explores ways their residency or respective institution mitigates or contributes to trauma.
Demonstrates a knowledge of resources[1] and institutional supports for residents	1. Demonstrates a knowledge of resources[1] and institutional supports for residents
Demonstrates trauma informed care behaviors to peers	1. Mentors others on the use of training trauma informed care in clinical practice. 2. Acts as a role model for the use of trauma informed care in clinical practice.
Adjusts behaviors based on evolving best practice guidelines in the domain of trauma informed care	1. Engages in trauma informed care training. 2. Critically engages with literature on trauma informed care and clinical practice guidelines.

Additional details and examples:

Medical Knowledge:

[1] For example people of size, people who have an accent, wear certain clothing, or are unhoused.

[2] SAMHSA, Substance Abuse and Mental Health Services Administration

Patient Care – History Taking:

[1] Asks the patient about who (if anyone) is in the room with them. Privately ask whether they would like their visitor to be in the room for the history. For sensitive questions (e.g., about intimate partner violence, safety at home, sexual activity), request that the visitor leave the room. If appropriate and feasible, request law officers leave the room during history taking.

[2] For example, does not probe for additional details unless clinically necessary.

[3] For example, mandatory reporting or threat of imminent harm.

[4] For example, resident asks attending to take history together

[5] For example, in the hallway

[6] For example, maintains open access to the door

[7] For example, "Many patients have shared something about themselves or their preferences for care – is there anything that you would like me to know or consider in providing your care?"

Patient Care – Physical Exam:

[1] For example, "I would like to examine your chest wall because a rash may be causing your symptoms".

[2] Appropriately drapes and covers sensitive areas during the exam, exposing only the area to be examined.

Professionalism and Interpersonal Skills/Communication:

[1] In contrast to pity, condescension, and making judgments

[2] For example, avoids phrases such as "Lift up your arm for me," instead, states, "Could you please lift up your left arm?"

[3] For example, avoids terms such as "drug seeking" and uses person first language (a cisgendered woman that is unhoused instead of a homeless woman).

Systems Based Practice:

[1] For example, provider gender preference, food preferences, high holidays, etc.

[2] For example, social workers, violence intervention workers, community advocates, etc.

[3] For example, consultation of forensic nurse.

Practice Based Learning and Improvement:

[1] Resources may include therapy, debriefing, peer support, avoidance of trauma activators.

2 The Changing Landscape of Emergency Medicine Residency and the Workforce Report: From Programs to Applicants

Carrie Johnson, Mikhail Voskanov, Ronna Campbell, Aidan Mullan, Cameron Gettel, James Homme, Daria Hunter

Background: Emergency medicine (EM) has experienced

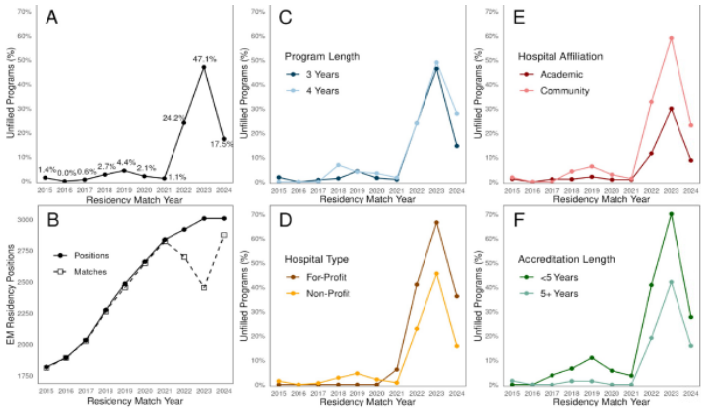
tremendous shifts in the residency landscape, including changes in available positions, match rates, and applicant characteristics. The 2021 EM Workforce Report, predicting a surplus of EM physicians by 2030, likely influenced these changes.

Objective: This study aimed to compare before and after the 2021 EM Workforce Report: the proportion of unfilled EM residency programs; characteristics of unfilled programs; and matched applicant characteristics. We hypothesized there would be significant differences in all three aims comparing the two time points.

Objective: We conducted a repeated cross-sectional study using publicly available data for the 2015-2024 match cycles. Outcomes were analyzed prior to the Supplemental Offer and Acceptance Program and compared pre- and post-report (2015-2021 vs 2022-2024). Rate ratios (RR) were calculated with 95% confidence intervals.

Results: Of 283 programs, the proportion of EM programs that went unfilled for at least one year increased significantly from 1.9% pre-report to 29.5% post-report (RR 15.7, 95%CI: 10.4-23.7) (Figure 1). Programs with less than five years of accreditation saw a more significant rise in unfilled positions (5.8% to 47.2%) compared to programs with longer accreditation (0.6% to 25.7%) (p=0.007). Post-report, the proportion of US-trained MDs among matched applicants decreased (72.9% vs 54.0%, RR 0.74, 95%CI: 0.71-0.77), while the proportions of Doctors of Osteopathy (21.1% vs 33.4%, RR 1.58, 95%CI: 1.50-1.66), US international medical graduates (IMGs) (4.6% vs 9.8%, RR 2.12, 95%CI: 1.92-2.34), and non-US IMGs (1.3% vs 2.8%, RR 2.23, 95%CI: 1.84-2.70) increased (Figure 2).

Table 1. Emergency Medicine residency program matches in the United States by match year, 2015-2024. (A) Percentage of unfilled EM programs per year; (B) Number of available EM residency positions and matches per year; (C) Percentage of unfilled EM programs by program length; (D) Percentage of unfilled programs by hospital type; (E) Percentage of unfilled programs by hospital affiliation; (F) Percentage of unfilled programs by unfilled programs by hospital accreditation length.



Conclusion: Since the 2021 EM Workforce Report, unfilled EM residency programs have risen, particularly among newer programs. There has been a shift in the composition of matched applicants, with fewer US-trained MDs entering EM. The magnitude to which these changes were directly attributable to the report is uncertain.

3 Standard Letter of Evaluation Rating Associations with Individual versus Group Authorship and Volume of Letters Written

Kalen Wright, Richard Sapp, Carolyn Commissaris, Derek Monette, Laura Welsh, David Peak, Daniel Egan, Eric Shappell

Background: Previous research suggests group SLOEs are trusted more than SLOEs authored by individuals. Whether individual SLOEs are associated with inflated ratings which may contribute to this perceived difference in trustworthiness is unknown. It is also unclear if inflated ratings are associated with volume of SLOEs written, thus impacting trustworthiness of SLOEs from individuals as individuals are less likely to author high volumes of SLOEs compared to groups.

Objectives: Quantify the association of average global assessment ratings with (1) individual vs group authorship and (2) volume of SLOEs written.

Methods: All SLOEs from 2016-2021 were included (n = 40,216). Number of SLOEs written and average global assessment ratings were calculated for unique author(s) each year, resulting in 4,586 observations. Group SLOEs were detected using a previously validated algorithm. SLOE volume was stratified into 3 groups targeting equal group size (Table 1A). Mean ratings were compared using t-tests and ANOVA.

Results: At all levels, mean ratings from individual SLOEs were higher than group-authored ratings; however, differences in ratings decreased as volume increased, and at the highest volume, the difference is of questionable practical significance (0.12, Table 1B). For both individual and group SLOEs, mean rating decreased as volume increased, though score differences across volume tiers were greater in individual SLOEs compared to group SLOEs (0.40 vs 0.19, Table 1B). The mean rating from high-volume individual SLOEs approximated ratings from moderate and high-volume group SLOEs (2.7 vs 2.7 and 2.6, respectively).

Conclusions: SLOEs from low-volume individual authors should be interpreted with the context that ratings from this group tend to be higher, which may represent grade inflation. Mean ratings from high-volume individual authors approximate those of moderate to high-volume group SLOEs and may be appropriate to consider similarly to ratings from these groups.

Table 1. A-B. Characteristics of study groups.

A. Number of SLOEs per category

Annual SLOE Volume	Individual	Group	Total
1 SLOE	986	1,007	1,993
2-9 SLOEs	641	669	1,310
10+ SLOEs	353	930	1,283
Total	1,980	2,606	4,586

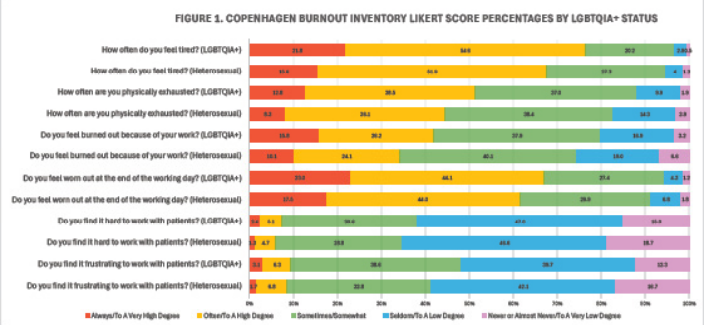
B. Average ratings and differences in ratings by group and volume*

Annual SLOE Volume	Individual	Group	Difference	p**
1 SLOE	3.1	2.8	0.32	<0.01
2-9 SLOEs	2.9	2.7	0.27	<0.01
10+ SLOEs	2.7	2.6	0.12	<0.01
Difference	0.40	0.19		
p***	<0.01	<0.01		

* 1 = Lower 1/3, 2 = Middle 1/3, 3 = Top 1/3, 4 = Top 10%
** two-sided t-test
*** one-way ANOVA

burnout difference was 3.9 (95%CI 2.60-5.25).

Conclusions: LGBTQIA+ EM residents had statistically significantly higher levels of burnout compared to heterosexual EM residents across all CBI domains. While these findings highlight the disproportionate burnout experienced by LGBTQIA+ EM residents, the practical and clinical impact of these differences needs further exploration.



4 Burnout Among LGBTQIA+ EM Trainees: It's Not All Sunshine and Rainbows

David Rudolph, Blake Denley, Kayla Luliucci, Lea Moujaes, Kirlos Haroun, P. Logan Weygandt

Background: Burnout continues to be a serious problem among EM residents. Prior studies suggest that minority groups in medicine, including LGBTQIA+ persons, have higher rates of burnout due to unique challenges such as identity concealment, discrimination, and lack of institutional support.

Objectives: This study investigates the prevalence of burnout of LGBTQIA+ EM residents compared to their heterosexual peers. We hypothesized that LGBTQIA+ residents would be more likely to experience burnout.

Methods: The 2024 In-Training Exam (ITE) was administered to 9,485 residents from February 27 March 2 and included an optional post-ITE survey. The survey gathered demographic information, including gender and sexual orientation, and employed a validated 6-item abbreviated Copenhagen Burnout Inventory (CBI) to assess burnout among EM residents. Burnout was measured on a 5-point Likert scale across three domains: personal, work-related, and patient-related. Chi-square tests were used to analyze associations between LGBTQIA+ status and burnout. The CBI averages responses, ranging from "Always" (100) to "Never" (0), for each burnout subscale.

Results: Of the 9,485 residents surveyed, 6,815 to 6,849 (71.9%-72.2%) responded to the burnout questions. Burnout rates were higher among LGBTQIA+ residents compared to heterosexual peers (Figure 1), with mean CBI score differences of 4.4 (95% CI 3.0-5.9), 4.6 (95%CI 2.93-6.2), and 2.9 (95%CI 1.36-4.42) for personal, work-related, and patient-related burnout, respectively (Figure 2). The total

5 Baby Fever: Availability and Quality of Parental Leave Policies on Emergency Medicine Residency Websites

Abagayle Bierowski, Erin Hoag, Danielle Haussner, Casey Morrone, Danielle Melisiotis

Background: Parental leave (PL) and maternity policies are important considerations that can influence prospective residents' selection of residency programs, yet little research has explored their transparency on program websites, often the first contact point for applicants. Accessibility is vital as policies vary widely, and related inquiries have traditionally been stigmatized.

Objectives: This study aimed to evaluate the availability and quality of parental leave and pregnancy accommodation information provided on the websites of EM residency programs and their related GME sites.

Methods: Descriptive statistics from 285 EM residency and GME websites were collected in July 2024. Chi-square tests were performed to assess associations between the availability of PL information and program director (PD) gender, program size, and program age.

Results: 29 EM program websites (10.2%) contained PL information: 16 (5.6%) detailed specific leave policies and 13 (4.6%) mentioned available PL. Two programs (0.7%) detailed accommodations for pregnant residents. 62 EM websites (21.8%) linked to a related GME website containing specific leave information. On their GME website, 149 programs (52.3%) had PL information: 54 mentioned leave while 94 gave detailed information about compensation and length of leave. 130 programs (37.5%) had no relevant information available on either site. Larger (>11 annual positions) and older (est. 2010 or earlier)

programs were more likely to provide PL information on their websites [$\chi^2(1, N = 285) = 5.91$, $p = 0.015$; $\chi^2(1, N = 285) = 5.95$, $p = 0.015$)]. We found no significant association between PD gender, program length, or program region and the presence of PL information.

Conclusions: Our findings reveal substantial gaps in parental leave and pregnancy accommodation information on EM and GME websites, highlighting the need for greater transparency to support prospective residents who may hesitate to ask about these policies during interviews.

6 Beyond the Bedside: Exploring Social Determinants of Health through the Eyes of Emergency Medicine Clerkship Students

Mark Olaf, Keith Willner, Devon Bremer, Jennifer Spinozzi

Background: Social Determinants of Health (SDH) are critical elements in the effective delivery of value-based care. The ED presents a unique opportunity for medical students to understand the impact of SDH on the delivery of care. Published curricula exist to address SDH undergraduate education in the ED but may be resource intensive.

Educational Objectives: We aimed to develop clinically based, EM-centered, constructive learning opportunity to emphasize and teach students about SDH principles and to assess its efficacy through a qualitative approach.

Curricular Design: Using a constructivist learning theory framework, we instituted a SDH shift into our clinical curriculum and asked students to reflect on their experiences. Students identified a patient in the ED whose visit was related to SDH factors, interviewed the patient, and worked with a social worker or care manager to address those needs during that visit. Students then submitted reflections about SDH factors and resources based on these experiences. We then performed a qualitative analysis using a constructivist learning theory framework using phenomenological methods adapted to the reflections provided by this experience.

Impact/Effectiveness: 115 students completed the exercise and all responses were analyzed. Identified themes included the effects of poverty including housing instability identification, access to healthcare, financial constraints, and cultural and language barriers to the delivery of care; stigma around substance use and mental health conditions; as well as the impact of location on care rendered. The development of this curricular content appears to have generated thoughtful insight into elements of SDH in the clinical environment. Future work should focus on integrating these experiences with SDH principles learned elsewhere in their medical school curricula, and to further develop undergraduate curricula that incorporate SDH principles and experience while measuring patient centered outcomes based on such curricula.

7 From Data to Development: Formative Feedback via Electronic Health Record-Derived Metrics

Ashley Rider, Josh Hughes, Loretta Matheson, Luke Morris, Sara Krzyzaniak

Introduction: Residents benefit from diverse feedback sources to guide their clinical progression. Traditionally, feedback comes from a convenience sample of attendings after a given shift, which can introduce bias and subjectivity. In contrast, Electronic Health Record (EHR)-derived clinical metrics provide longitudinal, quantitative performance data based on thousands of data points.

Objectives: 1. Provide supplementary feedback on resident efficiency and breadth of exposure. 2. Familiarize residents with clinical metrics they may encounter as attendings. 3. Extract and deliver data in a responsible and psychologically safe manner.

Curricular Design: Metrics were selected based on literature, industry standards, and stakeholder input. The metrics

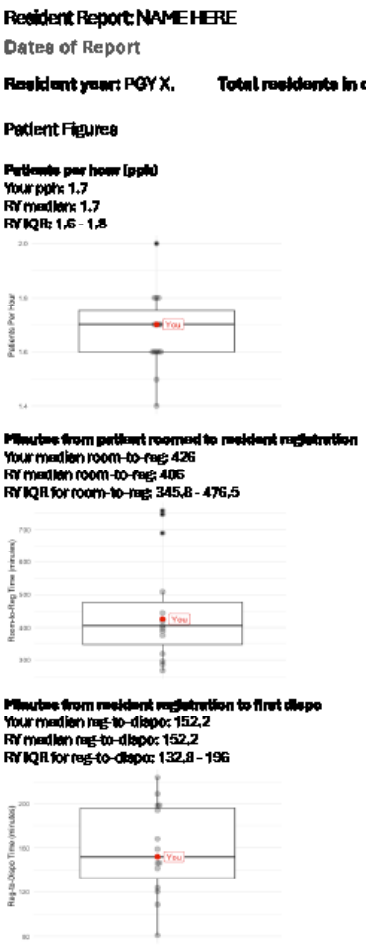


Image 1. Example of a Partial Metrics Report (acuity, procedures, consults, total patients, total hours, and 72-hour return visits not included).

included patients per hour, sign-up to disposition times, patient acuity, procedures, consults, and bouncebacks. A guide was created to explain the rationale and derivation of these metrics. Departmental data analysts extracted the relevant EHR data and created individualized reports for each resident that included class-year comparisons using medians and interquartile ranges. Metrics were shared quarterly with all 60 residents over 2023-2024 through individualized Google Drive folders.

Impact: During biannual surveys, 57 residents responded to the following question, "This year we started providing you with your individual clinical metrics. How have you used this information thus far?" Responses were categorized by an institutional ChatGPT as 39% positive, 46% neutral, and 16% negative. An author independently categorized the responses with 91% agreement; all discrepancies were labeled neutral by ChatGPT and positive by author. Positive themes included motivation to self-reflect, objective benchmarking, and support for performance improvement. Negative themes focused on difficulties accessing and interpreting the data. Collectively, this suggests that metrics can add value to a resident's experience when properly contextualized.

8 Senior Resident Bootcamp: An Interactive Curriculum for Rising EM Senior Residents

Ashley Landesman, Matthew Magda, David Warshaw, Chinezimuzo Ihenatu, Nikita Paripati, Michael Abboud

Background: As EM residents progress through training, they take on added responsibilities, including supervising and giving feedback to junior residents and students, performing stroke and trauma evaluations, administrative tasks, and more. Many EM residents do not undergo formal training on these new tasks and responsibilities; instead, they learn on shift. Without formal training, there is variability in comfort, confidence, and experience among senior residents.

Educational Objectives: We sought to identify gaps in training and knowledge, and design a curriculum to address those gaps in the skills and experiences of senior EM residents. We also sought to assess the efficacy of the curriculum in increasing resident preparedness to perform the necessary skills and responsibilities of their new role.

Curricular design: We conducted a needs assessment using interviews with current senior residents to determine areas where they felt most unprepared to handle their new role. This prompted a focus group including residency leadership, medical education fellows, and senior residents, which culminated in the creation of a half-day interactive bootcamp. This curriculum includes formal didactics on performing stroke, trauma, and obstetric evaluations with simulated practice cases, instruction on providing feedback and supervising junior learners, and hands-on experience with procedural supervision. The efficacy of this bootcamp was evaluated using an anonymous survey immediately pre- and post-intervention, focusing on resident confidence in performing these tasks.

Impact/Effectiveness: Scores from the survey comparing pre- to post-bootcamp responses noted a statistically significant ($p<0.05$) increase in residents' self-perceived skills and confidence in their ability to be a senior resident, as well as 7 of 8 specific skills included in the survey (all except giving feedback). Overall, implementation of the senior resident bootcamp curriculum was largely successful in improving the confidence of new senior residents to perform their new duties. Future work could evaluate ways to expand the curriculum to include other areas of need and assess resident performance (rather than self-perceived confidence) in these tasks using an external evaluator.

Skill/Attribute	Pre-Intervention Score (mean)	Post-Intervention Score (mean)	P Value[1]
Skills to be Senior (% Yes)	46.2%	92.3%	0.0108
Confidence	2.08	3.08	< 0.0001
Trauma Evaluation	2.46	3.31	0.0008
Stroke Evaluation	2.23	3.08	0.0008
Obstetric Evaluation	1.77	2.77	0.0003
Medic Command	1.23	2.00	0.0024
Giving Feedback	3.00	3.15	0.3370
Teaching Juniors	2.54	3.15	0.0009
Teaching Procedural	2.23	3.08	0.0001
Supervising Juniors	2.85	3.31	0.0075

All participants were given identical, anonymous surveys immediately pre- and post-intervention. The question focusing on having the skills to be a senior resident was self-assessed as yes or no; all other questions were assessed using a scale 1 (not prepared) to 4 (very prepared).

[1]Paired t-test for continuous values, chi-square test for binary values.

9 Development of a Novel Automated Workflow to Improve Resident Feedback and Evaluations

Matthew Gittinger, Bradley Wallace, Maurice Selby, Annemarie Cardell, Jeffrey Siegelman

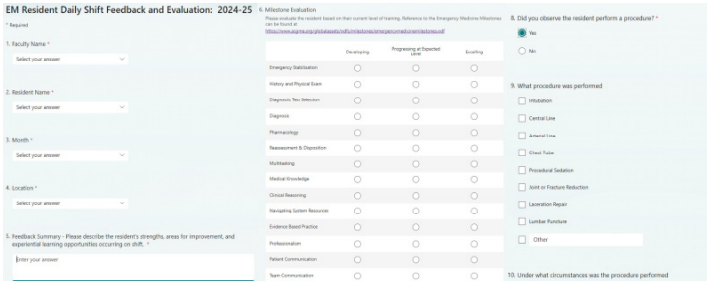
Introduction: Obtaining consistent quantity and quality of end of shift evaluations of residents by faculty is a common problem in graduate medical education. Informal polling of our program's faculty noted the main deterrents to completing evaluations were trouble navigating commercially available evaluation software, length of time required to complete evaluations, and difficulty completing evaluations on a smartphone device.

Objectives: We sought to develop our own online evaluation tool utilizing the Microsoft 365 line of software to improve faculty user experience and improve resident evaluations and feedback. The goal of this workflow was to increase the response rate, while improving the quality of

summative descriptive feedback provided to the residents. Additionally, this evaluation would be automated to provide real time responses to the resident and faculty evaluator via e-mail upon submission.

Design: The residency program directors developed a three-part evaluation form in Microsoft Forms that included written summative feedback, a three-point survey of milestone evaluations, and a procedural evaluation (figure 1). This form was viewable and able to be completed on a single webpage on both computers and mobile devices. An automated workflow was designed using Microsoft Power Automate, a user-friendly cloud-based service using AI. Upon submission of an evaluation, this workflow automatically captures and distributes evaluation data to the resident, faculty evaluator, and residency leadership, while storing the data in an easy to navigate Microsoft Excel file (figure 2).

Impact: Since implementation, we have seen a nearly three-fold increase in the number of evaluations compared to the same period of the prior academic year. Additionally, an increase in the quantity of descriptive feedback, as well as improved quality has been noted. Informal polling of both residents and faculty has noted increased satisfaction with this evaluation tool. Moving forward, we hope to further develop an automated workflow to distribute evaluation reminder e-mails to faculty using our scheduling software.



10 Teaching Ultrasound Guided Fascia Iliaca Block to EM Residents

Caroline Molins, Reshvinder Dhillon, David Monaco, Soterios Stroud, Timothy Stokes

Introduction: The fascia iliaca block (FIB) has emerged as a valuable tool in EM for providing effective analgesia in patients with hip fractures. FIB is a safe and easy-to-perform procedure, offering reduced opioid consumption and improved patient comfort. Given the increasing emphasis on point-of-care U/S in EM residency programs, there is a unique opportunity to integrate FIB training into resident curriculum. However, little research has been conducted on the most effective methods for integration. Our study aims to address this gap by evaluating a brief educational intervention (BEI) designed to improve residents' knowledge, skills, and confidence in performing FIB in the ED setting.

Educational Objectives: This study aimed to assess the effectiveness of a BEI on U/S-guided FIB. Our educational objectives were to educate EM residents about the FIB including its uses, demonstration of how to perform, and resident performance of an FIB in a simulated scenario.

Curricular Design: We created a BEI that focused solely on U/S guided FIB and consisted of two parts. Part one was completed asynchronously through Canvas LMS, which consisted of a pre-test, a recorded video, and a post-test. The recorded video discussed the regional anatomy, procedure indications, contraindications, complications, and step by step instructions. Part two consisted of a simulation-based scenario in which residents practiced U/S guided FIB on phantom models.

Impact/Effectiveness: This BEI was open to all EM residents (3-year program with 6 residents per year) at a Level 1 trauma center in the Southeast US. Residents who were part of the research team were excluded. All 15 eligible residents completed the BEI. Pre-test results showed that 20% (3/15) of residents scored > 75%. Post-test results showed an increase to 60% (9/15). We used the paired samples t-test to determine if the difference between pre-and post-test scores was significant. The value of t was 2.982 with a p value of 0.00989. After the BEI, all residents reported feeling confident and prepared to perform a FIB. Additionally, they felt more comfortable performing FIB and believed the procedure was important to their education. Overall, the intervention was found to be effective in improving knowledge, and residents felt more comfortable performing FIB after the intervention.

Research Abstracts

1 Effects of a Refresher Course on Graduating Medical Students' Confidence in Point-Of-Care Ultrasound Skills

Amy Hembree, Bryan Leppert, William Levine, Samuel Ayala, Maya Lin, Raymond Chen, Elise Aponte, Kevin Ching, Sophia Lin

Background: Although point of care ultrasound (POCUS) is increasingly utilized across several medical specialties, few medical schools include dedicated POCUS education as part of their 4th year curriculum. This is a critical time in education, and lack of confidence in POCUS skills at the onset of residency may play a role in decreased POCUS utilization as new physicians. We designed a POCUS course specifically for graduating 4th year medical students to address this deficit.

Objectives: We aimed to determine if participation in a POCUS refresher course impacts graduating medical students' confidence level in POCUS skills and planned frequency of POCUS use during internship.

Methods: We conducted a cross-sectional study of graduating non-surgical specialty-bound medical students participating in a POCUS refresher course 1-2 months before graduation. The course consisted of a two-hour didactic session followed by a hands-on practice session reviewing lung POCUS, cardiac POCUS, IVC POCUS, and ultrasound-guided access. Students completed pre-course and post-course surveys assessing their confidence in POCUS skills, planned utilization of POCUS as interns, and need for additional POCUS training before internship on a 5-point Likert scale.

Results: 179 students completed surveys before and after participating in the POCUS refresher course. After the course, students reported increased confidence in their POCUS skills ($p<0.001$) and felt they were more likely to perform lung POCUS ($p<0.001$), cardiac POCUS ($p<0.001$), IVC POCUS ($p<0.001$), and ultrasound-guided access)$p<0.001$) during internship. Participants also reported decreased need for additional POCUS training prior to beginning internship ($p=0.004$) (Table 1).

Question	Pre course score mean (CI)	Post course score mean (CI)	P value
Confidence in POCUS skills	2.02 (0.02, 4.02)	2.68 (1.31, 4.04)	<.001
Likelihood of needing additional POCUS training during your internship year before using POCUS	4.26 (1.88, 6.64)	3.98 (1.73, 6.23)	<.01
Planned frequency of POCUS use during internship	3.30 (1.10, 5.50)	3.65 (1.44, 5.87)	<.001
Planned frequency of lung POCUS use during internship	2.98 (.77, 5.20)	3.36 (1.15, 5.57)	<.001
Planned frequency of cardiac POCUS use during internship	3.18 (.90, 5.45)	3.58 (1.41, 5.74)	<.001
Planned frequency of IVC POCUS use during internship	3.14 (.88, 5.40)	3.46 (1.15, 5.76)	<.001
Planned frequency of ultrasound-guided peripheral IV placement during internship	3.20 (.86, 5.53)	3.71 (1.32, 6.07)	<.001
Planned frequency of ultrasound guided-central line placement during internship	3.42 (.70, 6.14)	4.04 (1.53, 6.55)	<.001

Conclusion: Participation in a POCUS refresher course 1-2 months prior to graduation increased medical student confidence in POCUS skills and planned frequency of use of POCUS applications during internship. As a result, this POCUS refresher course may serve an important role in better preparing new physicians for the increasing use of POCUS in medical practice.

2 Lessons Learned from an High Fidelity in situ ED ECMO Simulation Pilot

Alexandra Filkins

Background: ED initiated ECMO based CPR (eCPR) is a critical intervention to provide circulatory support for select cardiac arrest patients. As a high acuity low frequency procedure, it requires orchestration of ad-hoc teams, performing procedures in an unfamiliar environment, all within a tight timeline. We designed an interdisciplinary high fidelity simulation pilot program focused on the nontechnical skills of ED based eCPR. Educational Objectives: Prior to eCPR program initiation, needs assessments and interdisciplinary training are required to ensure a smooth process. We created an in situ simulation pilot to identify common clinical and educational needs for ED based eCPR at our safety-net urban level one trauma center.

Curricular Design: A simulation scenario was designed by clinical experts in simulation. The case began with an EMS call and concluded with the manikin on eCPR exiting the ED and participants included all members of the eCPR code team including EPs, CT surgeons, nurses, RT,, ED and ECMO technicians. The pilot was run in the same ED resuscitation bay by staff while on shift. The SIM was debriefed using the PEARLS method. We collected feedback about the roles and tasks of each member, medical and procedural understanding, as well as general comments. We conducted a thematic needs analysis, which was then used to refine the eCPR process and guide future training

Results: A consistent theme across all debriefings was the need for role clarification around learners, particularly for ED residents. Based on the survey we created the defined roles based on level of training. We identified important disconnects between team members regarding indications for chest compressions, defibrillation, and medications before, during, and after cannulation.

Conclusion: This eCPR in situ simulation identified the need for predefined and sequential roles for ED residents as well as targeted educational training on various phases of eCPR care.

3 Paving Professional Development Tracks: Create a Road from Scholarship to Program Requirements

Bryan Kane, Nathalie Torres, Shawn Quinn, Gavin Barr, Alexandra Amaducci, Mary Nemeth, Dawn Yenser

Background: The ACGME requires residents to participate in scholarship, quality improvement (QI), and patient safety (PS). Academic tracks that focus on a particular

subspecialty field of Emergency Medicine (EM) could enhance the educational experience of residents, provide a more tailored approach to fulfilling academic requirements provided by the ACGME, and establish a foundation for those residents seeking fellowship or a faculty position after graduation.

Educational Objectives: We describe the systematic development of a professional development track system.

Curricular Design: This curriculum was developed at a PGY 1-4 program based at a suburban health care network training 16 residents a year. After review of the ACGME requirements, the following 5 key areas were identified as being necessary components of a track: QI, PS, Committee Membership, Provision of Education, and Field Specific Additional Professional Development. Table One denotes the tracks developed. The 5 key areas address multiple ACGME requirements including IV.B.1, IV.D.2-3, and VI.A. In preparation for introduction, the residency research director prepared multiple Human Subjects Research Determinations (HSRDs) to allow possible dissemination.

Impact/Effectiveness: Table Two demonstrates exemplar activities in the identified 5 key areas. For ACGME CLER visits, the tracks provide systematic resident involvement in QI and PS. Work in QI has been identified by residents and faculty as the central driver of both work within the track and dissemination, making HSRD's central to track success. Being linked to ACGME requirements, including scholarly output, track work directly feeds into programmatic WebADS submissions. Measurable and ACGME reportable output includes presented/published abstracts at regional and national meetings, published articles, grand rounds for both EM and external departments, educational presentations at regional and national meetings, membership on hospital/regional/national committees, book chapters, and participation/completion of nationally certified fellowships. Feedback from faculty and residents is that PS work is difficult in some tracks. To that end, PS is being removed from the tracks and centralized with linkage to network work on high reliability.

Table 1. Tracks developed.

Toxicology	POCUS	Critical Care	EMS	Med ED (UME vs. GME focus)	ERM/ Implementation
Simulation	Wilderness Med	Admin/Operations	Informatics (in development)	Global EM (in development)	PEM
Peer Review/Patient Safety	Palliative Care	DEI/Health Equity	Research	Sports Medicine	

Table 2. Exemplar track output.

Quality Improvement	Patient Safety	Education	Committee	Field Specific Training
Critical Care: Lab Reduction (ACEP Poster)	Patient Safety: M+M Cases	EBM: 52 Articles Project	Critical Care: Network Code Blue Committee	Wilderness Medicine: FOAM Certification
Tox: TOXIC Registry (NACCT Posters)	EMS: Trench Rescue Case Report	Wilderness Medicine: EM Grand Rounds, PACEP Competition	Research: PACEP Research Committee	Med ED: ACEP Teaching Fellowship
POCUS: Rapid Education Event (Published)	PEM: ACEP Readiness	Tox: Regional Newsletter & Presentations	Patient Safety: Network Quality Council	Simulation: Sim Wars

4 Remote Point-Of-Care Ultrasound Training for Physicians in Low-Resource Countries

Reshma Sharma, William Waite, Tyler Moriarty, Shivani Ruf, Jillian Stone, Stephen Leech, Grace Brown, Mitchell Guedry, Zakariya Hassouneh

Background: The use of point-of-care ultrasound (POCUS) in clinical practice is rapidly evolving. Classically, POCUS training has been done in person and is resource-intensive, which poses challenges to those in resource-limited settings. We have developed a comprehensive remote education program focused on POCUS for physicians in low-resource settings that allows training through a virtual platform.

Educational Objectives: The primary objective is to determine if providing a structured training platform via telehealth technology to physicians with limited resources and limited prior ultrasound training will improve their ability to perform and interpret POCUS. Additionally, we aim to determine if the course increases physicians' confidence and willingness to use POCUS to evaluate and manage their patients.

Curricular Design: Physicians from a remote hospital in Bhutan were enrolled in a six week course with weekly lectures that covered high-yield POCUS topics. Each lecture was followed by a hands-on component and time allotted to review cases. During the hands-on component, the physicians utilized Butterfly hand-held ultrasound devices to obtain images on volunteer-simulated patients. We reviewed the images in real-time and gave guided feedback via the telehealth platform provided by the World

Telehealth Organization. This maximized our ability to guide participants in improving their ultrasound skills.

Impact/Effectiveness: 12 physicians participated in our course. Subjective data was collected pre-intervention and post-intervention via survey. Learners' confidence in performing and interpreting POCUS improved from a mean of 6.16 (SD 2.79) to 8.41 (SD 1.76) on a 10 point likert scale; $t(11)= 4$, $p = 0.0019$. Objective data regarding the technical skill of each physician before and after the course was measured via their performance in obtaining images on a standardized patient. Images were graded on a scale of 1 (poor) to 5 (excellent). This data is pending the end of our final skills test. We believe this novel approach will allow us to maximize the benefits of ultrasound teaching without the restrictions of traditional resources.

5 The Impact of Physician Online Medical Control on High Acuity Patients Arriving to a Community Teaching Hospital

Joslyn Joseph

Background: Emergency Department (ED) Online Medical Control (OLMC) programs enable direct communication between paramedics and ED physicians for real-time patient care guidance. Our community teaching hospital implemented an OLMC program in September 2023, with attending physicians and senior residents available for consultations for the most critical calls and patients. This study investigates whether having OLMC available influenced paramedics' decisions to transport critically ill patients to our ED relative to other hospitals.

Objective: To evaluate if the initiation of OLMC increased the transport of critically ill patients to our ED.

Methods: Senior EM residents were trained via lecture, training videos, and simulated practice on how to perform OLMC. A reference guide and guide cards were posted near phones to look up protocols rapidly. This was followed by a period of ten supervised calls by EMS leadership. We conducted a before-and-after study following the OLMC program's launch. We analyzed Electronic Medical Records for EMS arrivals over six months before (3/1/2022 to 8/31/2022) and after (9/1/2023 to 2/28/2024) implementation. We collected data on Emergency Severity Index (ESI) triage levels, focusing on ESI Levels 1 and 2 as indicators of high acuity. Data was also compared with control periods from previous years to account for seasonal variations and COVID-19 impacts.

Results: Following OLMC initiation, 4,819 out of 11,762 patients arriving by EMS were high acuity (ESI 1 or 2), compared to 5,083 out of 12,129 before the program ($p=0.142$). In control periods, there were 4,850 high acuity patients out of 11,765 ($p=0.589$) and 4,811 out of 11,247 pre-study ($p=0.180$).

Discussion: Our study found no significant increase in critically ill patients transported to our ED post-OLMC implementation. Limitations include reliance on ESI levels without detailed complaint categorization and potential exclusion of patients arriving via Basic Life Support (BLS). While OLMC did not increase high acuity patient arrivals, its effects on ED-EMS collaboration and patient outcomes warrant further investigation. Other studies suggest enhanced collaboration may improve mortality rates in high-acuity cases, highlighting the need to explore OLMC's broader benefits.

6 Evaluating the Evaluators: Who Can You Trust with Entrustability?

Bryan Kane, Danielle Sultan, Deepak Jayant, Andrew Koons, Shawn Quinn, Dawn Yenser

Background: The Association of American Medical Colleges has established 13 core entrustable professional activities (EPA's). The EPA's describe objective, observable behaviors which should be present in all medical school graduates.

Objectives: The purpose of this study was, using core faculty as the gold standard, whether non-core faculty and residents are more or less likely to determine medical students (MS) as entrustable.

Methods: This IRB approved study was conducted at an independent academic center hosting a PGY 1-4 EM residency with 16 trainees per year. A Delphi process identified EPA's 1 (H+P), 2 (Diff dx), 3 (Diagnostic testing), 6 (Oral presentation), 9 (Teamwork) and 10 (Emergent care) as possible to measure in a 4-week MS 4 rotation. An overall performance category was included as well. Evaluations used a 1-3 scale defined as: 1 above the level of their peers, 2 at the level of their peers, and 3 below the level of their peers. N/A or unable to assess was an option.

Results: Evaluations (N= 983) submitted in academic years 2021-2023 are presented in Figure 1. Use of the "below peers" score was globally less than "above peers". In the overall performance category, PGY 4's were the most likely group to submit a "below peers", using this response 33.2% of time. PGY 2's were the most common group to note an inability to evaluate an EPA and most infrequently identified below average performance.

Conclusions: In this single institution cohort, PGY4's were found to be the strictest graders followed closely behind by core faculty in almost all EPAs. Collectively, senior resident (PGY3 and 4's) evaluations of entrustability are similar to those of core faculty. As such, programs may consider incorporating senior resident feedback into student evaluation of entrustability. Non-core faculty, in this cohort,

appeared to be more lenient evaluators, suggesting an opportunity for faculty development. PGY 2 residents may not have the requisite experience to appropriately evaluate MS entrustability, though this conclusion is limited by a low number of submitted evaluations.

Figure 1. Score submissions frequency by type of evaluator.

7 Teaching Palliative Care Using Simulation and Standardized Patients in Emergent Settings

Ryanne Mayersak, Josh Kornegay

Background: The 2014 Institute of Medicine report made recommendations that clinicians caring for critically ill patients receive core training in palliative care. [1] A decade later, there remains gaps in formal educational training of palliative care in most residency programs. Studies suggest that a simulation-based platform may offer an ideal modality for palliative care training. [2]

Educational Objectives: We designed a simulation curriculum using standardized patients (SPs) for training EM residents in palliative care discussions.

Curricular Design: The curriculum consisted of a lecture, practice scenarios, and two progressive simulations. (Figure 1) The lecture introduces a method to screen for and support strongly held beliefs about end-of-life care. It is built around factors critical to end-of-life conversations taught through the WORRI mnemonic [3]. This allows the provider to set the stage for the conversation; elicit acceptable functional outcomes and values around death from the patient; share realistic outcomes from available interventions; and provide dynamic, care plan recommendations that align with the patient's values. Simulated ED theaters and SPs were utilized, and scenarios were segmented into two distinct phases. Scenarios have critical action checklists for learner evaluation and were observed by palliative and EM faculty and non-participating residents. Afterwards, learners participate in debriefs with observers followed by SPs. SPs provide constructive feedback on communication skills during the palliative care discussion. This input is critical in honing competency in empathetic patient-family communication within the scope of palliative care.

Impact/Effectiveness: The session was well received. Residents were administered a pre- and post-intervention survey. All survey respondents reported that palliative care is important to EM training. Participants universally shared they have limited knowledge about palliative care and appreciated a better understanding of its importance. Simulation training is a useful model for teaching and assessing critical communication skills. Starting goals-of-care conversations in emergent settings can lead to early palliative consultation, shorter hospitalizations, and improved patient care.

W	**W**hat the patient knows and **W**orries about regarding their condition
O	**O**utcomes they desire
R	**R**ealistic outcomes
R	**R**ecommendations
I	**I**nterventions and/or **I**nformation transfer

FIgure 1. End-of-life conversations using the WORRI mnemonic.

8 Can You Trust Entrustability? Evaluating Entrustable Professional Activities in Emergency Medicine Rotations

Bryan Kane, Danielle Sultan, Deepak Jayant, Andrew Koons, Shawn Quinn, Dawn Yenser

Background: The Association of American Medical Colleges has established 13 entrustable professional activities (EPA's) which describe objective, observable behaviors for medical students.

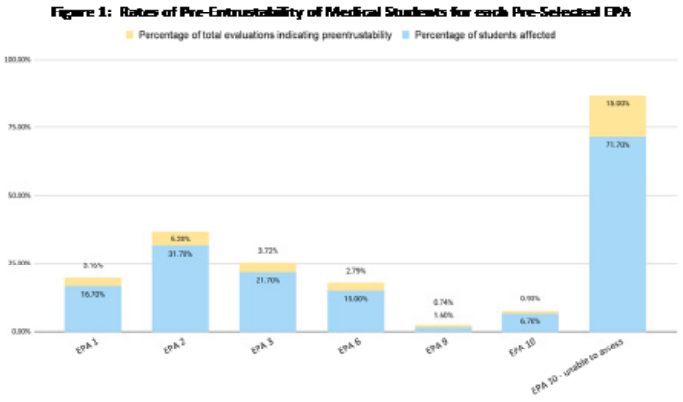
Objectives: The purpose of this study was to determine the feasibility of measuring medical student entrustability during a 4-week 4th year EM rotation.

Methods: This IRB approved study was conducted at a health network hosting a PGY 1-4 EM residency. Based on prior published experience measuring the Milestones, a Delphi process was used to determine which EPA's our clerkship could gather reliable data. EPAs 1 (H+P), 2 (Diff dx), 3 (Diagnostics), 6 (Presentation), 9 (Teamwork) and 10 (Emergent care) were selected. Evaluations used a 1-3 scale defined as: 1 above average, 2 average, and 3 below average. N/A or unable to assess was also an option. The student was deemed entrustable if the majority of received evaluations determined they were at or above the level of peers (ie 1 or 2). Shift evaluations were completed by EM residents and faculty.

Results: From 7/21 to 6/23 a total of 60 medical students had a total of 538 evaluations. Figure 1 demonstrates dispersal of pre-entrustability in the cohort. Students averaged approximately 9 evaluations (ranging from 1 to 22) per rotation. 29 students (35% of all students) had less than 5 evaluations submitted. 58 students (96.67%) were

determined to be entrustable in all of the selected EPAs placed on the evaluation. Two students were determined to be pre-entrustable: one in EPAs 2 and 6, the other in EPA 3. Both students had only 1 evaluation. Only 1 student with a high rate of evaluations returned was determined to be below the level of peers on numerous EPAs but did not meet the pre-determined threshold of 50%.

Conclusions: In this single site cohort, the majority of students had broad entrustabilty documented in their shift evaluations. EPA 2 (Diff dx) had the highest rates of pre-entrustabilty, EPA 9 (Teamwork) the lowest. That in the ED there was difficulty assessing students in emergent situations (EPA 10) warrants further investigation. While use of the EPA's may not provide a mechanism to differentiate medical student performance, it appears feasible to evaluate pre-selected EPA's during a traditional 4-week EM rotation. The resultant EPA data may be of value to medical school administration.



9 Improving Communication Skills in Difficult Situations: A Pre/Post Educational Intervention

Adrian Cotarelo, Matthew Mocol, Samuel Miller, Miriam Kulkarni

Background: Effective communication in challenging patient interactions is essential for medical professionals, yet it often poses difficulties for trainees. There is a need for structured training to enhance comfort in scenarios such as handling agitated patients, patients leaving against medical advice (AMA), and the disclosure of medical errors. This study evaluates a pre/post educational intervention specifically aimed at improving these critical communication skills among students, addressing a recognized gap in their educational preparation.

Educational Objectives: Increase students' comfort levels in communicating with agitated patients. Enhance students' ability to manage conversations with patients refusing care or leaving AMA. Improve students' confidence in disclosing medical errors to patients.

Curricular Design: The intervention included a blend of didactic instruction and hands-on role-playing exercises. Sessions included simulated case-based scenarios with feedback from faculty. Resources included didactic materials and scripted role-play scenarios. Assessments were conducted through pre- and post-intervention surveys, with Chi-square analysis to assess improvements. Challenges included initial difficulty in engaging students in role-play as well as time management.

Impact/Effectiveness: The intervention significantly improved students' comfort in difficult communications, showing overall improvement ($\chi^2(3) = 28.14$, $p < 0.001$), with specific gains in comfort for managing patients leaving AMA ($\chi^2(3) = 13.98$, $p = 0.003$) and in disclosing medical errors ($\chi^2(3) = 10.65$, $p = 0.014$). These results underscore the value of targeted communication skills training, with plans to 1 refine the curriculum based on feedback.

10 Not Just a Game of Telephone - A Handoff Simulation

Carly Theiler, Kaila Pomeranz

Background: Despite it being one of the most high risk activities in the Emergency Department (ED), significant variation in handoff practices exist. Further, residents receive inconsistent, and often insufficient, training on patient handoffs, and their proficiency in this area is not consistently evaluated.

Educational Objectives: We sought to design a handoff simulation for our residents that would 1) Assess their baseline experience and attitudes, 2) Evaluate resident proficiency and identify common pitfalls, and 3) Identify areas for improvement in order to create a more effective and uniformly adopted handoff system.

Curricular Design: We designed a simulation curriculum focused on a patient in the ED who undergoes multiple handoffs. Prior to the simulation, residents took a comprehensive survey regarding their current handoff practices and attitudes. A simulated patient encounter was created in the Electronic Medical Record (EMR), and residents were given access to all resources they would typically have in the ED. Prior to the session, the faculty facilitators created a checklist of important patient information and this was used to score the residents during the simulation. Residents participated in the simulation in small groups with three participants. Resident #1 was given the simulated patient encounter to review while the other two were placed in a separate space. After Resident #1 had

reviewed the case, they were prompted to prepare for handoff. At this time, Resident #2 was allowed to enter and handoff took place. After Resident #2 had received handoff, they were provided with interim details regarding the patient's course on their shift, and were given access to an updated EMR. Resident #3 was then allowed to enter and another handoff took place. Similarly, Resident #3 was provided additional interim shift details and after review was prompted to triage the patient to Internal Medicine, which was played by one of the faculty preceptors. After all groups had rotated through, there was a large group debrief at the end.

Impact/Effectiveness: This simulation gave us valuable insight into our residents' attitudes surrounding handoff, and the gap in their current education surrounding this skill. In addition, we were able to identify common pitfalls and areas for improvement in our handoff practices.

11 "Introduction to Ophthalmology" Session for Emergency Medicine Sub-Interns

Rachel Bass, Reyoot Berry, Max Berger, Stephen Villa

Background: Many medical schools in the United States lack comprehensive ophthalmology training, leaving EM residents with insufficient foundational knowledge to evaluate eye complaints effectively in the ED. Additionally, most medical students are unfamiliar with the specialized equipment required for conducting a thorough eye examination. To address this gap, we developed the "Intro to Ophthalmology" curriculum, targeted at senior medical students during their EM sub-internship. Educational Objectives By the end of this session, learners will be able to: 1. Identify the commonly used parts of a slit lamp in the ED. 2. Develop skills in using a slit lamp for the work up of common ED ocular complaints. 3. Develop skills in performing ocular ultrasound.

Curricular Design: The curriculum includes asynchronous pre-recorded lectures covering the evaluation of the common ED complaints of the red and painful eye, vision loss, and proper slit lamp use. This is followed by an in-person session where students practice using the slit lamp, tonopen, and ocular ultrasound, with real-time feedback from instructors. The goal of the curriculum is to enhance the preparedness of medical students to assess ophthalmologic complaints in the ED during their rotation and when they become residents.

Impact/Effectiveness: To assess its effectiveness, we implemented a pilot study using pre- and post-curriculum examinations to measure knowledge acquisition among the learners. Prior to rolling out the assessment to senior medical students, we piloted the assessment with three EM interns. This assessment consisted of ten multiple choice questions as well as a question asking students to gauge their subjective comfort with ophthalmologic complaints on a 1-10 scale. In this pilot iteration, 12 learners completed the curriculum. Given our role in clerkship leadership, we asked each student to complete the pre- and post-test but made it optional. 11 students completed the pretest and 6 students completed the posttest. Our data shows an improvement in average examination scores from 5.3 to 6.7. Subjective comfort with ophthalmologic complaints increased from 3.9 to 6.2. Based on positive feedback and results from our pilot study, we plan to continue this "Intro to Ophthalmology" session with future sub-interns.

Figure 1.

12 Paper vs Plastic: Is There a Difference between Electronic and Paper Evaluations?

Bryan Kane, Danielle Sultan, Deepak Jayant, Andrew Koons, Shawn Quinn, Dawn Yenser

Background: As developed by the Association of American Medical Colleges (AAMC), there are 13 core entrustable professional activities (EPA's) which describe objective, observable behaviors which should be present in all graduating medical students.

Objective: The purpose of this study was to determine the impact of the type of EPA based evaluation (paper or electronic) on completion rate and content.

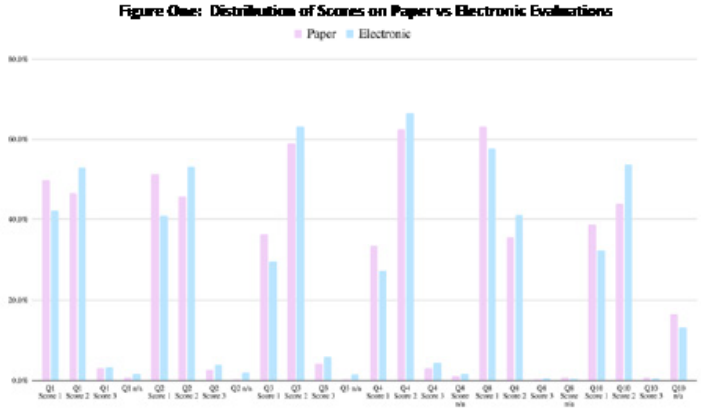
Methods: This IRB approved study was conducted at an independent academic center hosting a PGY 1-4 EM residency. Of the 13 shifts in a 4-week 4th year medical student clerkship, 8 are scheduled at the main campus (electronic) and 5 at the community site where the residency is based (paper). Both evaluations contain the same questions on EPA's 1 (H+P), 2 (Diff dx), 3 (Diagnostic testing), 6 (Oral presentation), 9 (Teamwork) and 10 (Emergent care) and overall performance. The scale used was 1-3, with 1 being above average, 2 average, and 3 below average. N/A or unable to assess was an option. The majority of faculty work at both campuses and EM

residents rotate at both campuses during their 4-week rotations, exposing students to similar evaluator cohorts.

Results: Results presented are from 7/2021-6/2023. Paper evaluations comprised 30.3% of those assigned and had a 53.7% completion rate (N=161). Electronic evaluations were 69.7% of those assigned and had a 69.7% completion rate (N=370). Figure 1 demonstrates the dispersal of evaluation scores. There was a higher percentage of evaluations that received a score of 3 for the paper evaluations (8.7%) versus the electronic evaluations (7.0%). Of note, 47% of students had only paper evaluations submitted. No student received only electronic evaluations.

Conclusions: In this single institution cohort, the higher return rate of electronic evaluations suggests an advantage to that form. This advantage may be due to ease of completion or visibility in the residency software system (New Innovations). Paper evaluations had a greater proportion of negative feedback, but limitations of the study design prevent clear attribution as to why this occurred. With almost half of the students in this cohort receiving only paper evaluations, offering both options may be of value to clerkship directors.

Figure One: Distribution of Scores on Paper vs Electronic Evaluations



13 The State of Emergency Medicine Clerkships in United States Undergraduate Medical Education

Mary McGoldrick, Jimmy Truong, Eli Rogers, Lauren Curato, Alison Bonner, Justine Sweeney, Juliet Jacobson, Jonathan Giordano, Emmagene Worley, Tiffany Murano

Background: The landscape of EM has shifted significantly following the rapid expansion of residencies, the single-accreditation system, a landmark jobs report, worldwide pandemic, and unprecedented 2023 Match. Databases exist to collate information regarding undergraduate medical education (UME) EM clinical experiences, but many are incomplete or outdated. According to the AAMC, in 2020 61% of medical schools had required clerkships in EM.

Objectives: Investigators sought to determine how EM clerkships are offered across all accredited medical schools in the US. We anticipated that, compared to data collected in 2013, there would be more required clinical experiences, but variability in timing and rotation length.

Methods: In this observational study, we conducted an internet search of EM curricula for 224 (146 MD, 78 DO) accredited US medical schools. We examined if an EM clerkship was required, rotation length, number and length of shifts.

Results: Online information was notably varied in accuracy and availability. An EM clerkship was required for 74.6% (141/189) of schools researched. An EM clerkship was required in most DO schools (92.4%, 61/66) versus 65% (80/123) of the MD schools. Of the 131 clerkships where timing was able to be identified, most occurred after core rotations (80/131). Clerkship lengths varied from 2-5 weeks, but most were 4 weeks. We also identified a range of shifts required (5-16), but were unable to elicit this detail for the majority of schools.

Conclusions: The majority of schools require EM clerkships, but differ in when they occur. As we searched for detailed clerkship information, we found conflicting information and results became limited. The maintenance and accuracy of online curricula may be helpful for EM bound students. We plan to administer a survey to each point of contact identified in our search to verify the accuracy of the internet information and collect data that was unavailable.

Table 1: UME EM required clerkships and timing relative to core clinical year

Is EM Clerkship required?			
	MD	DO	All
Yes	80	61	141
No	43	5	48
Information not available	23	12	35
When does required clerkship occur?			
	MD	DO	All
Before core rotations	1	0	1
During core rotations	30	15	45
During or after core after core rotations	1	4	5
After core rotations	42	38	80
Not applicable	43	5	48
Information not available	29	16	45

14 "Podcast Conference Day" - The Implementation of a Live, Synchronous, Audio-Only Emergency Medicine Educational Conference and Its Impact on Resident Wellness and Knowledge Acquisition and Retention

Nickolas Srica

Background: Emergency medicine residency programs around the world are always looking for ways to innovate upon and improve the educational experience of their residents.

Podcasts have become tremendously popular in the medical education world, especially within EM. A previous project has looked at the implementation of an audio-only educational conference at another similar academic institution with very promising findings regarding resident wellness, but the impact on knowledge acquisition and retention, as well as the generalizability of this wellness impact, have not been previously assessed.

Educational Objectives:

- Design, implement, and evaluate an innovative educational pilot for a live, audio-only, synchronous "Podcast Conference Day" at an academic 4-year EM residency program via a virtual platform in lieu of standard in-person conference.
- Assess the impact of this on perceived resident wellness via a post-conference survey.
- Evaluate the effect on short-term knowledge acquisition via a post-conference 10-question quiz to be answered within 72 hours.
- Analyze the impact on long-term knowledge retention via a 10-question quiz 12 weeks later.
- All questions self written to ensure only included covered material.

Curricular Design:

- First "Podcast Conference Day" implemented virtually - December 2023
- "Attended" by 60 residents.
- Included 7 total audio-only, podcast style "talks"
- Included multiple guest speakers from other institutions around the U.S. (New Jersey, Ohio) and world (Ireland)

Impact/Effectiveness:

- Overwhelmingly positive results and feedback received regarding the educational experience
- Experiential Survey: average of 45.6/48 resident responses (95%) "strongly agree" this was a positive educational experience, will improve their clinical practice, the format was adequate for the delivered content, the speakers were effective, and would want more of these in the future.
- Knowledge Acquisition (<72 hours): average score 9.3/10 correct (50 total responses)
- Knowledge Retention (12 weeks): average score 9.23/10 correct (22 total responses)
- Ongoing work: implementing 3 additional podcast conference days during current academic year with goal of comparing knowledge acquisition/retention to traditional in-person didactic days.

15 Surviving the Wild: Gamification of Wilderness Medicine Training for Emergency Medicine Residents

Shayne Gue, Natalie Diers, Abigail Alorda, Jonathan Littell, Maria Tassone, Stephanie Cohen

Background: Wilderness and environmental medicine topics are critical components of emergency medicine training but are often underrepresented in standard curricula. To address these gaps, we developed and implemented an innovative gamified curriculum focused solely on these topics. This curriculum aims to enhance resident competency in managing medical emergencies in austere environments through a structured, multi-station approach that emphasizes both knowledge and procedural skill development.

Objectives: After participation in this event, residents will be able to: demonstrate procedural skills essential for patient management in wilderness settings (e.g. splinting, wound care, and improvisational techniques); apply core wilderness medicine principles to manage a variety of environmental problems (hypothermia, hyperthermia, altitude sickness, envenomations, and more); and integrate clinical knowledge with effective teamwork and communication in the management of multiple simulated patients.

Curricular Design: This simulation was integrated into the weekly didactic series of two local EM residency programs. Residents were divided into teams and "raced" through six stations. One station focused exclusively on procedural skills, while another featured knowledge questions along a "trivia trail." The remaining four stations presented clinical scenarios requiring residents to diagnose and manage patients in simulated wilderness environments. Each station was designed to foster teamwork and reinforce learning through immediate feedback and facilitated debriefings. Resources included low-fidelity task trainers, simulation

models, and case-based discussions.

Effectiveness: 30 residents from two EM programs participated in the curriculum. Analysis of matched pre- and post-test scores revealed a significant increase in medical knowledge, with scores rising from an average of 53% to 78% ($p<0.001$). Participants reported increased motivation and engagement, and 100% of respondents "agreed" or "strongly agreed" that the event was effective in improving their ability to manage patients in austere environments. These results support the value of incorporating gamification and hands-on skills training into wilderness and environmental medicine education.

16 Community and Connection in EM: An Arts- And Humanities-Based Curriculum to Address Loneliness in Residency

Kamna Balhara, Christina Seto, Nathan Irvin

Background: Loneliness is a public health crisis affecting patient outcomes and clinician well-being. EM residents are especially vulnerable, given shift work in high-stakes settings. However, little is known about how EM curricula can mitigate loneliness. Arts and humanities (A&H) pedagogies supporting connection, resilience, and reflection may represent effective tools. We created a year-long A&H-based curriculum framing loneliness as a determinant of patient health and clinician well-being.

Educational Objectives: Recognize loneliness as a public health crisis for ED patients Describe best practices and resources to address patient loneliness Explore personal experiences with loneliness in EM training Practice reflection and community building as tools to mitigate loneliness

Curricular Design: Our multimodal curriculum includes five one-hour sessions integrated into residency didactics and three elective sessions. (Table 1) Evidence-based A&H pedagogies were used to foster group dialogue in safe learning spaces and enable reflective practice. Each didactics session uses A&H techniques to encourage reflection on specific themes supplemented by relevant evidence and literature, and ends with journaling prompts to encourage strategies for addressing loneliness. Elective sessions in arts-focused community spaces foster broader connections between residents, faculty, and loved ones.

Impact: Impact will be assessed via pre-, mid-, and post-surveys using the UCLA Loneliness Scale. Baseline data show that all respondents experienced loneliness in residency; all recognized it as a health determinant, but none consistently included social connection resources in care plans. 97% of respondents evaluated sessions to date as "excellent" or "good"; positive attributes noted in free-text responses include the communal nature of activities and facilitation of meaningful discussion and diverse viewpoints. This innovative approach may be relevant to EM educators across varied settings.

Table 1. Overview of curriculum sessions (*Sessions marked with an asterisk have already occured at time of abstract submission.

Session Date	Session Topic	Arts and humanities-based pedagogies	Facilitators or instructors	Other participants (in addition to residents)
September 2024, residency conference	Introduction to loneliness as a social determinant of health and as an aspect of medical training*	Museum-based education (Personal Responses Tour); reflective writing	Faculty	n/a
October 2024, Local art museum	*Community building in the community - elective activity #1, focused on opportunities for individual reflection, sharing, and group cohesion**	*Museum-based education*	*Faculty,*	*Resident and faculty family or loved ones*
November 2024, residency conference	Trauma, shame, and imposter syndrome as contributors to loneliness in residency training	Museum-based education (Visual Thinking Strategies); reflective writing	Faculty panel	n/a
December 2024, Local art museum	*Community building in the community - elective activity #2, focused on opportunities for individual reflection, sharing, and group cohesion*	*Museum-based education*	*Faculty*	*Resident and faculty family or loved ones*
January 2025, residency conference	Interprofessional practice as an antidote to loneliness	Medical improv; reflective writing	Faculty	ED nursing colleagues
February 2025, residency conference	Community solutions and clinical resources for connectedness for vulnerable ED populations	Museum-based education; reflective writing	Faculty, community partners	n/a
April 2025, Local art museum	*Community building in the community - elective activity #3, focused on opportunities for individual reflection, sharing, and group cohesion*	*Museum-based education*	*Faculty,*	*Resident and faculty family or loved ones*
May 2025, residency conference	Building community within our program: personalized and communal solutions	Graphic medicine; music; reflective writing	Faculty, artists	n/a

17 Pilot Program on Feasibility of Health Care Proxy Form Completion in the Emergency Department

Harsh Panchal, Dahlia Luongo, Cassidy Dahn

Background: Health care proxy (HCP) forms, a critical component of advance care planning (ACP), allow patients to appoint an agent to make medical care decisions aligned with their values and priorities in the event that they are unable to communicate themselves. National rates of HCP completion are notably low.

Objectives: Our aim was to promote patient education and completion of HCP forms in the Emergency Department (ED) of NYU Langone Health Tisch Hospital, where only about 1/3 of patients admitted inpatient are discharged with

a completed HCP form. A secondary goal was to determine the feasibility of HCP form completion using undergraduate volunteers without clinical experience in the ED environment.

Methods: After completing ACP and HCP training, volunteers approached ED patients over a six week period. One of three potential outcomes were recorded: (a) HCP completed and patient educated, (b) education provided but HCP not completed, and (c) patient unable to receive education. Subsequently, volunteers completed a survey that recorded the patient's personal information, demographics (e.g. age, language spoken), and outcome.

Results: Of the 109 patient responses recorded, 67.9% [74/109] of patients received education about the importance of HCP forms, 60.8% [45/74] of whom opted to complete a HCP form immediately following provided education. Though 38 HCP forms were successfully processed and uploaded to patients' electronic health records (EHRs), 7 forms were not uploaded due to ED workflow errors or improper completion.

Conclusions: This study establishes the feasibility of HCP form completion in an ED environment by nonclinical persons. There was an increase in HCP form completion in the ED from near 0 persons to over 30 persons in a six week period. Primary HCP enrollment limitations included the ED environment and workflow gaps in uploading the paper form to the EHR. Overall, with minimal training, undergraduate volunteers can have an impact on ACP in the ED.

18 The Breakfast Club: Enhancing Emergency Medicine Education through Spaced Retrieval and Elaborative Interrogation Techniques

Shayne Gue, Abigail Alorda, Stephanie Cohen, Joseph Ray

Background: Emergency Medicine residency presents a challenging educational environment where clinical demands can limit traditional didactic learning opportunities. Despite extensive research supporting cognitive psychology techniques in improving knowledge retention, these strategies remain underutilized in GME settings. This study aims to address this gap by integrating spaced retrieval and elaborative interrogation techniques in an innovative, low-resource curriculum titled "The Breakfast Club."

Objectives: To assess the impact of incorporating spaced retrieval and elaborative interrogation techniques on resident performance and knowledge translation.

Curricular Design: The curriculum was implemented in a single-institution EM residency program. PGY1 and PGY2 residents self-selected into an intervention group (n=7), participating in a 1-hour study session teaching spaced retrieval and elaborative interrogation techniques, and a control group (n=7) with no intervention. The intervention group engaged in active recall and explanatory discussions on selected topics related to gastrointestinal pathophysiology. Pre- and post-intervention assessments consisting of five multiple-choice and five short-answer questions were used to measure knowledge gains. Questions were developed by expert faculty and reviewed by five additional EM educators for content validity and quality assurance.

Effectiveness: Preliminary results revealed a non-significant trend toward greater knowledge translation in the intervention group compared to controls (77% vs 70%, p=0.28). However, given the small sample size, it remains unclear whether this observed trend would reach statistical significance with a larger cohort of learners. Despite this limitation, participant feedback highlighted the potential benefits of spaced retrieval and elaborative interrogation for reinforcing foundational knowledge. The structured approach is easily scalable, requires minimal resources, and is adaptable across multiple specialties, supporting broader implementation. Further exploration will help establish whether these techniques can serve as a cornerstone for evidence-based teaching strategies in emergency medicine education.

19 Practice Makes Perfect: Using Soft-Embalmed Cadavers as a Teaching Model for Hip Reduction

Marcus Nash, Joshua Altman, Jeremy Taylor, Meredith Thompson, Nicholas Maldonado, Caroline Srihari, Sarah Chrabaszcz

Background: Mastery of hip reduction techniques is a critical skill for emergency medicine physicians. Resident physicians often face challenges in acquiring necessary hands-on experience with this procedure, with limited or variable exposure in the clinical learning environment. Soft-embalmed cadavers have unique properties that maintain joint range of motion and may provide an innovative model for training hip reduction techniques in a simulated environment.

Objectives: This project sought to assess the feasibility and physical resemblance of soft-embalmed cadavers as a novel hip dislocation-reduction model.

Curricular design: The model was created using two soft-embalmed cadavers. An orthopedic surgeon conducted a dissection of the femoroacetabular joint to facilitate repeated dislocations and reductions without compromising the model's integrity (Image 1). This model was tested by a multidisciplinary group of subject matter experts (SMEs) including six physicians specializing in emergency medicine, sports medicine, and orthopedic surgery who performed hip reductions on the cadaveric model. The experts then completed a survey to assess physical resemblance and utility

of the cadaveric model for teaching hip reductions.

Effectiveness: All SMEs noted near complete realism regarding the model's anatomy and range of motion. For replicating a hip dislocation, 83% of SMEs stated the model was realistic. While 66% of SMEs stated the cadaver gave a realistic representation of a hip reduction, only 33% reported the cadaver was able to simulate forces of a real patient. Additional responses are in Table 1. Overall, 66% of SMEs expressed a strong inclination to use this model for teaching learners. In sum, soft-embalmed cadavers are a feasible model for hip reduction training, limited in their ability to simulate forces required for reduction. In the absence of other available simulators, they may provide learning opportunities for training hip reduction and have potential as a training model for other orthopedic procedures.

20 Addition of a Screen-Based Human-Like Avatar to Traditional Mannequin-Based Simulation for Emergency Medicine Resident Training

Salil Phadnis, Lisa Clayton, Patrick Hughes, Scott Alter, Christopher Williams

Background: Medical simulation education can be broken down into three methodologies; Manikin based simulation (MBS), virtual screen-based simulation (SBS), and partial task simulation. SBS uses a human-like animation, or avatar, which can improve recognition of acute medical conditions. However, the combination of MBS and an avatar has not been explored in publications. We hypothesize that integrating SBS and MBS into a single simulation can enhance emergency department resuscitation training.

Methods: Four emergency medicine cases were selected from a board review text. Each case had two versions: control (SimMan only) and treatment (SimMan with avatar). The avatar, displayed on a monitor above the manikin, visually showed changes in illness severity. In the control group, the proctor verbalized exam findings and changes. In the treatment group, the avatar displayed these changes. Participants were emergency medicine residents. Case assignments were block-randomized so each resident participated in 2 control and 2 treatment cases. Critical actions were recorded, and average completion times were compared using a t-test. A survey using Likert scales and free-response questions assessed simulation strengths and weaknesses.

Results: Fifteen residents completed four scenarios: 30 with the manikin alone and 30 with the manikin plus avatar. There was no significant difference in time to critical actions. Post-simulation Likert ratings (1 = strong disagreement, 5 = strong agreement) showed agreement with realism, learning effectiveness, and knowledge testing in combined manikin-avatar cases, with median scores of 5. Visual exam recognition and virtual monitor ease also scored highly. Respondents preferred future simulations to use the combined format. Free responses noted that the avatar improved visualization and realism, though technical improvements, such as interactive elements and better color accuracy, were suggested.

Conclusion: Adding a screen-based avatar to manikin-based simulations enhances realism and perceived educational value, ultimately improving training effectiveness.

21 The Rural Rumble: Gamification and Simulation to Improve Resident Skills for Low-Resource Emergency Medicine Practice

Ross Sinicrope, Mitchell Voter, Taylor Cesarz, Natalie Diers, Shayne Gue, Stephanie Cohen

Background: A critical access center is a hospital with 35 miles from another hospital. Despite their small size, they serve a large proportion of the American population. >40% of United States EDs are located in rural communities. Over the last two decades, rural ED visits have increased by 50%. Many learners may receive no exposure to healthcare in rural areas and thus are not familiar with the unique opportunities and challenges associated with practicing in these areas including high acuity low opportunity (HALO) procedures. We found that simulation is an effective way to bridge this gap.

Educational objectives: Provide an overview of the healthcare needs of rural communities and the importance of healthcare professionals receiving training to practice in these settings while also discussing the design of simulation scenarios that effectively emulate the unique challenges seen when working in rural environments with minimal resources.

Curricular design: Rural Rumble is a gamified simulation. Scenarios included epidural hematoma, obstetric arrest, neonatal resuscitation, upper GI bleeding, and testicular torsion. HALO procedures were included, exploring low-cost, low-fidelity trainers allowing learners the opportunity to develop skills such as Burr holes, perimortem c-section, balloon tamponade, and manual detorsion. Learners faced challenges such as the inability to transfer patients, limited specialist assistance, and lack of physical resources that required problem-solving to navigate rural medicine obstacles for patient care. Pre & Post-tests were also included to assess learner knowledge and satisfaction.

Impact/Effectiveness: 16 EM residents took part in the educational activity. The pretest mean score was 70.8% and the posttest mean score was 84.4%. The difference between the pretest and posttest means was statistically significant, $t(15) = 3.64$, $p<0.005$ (two-tailed), indicating an improvement in performance following the intervention. Additionally, learners indicated they "strongly agreed" with statements regarding their motivation, engagement, challenge, and overall effectiveness of this educational innovation (87.5%, 93.8%, 93.8%, and 100% respectively).

22 Cruise Ship Catastrophe: An Escape Room Simulation for Mass Casualty and Disaster Medicine Training

Michael Thompson, Abigail Alorda, Stephanie Cohen, Shayne Gue

Background: Mass casualty incidents (MCIs), although rare, are critical elements of emergency medicine practice. Effective management requires proficiency in triage principles, efficient utilization of limited resources, and strong leadership skills. Due to the infrequency of these events, they are seldom encountered during residency training. This educational innovation leverages an escape room format to create an MCI on a sinking cruise ship, providing an immersive learning environment to engage trainees while teaching essential concepts of MCI, event medicine, and disaster management.

Objectives: By the end of this session, residents will be able to: manage patients they may encounter in a real-life event medicine situation; formulate a plan to efficiently use limited resources; demonstrate leadership and teamwork to effectively treat patients outside of the hospital

Curricular Design: This was an interactive escape room of a cruise ship disaster scenario. Teams assumed the role of the ship's medical director and worked in teams to solve a series of interconnected puzzles related to MCI, event, and disaster medicine. Each puzzle tied to specific objectives, including triage, prioritizing care, and resource management. Teams were timed, and the first team to "escape" was declared the winner. Throughout the activity, teams were faced with realistic scenarios (e.g. managing limited supplies, coordinating rescue efforts, and providing care to critically injured patients). The escape room format fostered engagement and encouraged active participation, while facilitated debriefings reinforced key learning points and provided immediate feedback.

Effectiveness: A total of 44 emergency medicine residents participated in the educational session, with 43 completing post-session surveys. 93% of respondents "strongly agreed" that the session better motivated them to learn compared to other educational methods. Nearly all participants (97.7%) reported feeling more prepared to handle a real-life MCI or disaster situation as a result of the session. These findings suggest that integrating gamified, escape room-style games into emergency medicine education can effectively enhance resident preparedness and competency in managing MCIs and other complex emergency scenarios.

23 Feedback Retaliation: Fact or Myth?

Danielle Biggs, Nicole Maguire, Mary Rometti, Greg Neyman

Background: Emergency Medicine (EM) faculty are concerned about how their feedback on residents may be perceived, fearing that unblinded feedback could lead to retaliatory evaluations. This study investigates whether concerns about retaliation are genuine and examines correlations with factors like practice setting, gender, and years of experience.

Methods: After IRB approval, a 10-question anonymous survey was distributed to the Council of Residency Directors (CORD) faculty. Chi-square testing assessed agreement levels across demographics, and the NRC Emotional Lexicon was used for sentiment analysis of optional comments. ANOVA testing compared NRC domain averages by demographics.

Results: A total of 120 faculty participated, with 43% female. Responses by experience showed 56% practiced over 10 years, while 21% had 8-10 years, 18% had 4-7 years, 4% had 1-2 years, and 1% had less than 1 year. There was statistically significant differences in how men and women agreed with two questions: I have felt fear of retaliation when filling out non-anonymous evaluations of resident performance (42 vs 71%, p=0.045); Fear of retaliation affects the way I provide evaluations for residents (26 vs 57%, p=0.017). There were no other statistically significant differences. For the specific questions, the agreement rates are noted in Table 1. Among 46 comments, common themes included “fear” (3%) and “trust” (5.2%). No significant trends emerged by practice years or setting. 46 free text comments were reviewed for common themes, which are displayed in Table 2. The most frequently appearing theme is that concern for feedback retaliation is real, most frequently expressed as “fear” (3%) and “trust” (5.2%).

Conclusions: Faculty concerns about retaliation affect feedback quality, with many reporting avoidance of specific details. Respondents requested more training in delivering constructive feedback and for residents in receiving it. Feedback retaliation was reported to impact faculty promotions and occasionally involved threats. Continued study is essential to safeguard faculty and improve evaluation practices.

Table 1.

Question	Agreement Rate
I have felt fear of retaliation when filling out non-anonymous evaluations of resident performance.	54%
Fear of retaliation affects the way I provide evaluations for residents."	39%
Anonymous evaluations of resident performance would be a better approach to avoid concerns about retaliation.	56%
I have experienced or observed instances of retaliation after providing feedback on resident performance.	57%
There are alternative methods or systems that could improve the evaluation process and address concerns about retaliation.	60%
How important is it for the evaluation process to ensure anonymity to protect faculty from potential retaliation.	48%
The current evaluation system adequately protects faculty from potential retaliation.	20%

24 Mastering Disaster: Utilizing Gamification to Enhance Resident Education on Mass Casualty and Disaster Medicine

Andrew Bobbett, Abigail Alorda, Stephanie Cohen, Tom Bentley, Shayne Gue

Background: Gamification has been shown to elevate learning outcomes by increasing motivation, engagement, and long-term knowledge retention. Topics such as mass casualty incidents (MCI) and disaster preparedness are frequently underrepresented in emergency medicine residency curricula and are often overlooked in preparation for the Emergency Medicine in-training exam. This educational innovation leverages a trivia-based gamification approach to improve resident engagement and preparation for board exams while covering these critical topics.

Educational Objectives: By the end of this session, residents will be able to: develop a structured approach to answering board-style questions on emergency medical services (EMS), disaster medicine, and event medicine; collaborate and build consensus within interprofessional teams and demonstrate leadership and effective teamwork in managing patients during MCI and resource-limited scenarios.

Curricular Design: A 75-minute trivia competition, part of a larger MCI-focused academic half-day, was integrated into the weekly didactics of two local EM residency programs. Six interprofessional teams were created, each

composed of PGY1-3 residents, ensuring a balanced mix of experience levels. The competition featured a combination of rapid-response questions and board-style case scenarios focused on MCI, disaster preparedness, and event medicine. Immediate feedback and facilitated discussions followed each question to reinforce learning points. This interactive design fostered teamwork, encouraged active participation, and provided an engaging platform for the application of critical thinking skills in a high-pressure environment.

Impact/Effectiveness: Feedback was collected from participants using post-session surveys. 86.7% of learners "strongly agreed" that the Mastering Disaster session motivated, engaged, and challenged them more effectively than traditional educational methods. Additionally, 100% of participants reported feeling better prepared to handle a real-life MCI as a direct result of participation. These findings suggest that gamification may be an effective tool for enhancing resident preparedness and knowledge retention in underrepresented topics within the emergency medicine curriculum.

25 The Applicant's Perspective of Social Media Use among Emergency Medicine Residency Programs

Cassidy Baldwin, Nicholas Jobeun, Charles Khoury, Kelly Roszczynialski, Julie Cueva, Arlene Chung

Background: Many emergency medicine (EM) residency programs have active accounts on social media. However, the impact of these accounts on applicants to EM residency programs remains unclear as there is limited research about the EM applicants' perspective.

Objectives: We aimed to study the experience of EM applicants, and specifically their use of residency programs' social media during the application process. We hypothesize that applicants use social media to explore and evaluate residency programs and these pages influence their decisions.

Methods: This was a retrospective cross-sectional study. An online survey of multiple-choice questions was distributed to applicants who applied to at least one of three geographically distinct EM residency programs during the 2023-2024 application cycle. Data was collected from March to May 2024.

Results: Of the 1,831 invited participants, 405 (22.1%) completed the survey. Most responders (81.7%) used some form of social media to learn about EM residency programs. Instagram was the most popular (76.3%) followed by X (formerly Twitter, 6.8%), Facebook (2%), and TikTok (0.7%). 91.5% of those who used social media believed it provided useful information not otherwise acquired during the interview day. They preferred content highlighting program culture over content describing program design, education, or facilities. Nearly half of participants agreed that a program's social media page influenced where they applied (40%) and likewise 44% stated these pages impacted their final rank list.

Conclusions: Most applicants to EM use social media to learn more about residency programs. Information obtained from these accounts can potentially have an important impact on applicants' rank list decisions. Thus, residency programs should consider modifying their social media content to highlight the culture of their programs

26 Creation and Implementation of an Ob-Gyn Escape Room for Emergency Medicine Residents

Hayley Blend, Joshua Justice, Carmen Wolfe

Background: While the ACGME mandates residents to perform ten vaginal deliveries to graduate, this requirement only covers a fraction of the emergent conditions related to pregnancy and childbirth. Traditional didactics alone may only partially prepare residents for these scenarios. An obstetrics and gynecologic (OB-GYN) escape room, specifically designed for EM residents, offers hands-on training that serves as an effective alternative or supplement to traditional didactics.

Educational Objective: Learners should be able to define common terms associated with emergency care of pregnancy patients; prioritize patients based on OB triage criteria and cervical dilation assessment; identify gestational age based on U/S measurements; simulate cardinal fetal movements of delivery; and order appropriate pharmacologic interventions for postpartum hemorrhage.

Curricular Design: Learners move through six stations simulating various stages of obstetric care. Stations included matching obstetric terms with definitions to unlock a key and phone number for later use. Assessing cases using OB-specific triage criteria and evaluating cervical dilation using custom-built models. Unscrambling U/S images to determine

gestational age. Matching and demonstrating the seven cardinal movements of fetal delivery and performing cord clamping. Managing postpartum hemorrhage by arranging medications in order of action onset and treating eclampsia using clues from previous stations. Learners 'escaped the room' if they could complete tasks in the allotted time.

Effectiveness: A post-participation Likert scale survey was administered. 70% of responders agreed or strongly agreed that the activity increased their confidence in evaluating patients with obstetric emergencies. The escape room required participants to apply clinical knowledge, critical thinking, and teamwork, providing an engaging alternative to traditional didactic learning. This method reinforced essential skills in managing OB emergencies, tailored to the needs of EM residents.

27 Characteristics and Educational Support Resources Available to Emergency Medicine Core Faculty: A National Survey

Jaime Jordan, Fiona Gallahue, Laura Hopson, John Burkhardt, Keith Kocher, James Cranford, Drew Robinett, Moshe Weizberg, Tiffany Murano

Background: Core faculty (CF) are key to supporting the educational mission in emergency medicine (EM). Changes in ACGME requirements no longer guarantee adequate protected time for CF. It is essential to characterize the CF workforce and available support provided. Objectives: We sought to assess EM CF characteristics, support, and the impact of the 2020 revisions to ACGME regulations. We explored the influence of individual and institutional characteristics on support and impact of the regulatory changes. Methods: This was a cross-sectional survey study of a convenience sample of EM CF. Participants completed an online survey of multiple choice and completion items. We calculated descriptive statistics and used comparative statistics to assess associations between individual (e.g., socio-demographics, rank) and institutional (e.g., location, program type, setting) characteristics on resources and impact of ACGME revisions. Results: 596 participants from 116 residency programs participated. Characteristics of participants and programs are reported in Table 1. Participants received variable compensation for their role as CF. After the change to the ACGME requirements in 2020, 417 (70%) reported no change to their clinical work hours and 420 (71%) reported no change to their non-clinical responsibilities. There was significant association between number of residents per class ($p<0.001$), duration of training program)$p<0.001$), and type of institution ($p<0.001$) on the number of administrative personnel. There was a significant association of gender ($p=0.7$), academic rank ($p=0.02$), region ($p=0.009$), number of residents per class ($p=0.02$) and type of site ($p=0.01$) on change to clinical work hours after changes to ACGME requirements.

Conclusions: A minority of participants reported a change to their clinical and non-clinical expectations after revisions to the ACGME regulations. We found inequities in the impact of ACGME revisions on CF clinical work hours.

Table 1. Participant and program characteristics

	n (%) Total n = 596
Gender	
Male	303 (51)
Female	221 (37)
Race	
Asian, Native Hawaiian or Other Pacific Islander	57 (10)
Black/African American	12 (2)
Hispanic	36 (6)
White, Non-Hispanic	436 (73)
Other	34 (6)
Academic Rank	
Instructor/Lecturer	15 (3)
Assistant Professor	280 (47)
Associate Professor	182 (31)
Professor	80 (13)
Other	26 (4)
Region	
Midwest	131 (22)
Northeast	140 (24)
South	172 (29)
West	153 (26)
Program format	
PGY 1-3	414 (70)
PGY 1-4	166 (28)
Type of Primary Training Site	
Community	195 (33)
County/Public	103 (17)
Military/VA	3 (0.5)
University	243 (41)
Other	34 (6)
Number of residents per class (mean ± standard deviation)	12 ± 3.5
Number of personnel in program administration (mean ± standard deviation)	3.6 ± 4

28 Patient Task Facilitator: Redefining the Shadower Role

Adam Janicki

Background: Physician shadowing offers exposure to physicians' daily responsibilities, roles, and understanding of patient interactions. Given pressure to maintain clinical productivity, including students in Emergency Department (ED) care may be difficult. Student impact on patient care and physician workflow is understudied and novel programs seeking to incorporate students are warranted.

Educational Objectives: The Patient Task Facilitator program is a longitudinal educational program that combines physician mentorship and an in-depth clinical experience. We sought to offer more direct patient-facing activities compared with volunteering or shadowing, improve patient ED experience, incorporate students into the care team, and allow faculty to benefit from enhanced workflow.

Curricular Design: Educators, community engagement specialists, and administrative leadership designed the program to seamlessly incorporate students into ED workflow. Students are paired with a physician mentor

and are expected to be present for at least 20 shifts over a semester. Students serve as a patient care concierge by carrying a mobile phone and providing patients with the phone number to be reached for questions or concerns. The goal is for students to improve patient and family experience and reduce the need for physician and nursing attention.

Impact/Effectiveness: The patient task facilitator program has been active since 2019. Forty-two students and eight attending physicians have participated. Three students (7%) with engagement below expectations were removed from the program. The program is modified based on feedback, which is obtained semi-annually. Adaptations included ensuring consistent mentor pairing, increased phone availability, and internal promotion of the program. Faculty and student satisfaction was high, 74% of students reported plans to pursue careers in medicine and faculty reported improved productivity, patient satisfaction, and nursing availability.

29 Curriculum Overlap between EMS and Disaster Medicine Fellowship Programs in the United States

Matthew Bisgaier

Background: Disaster medicine (DM) is an emerging subspecialty focused on patient and population care in the disaster setting. Some emergency physicians are involved in DM fellowship training as learners and faculty. In 2023, the Council of Disaster Medicine Fellowship Directors published the Model Core Content of Disaster Medicine, defining core competencies for DM fellows. Previous studies examined training in EMS fellowships. We aimed to identify content areas common to both EMS and DM fellowship training.

Methods: A 59-question survey was sent to active DM fellowship programs in the U.S. via the Fellowship Directors' listserv from May to June 2024. The survey collected data on program demographics, educational content, and resources. Findings were compared to EMS fellowships training.

Results: Thirteen programs (93%) responded. Programs typically offered three positions yearly, with 88% filled, and seven faculty members. Fellowship duration varied, but 92% could be completed in one year. Most fellows (79%) were EM trained. Six programs accepted international fellows, and two accepted advanced practice providers. DM fellowships provided a broad range of educational activities, with some significant differences from EMS fellowships. DM training emphasized disaster planning across health systems and partnerships with regional/state coalitions, EMS agencies, and federal agencies. Both DM and EMS fellows participated in mass gatherings. DM offered additional opportunities including HAZMAT, wilderness medicine, infectious disease response teams, and law enforcement topics.

Conclusions: This study identified shared educational activities in DM and EMS fellowships. Findings highlight opportunities for collaboration between DM and EMS on educational activities such as disaster planning in EMS, special operations, mass gathering events, urban search and rescue. As DM develops, clearer distinctions may enhance the specialty.

30 Enhancing Medical Student Confidence in Managing Patients with Mental Health Crises and Patients in Law Enforcement Custody

Miguel Navarro, Max Berger, Stephen Villa, Annette Dekker, Sohyun Park

Background: EM physicians must be proficient in caring for vulnerable populations, including individuals with decreased autonomy such as those experiencing mental health crises and patients in law enforcement custody. Prior to EM rotations, students rarely have any experience with the "medical screening exam" (MSE), Emergency Medicine Treatment and Labor Act (EMTALA) and how this applies to caring for patients. We designed a curriculum to help prepare students for caring for these vulnerable populations.

Educational Objectives: To introduce core clerkship medical students to: the MSE; caring for patients experiencing a mental health crisis; and ethical/legal considerations in caring for those in law enforcement custody

Curricular Design: Three 10-minute asynchronous modules were created: 1) MSE and EMTALA and the approach to patients 2) experiencing mental health crises and 3) in law enforcement custody. Learners completed all 3 modules including a 10 question pre/post test knowledge assessment. The posttest contained a self-reported confidence assessment and free response question regarding potential changes to their future clinical practice. Impact/Effectiveness All 172 EM clerkship students at our institution completed the modules during the 2023-2024 academic year. Self-reported confidence in addressing an MSE improved from 3.09 pretest to 3.92 posttest on a 1-5 scale ($p<0.001$). After the modules, 75% of students agreed that they felt better prepared to care for patients in law enforcement custody, and 81% of students agreed that they felt better prepared to care for patients experiencing a mental health crisis. Qualitative analysis revealed improved understanding of legal involuntary hold protocols, increased attention to patient privacy, and enhanced legal and ethical awareness regarding patients in law enforcement custody. Representative quotes are shown in Table 1. There was no statistically significant improvement in scores on the medical knowledge assessment.
Impact/ Effectiveness: This targeted educational intervention enhanced medical student confidence in caring for these vulnerable populations. Incorporating these modules into EM

rotations can better prepare future physicians

Table 1.

Practice changing statements from medical students after completion of modules
Asking law enforcement officers to leave the room during H&P of a patient in custody
Respecting patients' right to privacy
Knowing what necessary PHI to disclose to law enforcement
More consideration for the limits of our relationship with law enforcement
Engage in patient care with a better understanding of the law
Not being afraid to advocate for patients even under custody
I feel more comfortable seeing a patient in the ED presenting with a psychiatric complaint
Asking police to turn off recording devices during patient visits
I understand the details of when a 5150 hold is appropriate
Systematically approaching de-escalation
I feel more confidence in advocating for patient's rights in these vulnerable populations
More compassion to people in custody

31 Do EM Residents Value Peer Support? Preliminary Evidence from Our Novel Resident Peer Support Program

Lindsay Walsh, Jane Hayes, Giselle Malina, Sangeeta Sakaria, Derek Monette

Background: Emergency medicine residents encounter traumatic situations throughout training and may be uniquely affected by these events. To better support our residents, we developed a novel Peer Support Program that proactively connects residents with a trained co-resident peer supporter after an adverse clinical encounter. However, it was unclear if residents would identify the program as a source of support.

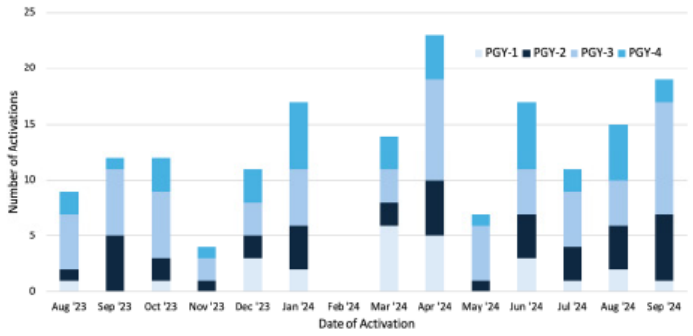
Objective: Evaluate the utilization of a Resident Peer Support Program and assess whether EM residents find value in this program after stressful events.

Methods: We performed a cross-sectional analysis of all peer support activations from August 2023 to October 2024. Activation data were extracted from a program database, including the date for each referral and activation, the referred resident's rank, and event details. We administered anonymous pre- and post-implementation surveys and compared responses using chi-squared tests.

Results: There were 171 resident peer support activations. A peer supporter was activated within 24-48 hours in 91.2% (n=156) of these events. Most referrals were made by residents (n=101, 59.1%), and senior residents more frequently received peer support (Figure 1). The most common reasons to be referred include involvement in a challenging adult case (n=74, 43.4%), Morbidity and Mortality conference (n=59, 34.5%), or a challenging pediatric case (n=35, 20.5%). There were 22 (37.9%) and 18 (31%) survey respondents to the pre- and post-surveys, respectively. In the pre-survey, 40% of trainees reported direct support from the residency after a difficult clinical experience, compared to 68% after program implementation. Most respondents (82%) found the program helpful.

Conclusions: Our Resident Peer Support Program has been widely accepted by our residents. Most referrals were made by residents, which, together with our survey data, suggests that residents value the program as a tool to support one another after stressful events

Table 1. Monthly peer support activation by supported resident year.



32 Knowledge Gaps in Billing and Documentation Following the 2023 Evaluation and Management Services Guideline Changes

Marshall Howell, Jacob Kirkland, Rebecca Kernen, Brian Milman, Joshua Ginsburg, Samuel Parnell

Background: In January 2023, the evaluation and management (E/M) billing and coding guidelines changed to emphasize complexity of medical decision-making. The ACGME requires EM residencies to teach these skills under the systems-based practice milestone. Few studies have evaluated residents' educational needs under the new guidelines.

Objectives: This study aimed to assess EM resident, residency graduate, and faculty knowledge and perceptions of the 2023 E/M billing guidelines and their integration into residency curricula. We hypothesized these groups would reveal knowledge gaps and a need for improved billing education.

Methods: We developed a cross-sectional survey based on previous research. After piloting and cognitive interviewing, we sent the anonymous survey to 26 second-year residents, 24 third-year residents, 34 recent graduates, and 124 residency faculty from our 3-year EM program. Responses were collected from September to October 2024.

Results: The survey had a 61% (126/208) response rate. While 93% (26/28) of residents and 86% (68/79) of faculty reported billing and documentation skills are relevant to an attending's role, only 25% (7/28) of residents and 20%

(16/79) of faculty felt the curriculum sufficiently prepares residents for future billing responsibilities. Residents and faculty identified reimbursement models, critical care billing, and determining encounter-appropriate E/M codes as areas of need (Table 1). Faculty attestations often add information to resident notes for billing (Figure 1), but only 41% (32/79) felt equipped to teach these skills. Graduates reported greater confidence than residents and faculty in most areas (Table 1), and 58% (11/19) felt the billing curriculum prepared them for independent practice.

Conclusions: Residents and faculty indicated a need for improved billing education under the 2023 guidelines and areas for curricular improvement. Graduates felt more confident in their billing knowledge than anticipated

Table 1.

	% Agreeing or Strongly Agreeing		
	Residents (n=28)	Faculty (n=79)	Graduates (n=19)
I understand how the reimbursement model from the Centers for Medicare & Medicaid Services influences billing and coding practices in the emergency department.	36%	53%	79%
I understand how Relative Value Units (RVUs) are related to the medical services I provide.	68%	68%	79%
I understand how Evaluation and Management (E/M) coding levels for emergency department encounters (CPT 99281-99285) are determined.	68%	62%	84%
I understand the requirements for documenting critical care billing (CPT 99291 and 99292).	43%	77%	74%
I am able to determine the appropriate E/M code for my patient encounters.	29%	33%	58%
I adjust my level of documentation based upon the patient's presentation and anticipated E/M coding level.	32%	39%	58%
I utilize tools in the electronic medical record (e.g., smartblocks or smartphrases) to help guide my documentation for improved billing.	64%	61%	95%

33 Physician Perception of Patient-Physician Communication

Katarzyna Gore, Dustin Brown, Callan Coghlan, Danielle Raslan, Galeta Clayton, Aylin Ornelas Loredo, Michael Gottlieb, Stanley Rozentsvit, Hunter Jenkins

Background: Assessing patient satisfaction with physician performance, particularly in communication, is standard in the U.S healthcare system. There is significant variability in residency training regarding specific areas of patient centered communication.

Objective: The objective of this study was to compare resident and attending physician self perceived communication skills and perform a thematic analysis of reported challenges and barriers to good communication.

Methods: This was a cross-sectional mixed methods survey study among resident and attending physicians at a single academic center. We developed a survey, informed by the validated Communication Assessment Tool. Additional questions focused on health equity and open-ended responses. The survey items used 1-5 Likert scales. We gathered content and response process validity prior to distribution. The survey was distributed weekly for 3 weeks, following modified Dillman methods. For quantitative analysis, we compared mean resident vs attending scores utilizing a pooled unpaired sample t test. For qualitative analysis, two study members performed thematic analysis following best practices in qualitative research.

Results: 72% (26/36) of residents and 53% (26/49) of attending physicians completed the survey. There was no statistically significant difference between resident and attending perceptions for any survey items. Thematic categories were consistent across both groups and identified the following challenges: managing expectations, time, and equity concerns.

Conclusion: Patient centered communication is a milestone based competency in which residents should progress, therefore, the lack of difference between resident and attending groups brings to question how best to educate and evaluate communication skills. Both groups rated their training on communication lower when compared to other questions in this study. This study further identifies the need for standardized patient centered communication in training in order to prepare resident physicians.

Table 1.

Question	Attending mean	Resident mean	P-value
(1-13) How do you rate your ability:			
(1) Effective Communication	3.92	3.88	0.8438
(2) Empathy	3.92	3.92	1
(3) Minimize patient misunderstanding	3.61	3.46	0.4134
(4) Convey complex information	3.88	3.54	0.1199
(5) Resolving communication challenges	3.54	3.12	0.0667
(6) Manage patient expectations	3.50	3.19	0.1482
(7) Elicit patient health care concerns	3.65	3.62	0.8587
(8) Develop rapport	3.96	4.27	0.1722
(9) Communicate effectively with non-English speaking patients	2.85	2.88	0.8775
(10) Communicate effectively with patients that share a different gender	3.77	3.85	0.7218
(11) Communicate with patients that have a different race	3.50	3.77	0.1935
(12) Communicate with LGBTQIA+ patients	3.85	3.73	0.6284
(13) Use pronoun-sensitive language with transgender patients	3.35	3.58	0.4195
(14) How would you rank the training (dedicated time during residency focused on patient communication strategies led by core faculty) you have received on patient centered communication?	2.96	2.88	0.7677
(15) How would you rate the simulation experiences you have participated in regarding patient centered communication?	3.19	3.23	0.8864
(16) Do patient evaluations accurately reflect your communication abilities	2.08	2.65	0.0628

34 Emergency Medicine Resident Perspectives about Feedback in the Emergency Department

Brian Walsh, Fred Fiesseler

Background: Resident feedback is an important component of emergency medicine resident training. Although residents often report that they do not get enough feedback, it is unclear what exactly they consider feedback. We sought to clarify resident views on the feedback they consider most helpful and in what areas they would appreciate more and less feedback.

Methods: An anonymous survey was created using Google Forms and distributed to all residents in an emergency medicine residency with 29 residents. Residents were asked multiple-choice questions about their views of feedback, specifically about the best times to give feedback, the areas in which they would like more and less feedback, and the manner in which they would like feedback given. The percent of residents responding with each option was calculated.

Results: 27 out of 29 residents (93%) completed the survey. 93% said the most helpful feedback comes from attending physicians. 56% said feedback is best given in private immediately after a patient encounter, while only 4% said it is best given at the bedside. 96% said feedback is best given in small aliquots instead of during dedicated meetings. The top areas in which residents would like more feedback are management plans (85%) and patient assessments (70%). The area in which they would like less feedback are social skills and social interactions (44%).

Conclusion: Feedback is an important component of education. Clarifying resident views about it and ways in which feedback may be better-received by residents will likely benefit their education.

35 Creation of a Resident Pod Improves Educational Experience in a Community Hospital

Nathan Stuempfig, Hanna Rahman, Jamie Lam

Introduction: Currently, there are varied clinical workflows throughout emergency medicine (EM) training programs without recommendations that optimize resident learning opportunities. Furthermore, newer, community-based programs often have difficulty integrating residents into existing workflows. It is critical for EM training programs to optimize opportunities to perform advanced, critical procedures and to provide adequate patient volumes for their residents.

Objectives: We compare 2 different clinical workflows and the impact they have on educational opportunities for EM residents. We anticipate that the creation of a Resident Pod (R Pod) will lead to an increase in critical procedures and patient volumes for residents when compared with a 1 on 1, round-robin assignment system.

Methods: This is a retrospective, observational study that was conducted in a single, community-based emergency department. Data were collected for 1-year prior to the implementation of a R Pod and for 1 year after implementation. PGY-1 and PGY-2 classes were used in each data set. There were 8 residents for each class, 16 residents for each timeframe. The number of patient encounters and critical procedures were totaled for each class during each time period. The median number of patients seen per month as well as critical procedures per month were calculated. Wilcoxon rank sum was utilized to determine statistical significance.

Results: There was an increase in both patient encounters per month and critical procedures performed by residents per month. For patient encounters, statistical significance was obtained for the PGY-1 residents (p=0.004) and for all residents (p=0.022). Procedures increased for PGY-1s (p=0.002), PGY-2s (p=0.041) and all residents (p=0.002). PGY-2 residents saw more patients in the R Pod, but this did not obtain statistical significance.

Table. Median number of patients seen per month pre and post RPOD implementation overall by PGY level.

	RPOD Implementation Period		
Resident Year	Pre (8/1/22-6/30/23)	Post (8/1/23-6/30/24)	p-value*
Total (PGY1 and 2)			0.004
Median (IQR)	1273 (1253-1387)	1537 (1371-1653)	
Min-Max	1170-1425	1344-1733	
PGY-1			0.022
Median (IQR)	573 (439-701)	698 (661-797)	
Min-Max	418-736	618-881	
PGY-2			0.26
Median (IQR)	756 (686-835)	870 (667-936)	
Min-Max	506-924	578-964	

*Wilcoxon rank sum

Conclusion: The creation and implementation of a R Pod showed increased patient volumes and increased opportunities to perform critical procedures for EM residents when compared to a round-robin patient assignment system. Although this is a small, single -center study, consideration of utilizing a R Pod clinical structure should be considered for new, community-based EM residency programs.

36 Nature vs. Nurture: Career Choice in Emergency Medicine Residents

Jaime Jordan, Samuel Clarke, Mark Curato, Adam Frisch, Adam Janicki, Jonathan Ilgen, Anne Chipman, Laura Hopson, Michael Gottlieb

Background: Career choice is a complex decision

involving personal preferences and training program characteristics. It is unclear to what degree the training program shapes career choice or if residents select training programs that align with their plans. Objectives: We sought to evaluate emergency medicine (EM) resident career plans over time and assess differences between 3- and 4-year training formats. Methods: We conducted a prospective cohort study of EM residents at 4 ACGME accredited residencies from 2020-2024. Participants completed an online survey at the onset of training and just prior to graduation. The survey consisted of multiple choice and completion items and was piloted prior to use. We calculated descriptive statistics and used univariable regression to determine factors with an association of $p<0.1$. We then used those factors in a multivariable logistic regression to determine statistical significance ($p<0.05$).

Results: 173 residents (89 from 3-year and 84 from 4-year programs) completed both initial and graduation surveys. Career plans at the start of residency were similar in 3-year and 4-year programs (Table 1). However, at graduation a greater number of residents at 4-year programs planned on fellowship or academic careers compared to 3-year program ($p<0.001$). 62 participants (35.8%) had a change in career plans during residency. Regression of all factors (including resident age, program, graduation year, MD or DO degree, and chief status) showed an association only between program format and change in career choice ($p<0.005$) with 4-year programs having a higher likelihood of transition. Number of transitions by type are listed in Table 2.

Conclusion: A greater number of residents at 4-year programs in this study planned on fellowship or academic career compared to those in 3-year programs, despite initial plans being similar between the groups. Residents in 4-year programs were more likely to change their career plans during residency.

Table 1. Career plans at beginning and end of residency in PGY 1-3 and PGY 1-4 programs.

	PGY 1-3 Initial n (%) Total n = 89	PGY 1-3 Graduation n (%) Total n = 89	PGY 1-4 Initial n (%) Total n = 84	PGY 1-4 Graduation n (%) Total n = 84
Fellowship	23 (26)	30 (34)	27 (32)	35 (42)
Non-Academic	61 (69)	58 (65)	51 (61)	33 (39)
Academic	5 (6)	1 (1)	6 (7)	16 (19)

37 Triage Time Trials: Enhancing Emergency Preparedness through a Mass Casualty Incident Simulation Race

Mohammed Rahman, Natalie Diers, Stephanie Cohen, Jeff Katz, Linh Nguyen, Ayanna Walker, Shayne Gue

Background: Simulating a mass casualty incident (MCI) triage race provides a dynamic environment to practice and apply triage principles in a high-pressure, timed format. This innovative approach encourages residents to refine their triage skills while promoting engagement, time efficiency, and accuracy. Given the infrequent exposure to MCIs in clinical practice, this educational intervention helps prepare residents to manage crises effectively, bridging the gap between theoretical knowledge and real-world application.

Educational Objectives: By the end of this session, residents will be able to: define a mass casualty incident (MCI) and discuss the unique challenges inherent to mass casualty incidents and disaster/event medicine; differentiate between day-to-day triage and triage during a mass casualty incident; and apply the components of START (Simple Triage and Rapid Transport) for mass casualty incidents.

Curricular Design: The session was structured as an interactive simulation race. The scenario was framed as a cruise ship tour interrupted by an explosion on deck, requiring immediate triage and management of multiple casualties. Each "patient" was represented by a card placed in the field detailing vital signs and injuries. Residents raced to each patient, assessed their condition, and assigned the appropriate triage tag before carrying them to the designated color-coded area. Winners were determined based on both time and triage accuracy. Any incorrectly triaged patients were reviewed and discussed in a structured debrief to highlight key learning points. This hands-on activity provided an immersive experience for participants to develop triage skills in a fast-paced, competitive setting, mirroring the urgency and complexity of real-world MCIs.

Impact/Effectiveness: Feedback was collected through post-session surveys. All learners (100%) indicated that the MCI Triage Race was more motivating, engaging, and challenging than traditional didactic methods. Additionally, 86.7% of participants "strongly agreed" that the activity improved their preparedness to handle real-life MCI scenarios. These results suggest that incorporating gamification and simulation into MCI training can enhance resident confidence and competence in managing disaster situations.

38 From Outcomes to Insights: A Structured Reflection Tool for Practice-Based Learning and Improvement

Kathryn Ritter, Kathryn Lorenz, Michael Ehmann, Haleigh Ferro, Sarah Hill-Yeterian, Jeremiah Hinson, Linda Regan, Kamna Balhara

Background: To optimize skills in Practice Based-Learning and Improvement (PBLI), residents should have access to their patient outcomes data. Prior research demonstrates that automated patient outcome feedback increases electronic health record (EHR) re-access by residents, but outcomes data alone may be insufficient to promote reflective practice. Residents may benefit from a format for structured reflection upon those outcomes.

Objective: We developed a longitudinal tool grounded in narrative writing with structured prompts to bridge outcomes data with resident reflection ("Growth Charts"). We describe residents' experiences with Growth Charts and analyze the tool's impact on PBLI through qualitative analysis.

Methods: Six PGY1-4 Emergency Medicine residents at a single academic program participated in a 12-month pilot. Residents analyzed their personalized outcomes on a digital platform, Linking Outcomes Of Patients (LOOP), which tracks unanticipated return visits ("bouncebacks"), inpatient level-of-care escalations, and deaths. Participants then responded to Growth Chart prompts with written reflections on factors contributing to reported outcomes and intended practice modifications. Semi-structured interviews with residents about their experience with Growth Charts and LOOP data were qualitatively analyzed via an inductive approach and grounded theory.

Results: Six key themes emerged (Table 1). All participants reported that LOOP provided valuable information and several expressed that using data enhanced reflection quality. One participant stated, "My reflections wouldn't have been as robust without [LOOP]." Participants reported that structured reflections led to practice change (e.g., adjusting discharge instructions to prevent bouncebacks and increasing confidence when advocating for level-of-care decisions).

Table 1. Categorized themetic analysis from participant semi-structured interviews. *Codes regarding the Growth Chart; #Codes regarding LOOP; ^Codes reagrding LOOP and Growth Chart together.

Theme	Codes	Representative Quotes
Goal setting	Benefit of written record*	"Having all the rotations in the same document allowed me to look back [at] other things that I was working on earlier."
	Benefit of goal setting^	"It was nice to think about where I'm going, where I've been, especially with all of the data that I have, and how I want to get to where I want to be."
Benefit of reflective practice	Valuable adjunct to biannual reviews with program directors^	"And I think those [LOOP and Growth Charts] help[ed] me kind of anchor in individual practice goals and who I want to be as a physician. And kind of drive some of those conversations in a way that I don't know if I would have been as focused on, or as cognizant of, without the LOOP data and the narrative reflections."
	Valuable practice for emotional processing^	"I think anytime you're intentionally reflecting. It's gonna change how you behave and [have] small micro interactions...in the daily workspace."
Format & content of Growth Chart	Personal preference for reflective practice^	"I feel like when you write something down it solid[ifies]...and allows you to tackle some...of the reality [of] what you're putting in your head, [by]...putting it into speech."
	Redundancy of phrasing of questions^	"I think some of the questions were a little redundent sometimes...I would just eventually be like, 'See that answer,' especially towards the end of the year."
	Formatting of Google document^	"I think it was on a Google document. I'm wondering if just making it on One Drive might be easier to access because I had to keep searching for the Google document link."
Barriers to consistent use	Inaccessibility of LOOP#	"Usually to access LOOP, we'd have to be on the VPN. That was a bit of a challenge or a barrier"
	Lack of motivation^	"It was really just the buy-in, and I feel like should the buy-in have been influenced by a requirement to do it or some kind of carrot to do it? But ultimately the buy-in ended up being influenced by the experience with it."
	Less useful for off-service rotations#	"It would have been interesting to see my bounceback rate [on those off-service rotations]...in theory, it could have been useful."
Benefit of objective data	Valuable patient care follow-up information#	"I think one of the best parts of LOOP was seeing the bouncebacks, and I think you didn't get a good handle on that end of the spectrum prior to using LOOP[, and one could argue, that's kind of the most relevant area for improvement."
	Enhanced quality of reflections#	"It allowed to me to be grounded in objective data...I think it actually foster[ed] the reflection, because I feel like my reflections wouldn't have been as robust without the LOOP data."
Clinical practice change	Confirmation of current practice*	"Data allowed you to feel strong in your decision making of appropriate level of care decisions that was happening based off of good clinical practice."
	Change in discharge planning*	"[The data led me to think] should I have changed my discharge instructions? Do I need to have a more in depth conversation with this patient, and anticipate a return?"
	LOOP data resulted in practice change*	"Prescribing habits were definitely influenced by the LOOP data...and the emphasis on care transitions was very much influenced by the LOOP data in terms of the bouncebacks."

Conclusion: Growth Charts to bridge EHR-derived outcomes data with structured reflection may foster PBLI by facilitating reflective practice.

39 Improving the Evaluation and Feedback Process in an Emergency Medicine Residency Program

Lindsey Jennings, Justine McKittrick, Katherine Rodriguez, Alexander Howard

Background: To improve the volume of written feedback and evaluations at our institution, we made several changes to our emergency medicine resident evaluation process. These changes included: 1) shortening the number of questions asked on our resident evaluation form from 23 questions to 4 questions , 2) utilizing an entrustable professional activities (EPA) framework for evaluations, and 3) adding completion of resident evaluations to the bonus pay structure for faculty.

Objectives: The purpose of this study assess for changes in 1) resident perceived quality of feedback , 2) attending perceived quality of evaluation forms, and 3) the number of evaluations completed by faculty before and after the intervention.

Methods: This study included 2 components: 1) a prospective survey study that assessed resident and faculty satisfaction with our evaluation system before and after the intervention, and 2) an observational prospective study examining the number of written evaluations completed by attending physicians before and after the intervention. Surveys assessed the quality of feedback provided from the evaluation system using a 5-point Likert scale. All emergency medicine residents (n=30) and faculty (n=35) were eligible for participation. The number of evaluations completed pre-intervention (4/15/2024-7/14/2024) and post-intervention (7/15/2024-10/14/2024) were obtained from our evaluation software, MedHub. Descriptive statistics were utilized.

Results: 15 residents (50%) and 20 (57%) attendings completed the pre survey. 13(43%) residents and 16 (46%) attendings completed the post-survey. There was an increase in residents reporting feedback was actionable (47% to 69%), and a decrease in the percentage of residents who reported vague feedback (47% pre, 23% post). There was an increase the percentage of faculty who felt the questions asked on evaluations were relevant (30% pre, 86% post). There were 115 evaluations completed in the pre-intervention period,

and 357 in the post-intervention period, resulting in a 210% increase in the number of evaluations completed.

Conclusions: The described intervention significantly increased completion of resident evaluations during the study period. Limitations include a short study period and low survey response rates.

40 It's Scarlet in the Study! Deciphering Toxic Pathologies in a Murder Mystery Party

Michael DiGaetano, Colleen Donovan, Aarsh Shah, Denise Fernandez

Background: Gamification in medical education enhances engagement and learning, but applications for toxin education in EM residency are limited. Our project introduces a "whodunnit" gamified approach to teach EM residents about toxic pathologies, combining storytelling with diagnostic skills. This method addresses an educational gap by embedding toxicology within an interactive mystery.

Educational Objectives:

- Improve clinical reasoning and toxidrome identification via casework
- Engage teams in an exciting and collaborative "whodunnit" setting
- Integrate wellness/team building into core toxicology content

Curricular Design: We chose three complex toxidromes (carbon monoxide, cyanide, and sodium nitrite) as anchors for our "murders." Set in a fictional town, participants were prebriefed on rules and character profiles (created using generative AI). Three individuals were chosen as "murderers" and only given knowledge regarding their specific toxidrome. Participants were divided into three teams and given 20 minutes to uncover method, motive, and murderer (3Ms) by sifting through physical evidence boxes with "autopsy reports" and toxidrome clues. Teams debated and defended their 3M accusations in an open forum, with a final debrief and review of key toxidromes. Residents completed pre- and post-tests on toxicology topics without specifying game details. They also gave feedback on the game as an educational tool in a post-game survey.

Impact/Effectiveness: There are no published murder mystery-style learning activities in EM residency didactics. This approach yielded a 16.7% increase in toxin knowledge, with PGY2s showing the most improvement in confidence and knowledge. All participants agreed that this session improved toxidrome knowledge and was a good use of their educational time, with 69.6% and 78.3% strongly agreeing, respectively. Future session plans include smaller groups and more toxidromes. This project shows an engaging model with replication potential for EM programs.

41 Assessing Structural Competency Using ACGME Milestones: Uncovering Challenges and Needs

Ridhima Ghei, Taylor Extavour

Background: Efforts to improve cultural competency in Emergency Medicine (EM) residency training have evolved over time. In 2008 and 2011, leaders advocated for curricula that addressed diversity, cultural competence, and implicit bias. By 2020, critiques of traditional approaches prompted a shift toward 'Structural Competency,' which emphasizes the societal factors impacting health. The 2021 ACGME Milestones overlap with this mission, especially in Interpersonal and Communication Skills 1 (ICS1) and Systems-Based Practice 3 (SBP3). However, assessing these competencies remains challenging, underscoring the need to understand current practices in order to guide future training.

Objective: This study explores how EM program leaders assess ACGME milestones ICS1 and SBP3, hypothesizing that variations in methods and subjectivity affect residents' educational outcomes. Methods: A focus group was conducted with EM program directors (PDs) and assistant PDs to discuss ICS and SBP milestone assessment practices. Purposive sampling ensured diverse representation in terms of gender, location, and program length. Questions focused on assessment techniques, milestone expectations, and educational initiatives. Two investigators inductively analyzed the transcript, with discrepancies resolved through discussion.

Results: Participants reported varied assessment tools, including shift evaluations, simulation, and faculty/patient feedback, which were compounded by subjective interpretations of milestones and scores simply based on training year. Recommendations included enhanced faculty development around assessment and more standardized processes.

Conclusions: Findings suggest EM residency leaders face challenges and ambiguity in assessing ACGME competencies. Standardizing evaluation processes and establishing guidelines may improve milestone score accuracy and reliability. Clarities around assessment can subsequently guide educational initiatives around structural competency.

42 Job Placement and Satisfaction among Emergency Medicine Residency Graduates

Brian Milman, Stephanie Stroever, Mary Edens, Fiona Gallahue, Michael Kiemeney, Albert Kim, Miriam Kulkarni, Andy Little, Anthony Sielicki, James Morris

Background: Prior Emergency Medicine (EM) workforce studies projected a future surplus of EM physicians, raising concerns about job prospects for EM trainees. The projected

surplus was a significant factor in the unusually high number of unfilled residency positions in recent NRMP Match cycles. Current data show a rebound in applications for the 2025 Match and an overall optimistic view among trainees about EM job opportunities. However, limited data exist on actual job placement and satisfaction of graduates.

Objectives: This study aimed to (1) characterize career paths of EM graduates, (2) assess residents' job placement satisfaction perceived by program directors (PDs), and (3) evaluate the feasibility of gathering comprehensive job placement data from EM residency PDs.

Methods: A cross-sectional feasibility study was conducted by surveying EM residency PDs using purposive sampling. Program characteristics (ERAS region, program length, site type, staffing model, and establishment date) and resident outcomes (fellowship or job type, geographic preference, employment model, and satisfaction) were collected. Descriptive statistics were used for quantitative analysis.

Results: Thirty-one PDs (68.9% response rate) participated. PDs reported their residents obtained jobs (67.2%) or fellowships (32.1%) prior to graduation, with high satisfaction levels (92%). Most graduates (98%) secured employment in their desired geographic area and practice setting. Barriers to job placement included geographical restrictions and limited job openings in specific cities.

Conclusions: The findings indicate high job placement satisfaction among recent EM graduates. This study demonstrates the feasibility of using PD-reported data to track job market outcomes and suggests further studies could improve understanding of regional job availability and hiring barriers for EM graduates. Collecting longitudinal data will be essential to accurately predict future workforce trends

43 Feasibility of a Performance Benchmark System Using Emergency Medicine Resident End-Of-Shift Assessments

Ryan McKillip, Ryan Tabor, Ravi Chacko, Elise Lovell

Background: Early identification of residents at risk of underperformance is essential for effective intervention. Periodic performance assessments may not detect subtle or sudden declines in progress. Competency-based end-of-shift assessments have recently been introduced within EM residencies, but it is not known whether data from these assessments can establish predictive benchmarks for resident progress to facilitate early detection of underperformance.

Objective: This study aims to determine the feasibility of creating benchmarks for EM resident performance using multi-year data from EM resident end-of-shift assessments.

Methods: An end-of-shift assessment using 22 EM entrustable professional activities (EPAs) was implemented within a three-year residency program at an urban tertiary care hospital. Faculty members assessed level of required supervision on a scale of 1 to 5, from "I had to do it" to "I did not need to be there at all." Assessments were collected from February 2023 to September 2024 and then separated by the residents' month in training. The 25th percentile was calculated for each month, along with combined mean entrustment level (EL) and standard deviation (SD). Individual resident mean ELs were compared to these benchmarks.

Results: A total of 5,441 assessments were completed for 70 residents during the period. The number of assessments per resident ranged from 4 to 161. The median assessments per resident was 91 and the mean was 77.7 (SD 47.6). Mean EL ranged from 2.7 (month 2) to 4.9 (month 36), with SD ranging from 0.40 (month 36) to 0.94 (month 5) (Figure 1). Nineteen residents had at least one month with a mean EL below the 25th percentile, 4 had 2 consecutive months, and 1 had 4 consecutive months (Table 1).

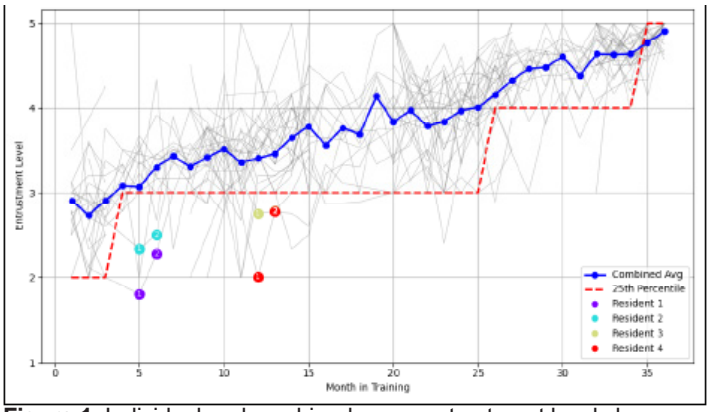


Figure 1. Individual and combined mean entrustment levels by month in training. Residents are flagged if their average entrustment level falls below the 25th percentile for two consecutive months, ignoring months 35 and 36, or months with 2 or fewer assessments.

Table 1. Number of residents with consecutive months in the bottom quartile.

Months in Bottom Quartile	Number of Residents
1	19
2	4
3	1
4	1

Conclusion: It is feasible to use the data generated by EPA-based end-of-shift assessments to establish benchmarks that identify residents at risk of underperformance. Further study is needed to evaluate if these benchmarks aid program interventions.

44 Using Quality Improvement Education to Improve Care of Septic Patients in the ED

Jinjoo Lee, Ashley Deutsch

Background: Sepsis is a widely known disease process that specifically impacts patients in the emergency department where Emergency Medicine physicians are usually the first to recognize and intervene on the resuscitation of these patients. Studies have shown that the absence of timely intervention lead to poor outcomes in morbidity and mortality. Additionally, failure to meet metrics also result in a substantial loss of Center for Medicare and Medicaid compensation to hospitals. Residents at Baystate Medical Center used quality improvement methodology to identify the limiting factor in regards to meeting the 3 hour sepsis bundle criteria at our level 1 academic trauma center.

Objectives: To identify the gaps in care for patients meeting Center for Medicare and Medicaid sepsis criteria in our ED while improving residents' knowledge of quality improvement methodology.

Method: Using Define, Measure, Analyze, Improve, and Control quality improvement methodology, residents performed a retrospective analysis of patients meeting criteria for severe sepsis or septic shock who presented to Baystate Medicine Center ED and required admission in the days between 1/30/2022 – 2/6/2022 and 8/28/2022 – 8/31/2022 to evaluate which proportion did not receive antibiotics within 3 hours of identification. Exclusion criteria included patients meeting sepsis criteria after admission, documented exclusion for concern of infection in emergency room encounter, and patients who were COVID positive.

Results: 38% of patients admitted who met severe sepsis criteria did not receive antibiotics within the 3 hour guideline window. Approximately 33% of patients in this cohort did not have IV antibiotics ordered within the 3 hour window. The remaining 67% had IV antibiotics ordered within 3 hours but not administered until more than 3 hours after identification of severe sepsis or septic shock.

Conclusions: Antibiotic administration within 3 hours of identification of sepsis was delayed in 38% of the patients meeting criteria for severe sepsis or septic shock during the studied period at Baystate Medical Center. Using this data, residents have been able to craft a clear, compelling problem statement to administration to garner their partnership continuing their quality improvement project to close this gap in care.

45 Open to Interpretation: Design Thinking, Role-Reversal Simulation, Builds Empathy in Language Discordant Care

Jason Langenfeld, Tedd Welniak, Dalto Nelsen

Background: Linguistic barriers create challenges in delivering effective healthcare in the ED, where miscommunication has dire consequences. There is limited evidence regarding resident education on language discordant care. Undergraduate students partnered with EM faculty to understand language discordant care in the ED. Design thinking, a human-centered problem-solving technique, was utilized to identify innovative solutions to improve provider understanding of the effects of those barriers on patient care.

Educational Objective: Evaluate EM resident confidence treating language discordant patients and develop training to improve understanding and empathy.

Curricular Design: Utilizing design thinking, undergraduates and EM faculty met to identify problems and goals of the exercise. Empathy interviews with ED patients and providers exposed contrasts between language concordant and discordant patient encounters. A preferred-language role-reversal simulation exercise was developed. EM residents were surveyed to evaluate experience and attitudes in caring for non-English speaking patients. In a structured simulation encounter, English-speaking EM residents placed in a patient role were treated by embedded participant physicians speaking non-English languages. Participants then completed a post-survey and structured debrief. Responses were analyzed for change and theme.

Impact: Following the simulation, learners rated communication as challenging with confidence in treating language discordant patients and perceived quality of care decreased. Debriefs identified common themes including perspectives on patient encounters and technology available for assistance. This novel exercise was an effective tool to provide education and experience on the care of language discordant ED patients. Results and reflections exposed lack of confidence in the current resources available and highlighted the need for better technology and resources to help alleviate barriers when traditional avenues for communication fail.

46 Growing a Culture of Feedback in Emergency Medicine: A Multifaceted Curriculum Design and Incentive Structure

Andrew Moore, Inna Massaro, Timothy Fortuna

Background: Feedback is a cornerstone of resident education. Actionable and timely feedback, provided during and after shifts and in written format, is pivotal to resident advancement and compliance with GME milestones (1). The Emergency Department (ED) is a particularly challenging learning environment due to time constraints, regular interruptions, and the nature of shift-based scheduling impacting resident and attending overlap (2). We hypothesized that we could improve the quantity and quality

of feedback Emergency Medicine (EM) residents received via an intervention that combined an educational curriculum for faculty and monetary incentives.

Methods: We designed and implemented a faculty development curriculum on feedback that included lectures, small group workshops, and targeted feedback on their resident MedHub evaluation forms. Clinical faculty were provided with a monetary incentive for feedback compliance. The number of completed faculty feedback evaluations were tracked and reported from MedHub. We also sought informal feedback from residents about their satisfaction with the evaluations they received

Results: The number of completed evaluations increased by 38% from 1900 to 2641, with a year-over-year increase of 741 completed resident evaluations in MedHub. A paired students t-test showed a significant increase by provider year over year ($p=0.00034$). Additionally, resident physicians felt that the quality of feedback was significantly improved. Thematically, the quality of feedback improved with the average words per feedback form increasing from 10 words to >20 words. Additionally, the quality of feedback improved as well, often citing specific cases or learning opportunities.

Conclusions: A multi-pronged approach improved the quantity and quality of faculty feedback to residents. Curriculum development for clinical faculty and pay incentives increased assessment and signaled a cultural shift integral to quality resident education. The next steps include developing a scoring model to quantify the improvement in feedback. We will also assess whether curriculum development or the monetary incentive had the most impact on faculty feedback behaviors.

47 Foundations of Emergency Medicine: Development, Use, and Satisfaction of a Novel Curriculum Focusing on Lower Acuity Conditions

Nathaniel Shekem, Christina Matulis, Adam Sigal, Simiao Li-Sauerwine, Kristen Moore

Background: The Model of Clinical Practice of Emergency Medicine includes the management of critical, emergent, and lower acuity conditions. Lower acuity patients represent 25% of encounters that occur in the emergency department (ED). No standardized curriculum exists for lower acuity conditions. Foundations of Emergency Medicine (FoEM) is a free, comprehensive, open-access, online curriculum that has been widely adopted. Recognizing this education gap, FoEM developed a novel Urgent Care (UC) curriculum.

Objective: To improve knowledge regarding the evaluation and management of common lower acuity conditions in the ED and UC settings using case-based small groups that can be incorporated into existing training curriculums.

Curricular Design: Using a modified Delphi method, we developed 14 cases covering common lower acuity presentations. The opportunity to practice effective responses to common patient questions is a unique, emphasized component (Table 1). This adaptable online curriculum can be implemented longitudinally as single case sessions or as five hour-long units. Cases are best utilized in a small group setting with an experienced clinician facilitating discussion and guiding learners. Each case is paired with asynchronous resources and an "essential learning" document that provides additional details on core concepts.

Applicability/Impact: We developed a 2024 survey of FoEM site leaders and learners to assess this curriculum. A total of 28 EM training programs indicated use of the curriculum, serving 1,001 learners. 100% of site leaders and 97.6% of site learners found content to be clinically relevant, high-yield, and a valuable use of didactic time (Table 2). Suggestions for improvement included: expanding the list of lower acuity conditions and incorporating imaging and procedural skills for lower acuity conditions. Future efforts will focus on expanding content and disseminating the curriculum more widely.

Table 1. Case topic and example patient questions from Foundations of Emergency Medicine Urgent Care Curriculum.

Sample of Case Topics	Examples of Commonly Asked Patient Questions
Cellulitis	"I've been taking this antibiotic for 24 hours and the redness has not gotten better, does this mean the antibiotic isn't working?"
Conjunctivitis	"Don't I need eye drops for my eye infection? Everyone I know gets eye drops for pink eye."
Influenza	"What is the difference between a cold and the flu?"
Upper respiratory infection	"I know this is bronchitis. Why can't you just prescribe me an antibiotic for this cough? I get these symptoms every winter and I always get an antibiotic and it makes me feel better."
Ankle sprain	"How long will it be before I can play sports again?"
Concussion	"I have a really important game this weekend. Is it OK if I play?"

48 BINGO: A Novel Observation Tool to Optimize the Observer Role in Simulation-Based Setting

Deborah Jaenicke, Erich Heine, Sara Baker

Background: Simulation-based training is essential for healthcare education, allowing trainees to practice in a controlled environment. However, resource constraints often mean many assume observer rather than active roles, which can feel passive. Various methods like assigning roles

and using checklists have been tested to boost observer engagement, yet outcomes are mixed, especially in balancing technical skills with clinical decision-making. To address this, we introduce a novel Bingo card tool that uses game theory to increase observer engagement. By tracking clinical decisions during simulations and adding a competitive element, the Bingo card aims to keep observers attentive and engaged. This approach, not yet explored in literature, seeks to enhance satisfaction, knowledge retention, and teamwork in simulation learning.

Objectives: This tool aims to make observation more engaging by assigning observers an active, challenging task. Primary outcomes include self-reported engagement, learning, and satisfaction during observation.

Curricular Design: Over one month, two simulation directors and a fellow piloted the Bingo card for mandatory simulations. This 5x5 grid prompts observers to track specific participant actions. Sessions at Orlando Health's Graduate Medical Education Simulation Center included three scenarios with residents from PGY-1 to PGY-3. Each scenario had two active participants, while the remaining four observed in roles of nurse, note taker, or Bingo player. Each resident took on the Bingo role once. Standard debriefs and post-simulation Likert-scale surveys assessed observer experiences.

Impact: This Bingo tool was piloted across three sessions with sixteen residents completing surveys on focus, enjoyment, engagement, and distraction. Most residents reported that the tool improved focus, enjoyment, and engagement, with minimal distraction and a preference for its use. Figures and tables are attached.

Figure 1. Survey questions.

Survey questions included the following and were rated on a Likert Scale from 1-7.
1. The bingo card tool helped me stay focused/engaged during the observation. (Focused)
2. Observing the simulation scenario while using the bingo card made the process more enjoyable. (Enjoyable)
3. The bingo card helped me notice things I might have otherwise missed. (Notice)
4. I found the bingo card distracting to the overall observation experience. (Distracting)
5. I would prefer to use a bingo card in future observation tasks. (Preference)

Table 1. Bingo perspective survey averages.

Survey questions included the following and were rated on a Likert Scale from 1-7 and correlate to the questions listed in Figure 1. The n was 16, with average Likert scale results as below

Bingo Perspective Survey Averages				
Focused	Enjoyable	Notice	Distracting	Preference
6.625	6.3125	6.625	3.625	6.25

Survey questions included the following and were rated on a Likert Scale from 1-7 and correlate to the questions listed in Figure 1. The n was 16, with average Likert scale results as below

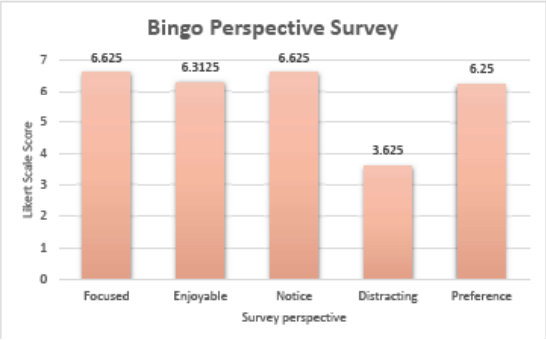


Figure 2. Bingo perspective survey averages graph.

49 National Survey of Emergency Medicine Residency Program Simulation Resources

Max Berger, Arlene Chung, Daniel Ackil, Ryan Clark, William Soares, Jaime Jordan

Background: The American Board of Emergency Medicine (ABEM)'s new Certifying Exam features simulation-based assessment.The current resources available to prepare residents to successfully pass this high stakes exam is unknown.

Objective: We sought to assess the current state of simulation resources in EM residency programs.

Methods: This was a cross-sectional survey study of residency or simulation leadership at ACGME accredited EM programs. We developed and administered an online survey consisting of multiple-choice items. The survey was piloted prior to use. To maximize response rate and minimize guessing, we did not require participants to complete all survey items. We collected data from August-October 2024. We calculated descriptive statistics.

Results: We identified contact information for residency or simulation leadership from 287 programs and 154 programs completed the survey (54%). Table 1 shows characteristics of participating programs. 80% of respondents were from PGY1-3 programs and 20% from PGY1-4 programs. Table 2 reports program simulation resources and usage. 40% of respondents reported that their department has a simulation division and 81% reported having a simulation director. 97% of programs reported they had access to a dedicated simulation center. 85% reported that it was "extremely easy" or "somewhat easy" to access simulation center resources, while 15% reported that it was "neutral," "somewhat difficult," or "extremely difficult." 16% of programs reported having to pay for simulation center resources, and of those, 26% stated that this limits simulation in their curriculum. There was a wide range of reported average yearly hours of simulation education per resident (mean 47.70 hours, SD 38.45).

Conclusions: While most participating EM residency programs have access to simulation resources, not all programs have robust resources, which may lead to inequities in preparing trainees for the new ABEM Certifying Exam.

Table 1. Survey respondent program demographics.

Residency program format	n (%)
PGY 1-3	122/153 (80%)
PGY 1-4	31/153 (30%)
Does your EM Department/Division have a Simulation Division?	
Yes	61/153 (40%)
No	92/153 (60%)
Does your EM Department/Division have a Simulation Director?	
Yes	124/153 (81%)
No	29/153 (19%)
Which of the following best describes your primary clinical site?	
County	20/151 (13%)
University	58/151 (38%)
Community	66/151 (44%)
Military	2/151 (1%)
Other	5/151 (3%)
Which of the following best describes your primary clinical site?	
Urban	89/153 (58%)
Suburban	51/153 (33%)
Rural	11/153 (7%)
Other	2/153 (1%)
What region is your residency program located in?	
West	27/153 (18%)
Midwest	40/153 (26%)
Northeast	35/153 (23%)
South	50/153 (33%)
Puerto Rico	1/153 (1%)

50 Characteristics of Soaped EM Residents

Anthony Sielicki, James Morris, Brian Milman, Miriam Kulkarni, Andy Little

Background: Between 2021-2023 Matches in Emergency Medicine (EM), there were 787 unfilled positions which were largely filled in the Supplemental Offer and Acceptance Program (SOAP).

Objectives: We sought to characterize rates of attrition of SOAPed EM residents, as well as their general guidance needs based on the ACGME milestones compared to residents who matched into EM in the main Match.

Methods: This was a mixed-methods study. A survey was distributed to program leaders in EM while at CORD's Academic Assembly and then via the CORD listserv. Program leaders were asked about the number of SOAPed residents in their program, the number who have left or plan to leave, and the typical amount of support and guidance required for each ACGME milestone.

Results: We collected 56 responses from program leaders, who reported having 289 SOAPed residents in their programs over the past 3 years (mean 5.25, std 3.99), representing 36.7% of all SOAPed EM residents from 2021-2023. 20 were reported to have left or planned to leave their program (6.9%). Table 1 displays the typical amount of required guidance for each milestone.

Conclusions: Within this sample, the attrition rate of SOAPed residents is (6.9%). SOAPed EM residents require more guidance with emergency stabilization and multitasking than their peers.

Table 1. Guidance for SOARed EM Residents compared to categorically matched peers.

Milestone	Much more	Somewhat more	Same	Somewhat less	Much less
Emergency Stabilization	16.7%	35.2%	40.7%	7.4%	0
Focused history and exam	9.3%	29.6%	53.7%	5.6%	1.8%
Selection of diagnostic studies	9.6%	32.7%	50%	7.7%	0
Appropriate diagnosis	7.4%	33.3%	55.6%	3.7%	0
Pharmacotherapy	5.8%	26.9%	63.5%	3.8%	0
Reassess and disposition	5.6%	31.5%	55.6%	7.4%	0
Multi-tasking and task-switching	11.3%	35.8%	47.2%	5.7%	0
Procedural skills	11.1%	24.1%	50%	14.8%	0
Medical knowledge	15.1%	22.6%	50.9%	11.3%	0
Professionalism	3.7%	7.4%	74.1%	13%	1.8%
Patient and family communication	1.9%	9.4%	79.2%	7.5%	1.9%
Interpersonal and team communication	3.7%	11.1%	74.1%	9.3%	1.9%
Self-awareness and well being	5.6%	16.7%	66.7%	11.1%	0

51 Leading in Silence: Simulating a Mass Casualty Event with a Deafened Commander

Shayne Gue, Stephanie Cohen, David Lebowitz, Drake Dixon, Evan Stern, Natalie Diers, Jonathan Littell, Tracy MacIntosh

Background: Mass casualty incidents (MCIs) are difficult to adequately prepare for given their inherent unique circumstances. We aimed to improve the learner's ability to overcome communication barriers. Simulating an MCI where the team leader cannot hear builds confidence and proficiency for future real MCIs.

Educational Objectives: By the end of this session, residents will be able to:

1. Evaluate and triage multiple patients from a natural disaster while remaining calm and utilizing the resources and team members you have
2. Assign roles in order to care for all patients effectively
3. Communicate effectively due to disability to the team leader so the team can continue to treat patients effectively

Curricular Design: A team is placed on a simulated cruise ship where an explosion occurs and results in the team leader losing the ability to hear. The team and leader must evaluate three patients and prioritize patients for airlift evacuation. We prepared three simultaneously run cases that were procedure-heavy and medically complex. The cases consisted of a pregnant patient in labor, a patient suffering a pneumothorax and hypothermia, and a patient who suffered severe facial trauma. The team must perform an urgent delivery, neonatal and maternal resuscitation, chest tube insertion, and a cricothyrotomy among other critical actions. The learners were surveyed on how this MCI simulation scenario better motivated/engaged/challenged/prepared them compared to other traditional educational methods.

Impact/Effectiveness: Data was collected from the surveys completed by learners regarding this MCI simulation. 100.0% of learners indicated they "strongly agreed" or "agreed" that the MCI Simulation session motivated, engaged, and challenged them more than traditional educational methods. 86.7% of learners "strongly agreed" with the statement "I feel better prepared to manage a real-life MCI/disaster/event medicine scenario as a result of my participation in this activity" with the remaining 13.3% indicating they "agreed".

52 Best Practices for Teaching Verbal De-Escalation in Health Professions Education: A Systematic Review

Emily Jameyfield

Background: Workplace violence is unfortunately very prevalent in emergency departments. First line management of agitation within healthcare is widely understood to be verbal de-escalation. Trainees such as EM residents are commonly responsible for managing agitated patients or visitors. Unfortunately, formalized training in the skill of verbal de-escalation is grossly lacking across health professions education (HPE), and consensus on how best to teach the skill is absent.

Objectives: This systematic review aims to outline the characteristics of curricula within HPE that teach de-escalation skills, to assess the studies describing these curricula in regards to research quality and strength of evidence, and to outline consequent best practices for how to teach the skill of de-escalation to health professionals.

Methods: The databases PubMed, EMBASE, ERIC (EBSCOhost), and Google Scholar were searched in November 2023. Studies that looked at empirical outcomes from educational interventions designed to teach de-escalation to health professionals were included. A standardized data extraction form was utilized and included studies were assigned scores on the Medical Education Research Study Quality Instrument (MERSQI) and the Best Evidence Medical Education (BEME) Strength of Evidence scale. A narrative synthesis approach was adopted.

Results: Out of 3788 unique records that were identified via search protocols, 46 studies met inclusion criteria. Nine had BEME scores of 4 or 5, indicating strong evidence. MERSQI scores ranged from 5.5– 16, (mean 10.36). Learners included nurses, physicians, nursing and medical students, and other hospital staff. Interventions with

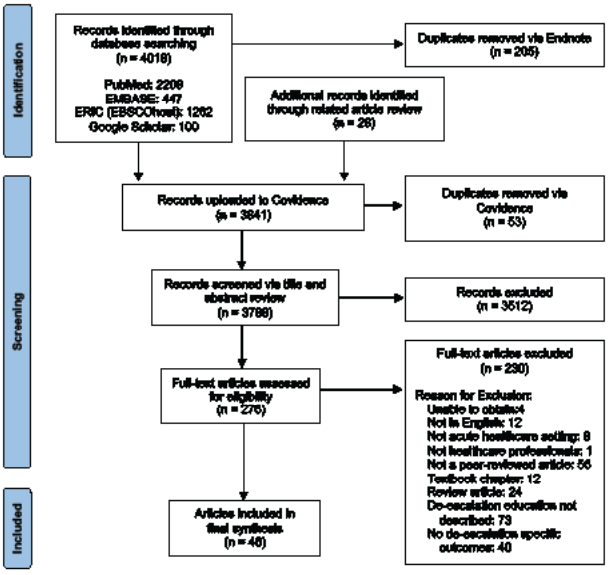


FIgure 1. Preferred reporting items for systematic reviews and mea-analyses (PRISMA) flow diagram.
From: Page MJ, McKenzie JE, Bossuyt I, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ. 2021; 372:n71. doi: 10.1136/bmj.n71.

strong evidence all incorporated role-play or simulation for teaching. The most evidence-supported frameworks for verbal de-escalation content are the Ten Domains of De-escalation by the American Association for Emergency Psychiatry and the De-escalating Violence in Health-care Settings Trainer Manual by the International Committee of the Red Cross.

Conclusions: Available evidence suggests that the most effective way to teach de-escalation within health professions education is through a combination of lecture, discussion, and active skills practice.

53 Rapid Development of a Novel Faculty Development Curriculum Utilizing Junior Faculty as Primary Authors

Heather Brown, Amanda Stratton, Stanley Hassinger

Background: Academic faculty development can vary in scope and perceived utility. The ACGME Common Program Requirements mandate that faculty pursue faculty development annually. Timely and specialty-specific faculty development is important for ensuring academic success for junior faculty and fellows and should be incorporated early in their careers. While creating a specialty and site-specific curriculum is likely most beneficial to leaners, the process can be laborious and daunting.

Educational Objectives: Rapidly create and deploy an effective faculty development curriculum for EM fellows and junior faculty to prepare them for successful careers in academic emergency medicine.

Curricular Design: Eight senior faculty developed a list of high-yield topics for junior faculty, the most useful decided by consensus (table 1). To promote independent learning and collaboration, five junior faculty and two EM fellows were assigned as primary authors for each of the topics according to their interest. A senior faculty considered an expert in the area was assigned as a mentor. Topics were presented in seminar format at a peer review session with all participants present. This stimulated valuable discussion including additional topics for the future.

Impact: Participants took an electronic survey with an 86% response rate (table 2). Responses strongly support the curriculum's importance and effectiveness. Responses particularly reflect the effectiveness of junior faculty as primary authors with all junior faculty strongly agreeing that creation of the modules improved their knowledge. Since curriculum deployment, new educational strategies are being employed by faculty and there is an increased emphasis on academic promotion. The curriculum is now being delivered to fellows and new-hire faculty in quarterly modules, with each participant creating an additional module to add to the curriculum.

Table 1. Curriculum topics and associated deliverables.

Topic	Deliverables
Navigating the IRB and protocol development	☐ Complete Citi Training ☐ Register for IRB account ☐ Request redcap account
Writing and submitting a scientific manuscript	☐ Identify relevant journals for research topic
Administrative skills	☐ Quality improvement project signup
ACGME faculty requirements and tenure track criteria	☐ Review CV ☐ Apply for academic appointment
Leadership	☐ Hospital committee sign up
Teaching outside the box	☐ Lecture development
Effective Mentorship/Giving effective feedback	☐ Identify mentor ☐ Write goals for mentorship
Additional topics to add, as recommended by the participating faculty and fellows: - Journal peer review and editing - Grant writing - Quality improvement - How to give a great presentation	

54 Cost-Effective Transesophageal Echocardiography Training on Cadavers with Nonfunctional Transducer

Christopher Clark, Nigel Bowe, Rupinder Sekhon, Caroline Dowers, Andrew Park, Abigail Brackney, Erin Cuddeback

Background: Emergency providers (EPs) face challenges in performing transesophageal echocardiography (TEE) due to insufficient training and high equipment costs. ACEP guidelines for TEE credentialing include verification of competency of transthoracic echocardiography (TTE) and 4-6 hours of TEE didactics followed by 10 supervised transducer insertions on live patients or high-fidelity simulators. A structured course for EPs to meet these standards can increase credentialing and overall use of TEE.

Educational Objectives: Participants will recognize indications, contraindications, and limitations of TEE with identification of appropriate views. Participants will then demonstrate the ability to place a TEE on a high-fidelity simulator and with use of a clinically nonfunctional transducer on cadavers. With course completion, participants will earn credentialing in accordance with ACEP guidelines.

Curricular Design: TTE proficiency is verified before course participation. Learners then engage with pre-lecture modules covering essential TEE concepts. Participants then practice TEE using a high-fidelity simulator, analyzing 10 cases with common pathologies or normal findings. Next, hands-on experience placing a TEE transducer on cadavers. Following this, participants complete an Objective Structured Clinical Examination (OSCE) with 10 proctored exams. The session concludes with a debrief.

Impact/Effectiveness: The course was implemented at an academic emergency center in June 2024. All participants achieved a score of 80% or higher with the OSCE, with most

attaining a perfect score of 100%. Use of a nonfunctional transducer cuts costs by eliminating the need for sterilization and avoiding damage to active probes. The cadaveric model improves transducer placement and manipulation while approximating physiological observations more closely than manikins. This course aligns with ACEP guidelines, aiming to help more EPs gain credentialing with a cost-effective approach and enhance the use of TEE, ultimately striving to improve patient outcomes.

55 The ITE House Cup: A Game-Changing Approach to Resident Board Preparation

Lauren Lamparte, Edward Ng, Shana Ross

Background/Objective: The In-Training Examination (ITE) House Cup, an intra-residency competition, was designed to enhance morale, encourage study habits, and improve ITE scores. Based on a needs assessment, residents attributed their lower ITE scores to disengagement in studying, which we hypothesized was due to a mental health decline linked to cold winters leading up to the ITE. The majority of residents indicated they would be more inclined to study in groups, prompting the development of the ITE House Cup.

Methods: Residents were randomly divided into 6 "houses", balanced across classes. Each house was paired with an Associate/Assistant Program Director (APD) "professor" for encouragement. The houses obtained points by engaging in study activities including: logging daily questions sets, participating as a house in attending led board review jeopardy, participating in "Board and Hungry" lunch sessions designed to teach test taking strategy, and participating in house study sessions outside of structured residency time. The competition was embraced by residents, APDs, and core faculty with strong participation. After the ITE exam, prizes were awarded and prestige was earned.

Results: As a result of this education innovation, 76% of residents reported an increase in prioritization of studying compared to only 39% in previous years. Almost 50% of residents attributed this increase in study habits directly to the ITE House Cup's group study activities, and 88% stated they felt more supported by peers and faculty to do well on the ITE exam. Their satisfaction with the ITE House Cup was rated highly, with 73% stating that participation in the Cup improved their mental health. Despite these improvements, ITE exam scores remained largely unchanged, falling within one standard deviation of previous scores and close to national averages.

Impact: We believe that with the continued encouragement of collaborative studying, we will see exam scores trend upward. We plan to implement the ITE House Cup again and believe other residents would benefit from this gamified curriculum.

56 Pediatric Ultrasound for Lumbar Puncture - A Simulated Task Trainer for Emergency Medicine Residents

Thomas Sanchez, Jaron Kurian, Edwin Davis, KeriAnne Brady, Hannah Park, Richard Shin

Background: Pediatric patients, particularly neonates, are challenging procedures for emergency medicine residents due to anatomical differences, the need for precision, and perceived high stakes. Mastery of LP technique in this population is critical multiple attempts increase the risk of complications and leads to heightened stress for the patient, parents, and clinicians. Given the limited availability of real-time practice opportunities, an anatomically accurate training model offers a valuable solution.There are high cost/high fidelity simulated task trainers that are available commercially, but no low cost/high fidelity models. Creating this model allows residents to develop the tactile skills and spatial awareness necessary to improve procedural confidence. By reducing reliance on trial-and-error learning in real patients, this model can enhance first-attempt success rates.

Objective: Our aim was to develop a simulated model of pediatric spinal anatomy using inexpensive, readily available materials. By creating an open-source, reproducible, and durable model, we sought to provide an accessible tool for effective teaching and skill familiarization for all emergency medicine residents.

Design: We constructed the model using ballistic gel and corrugated tubing from standard Emergency Department nebulizer mask kits. The ribbed structure of the tubing effectively simulates vertebrae and intervertebral spaces. The tube was sealed and filled with a mixture of water, starch, and ultrasound gel. This prepared structure was then embedded within the ballistic gel, creating a realistic and ultrasound-compatible representation of pediatric spinal anatomy.

Effectiveness/Impact: The model was reviewed and approved by ultrasound faculty prior to integration into a scheduled resident conference day. Following the session, 100% of surveyed residents reported that the model was an effective teaching tool and that it improved their confidence in estimating distance, angle, and positioning for primary needle puncture. Our goal is to enable all emergency medicine educators to construct this model, enhancing resident education in evaluating pediatric spinal anatomy with POCUS and supporting first-attempt success in clinical settings.

57 Floating to Find Rhythm: Assessing Procedural Confidence and Competence in a Novel Transvenous Pacemaker Simulation

Sachin Parikh, Cosimo Laterza, Benjamin Gilbert

Background: Performing a transvenous pacemaker (TVP) in emergency medicine (EM) is a high-acuity, low-occurrence (HALO) procedure essential for stabilizing patients with life-threatening bradyarrhythmias. EM residents have limited opportunities to perform this procedure, making simulation-based training crucial. A novel, inexpensive TVP model adapted from existing literature was constructed to help residents to conceptualize, visualize, and practice performing this complex procedure. The study aimed to evaluate the model's effectiveness in improving EM residents' confidence, procedural competence, and perceived realism.

Primary Objective: Assess resident confidence and competence performing a TVP.

Secondary Objective: Evaluate the realism of the simulator.

Methods: The study included 19 EM residents (PGY1-3) from a tertiary care center in New Jersey. A model costing $86 was adapted from existing literature and constructed with a submersible pump, vinyl tubing, and PVC components. Residents completed a pre-simulation confidence survey, received instructional training, practiced on the model, and were evaluated on procedural competence via a standardized 8-task checklist.

Results: Post-simulation, residents were graded on their knowledge, rated their confidence, and rated the model's realism via a 20-question quiz. Statistical analysis was conducted using paired one-tailed t-tests (α=0.05). Post-simulation, confidence in performing a TVP with assistance increased by 58.16% ($p<0.001$), and independent confidence rose by 60.26% ($p<0.001$). Knowledge of TVP indications improved by 39.74% ($p<0.001$). Confidence in identifying necessary supplies and procedural steps increased by 55.26% and 58.16%, respectively ($p<0.001$). Overall, education ratings improved from 23.16% pre to 87.63% post-simulation ($p<0.001$). Simulator realism scored 4.68/5.00 and pacer wire realism rated 4.79/5.00. Competency scores averaged 14.75/16.00 (PGY1), 15.00/16.00 (PGY2), and 14.83/16.00 (PGY3).

Conclusion: The TVP simulation training significantly improved resident confidence and proficiency. This low-cost model offered sufficient realism to effectively prepare residents for this rare emergency procedure. Limitations include a small sample size, potential Hawthorne bias, and inability to assess electrical and mechanical capture.

58 Doc Trial: A Targeted Documentation Curriculum for Emergency Medicine Residents

Thomas Sanchez, Brian Smith (Co-Author), Mitchell Melikhov-Sosin (Co-Author), Kallie Combs (Co-Author), Nao Yoneda (Co-Author), Timothy Khowong

Introduction: Documentation is essential to the practice of medicine as it creates a record of the medical care of a patient and the provider's thought process during an encounter. Adequate documentation allows for future providers to understand a patient's past medical care. It also can be protective in the case of a malpractice lawsuit, as it serves as the main record of that encounter. Despite this critical importance to the practice of medicine, formal Emergency Medicine (EM) documentation curricula are lacking.

Objective: Our goal was to create an interactive, entertaining, and educational curriculum to instruct Emergency Medicine residents in documentation. The primary aims of the intervention are to educate on documentation as a means to improve patient care, medicolegal protection, and billing/coding language.

Design: Designed as a series of sessions held every other month during our weekly conference didactics, each session is centered around a patient note created by the education team and designed to include common documentation errors observed by faculty. Residents are provided with notes prior to weekly conference and are instructed to identify deficiencies and areas for improvement. Residents are arranged into four teams that collaborate to fix notes in shared Google documents. The residents are thereby prepared for the sessions and arrive ready to discuss. The residents then engage in interactive didactics led by faculty. Primary learning points focus on delineation of thought processes to improve patient care, use of proper terminology and documentation of reassessments to assist in medicolegal protection, and optimize language for billing/coding.

Effectiveness/Impact: We surveyed residents and faculty using a 5-point unipolar Likert scale. Feedback was overwhelmingly positive, indicating a strong Kirkpatrick 1 impact. Residents rated sessions an average of 4.7/5, while attendings rated them 5/5 for both enjoyment and educational value. Additionally, 100% of faculty reported "very improved" or "extremely improved" resident documentation since the curriculum was implemented, with a mean score of 4.6/5, demonstrating Kirkpatrick 2 impact. Overall, this curriculum has shown great promise and we plan to collect data on Kirkpatrick 3 level through chart reviews in the future.

59 Guess Who: Repurposing Childhood Nostalgia as a Gamified Teaching Tool

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

Background: Guess Who is a deductive reasoning board game that many modern learners grew up enjoying. Unbeknownst to them as they strategically formed questions during gameplay, they were also learning to analyze salient features, while working on memory, auditory processing, vocabulary, social and communications skills, and making pivotal decisions to deploy either the typical binary questions versus deciding on the more pointed "bold play."

Educational Objectives: We aimed to use the same premise to hone these crucial skills amongst our trainees while teaching the often perplexing topic of rashes. The game board can be repurposed and outfitted with new card decks for subsequent topics. Our next proposed iteration for instance is orthopedic injuries.

Curricular Design: We reimagined gameplay to be team-based, allowing for collaboration and bonding. Two teams compete in a head-to-head challenge, each outfitted with a board that includes images of 24 must-know emergency medicine rashes. Each team selects a card from a separate pile of cards containing the same 24 images. The game's objective is to be the first to determine which card the opposing team has selected. Players alternate asking various yes or no questions to eliminate possibilities, such as:

"Is your rash blanching?"

"Is your rash Nikolsky positive?"

"Is your rash infectious?"

Well-crafted questions allow players to strategically eliminate multiple cards at once. A faculty member oversees the gameplay, acting as fact-checker, and moderator, while also providing educational pearls. Impact/Effectiveness: According to the follow-up survey evaluating this activity, trainees reported that they felt more confident in their ability to recognize and describe rashes. It serves as a novel way for programs to teach a particularly difficult topic, notoriously resistant to rote memorization. Since its implementation "Guess Who" has also created more awareness of creative ways in which to enhance didactic conference learning. We aim to share our activity with other programs via QR code so that they too can easily implement this activity as a free, open-access medical education resource.

60 Procedural Competency in Emergency Medicine Resident Physicians in Training: How is Competency Maintained, Evaluated, and Improved?

Jessica Smeaton, Katelyn Nielsen, Wirachin Hoonpongsimanont, Solomon Sebt, Vahe Zograbyan

Background: Procedures are a crucial skill set for emergency medicine (EM) physicians. ACGME requires residents to complete a certain number of procedures for graduation but assessing procedure competency has not been formalized among EM residency programs. (1)

Educational Objectives: We aimed to identify common mistakes in performing procedures in EM residents and correlations between numbers of performed procedures and their competency.

Curriculum: We evaluated residents' ability to perform a lumbar puncture, central venous access, thoracostomy, and intubations, via simulated scenarios using standardized procedure evaluation forms. Each assessment had key steps to complete in the pre-procedure, procedure, and post-procedure sections. Residents were graded Y if they completed the task spontaneously, R if completed with a reminder and N if unable to complete. The total score was based on the percentage completed without a reminder. Numbers of performed procedures were obtained from a self-reported database.

Impact/Effectiveness: We identified common mistakes through this process. For lumbar puncture, residents often forgot to call the timeout, discuss indications, risk/benefits of the procedure. In central venous access, ability to maintain sterile technique and proper needle handling were the concerns. Reminders were needed to use local anesthesia, proper chest tube size and placement technique when performed thoracostomy. For intubation, many concerned areas were found including calling time out, checking and verifying equipment, troubleshooting and passing the tube correctly, evaluating airway and post-intubation treatment.

We found no statistically significant correlation between procedure counts and competency score except for central venous access which had the highest procedure count (figure 1 and 2). Our findings affirm the benefit of utilizing simulation to identify procedure incompetency especially in the least-performed procedures.

	Procedure Count				Competency grade			
Procedure	Minimum	Maximum	Mean	Median	Minimum	Maximum	Mean	Median
LPs	0	7	3	2	0.882	0.971	0.937	0.941
Intubations	3	27	18	19	0.786	1.000	0.918	0.952
Thoracostomy	1	7	4	5	0.789	1.000	0.951	0.974
Central Venous Access	3	40	22	24	0.905	1.000	0.973	0.976
Total	0	40	12	6	0.786	1.000	0.945	0.952

Figure 1. Statistical Measures of Central Tendency for Procedure Count and Competency Grades.

61 How Single Accreditation Has Changed the Composition of Residency Programs

Zina Bwabi, Hannah Blakely

Background: Since the Match® was established, allopathic (MD), osteopathic (DO), and international medical graduate (IMG) students have utilized it for residency placements. DOs applied primarily through the American Osteopathic Association while MDs applied through Accreditation Council for Graduate Medical Education. The transition to a single accreditation system in 2020 led to a shift in the percentage of MDs, DOs, U.S. IMGs, and non-U.S. IMGs in residency programs.

Objective: This study evaluates how the move to single accreditation for DO graduates has changed the residency makeup in multiple specialties over 2014 to 2024.

Methods: Match® results were gathered from the National Resident Matching Program® database to evaluate the differences between emergency medicine (EM), family medicine, internal medicine (IM), general surgery, and orthopedic surgery. The differences in percentage of matched senior MDs, DOs, U.S. IMGs, and non-U.S. IMGs in each year were evaluated. Analysis was performed via ANOVA and chi-squared to test for significance of a p-value of < 0.05. A linear trend was used to establish the rate of available resident program positions in relation to the number of applicants per cycle.

Results: Between 2014 and 2024, there has been a significant increase in DO senior graduates and decrease in MD senior graduates in residency programs since the transition to single accreditation. The biggest increase is seen in EM as the number of DOs rose from 9.99% to 36.22% and number of MDs fell from 78.33% to 44.45%. Non-U.S. IMGs percentage increased significantly for EM, family medicine, and IM. Linear trendlines in applicants per year grew at a larger rate than available resident positions.

Discussion: The transition to single accreditation allowed DO recipients more opportunity to match into their desired programs while raising the competitiveness in specialties like EM, Family Medicine, and Orthopedics. The number of total applicants rises each year at a faster rate than available program positions, but some programs continue to have unfilled spots. More research is required to further understand the reason for increased preferences towards DO students and why some programs remain unfilled despite the increase of yearly applicants.

62 Establishing Procedural Confidence in Emergency Medicine: The Role of a Dedicated Intern Procedure Lab

Cosimo Laterza, Benjamin Gilbert

Background: Simulation-based training is essential for improving procedural skills and confidence among emergency medicine interns. Although simulation is widely used, much literature focuses on general orientation programs rather than targeted skills labs. Limited procedural exposure before internship can reduce confidence and affect proficiency. To address this, a focused Intern Procedure Lab was introduced before the academic year to enhance procedural confidence. Objective: To evaluate the impact of a dedicated Intern Procedure Lab on procedural confidence among first-year emergency medicine residents. Methods: This prospective study included 22 first-year emergency medicine residents from a residency program at a large academic hospital in New Jersey over two years. The Intern Procedure Lab, held in the hospital's simulation center, consisted of six procedural stations. Each station was led by, developed and curated by PGY2/3 residents. Each station provided 20 minutes of structured instruction on indications, contraindications, complications, materials, steps, and microskills, followed by practice attempts. Pre- and post-lab confidence levels were assessed using a 10-point Likert scale for both individual and overall procedural confidence. Statistical analysis was performed with a paired one-tailed t-test. Additionally, a site-specific procedure guide was created by the senior residents for future use within the department. Results: Confidence improved significantly, with an average increase of 2.59 (99%CI 2.57-2.61) from pre-lab (M=4.11, SD=1.1) to post-lab (M=6.81, SD=1.2) assessments. Each procedure showed a statistically significant confidence gain ($p<0.01$). Participants valued the lab's relevance and 1 effectiveness, while senior residents appreciated ownership of teaching.

Conclusion: The Intern Procedure Lab successfully enhanced procedural confidence in first-year emergency medicine residents, meeting a critical training need. The procedure guide was an invaluable addition as site-specific instruction was previously lacking. The lab's design demonstrates significant impact and can serve as a model for similar programs. Study limitations include a small sample size,

no evaluation of competence, and possible Hawthorne bias.

63 Defibrillate, Cardiovert, Pace! Translating Skills from Simulated to Real Equipment

Diana Labrada, Steven Chapman, Jonathan Bronner, Ryan Hunton, Josh Karsner, John Reitnauer

Background: Our institution switched to Stryker LifePak 15 defibrillators in 2023. It was imperative that junior learners be trained to operate the new defibrillators prior to using it on patients.

Objectives: To determine if skills including rhythm identification, mode selection (defibrillation, cardioversion, and transcutaneous pacing), and electricity delivery learned on a simulated defibrillator translate to correct use on a real defibrillator.

Methods: This was an observational prospective study that included a convenience sample of EM interns, 4th-year medical students, EM Physician Assistants (PA), and 3rd-year PA students. Data collection ran from June 28 - July 23, 2024. Inclusion criteria included being a University of Kentucky EM intern, medical student, PA, or PA student voluntarily present during a didactic day. Exclusion criteria included those who did not desire to complete the survey. The study was completed in three phases. Phase 1 included a one-hour training on arrhythmias and defibrillator functions as well as hands-on practice with a simulated defibrillator. Phase 2 occurred 24 hours after and included three randomized simulation cases that assessed the learners' ability to recognize the correct rhythm and manually operate the simulated defibrillator. Phase 3 occurred 2-3 weeks after Phase 1 and also included three randomized cases where learners had to operate a live defibrillator.

Task (N = 32 Learners)	Completion (%)[f]	Accuracy (1-3 scale)[f]	Timing (seconds)[f]
Defib: Turn on defib	100 (100, 100)	2.99 (2.83, 3.00)	0.0 (0.0, 0.0)
Defib: ID rhythm	96.9 (16.7, 100)	2.83 (1.33, 3.00)	9.2 (5.2, 29.4)
Defib: Choose modality	99.5 (83.3, 100)	2.91 (2.00, 3.00)	13.2 (7.8, 39.5)
Defib: Choose energy	100 (100, 100)	2.80 (1.83, 3.00)	19.1 (9.8, 63.7)
Defib: Charge defib	100 (100, 100)	2.94 (2.33, 3.00)	23.0 (12.2, 73.0)
Defib: Deliver electricity	100 (100, 100)	2.94 (2.33, 3.00)	29.2 (19.2, 78.7)
Cardio: Turn on defib	100 (100, 100)	3.00 (3.00, 3.00)	0.0 (0.0, 0.0)
Cardio: ID rhythm	98.4 (83.3, 100)	2.74 (1.20, 3.00)	9.4 (5.3, 29.2)
Cardio: Choose modality	100 (100, 100)	2.93 (2.67, 3.00)	13.6 (8.8, 29.3)
Cardio: Choose energy	100 (100, 100)	2.86 (1.83, 3.00)	24.4 (15.3, 45.8)
Cardio: Synchronize	96.4 (0.0, 100)	2.94 (2.40, 3.00)	17.0 (9.5, 49.2)
Cardio: Charge defib	100 (100, 100)	2.93 (2.00, 3.00)	30.6 (19.5, 79.3)
Cardio: Hold button	99.5 (83.3, 100)	2.77 (1.60, 3.00)	37.9 (24.8, 108.2)
Pacing: Turn on defib	100 (100, 100)	3.00 (3.00, 3.00)	0.0 (0.0, 0.0)
Pacing: ID rhythm	96.9 (16.7, 100)	2.94 (2.60, 3.00)	9.3 (5.3, 40.4)
Pacing: Choose modality	100 (100, 100)	2.94 (2.00, 3.00)	12.7 (3.2, 22.2)
Pacing: Select rate	97.9 (33.3, 100)	2.72 (2.00, 3.00)	24.0 (11.5, 53.5)
Pacing: Select current	99.0 (66.7, 100)	2.50 (1.25, 3.00)	42.4 (21.5, 132.8)
Pacing: Achieve electrical capture	96.4 (0.0, 100)	2.48 (1.40, 3.00)	48.9 (23.7, 154.4)

[f] Mean (Min, Max); Learners first had their scores averaged across raters

FIgure 1. Learner performance at Phase 2 (N=32).

Results: The 32 participants included 13 EM interns, 9 medical students, 4 PAs, and 6 PA students. Phase 2 demonstrated near 100% completion across all tasks and rhythms. Accuracy was higher for defibrillation and cardioversion as compared to pacing. Defibrillation was the fastest task (mean 29.2 seconds; range: 19.2-78.7 seconds), and transcutaneous pacing was the slowest task (mean 48.9 second; range: 23.7-154.4 seconds). In Phase 3, the task times were significantly longer across every task.

Conclusion: Although task completion and accuracy remained mostly high on the live defibrillator at 2-3 weeks, each task took longer. This study demonstrated that learned skills on a simulated defibrillator can successfully translate to task completion and accuracy on a real defibrillator. However, because of possible skill erosion over time, re-training may be necessary at regular intervals.

64 The Dose Makes the Poison: Cultivating Knowledge of Toxins and Treatments on a Botanical Voyage

Jaydip Desai, Michael DiGaetano, Colleen Donovan, Denise Fernandez, James Luckey

Background: Toxic overdoses based on plant-derived toxins are uncommon presentations that can be difficult to recognize. Without prompt recognition, sequelae of toxic ingestion can rapidly result in death. Active learning through outdoor exposure may help reinforce knowledge of toxic principles. However, there is an overall lack of literature regarding the efficacy of deviating from the traditional lecture format to outdoor settings with active learner engagement.

Education Objectives: Objectives included reinforcing identification and management of common plant-derived toxins, discussing pharmacology and physiology of medications derived from plants, and promoting wellness and creativity in core curricular content.

Curricular Design: The session involved a walking tour of a local botanical garden led by a toxicologist and pediatric EM attending with expertise in toxic plants in which learners identify plants and discuss the physiology of medications and toxins derived from them. Learners completed pre- and post-session surveys containing multiple choice questions related to plant identification, antidotes, and toxic effects, as well as self-reflection questions formatted as a Likert scale to assess comfort level and perceived understanding of toxicology.

Impact/Effectiveness: Of the eighteen participants, the percentage correct of toxicology principles increased to 87% from 47% based on pre- and post-assessments. There was also a 57% increase in confidence level upon completion of the exercise. This active didactic session on

toxic plants in their natural setting led to both increased comfort with identification of poisonous plants and toxin-mediated pathophysiology, as well as enhanced recall of knowledge regarding toxidromes. This session served as an effective and engaging learning experience that deviates from the traditional classroom setting. We hope that this project leads to further outdoor and hands-on didactic sessions in emergency medicine education.

65 Enhancing Resident Preparedness and Interest in Critical Access Hospital Emergency Departments through a Specialized Curriculum

Kjerstin Hensley, Sydney Miller, Robert Calleja, Bophal Hang

Background: Critical Access Hospitals (CAHs) face staffing shortages as most EM graduates pursue urban positions. A MedEd Portal review showed no standardized curriculum training residents for CAH roles. With saturated metropolitan EM job markets and ongoing CAH staffing needs, this study's rural-focused curriculum – including didactics, simulations, and procedural training – aimed to increase residents' interest and preparedness for CAH roles.

Objective: To assess whether a specialized curriculum improves resident preparedness and interest in critical access hospital EDs, we hypothesize that implementing such a curriculum will significantly enhance residents' preparedness and comfort in managing critically ill patients in these environments.

Methods: This prospective study between 2023-2024 included 29 residents in an urban, academic Level 1 Trauma center. The participants were surveyed on their comfort, experience, and interest in rural EM through pre- and post-surveys surrounding a novel 6-month curriculum. The curriculum included lectures on CAH foundations, EMTALA, pharmacology, and rare procedures, supplemented by a solo simulation and hands-on labs for limited-resource stabilization techniques. The training's impact was analyzed post-curriculum with paired t-tests and effect sizes via Cohen's d, with the Shapiro-Wilk test confirming normality and Bonferroni correction setting a 0.0125 threshold.

Results: Comfort in managing critically ill patients in both urban ($p < 0.001$, $d = 1.27$) and rural ($p < 0.001$, $d = 1.05$) settings improved significantly. An increase in comfort speaking with transfer centers ($p = 0.010$) was not significant after adjustment, though the medium effect size ($d = 0.61$) suggested practical relevance.

Conclusions: The curriculum enhanced residents' comfort in managing and stabilizing critically ill patients in urban and rural settings. Improvements in transfer center communication were observed but not statistically significant post-adjustment.

Table 1. Statistical analysis of interventions for critically ill patient management across different settings.

Variable	Mean Difference	t-Statistic	Unadjusted p-value	Adjusted p-value	Conclusion	Effect Size (Cohen's d)
Identifying Critically Ill Patients	0.52	2.166	0.042	0.168	Not Significant	0.47 (Medium)
Managing Critically Ill Patients in Urban Settings	1	5.831	<0.001	<0.001	Significant	1.27 (Large)
Stabilizing Critically Ill Patients in Low-Resource Settings	1.43	4.831	<0.001	<0.001	Significant	1.05 (Large)
Speaking with a Transfer Center	0.95	2.817	0.01	0.04	Not Significant	0.61 (Medium)

66 Crash Course – A Critical Care Curriculum for PGY-1 Emergency Medicine Residents

Tina Anjali Jagtiani, David Simon, Timothy Khowong, Kyle Vincent Soldevilla, Catherine De Guzman

Introduction: The hallmark ability of the Emergency Physician (EP) is to quickly assess a patient in extremis and deploy interventions to save lives. However, there is a lack of formal training in resuscitation for early trainees. To address this, we developed a structured, four-session curriculum with a combination of individualized interactive didactics and simulation to standardize resuscitation training for emergency medicine interns.

Educational Objectives: By the end of the course EM interns will:

1. Describe the pathophysiology of shock
2. Prescribe the correct hemodynamic agent for a patient in shock
3. Identify a physiologically difficult airway
4. Intubate a patient with normal airway anatomy
5. Describe the modes of invasive and non-invasive ventilation
6. Define reversible causes of cardiac arrest
7. Describe indications to cease a resuscitation
8. Conduct a basic goals of care discussion

Curricular Design: The curriculum consists of four 2-hour, 1-on-1 sessions. Prior to the course, interns take a pre-test with Likert scale and short-answer questions. Each session includes a 15-minute simulation followed by a 15-minute debrief, leading into a 90-minute interactive lecture related to the simulation topic. The remaining time is dedicated to supervised procedure practice and addressing questions. The 1-on-1 format promotes psychological safety for intensive learning, while the use of interactive didactics and simulation aligns with learner preferences in emergency medicine. The sequence of cases is scaffolded, building on knowledge from previous sessions. A post-test is administered immediately after the course.

Impact: The course effectively transferred the knowledge, skills, and attitudes needed for EPs in resuscitation, achieving success at Kirkpatrick Levels I and II. To date, 19 learners (n=19) have successfully completed the course. Pre- and post-test results show subjective confidence

in critical care increased from 2.47 to 4.13 ($p<0.001$) on the Likert scale, and average written exam scores improved from 49% to 74% ($p<0.001$). Learners provided overwhelmingly positive feedback. Though time-intensive, the curriculum represents a valuable investment in a crucial skill for Eps.

67 Bingo! A Multiplayer Synchronous Serious Game to Increase Weekly Conference Engagement and Learning

Tina Anjali Jagtiani, Thomas Sanchez, Brian Smith, Timothy Khowong

Background: Weekly conferences are a crucial component of medical residency education; however, maintaining consistent engagement among residents during these sessions can be challenging. We have implemented a novel intervention, content-related conference bingo, to address this issue, aiming to improve resident participation, satisfaction and knowledge retention.

Objectives: By participating in this serious game, EM residents will:

1. Actively listen to all didactics during weekly conference

2. Identify teaching points related to their individual game boards

3. Engage with their peers in a friendly competition 4. Formulate a teaching point for every completed box on their game boards

Curricular Design: We introduced a conference bingo initiative at our weekly resident conference via an online platform that is easily accessible from mobile devices. Bingo cards are created with terms and concepts directly related to each week's specific content. Residents play throughout all conference sessions, and the winner of the bingo game is prompted to present one learning point about each crossed-off tile on their card, which reinforces the information and facilitates peer teaching. We assessed engagement levels through a post-intervention survey, direct observation, and participation rates.

Impact: Following the implementation of conference bingo, we observed an increase in resident engagement. Post-implementation survey results (n=21) show a favorable reaction toward this novel activity with an average score of 4.24/5 on a bipolar Likert scale, demonstrating a Kirkpatrick Level I impact. In addition, 71.4% of participants report feeling "very engaged" or "engaged" in conference content with the incorporation of bingo, and 100% of learners expressed interest in future participation. The unanimous desire to continue participating in conference bingo demonstrates its strong appeal among residents, giving us the opportunity to leverage their enthusiasm for further educational enhancements

68 Navigating Clinical Feedback in Emergency Medicine: A Scoping Review

Neha Raukar, Dea Kehler, Bo Madsen

Background: Clinical feedback is essential to emergency medicine (EM) education, shaping residents' learning, decision-making, and patient care. However, barriers often limit the effectiveness of feedback. This review synthesizes current research to identify challenges and opportunities in delivering clinical feedback to EM residents.

Objectives: This review examines the role, impact, and challenges of clinical feedback in EM residency, focusing on how real-time feedback affects learning, patient care, and the perspectives of residents and attending physicians.

Methods:

Design: A scoping review of literature from 2013 to 2023 was conducted using Medline and Embase databases.

Setting: Studies were selected from diverse clinical environments, including community hospitals, tertiary centers, and urban trauma centers.

Participants/Subjects: Eleven studies from the US and Europe were included based on relevance to clinical feedback in EM residency. Interventions/Observations: Feedback approaches were reviewed, emphasizing optimal conditions and the educational value of timely, observation-based feedback. Data analysis revealed key barriers to effective feedback, such as time constraints, limited observation, workload pressures, and residents' emotional responses.

Results: Findings show that effective feedback improves clinical skills and operational efficiency but is often hindered by barriers, leading to missed opportunities. Results indicate feedback is most impactful when targeting modifiable behaviors and delivered as real-time, structured input from supervising physicians. Training residents to receive feedback effectively is also emerging as a valuable tool.

Conclusions: Feedback is critical to EM resident education, yet further studies are needed to understand its impact on resident performance in clinical settings. Recommendations include implementing structured faculty development and feedback training for both residents and educators to support continuous learning. Limitations include variability in study design and focus, along with limited literature, which may affect the generalizability of findings.

Innovation Abstracts

1 Shifting Training Preferences in Emergency Medicine Residency Applicants: A Post-Interview Analysis from 2020 to 2024

Christopher Woodard, Jennifer Campoli, Stephen Lucas

Objectives: This study aims to investigate the changing

training preferences among Emergency Medicine (EM) residency interviewees from 2020 to 2024 after participation in interview days We aim to identify trends in demographics, assess the influence of virtual programming, and explore resident priorities in their preference for training site.

Methods: Surveys were sent to program interview candidates pre and post interview with the program through Redcap and all data were de-identified. Data were collected through survey responses from EM residency candidates at a level one academic trauma center. Additionally, survey questions were designed to assess the influence of multiple variables affecting applicant decision-making and preferences including virtual programming (interviews and social events), program demographics, shift type, and more.

Results: From 2020 – 2024 gender diversity increased significantly with more female and gender diverse applicants applying. The priority of the "Overall residency interview day" as primary criteria for residency ranks decreased from 80% to 74% of respondents. Virtual dinners and social events decreased positive influence from 57% to 42% of respondents. Salaries and benefits increased positive influence from 51% to 68% of respondents. Shift length showed increased positive influence from 80% to 94% of respondents.

Conclusion: The period from 2020 to 2024 witnessed swift changes in training preferences among EM residency applicants. Most surprising was the decreased influence of virtual programming. While equitable, virtual interviews may not be meeting recruitment needs of future residents. Students' rank list decisions may be more heavily influenced by implicit bias and notoriety than true assessment of fit for each candidate. Concurrently, there was a higher positive influence for lower shift length and total number of shifts, highlighting a growing emphasis on work-life balance. As the greater working world has re-prioritized wellness this reflects in resident preference especially in the post-COVID era. As the healthcare climate continues to change the previous models of residency recruitment and administration that were adapted over a slowly changing climate of decades appear obsolete, but the ideal recruitment strategy is still a mystery.

2 A Comparative Study of Emergency Medicine Question Bank Performance and In-Training Exam Results in Emergency Medicine Residents over Four Years.

Susan Miller, Maria Valeria Ortega, Jesus Roa, Josef Thundiyil, Linda Papa, Christine Vandillen, Jay Ladde

Background: EM residency programs use question banks to help residents prepare for the In-Training Exam (ITE) and ultimately board passage.

Objectives: This study aims to determine the correlation between residents' utilization of the Rosh Review Question Bank (RR-EMQB) and their ITE scores.

Methods:

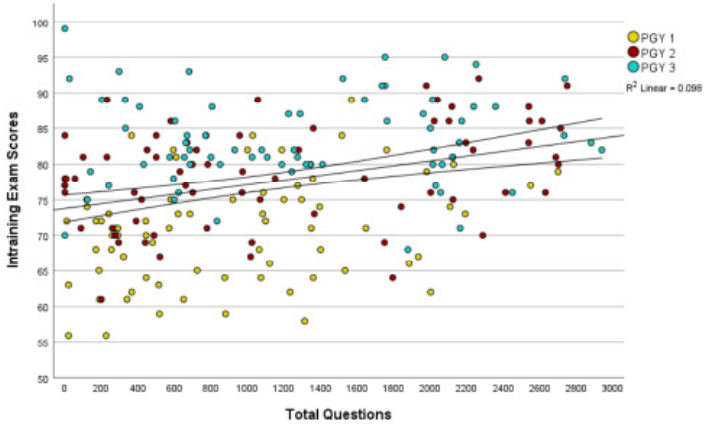
Design and Setting: This is a retrospective, observational cohort study involving EM residents from a single 3 year residency program with 54 residents in an urban tertiary trauma center.

Subjects: EM residents of all training levels, who utilized the RR-EMQB and have completed the ITE from 2020-2024 were included. Residents who did not take the ITE during this period were excluded.

Observations: We analyzed the number of RR-EMQB questions that were completed by each resident for the academic year they took the ITE and calculated correlation coefficients between the number of questions completed and ITE raw score. We also compared the number of questions completed between those scoring above and below the ABEM passing score of 75% correct.

Results: 123 subjects completed 909, 1185, and 1276 questions for PG 1, 2, and 3 years respectively (p=0.017). There were significant correlations with number of questions completed and ITE scores with a rho=0.317 (p<0.001). Subgroup analyses further indicated possible significant correlations in the earlier stages of training, with PGY-1 residents showing a correlation coefficient of 0.273 (p=0.021), PGY-2 residents 0.346 (p=0.003), while PGY-3 residents had a rho=0.097 (p=0.428). For those who scored below 75% correct, their mean questions answered was 813 (95%CI 660-966). For those who scored at 75% or above, their mean questions answered was 1278 (95%CI 1140-1415).

Conclusions: This study has the following limitation of a retrospective observational cohort study: trends can be regarded as an association as medical knowledge can be acquired by various means. Despite this limitation, we conclude completing a higher number of review questions may be beneficial for improving ITE performance, particularly in the earlier stages of training. This may be helpful for EM program leadership in developing remediation plans for at risk residents



3 Erector Spinae Plane Block: Regional Anesthesia Education for the EM Resident

Sean Whitty, Michelle Clinton, Andrew Blair

Background: Ultrasound-guided regional anesthesia (USGRA) enables physicians to provide analgesia without the side effects of opioids, improves patient satisfaction and outcomes, and is important for the ED provider. We utilize a single-day workshop to teach the Erector Spinae Plane Block (ESPB) to residents and attendings.

Educational Objectives: The objectives of this study were to create, implement and assess a cadaver model-based, single-day workshop for teaching USGRA to both Emergency Medicine residents and attending physicians. We also investigate if the required number of practice repetitions affects competence achieved at the end of the workshop. Survey data was collected to assess confidence in USGRA, number of USGRA blocks performed, and perceived barriers to performing USGRA in the ED

Curricular Design: A single-day workshop was designed to teach the ESPB. This involved a 15-minute lecture-style didactic with essential knowledge regarding the ESPB; including all theoretical information for performance of ESPB, photos and video, indications, anesthetic choice and safe dosing, complications, and ED location of USGRA supplies. Practice with gel ultrasound models introduced in-plane needle guidance and procedural basics. Participants then practiced with a soft-embalmed cadaver and were randomized to perform 3 or 6 attempts on the cadaver. One scored attempt was evaluated on a standardized rubric. Survey data were obtained before and after the workshop. Participants retested three months later and data was again collected. Final survey data will be collected six months after the workshop.

Impact/Effectiveness: This model provides a framework for concise, detailed education and practice with minimal effect on existing curriculum. Performance data showed some skill decay over time, but also an increase in confidence and likelihood to perform the procedure in post-session surveys. Barriers included efficiency and lack of faculty comfort with ESPB.

4 Drivers of Engagement/Burnout Workshop: A Fun, Engaging Way to Generate Performance Improvement Projects

Amber Billet

Introduction: Planning and completing a performance improvement project (PIP) is an important skill for Emergency Medicine (EM) residents to learn. It is also an ACGME requirement. We present an engaging method to generate PIP ideas.

Educational Objectives:
1. Recognize key drivers of engagement/burnout.
2. Participate in an immersive method to generate potential future PIPs.

Curricular Design:
1. A group of 26 EM residents and 6 EM attendings were introduced to the 7 drivers of engagement/burnout (Fig 1). The group chose the workload/job demand driver.
2. Gravity issues (ones that cannot be solved within the ED) were discussed and put in a "parking lot". These were excluded when generating ideas but were given to ED leadership.
3. Each person conceived two ideas related to improving workload/job demand and wrote them on two index cards.
4. Index cards were shuffled and passed around amongst participants. Each participant took 2 cards at random.
5. Participants paired up to discuss the ideas for 5 minutes. Using a 5-point Likert scale (Fig 2), each participant rated the idea and recorded the score on the back of the card.
6. Steps 4 & 5 were repeated x4.
7. Results were collated by adding the 5 ratings on each index card (min. 5; max. 25). A list was compiled ranking the scored ideas from highest to lowest.
8. Participants were asked to sign up to help develop solutions for the top 10 ideas.
9. The full list of ideas was provided to residency and ED departmental leadership.

Impact/Effectiveness: Participants collectively identified key drivers of burnout/engagement as related to workload/job demand and generated a ranked list of PIP ideas. A PIP was executed based on one of the key ideas (decreasing non-physician tasks) and was successfully implemented within 12 weeks. When residents have a sense of ownership in work unit changes, they recognize the importance of staying involved to promote positive change. If it's about us, don't do it without us.

Figure 1. Seven drivers of engagement/burnout.

5 Know Your Pressor: Table-Top Simulation for Push "micro" Dose Pressor Preparation and Use

Andrew Bloom, Jaron Raper, Helena Kons, Emily Green

Introduction: The practice of preparing and administering small doses (micro or push) of vasopressors in hemodynamically unstable patients is an essential skill in Emergency Medicine (EM). Using micro dose pressors (MDP) can be lifesaving but is also a high-risk practice with opportunities for errors in calculation, preparation or administration. Simulation provides a low-stake forum for learners to practice and fine-tune skills. There exists little to no formal education of MDP administration and preparation. Here we collaborated with our pharmacists to develop a table-top based MDP simulation for our EM residents.

Educational Objectives:

1) Explain indications for MDP in the ED
2) List appropriate supplies to prepare MDP
3) Determine appropriate MDP, dose, and frequency of administration based on clinical scenario
4) Prepare MDPs and propose appropriate dose to a patient

Curricular Design: The curriculum was designed by EM Clinical Pharmacists with EM faculty support. Pre-learning slides were provided to learners prior to the simulation highlighting MDP use and preparation. Learners participated in a 20-minute table-top simulation with our Pharmacy team with pre-brief and debriefing sessions. During the simulation MDPs were prepared, indications were discussed, and appropriate dosing and frequency was highlighted. Learners completed pre and post surveys using a 10-point Likert scale outlining comfort and knowledge of MDPs.

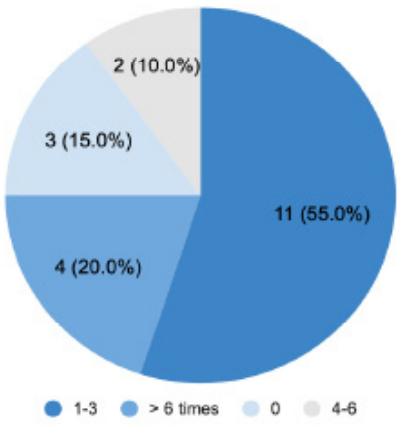


Figure 1. Prior learner experience with Micro-dose Epi.

Impact/Effectiveness: 20 EM residents participated in the simulation. A majority (65%) of residents had not prepared MDPs in a clinical setting highlighting the need for ongoing training. After the simulation residents reported significant improvement in performing (4.63 vs. 8.74), dosing (5.42 vs 9.0) and teaching (4.11 vs 9.0) MDP administration and preparation. Overall residents felt the activity was worthwhile (9.9) with high satisfaction (9.95).

6 Utilizing Simulation to Integrate Social Determinants of Health into Emergency Medicine Medical Student Clerkships

Andrew Bloom, Joshua Waldeck, Erin Shufflebarger, Zach Pacheco, Katherine Griesmer, Briana Miller

Background: Medical education has increasingly focused on the social aspects of healthcare in recent years, with programs incorporating training on the social determinants of health (SDH). Despite this progress, a gap remains in standardized simulation scenarios with SDH training objectives, and efficacy data is limited. This study introduced a series of emergency medicine (EM) training scenarios that integrated both clinical and SDH objectives. These scenarios aimed to provide learners opportunities to diagnose and manage common urgent and emergent complaints while also considering social factors.

Objectives: To incorporate SDH into medical student curriculum using simulation-based education.

Methods: A medical student and EM faculty developed simulation scenarios for use during a required third-year medical clerkship. The scenarios incorporated realistic SDH themes into common EM presentations, followed by debriefing. Pre- and post-intervention surveys were administered to participants.

Results: 30 students participated in the simulation and completed pre- and post-surveys. Post-survey results showed improved comfort in identifying (62% to 78%) and addressing (48% to 74%) patients' social needs. Confidence in awareness of SDH resources also increased (44% to 67%), and participants felt more confident connecting patients with these resources (44% to 75%). Learners also reported greater consideration of SDH in patient care post-training (68% to 87%). Participants overwhelmingly found the training valuable (96%). A slight increase was noted in the belief that medical students should be trained to address social needs (90% to 95%), reinforcing a pre-existing interest in SDH training. Overall, the scenarios were considered meaningful and broadened the students' perspectives on patient care.

Conclusion: This series of EM simulation scenarios demonstrates the feasibility, effectiveness, and perceived value of integrating SDH training into EM education.

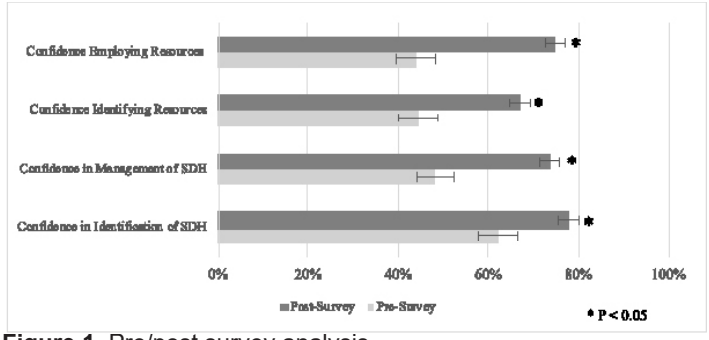


Figure 1. Pre/post survey analysis.

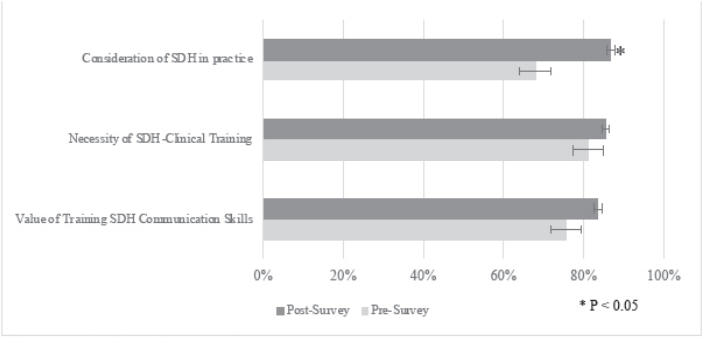


Figure 2. Pre/post survey analysis.

7 Navigating the Emotional Transition to and through Intern Year

Kathryn Lorenz, Linda Regan

Introduction: The AMA has indicated the importance of intern mastery of 8 domains of well-being including emotional. The transition from medical school to residency is overwhelming medically and emotionally given the expectations for new residents and patient care demands. Emotional readiness refers to the foundational emotional skills that help a resident flourish during intern year including learning to fail, understanding your strengths, and taking care of your own well-being. At our institution, 72% of residents indicated that they entered residency in the pre-contemplation stage for emotional readiness, acknowledging the importance of emotional readiness but not having strategies to grow in this domain. A curriculum that addresses the emotional transition to residency can be an effective tool to support emotional well-being for new residents.

Educational Objective: Our curriculum was designed to create an environment that normalizes the wide array of emotions that intern year invokes, fosters support, and provides resources for navigating those challenges.

Curricular Design: This curriculum consisted of four sessions during the academic year focused on developing a transparent and supportive community when discussing emotions that arise throughout the PGY-1 year. Key concepts included expectation setting as a new intern, peer to peer debriefing strategies, normalization of failure, and the importance of reflective practice.

Impact/Effectiveness: The curriculum was implemented in 2023-2024 with 12 PGY-1 residents. Participant feedback has been overwhelmingly positive, commenting on the transformational nature of this curriculum on their mindset for intern year. Objectively, participants demonstrated growth in emotional readiness, with 75% of respondents moving past the pre-contemplation stage and into the preparation and action phases of honing skills necessary for emotional success in residency. This small pilot demonstrates great promise for impacting emotional wellness during transition.

8 An Addiction Medicine Program for Emergency Medicine Residents

Ashley Iannantone, Andrea Carlson, Ryan McKillip

Introduction: For over a decade, discourse in the graduate medical education realm has identified a need to integrate addiction medicine into training, particularly for primary care and EM specialties. Despite this call to action and the prevalence of patients presenting to the ED for concerns related to substance use, there remains a gap in formal education on the topic during EM residency. Few programs offer formalized addiction medicine curriculums or elective opportunities, forcing residents to seek out FOAMed resources independently.

Educational Objectives: Our aim was to design a didactic-based comprehensive addiction medicine program for EM residents at all levels of training. Upon completion of this program, residents should be more comfortable with diagnosing and managing substance use disorders and their sequelae.

Curricular Design: We developed a didactic-based program covering the following addiction medicine topics: 1) screening for and diagnosing substance use disorders, 2) medication-assisted treatment for alcohol use disorder and opioid use disorder (including buprenorphine induction in the emergency department), 3) emerging drugs of abuse, and 4) motivational interviewing. Didactics were 30-60 minutes in length and were given throughout the 2024-2025 academic year during the regularly scheduled weekly resident conference. Feedback was solicited from resident and attending physicians after each session. Residents also have the option to do an Addiction Medicine elective, rotating with both our inpatient addiction consult service and in the outpatient medication assisted treatment clinic.

Impact/Effectiveness: Our addiction medicine program has had positive feedback thus far from both residents and

faculty, with particular interest in continued education and expanding topics of discussion. 88% of residents attended the first didactic session (including 100% of the intern class). Resident feedback has been positive, with 100% indicating that they "strongly agreed" that they gained knowledge from the session and it would make them more effective in their clinical practice. Further study of the program including pre- and post-didactics knowledge-based surveys is ongoing.

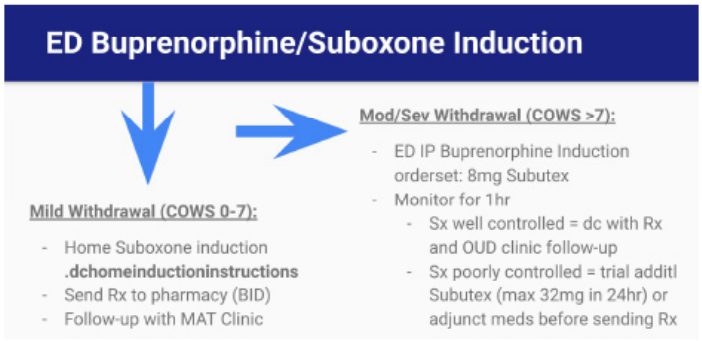


Image 1. Example slide from lecture on opioid use disorder managment including ED induction of buprenorphine.

Image 2. Overview of addiction medicine curriculum.

9 Simulated Cranial Ultrasound for Longitudinal Learning: An Interactive Session for Emergency Medicine Residents

Richa Gupta, Thomas Sanchez, Jaron Kurian, Hannah Park, KeriAnne Brady, Richard Shin

Introduction: Head trauma is a common presentation in the pediatric emergency department. While scoring tools have reduced the need for CT imaging, diagnostic challenges persist when scalp hematomas obscure physical assessment. Recent studies indicate variable sensitivity but high specificity for point-of-care ultrasound (POCUS) in diagnosing skull fractures, making it a useful adjunct. Emergency medicine residents need to recognize the sonographic characteristics of skull fractures and develop proficiency in acquiring accurate images, but due to variability in clinical exposure, may lack confidence in performing POCUS for this indication.

Objectives: Demonstrate accurate POCUS technique to identify pediatric skull fractures using a simulated model, increasing procedural confidence and diagnostic accuracy. Enhance routine use of POCUS as an adjunct to clinical assessment for pediatric head trauma.

Curricular Design: We integrated a small-group session and hands-on skills workshop by using a customized simulated task trainer with two ultrasound-compatible skull models —one with simulated fractures and another intact with highlighted pediatric suture lines—to enable comparative and realistic learning. During a 30-minute rotation, residents received instruction from a pediatric faculty member on POCUS indications, feasibility, and limitations for pediatric skull fractures. Learners then participated in a skills workshop, using the models to gain hands-on experience in image acquisition and pathology identification.

Impact: A post-session survey of 14 residents using a five point Likert scale showed that all respondents (100%) found the session educational. 86% reported increased confidence in identifying cortical irregularities in skull POCUS. Only 36% of respondents reported prior experience with pediatric skull POCUS, but 93% expressed an intent to implement it as a diagnostic tool post-session. Although previous studies have demonstrated the efficacy of POCUS in identifying skull fractures, educational methods for training clinicians in pediatric skull POCUS have not been systematically evaluated. With this project, we aim to establish an annual session to reinforce resident confidence and increase clinical utilization of POCUS for pediatric head trauma.

10 Mentorship as a Catalyst for Academic Writing in Emergency Medicine

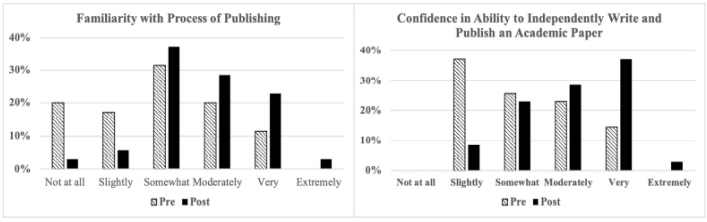
Eileen Chu, Laura Bontempo, J. David Gatz, Thomas Windsor, Zachary Dezman

Introduction: Academic writing is an important professional development skill, yet emergency medicine (EM) residents rank their competency in this area poorly. The goal of this educational advancement was to explore the impact of an academic writing mentorship program on EM residents and faculty.

Methods: 43 mentorship program participants from a single academic EM department were surveyed regarding their academic productivity and their interest, confidence, difficulty, familiarity, and assessment of the importance of academic writing. Participants also rated the quality of their mentorship and suggested improvements to the program. Data was analyzed using a Wilcoxon signed-rank test.

Results: There was an 81.4% survey response rate (18 residents, 17 faculty). Respondents reported significantly increased interest and confidence in academic writing, and increased familiarity with the peer-reviewed publishing process after participation. Respondents reported significantly decreased perceived difficulty of academic writing after mentorship program participation.

Conclusion: Participation in an academic writing mentorship program positively impacts both EM resident and faculty perceptions of academic writing and decreases the perceived difficulty of academic writing.



11 LGBTQ+ Health in Emergency Medicine Residency Curricula: A Needs Assessment

Elaine Hsiang, Joel Moll

Introduction: The quality of and access to care by LGBTQ+ patients is often compromised by physician knowledge deficits, bias, and inadequate training in LGBTQ+ health. EM physicians must be prepared to care for LGBTQ+ patients, but there is a lack of standardization of training in LGBTQ+ health across EM residencies.

Objectives: To assess current practices and perform a needs assessment of LGBTQ+ health teaching across a sample of EM residencies. This information can guide future efforts in standardizing content and improve delivery of LGBTQ+ health topics during EM residency training.

Methods: Residents from five geographically diverse EM residencies in the United States were invited to complete an online Qualtrics survey between April and June 2024. The survey contained questions regarding the amount and scope of LGBTQ+ health exposure in residency as well as delivery preferences to improve LGBTQ+ health teaching within residency curricula.

Results: 100 residents across the five programs participated in the survey (37% response rate). Participants reported a median of 2-5 hours of LGBTQ+ health teaching during residency, with 5.4% reporting zero hours. Most residents reported exposure to basic considerations (e.g. pronouns) and LGBTQ+ health disparities. The greatest content gaps were in pediatric considerations, legal considerations, and taking an organ inventory. Overall, participants were more comfortable performing clinical care for sexual minority patients than gender minority patients (Figures 1 and 2). Suggestions for improving LGBTQ+ health education emphasized the necessity of incorporating LGBTQ+ health into the curriculum and including LGBTQ+ community members and patients into curricular design and delivery.

Conclusions: These findings identify potential content gaps in education being delivered, and suggest that for LGBTQ+ health education to be more effective in emergency medicine residency programs, it should be comprehensive, community-engaged, and practice-oriented.

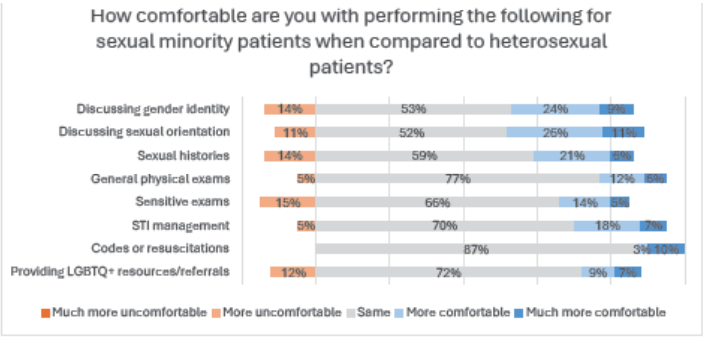


Figure 1. Respondent comfort in caring for sexual minority patients.

12 Use of Layered Gelatin/Tapioca Abdominal Wall Model to Practice Tans Abdominal Plane Block Regional Anesthesia

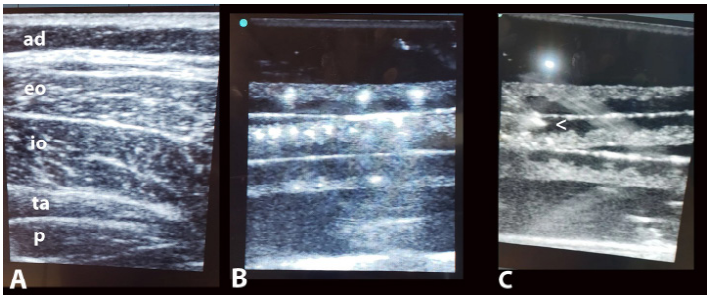
Matthew Hysell, Spring Lutzen

Introduction: Ultrasound-guided regional anesthesia has expanded considerably in EM. A possible new block in EM is the Trans Abdominal Plane block. This block deposits local anesthetic between the internal oblique and transversus abdominis muscle of the flank to achieve peritoneal anesthesia. We designed a layered model of the 3 muscles making up the abdominal wall to allow practice of injecting at specific levels Educational Objectives: To give residents the opportunity to practice visualizing multiple layers and injecting at a specific level

Curricular Design: Model was created using commercially available unflavored gelatine packets from the grocery store. We doubled the concentration of gelatine to create a more robust model. We mixed previously soaked tapioca into the liquid gelatine to texture to the ultrasound images. Tapioca sinks when added to hot gelatine. Layers must be allowed to cool to set up prior to adding new layers. The linear probe of most ultrasound machines only penetrates about 4cm so care must be taken with the thickness of each layer to not exceed the depth ultrasound can penetrate. However, the glass bottom to the gelatine caused significant reverberation artifact with shallow models; squares had to be

removed from the pan and set atop the remaining model to avoid reverberation. Even with double concentrated gelatin excessive downward force with the ultrasound probe could split models Image 1: A) Mid axillary line flank layers (ad=adipose, eo=external oblique, io=internal oblique, ta=transversus abdominis, p=peritoneum. B) Gelatine and tapioca model. C) needle at arrowpoint being advanced

Impact/Effectiveness: A 9x13 pan sufficed for 17 residents and medical students to practice injecting specific layers. It did require removal of squares of gelatine and stacking them to avoid artifact from the bottom of the pan and to decrease damage from the probe



13 Ultrasound Education: Knowledge Degradation during Residency

Pavitra Kotini-Shah, Megan Chan, Pranshul Goel, Reed Gilbert, Kayla Gross, Shaveta Khosla

Introduction: Proficiency in ultrasound skills is increasingly recognized as vital in medical training, particularly for residents facing urgent clinical situations. Literature indicates a concerning decline in ultrasound knowledge retention among first-year Emergency Medicine (EM) residents and a paucity of any evaluation for long-term retention. This gap in evaluation raises concerns about the effectiveness of current training methodologies and a lack of understanding regarding ultrasound knowledge degradation and retention during residency training.

Objectives: We sought to evaluate knowledge gained during a dedicated ultrasound rotation during PGY1 and then evaluate knowledge retention/degradation one year later during PGY2. **Methods:** We developed an online 50-question assessment tool that covered concepts for core applications and knobology pertinent to our ultrasound machines. The tool contained multiple-choice and matching questions. We evaluated EM and EM/IM residents with this same assessment tool as a pre-test, a post-test after their PGY1 ultrasound rotation, and then a 1 year post-test during the same month in their PGY2 year. The assessments were deployed for three consecutive years, from 2020-2021, 2021-2022, and 2022-2023. Paired t-tests were used to assess statistically significant differences.

Results: 18 residents were in each cohort. In all three cohorts, residents consistently showed improvement on the ultrasound assessment after the rotation with an average increase of 22%, 24% and 20% in the consecutive cohorts from pre to post throughout the academic year (July to June). Across the cohorts, residents' performance consistently declined on the one-year post assessment (on average the decline was 8% in the first two cohorts and 1% in the third cohort) with lower scores compared to immediately post rotation. Across the three cohorts, the improvement from pre- to post and degradation from post to 1-year post were both statistically significant ($p<0.01$).

Conclusions: Our data consistently revealed ultrasound knowledge degradation across multiple years, which the COVID-19 pandemic may have influenced, but the trend reinforces the necessity for ongoing educational refreshers and re-evaluation beyond initial training to ensure residents remain proficient.

Figure 1. Ultrasound knowledge across the three timepoints.

14 Improvisation Clinic – Building Relationship-Centered Communication Skills and Enhancing Learner Feedback in Emergency Medicine through Applied Improvisation

Brendan Freeman, Abbas Husain, Jordan Valentin

Introduction: Improvisational techniques offer a novel approach to teaching relationship-centered communication (RCC) for patient care and enhancing learner feedback in emergency medicine. The "Yes, and" improv technique promotes these by accepting (yes) and building on (and) a partner's ideas.

Educational Objectives: Define "Yes, and" and its role in RCC and learner feedback. Review three evidence-based feedback models through a "Yes, and" lens. Apply "Yes, and" skills in improv exercises.

Curricular Design: Following Kern's six-step approach, this curriculum was developed to address identified gaps in RCC and feedback skills in EM residents and delivered in

workshops held in 2024. Sessions 1 and 2 focused on RCC for residents and interns, with facilitator-led discussions linking improv to patient communication. First, we played a clip from "Whose Line Is It Anyway?", a popular improvisational TV series, and then led improv scene breakout groups. Session 3 centered on learner feedback for graduate medical education leadership. It began with an overview of "Yes, and", credible feedback, and evidence-based feedback models. Activities included a "Red Ball" exercise, where participants mimed passing objects, maintaining continuity and attentiveness to illustrate communication breakdowns, followed by improv/learner scenario breakout groups.

Impact/Effectiveness: A post-intervention survey with a 5-point Likert scale was administered for all 3 sessions. Respondents rated highly (4-5 on Likert scale) the activity structure (96.1%), length (84.3%), engagement (100%), relevance to practice (92.3%), and facilitator skill (88.5%). Thematic analysis revealed key themes: "enjoyment/engagement," "connection to patient care," "applying improv to feedback," and "openness to future application." Based on feedback, separate sessions were created for RCC and feedback; and for future implementations, learner scenarios will be removed from the feedback-focused session.

15 Implementation of a "Bias Interrupter" Into the Clinical Competency Committee

Adam McFarland, Lauren McCafferty, Jennifer Li

Introduction: A residency's Clinical Competency Committee (CCC) is responsible for assessing the capability of medical trainees in the clinical environment. However, multiple studies have shown that bias, including identity bias such as gender or race, can influence the perception of resident competence. Business literature suggests that bias interrupters (BI) can mitigate the influence of bias on performance assessment, a practice that has been minimally utilized by medical training programs.

Educational Objectives: The objective was to implement a bias interrupter in CCC to identify and intervene when bias may contribute positively or negatively to assessment of resident clinical performance. In doing so, we also hope to identify trends in instances of bias related to identity of resident or assessor.

Curricular Design: The BI was implemented at monthly CCC meetings at the beginning of academic year 2024-2025. There are 12 residents discussed at each meeting. The BI is a rotating member of the residency leadership team who focuses on the content of the discussion rather than their assessment of residents, with the freedom to interrupt as needed. Data collected includes quantity of interruptions, identity of resident and assessor, and thematic analysis of comments warranting interruption.

Impact/Effectiveness: Preliminary data suggests that a BI adds value in CCC. Key themes of interruptions include using perceived resident personality traits or assumptions about "confidence" and motivation to dismiss deficits in clinical performance or justify low ACGME milestone ratings. The BI also identified instances where critiques of performance were solely negative, overlooking positive feedback. Additionally, the BI noted when extraneous assessments (e.g. formative simulation) or non-clinical information may have influenced CCC evaluation inappropriately. Future directions include identifying trends based on resident or BI identity characteristics and examining the frequency of milestone adjustments following BI intervention. This intervention suggests that incorporation of a BI into CCC meetings can be easily implemented by residency programs with potential for immediate impact on resident assessment.

16 Evaluating Health Equity Education in Emergency Medicine Residencies

Tamara Duclaire, Theresa Schroeder Hageman

Background: The ACGME's 2012 CLER program aimed to improve patient care by equipping residents to address healthcare disparities. By 2018, however, many institutions had not implemented these strategies.

Objectives: This study evaluates U.S. emergency medicine residency programs for health equity training, including topics taught, teaching methods, and perceived barriers. We hypothesize limited curricula, a lecture preference, and barriers, including lack of time and funding.

Methods: In 2023, an observational survey was distributed to U.S. program directors via CORD and direct e-mail, with four participation reminders. Directors were also asked to classify their programs as community, university, or county.

Results: Of 281 directors, 35 responded (12%). Among these, 57% were university, 37% community, and 5% county programs. Overall, 91% included health equity training, covering Social Determinants of Health (97%), sexual orientation and gender identity (82%), and race/racism (76%). University programs more frequently covered sexual orientation and gender identity. Fifty-two percent reported barriers, primarily limited curriculum space (67%) and lack of faculty trained faculty (39%).

Conclusion: Most respondents include health equity training in their programs, with common topics on social determinants, gender, and race. University programs show broader topic inclusion. Limited curriculum space and lack of trained faculty are the main barriers. A low response rate may impact generalizability.

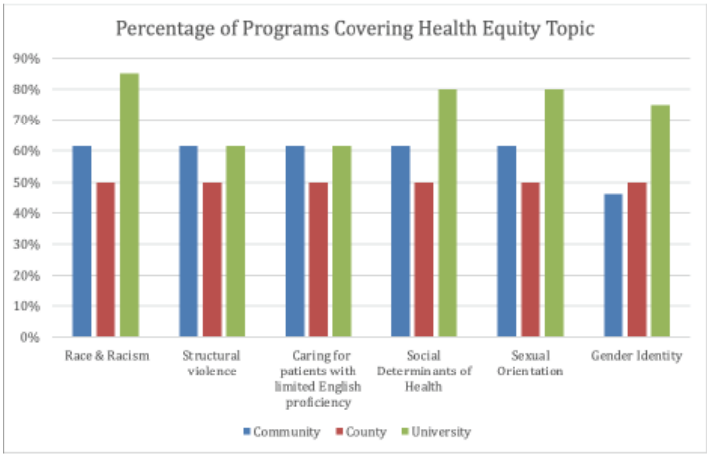


Figure 1. Percentage of programs covering health equity topic.

17 From Triage to Transformation: Medical Students Navigating Health Systems Science in the Emergency Medicine Clerkship

Mark Olaf, Keith Willner, Devon Bremer, Jennifer Spinozzi

Introduction: Health System Science (HSS) is the third pillar of medical education and addresses the underpinnings of how medical care is delivered, how populations of patients are cared for, and how to reduce the cost of care while optimizing outcomes. There is a paucity of literature regarding incorporating HSS principles and education into clinical curricula.

Educational Objectives: We aimed to develop clinically based, EM-centered, constructive learning opportunity to emphasize and teach students about Health Systems Science Principles and to assess its efficacy through a qualitative approach.

Curricular Design: Using a constructivist learning theory framework, we instituted a HSS shift into our clinical curriculum and asked students to reflect on their experiences. Students spent time in triage, with charge nurses, with care managers, EMS, and in patient transfer centers. Students were also asked to involve themselves in meaningful patient care opportunities when they became apparent. Students then submitted reflections regarding opportunities to meaningfully contribute to patient care, and the process of and challenges relating to managing ED patient flow, based on these experiences. We then performed a qualitative analysis using a constructivist learning theory framework using phenomenological methods adapted to the reflections provided by this experience.

Impact/Effectiveness: 115 students completed the exercise and all responses were analyzed. Identified themes and respective sub-themes included patient care roles and contributions including triage mechanisms, interdisciplinary collaboration, and interpersonal patient interactions; challenges to ED flow, including staffing shortages, patient overcrowding, bed availability; and solutions and suggestions for improvement, including education and training opportunities, improved communication, and resource allocation. The development of this curricular content appears to have generated thoughtful insight into elements of health systems science in the clinical environment. Future work should focus on assessing HSS related outcomes, including medical knowledge principles, and expanding this experience to more fully integrate with HSS principles learned elsewhere in their medical school curricula.

18 Einstein's Last Words: Enhancing On-Shift Learning in the Busy Emergency Department

Dylan Krause, Jessica Parsons

Introduction: The ED is a fast-paced environment where residents must acquire and apply knowledge. While traditional teaching methods are effective, active learning during shifts can improve knowledge retention. Whiteboard teaching offers a flexible way to highlight learning points without disrupting patient care. We developed a method called "Einstein's Last Words," where learning points are recorded on a whiteboard and shared with all learners after sign-out of patient care. This efficiently disseminates and reinforces learning points, enhancing on-shift education.

Educational Objectives:

• Promote active learning and knowledge retention on-shift by collecting and reinforcing key points.

• Implement whiteboard teaching as an efficient strategy that does not distract from workflow of the ED.

• Provide opportunities for peer teaching.

Curricular Design: In December 2024, residents completed a pre-survey on their perception of on-shift teaching. Following a didactic presentation in January regarding this method, ED team members began writing learning points on whiteboards related to active cases, covering topics like differential diagnosis and management (figure 1). These notes were shared at sign-out to reinforce learning. After six months, residents completed a post-survey. This project was met initial challenges in consistent use, which was resolved by frequent reminders.

Impact/Effectiveness: Of the 41 residents who completed the pre-survey and 28 who completed the post-survey, 89% reported that whiteboard teaching enhanced on-shift learning without detracting from patient care (figure 2), and 100% recommended it for ongoing use. This low-cost, effective strategy can be readily adopted by other ED programs. Future goals include optimizing session frequency and exploring interdisciplinary expansion.

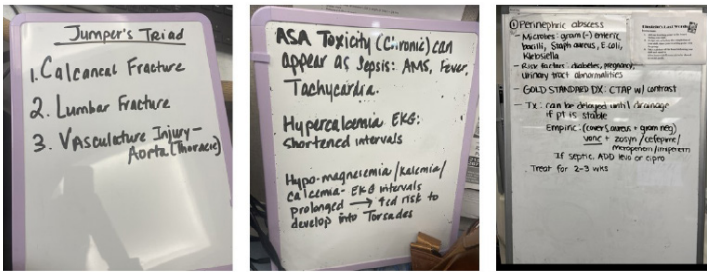


Figure 1. Examples.

19 Palliative Care Needs Assessment for Emergency Medicine Residents

Meghan Harrington, Kent McCann

Introduction: In 2012, ACEP created a palliative care (PC) subgroup to study the intersection of EM and PC; they developed a list of provider skills that integrate primary PC with concepts relevant to EM.

Objectives: This needs assessment explored how Baystate EM residents rate: 1) the importance of PC skills in EM, 2) the teaching they have received, and 3) their comfort level with these skills, all to assess whether more training is needed.

Methods: We developed a survey based on current literature that was sent to EM residents in one program. Likert scale 1-5 was used to establish proportions of respondents who agreed or disagreed with statements and Z-tests were used to obtain p values. A priori, we intended to test the following hypotheses: 1) more participants will feel PC skills are important than feel teaching is sufficient; 2) more participants will feel PC skills are important than feel personally comfortable exercising the skill; and 3) participants will feel teaching is insufficient at the same rate that they feel uncomfortable.

Results: Of 47 residents, 32 responded (68%). When accounting for any given skill surveyed, 75 to 100% of residents feel the skill is important, 3 to 34% feel the teaching of that skill is sufficient (18 to 74% feel it is insufficient), and 9 to 46% feel comfortable exercising the skill (while 6 to 53% feel uncomfortable). For hypotheses 1 and 2, the null was rejected across every skill. For hypothesis 3, the null failed to be rejected for all but five skills. Participants were also surveyed on preferred learning modalities, and bedside teaching and small groups tied for top vote.

Conclusions: Results suggest that EM residents find PC skills important but do not feel comfortable exercising them. The lack of significant difference between the proportion who felt uncomfortable and the proportion who reported insufficient teaching suggests an association between teaching and comfort. Over 53% of residents reported feeling uncomfortable with family witnessed resuscitation, the highest proportion of any skill. Results suggest that a simulation with subsequent debrief (a practical application of both bedside teaching and small groups), would be effective to improve the skill of running a family witnessed resuscitation.

Provider Skill	Reported Important	Reported Sufficient Teaching	Reported Insufficient Teaching	Reported Comfortable	Reported Uncomfortable
Pain control	96.9	28.1	18.8	43.8	6.3
Treating distressing non-pain symptoms	78.1	18.8	34.4	34.4	18.8
Difficult communication	100	21.9	25	37.5	21.9
Goals of care discussions	93.8	28.1	37.5	46.9	25
Caregiver support	75	3.2	74.2	18.8	43.8
Non-initiation or stopping of non-beneficial interventions	90.6	12.5	46.9	37.5	37.5
Treating common end-of-life symptoms	96.9	18.8	28.1	31.3	15.6
Care for the imminently dying and their family	90.6	15.6	50	28.1	28.1
Bereavement and grieving	87.5	3.1	59.4	18.8	34.4
Family witnessed resuscitation	100	9.4	65.6	9.4	53.1
Caring for patients under hospice care	87.5	9.4	68.8	15.6	25
Coping and self-care	90.6	34.4	37.5	†	†

Figure 1. Proportion (%) of respondents reporting importance, sufficiency of teaching, and comfort with palliative care skills.
Denotes field that was unintentionally omitted from questionnaire and thus no date is available.
Important = Likert 4 and 5 on a scale of very unimportant to very important.
Sufficient Teaching = Likert 4 and 5 on a scale of none to more than enough (Insufficient = 1 and 2)
Comfortable = Likert 4 and 5 on a scale of very uncomfortable to very comfortable (uncomfortable = 1 and 2)

20 A Low-Cost, Reusable, Three-Dimensional-Printed Ultrasound Phantom for Simulation of Knee Arthrocentesis

Shivani Ruf, Sara Baker

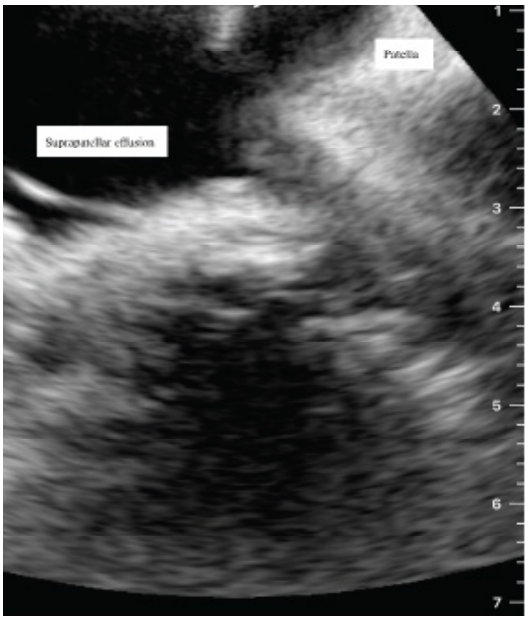
Introduction: Arthrocentesis is a common ED procedure that can quickly differentiate between a limb-threatening infection and a benign inflammatory reaction, but EM physicians get less practice with this procedure as many train at programs with orthopedic residencies. EM residents would benefit from arthrocentesis simulation. Commercial simulation phantoms are expensive. Previous homemade models have been limited by lack of US-compatibility and anatomical accuracy.

Educational Objectives: The objective was to create a

low-cost, reusable, anatomically accurate simulation phantom for US-guided knee arthrocentesis as well as to determine the educational effect of practicing on this homemade model.

Curricular Design: To create this model, a mold was created of a human knee. A digital model of the knee joint was downloaded from Thingiverse, an open-source three-dimensional (3D)-printing website. A mold for the simulated synovial fluid bladder was designed, printed, and then cast with silicone. The Creality K1 3D printer was used for all prints. Nylon filament was selected for most prints due to its heat-resistant properties that prevent warping when cast in ballistics gelatin. Simpler bladders were trialed but were incompatible with high temperatures or not representative on US imaging. After assembling the knee skeleton and bladder and placing this structure within the knee mold, heated ballistics gelatin was poured in. After cooling, the cast model was removed and ready for use. EM residents then participated in a workshop that included instruction and practice of US-guided knee arthrocentesis.

Impact/Effectiveness: This knee phantom improved upon previous models and allowed for realistic practice of the procedure. The curricular effectiveness of this knee phantom was assessed via analysis of pre- and post-workshop surveys which reported confidence with knee arthrocentesis and improved needle insertion/aspiration. Nonetheless, this knee phantom could be improved upon by making the model less translucent. To counteract lack of experience with 3D-printing/design, we made all of our digital models publicly available. Overall, we believe these phantoms can substantially improve the confidence and competency of learners' skills in US-guided procedures, beyond just knee arthrocentesis.



21 Improving Faculty Performance in Providing Written Feedback to Learners

Kimberly Alford, Allison Schiller, Leigh Patterson

Background: Providing written feedback to ED learners on their clinical performance is key to supporting their development. ACGME and the Liaison Committee on Medical Education require that learners receive feedback in a timely manner to calculate their individual milestones or grades. Despite recognizing the importance of this task, faculty struggle to complete evaluations. Chairs struggle to incentivize teaching productivity.

Objectives: Improve the number of written evaluations completed by faculty working at an academic medical center. Success was defined as medical students receiving an evaluation for 100% of shifts worked and residents receiving an evaluation for 50% of shifts worked during each ED rotation.

Methods: To meet the objective, faculty targets were created and disseminated in the Spring of 2020. Interventions to incentivize faculty performance were added yearly for the next 4 years. First, faculty annual evaluations included the new targets. Next a dashboard was created to track evaluations completed by each faculty. Last, targets were incorporated into the faculty compensation plan. (Table 1) We retrospectively analyzed performance in the two years preceding interventions and the subsequent 4 years.

Results: In 2018-19, faculty completed evaluations on 77% of student shifts and 31% of resident shifts. Performance in both groups improved when targets were included in annual evaluations. Faculty evaluated >50% of resident shifts after the introduction of a dashboard. Faculty evaluated >98% of student shifts and >75% of resident shifts when targets were also included in compensation plan quality incentives. (Figure 1)

Conclusions: Faculty performance in completing learner evaluations improved significantly after creating targets and implementing a series of incentives and visual aids to track progress.

Table 1. Intervention timeline.

Academic Year	Intervention
2019-20	Chair and Education Vice Chair Created Faculty Targets for completing Learner Evaluations and Disseminated
2020-21	Targets incorporated into Annual Evaluation Rubric to Inform Faculty Teaching Scores
2021-22	Power BI Dashboard Created to Allow Faculty to Track their Individual Progress in Completing Resident Evaluations
2022-23	Targets incorporated into Medical School Compensation Plan as Quality Incentive Metrics
2023-24	Medical Student Tracking added to Power BI Dashboard and Timely Deadlines added to Rubrics

22 Peer Power: Near-Peer Led Content Review as a Catalyst for Improved NBME Shelf Exam Scores

Amelia Pousson, Sarah Hill-Yeterian, Haleigh Ferro, Regina Brillman, Sharon Bord

Background: The NBME Advanced Clinical Examination (ACE) in EM is a critical component of assessment in EM education. Scores on this exam are compared with a nationally representative cohort and the material is traditionally more challenging than on other NBME "shelf" clinical exams. Previous literature has shown that both resident-led and structured curricula have improved shelf exam scores in other fields; however, there is scant literature describing interventions to improve EM-ACE scores. This project investigates the impact of a near-peer-run monthly review session on NBME EM-ACE performance. **Objective:** To assess whether a study group intervention improves ACE scores amongst medical students on an EM rotation.

Methods: A pre-and post-intervention study was conducted with 20 cohorts of EM clerkship students from August 2022 to August 2024. The intervention consisted of a single near-peer-led study group session during a 4-week clerkship. Material taught in this session was targeted towards content that was covered less during standard clerkship curriculum. Exam averages, highest, and lowest scores were collected from 10 cohorts before and 10 after the intervention.

Results: In the pre-intervention group (n=134), the mean ACE score was 77 (SD 7, IQR 8.25). In the post-intervention group (n=117), the mean ACE score was 80 (SD 7, IQR 10). There was a statistically significant increase in post-intervention scores (p = 0.014). This difference exceeds the difference expected based on analysis from administration comparing graded component scores from pandemic-induced disruption and conversion to pass-fail grading.

Discussion: The current EM-ACE exam is targeted at final-year medical students and is commensurately challenging. Pre-intervention, our team had noted a trend toward lower scores in students taking the clerkship earlier in their training along with temporal trends associated with pandemic-related disruptions and changing grade schemas. The intervention significantly improved scores in all learners, indicating its potential as an effective educational strategy. More research is needed to assess long-term benefits and broader applicability.

Conclusion: Structured study groups can boost NBME Shelf Exam performance, offering a useful tool for medical educators.

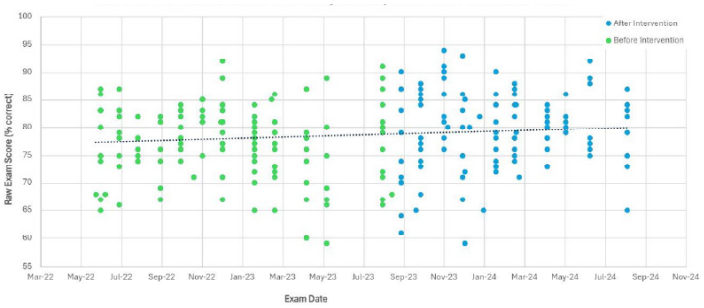


Figure 1. Near-peer led content review as a catalyst for improved Nbme Shelf Exam Scores

23 Differences in Language Used to Describe Racial Groups in Emergency Medicine Standardized Letter of Evaluation

Felisha Gonzalez, Laura Welsh, Avery Clark, Johanna Caicedo Valle, Ijeoma Okafor, Kerrie Nelson, Sula Frausto, Emily Cleveland Manchanda

Introduction: According to program directors in Emergency Medicine, the Standardized Letter of Evaluation (SLOE) is the most important component of the emergency medicine residency application. Understanding possible biases in SLOE language is critical for an equitable review process. Past studies have shown differences in the way medical students are described in narrative evaluations by race and gender. This is the first study to evaluate narrative linguistic differences in applicant SLOEs by race.

Methods: This is a narrative analysis of all US MD and DO SLOEs from applicants to the study institution in the 2022 application cycle. We used Linguistic Inquiry and Word Count (LIWC) to complete two analyses. Analysis One used frequency of words within 19 categories to evaluate differences between underrepresented minorities in medicine (URiM) and non-URiM applicants and within racial subgroups. Analysis two used LIWC to evaluate dichotomous use of 21 key words in these same groups. Linear Mixed Models (LMMs) were performed for each of the outcomes to evaluate for associations between URM/non-URM status or racial subgroup and each outcome and to account for correlation between a residents' SLOEs.

Results: Of the 809 unique applicants, 18.3% identified as URiM, 57.5% identified as White, 17.4% identified as Asian, 10% identified as Latinx, 6.3% identified as Black. The analysis revealed applicants who are Black contained on average 0.537 (SE=0.154, Bonferroni-adjusted p-value=0.010) percentage points more communal words when compared to White applicant SLOEs. URiM applicants had 0.322 percentage points more communal words (SE=0.102, Bonferroni-adjusted p-value=0.030) compared to Non-URiM SLOEs.

Conclusion: Applicants who were URiM or Black were more likely to be described with empathic and communal words than their peers. Our study demonstrates that URM students are more likely to be described with words which have been associated with less hireability and could represent coded language within evaluations that impact advancement

of URiM residents and diversity in our field.

24 Emergencies in Undocumented Persons - A Simulation Case

Adam Roussas, Taylor Wahrenbrock, Michelle Sergel

Introduction: Undocumented persons face unique barriers to accessing health care that are not taught in traditional emergency medicine curricula.

Educational Objectives: Improve residents' understanding of and confidence in addressing the legal and socioeconomic challenges that limit the ability to provide life saving care. Develop a reproducible simulation case for teaching social EM concepts related to the care of undocumented persons.

Curricular Design: We wrote a novel simulation case of a patient presenting to a critical access hospital with an acute myocardial infarction. The patient is undocumented, non-English speaking, and expresses consternation regarding the cost of care and potential for deportation before leaving against medical advice. Ancillary staff are coached to make derogatory remarks and to refuse transfer based on the patient's undocumented status if prompted. Residents were provided 15 minutes to address the medical complaint and also the social and legal challenges impacting care. After the case, a debrief was performed which included discussion regarding the barriers undocumented persons face in accessing care, their rights in the ED, and the nuances of the laws and systems available to assist them.

Impact/Effectiveness: A pre-post survey was given. 35 residents completed the pre-survey, 16 residents participated in the case, and 13 residents completed the post survey. 60% of residents in the pre-survey indicated a poor understanding of the legal and economic resources available to undocumented patients and moderate confidence caring for undocumented persons. After the simulation, over 80% of respondents indicated a better understanding and 100% of residents indicated high confidence in caring for undocumented persons. 100% of residents found the debrief session educationally valuable. We will be implementing this case at community and academic based centers and continue to collect data regarding utility in ED GME.

25 Resident Comfort, Retention, and Clinical Integration following Ultrasound-Guided Nerve Block Procedure Simulation Course

Madison Williams Chen, Blakeley Hudson, Andrew Bloom, Maxwell Thompson, Katherine Griesmer, Samuel Burleson, John Gullett

Introduction: Peripheral nerve blocks form a cornerstone of multimodal pain management; including with joint reductions, complex laceration repairs, and incisions and drainage, while also possibly negating need for procedural sedation. We present the use of a procedure simulation to guide resident physician education and improve retention in commonly indicated ultrasound-guided regional anesthesia (UGRA) techniques, thus increasing use in clinical practice.

Educational Objectives: Understand indications and performance of UGRA. Improve resident physician comfort in use of ultrasound, specifically as it pertains to identifying applicable anatomy in order to perform fascia iliaca compartment blocks (FICB), interscalene blocks, and upper extremity (UE) nerve blocks (radial, ulnar, and median). Increase consideration and clinical integration of UGRA.

Curricular Design: Nineteen emergency medicine resident physicians performed a simulation involving setup and performance of FICB, interscalene blocks, and UE nerve blocks. Surveys were obtained, using a 10-point Likert scale, to compare comfort level before and after participating in the simulation. An additional survey was completed by 8 resident physicians 1 month after simulation to gauge retention of comfort and measure clinical integration.

Impact/Effectiveness: Immediately following the simulation, in comparison to previous comfort level, resident physicians reported increased comfort in performing FICB (3.05 vs. 7.68, $p<0.001$), interscalene blocks (2.11 vs 7.22, $p<0.001$), and UE nerve blocks (2.16 vs 7.63, $p<0.001$). One month following simulation, 8 resident physicians completed an additional post-simulation survey. Of the 8 total respondents, they maintained average comfort level in performing FICB (7.5) and UE nerve blocks (7.63) and reduced average comfort level in performing interscalene blocks (6.5) as it compares to the immediate post-simulation data (Figure 1). In the 1 month post-simulation survey, 3 resident physicians (37.5%) reported they had performed FICB in their clinical practice since completing the simulation. Figure 1: Resident physician comfort in performing UGRA prior to, immediately after, and 1 month after simulation.

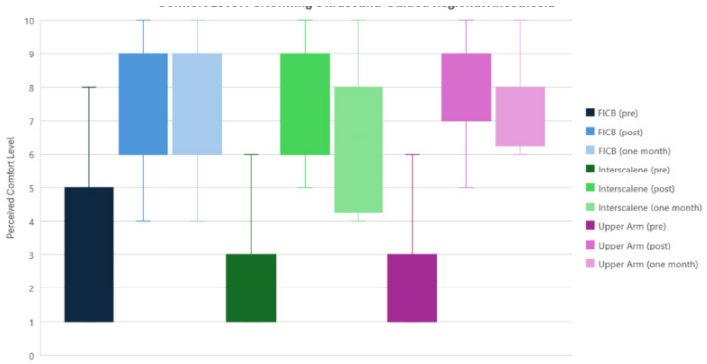


Figure 1. Comfort level performing ultrasound-guided regional anesthesia.

26 Communication in Difficult Patient Encounters

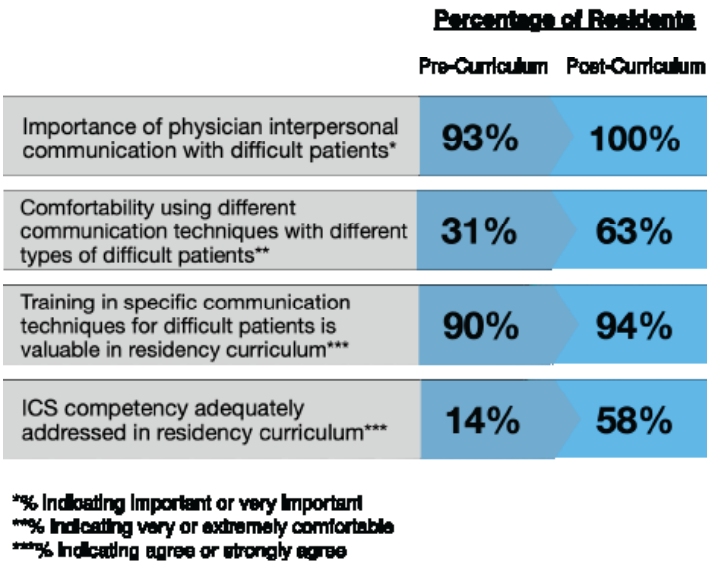
Kristin Lewis, Adriana Olson

Introduction: Physician-patient communication is vital for patient outcomes, especially in emergency departments (ED). Many ED encounters are interpersonally "difficult," emphasizing the need for strong interpersonal communication skills (ICS). ICS deficiencies lead to misdiagnoses, lawsuits, and patient dissatisfaction. Despite ICS being a key component of the Emergency Medicine Milestone Project, EM residency programs often struggle to educate residents in this area, signifying a curricular need.

Educational Objectives: The objectives were for EM residents to 1) name all 3 components of an interpersonally difficult encounter, 2) describe approaches to 3 patient factor types, and 3) rate ICS curriculum as valuable for EM residency education.

Curricular Design: A two-part curriculum was created and implemented at an urban, academic PGY1-3 EM residency. Residents viewed a lecture covering the importance of ICS, components of "difficult" patient encounters, empathetic listening, reframing conversations, and strategies for specific patient factors. Two ICS-related simulation scenarios were implemented: 1) an angry patient who frequently interrupts and does not de-escalate easily; 2) a patient who frequently presents with chronic abdominal pain, had extensive prior workups and is concerned about life-threatening diagnoses. Residents completed pre- and post-curriculum surveys. Core faculty, including residency program leadership, completed a survey.

Impact/Effectiveness: 56% (29/52) of residents completed a pre-curriculum survey. Nineteen residents completed a post-curriculum survey. Ten core faculty members completed a faculty survey. Prior to the curriculum, 95% of residents and 100% of faculty agreed or strongly agreed that ICS is valuable in EM residency curriculum. Prior to the curriculum, 31% of residents felt very or extremely comfortable using different communication techniques with "difficult" patients compared to 63% after the curriculum. Residents and faculty value ICS in EM residency curriculum. Our two-part curriculum improved resident comfort in communicating with "difficult" patients.



27 Implicit Bias in Emergency Medicine Rotation: Themes from Student Narratives

Xiao Chi Zhang, Dimitrios Papanagnou, Max Nunez, Raffaele Macri, Nina Mingioni

Introduction: Third-year medical students in their Emergency Medicine (EM) rotation are required to complete asynchronous online modules addressing unconscious bias and submit a one-page narrative reflecting on instances where they observed implicit bias, either in themselves or others, within the emergency department (ED). Implicit bias significantly impacts patient care, especially in fast-paced clinical settings. This study aims to explore and document the manifestations of implicit bias encountered by medical students in the ED.

Objectives: To qualitatively analyze de-identified student narratives and identify recurring themes of implicit bias observed during their three-week EM rotation.

Methods: Reflections (n=270) were collected from students completing their third-year EM rotation between 2023 and 2024 at an urban academic medical center and its affiliated EDs. Two independent coders iteratively analyzed random samples of 15 reflections to develop a codebook and refine themes until thematic saturation was achieved. The codes were compared with existing literature to identify key patterns across the reflections.

Results: Preliminary review of the reflections (n=30) indicated recurrent themes of implicit bias. These themes include biases towards patients with polysubstance abuse, homelessness, non-English speakers, chronic pain, mental illness, inability to self-advocate, and race. Further analyses are required to reach thematic saturation and to determine differences in theme prevalence, overlapping themes within reflections, variation of experiences, and implications of rotation order on these experiences.

Conclusions: The identification of recurrent themes during the initial data analysis reflects a concerning trend of implicit biases towards our vulnerable ED patient population. Further studies should be considered in exploring how medical students' awareness of their implicit biases can help fashion preceptors' behaviors and role modeling in the clinical arena.

28 Does Evaluation Transparency Affect the Authenticity of Clinical Evaluation Scoring for Medical Students in EM Rotations

Xiao Chi Zhang, Anna Lauriello, Dimitrios Papanagnou, Chaiya Laoteppitaks, Nina Mingioni, Alan Cherney

Introduction: Clinical rotations allow medical students to apply pre-clinical knowledge to patient care. Emergency Medicine (EM) is a required third-year rotation at our institution, with 70% of the course grade based on clinical shift performance, assessed through a 10-item Likert scale aligned with the National Clinical Assessment Tool (NCAT). In the 2023 academic year (AY23-24), we implemented a streamlined, transparent 10-item evaluation form, immediately accessible to students after completion, to promote reflection and self-improvement. However, this transparency generated negative feedback from both students and evaluators.

Objective: To assess how adjusting evaluation transparency can impact clinical performance scoring.

Methods: For the 2024 academic year (AY24-25), we revised the evaluation process by blinding students from receiving their exact Likert scores. Instead, preceptors were required to identify at least three domains needing improvement and one domain where the student excelled. Students also received detailed descriptions of performance expectations for each domain.

Results: We compared clinical performance scores over the first five months of EM rotations between AY23-24 (143 students) and AY24-25 (140 students). No statistically significant difference was found in monthly scores ($p>0.05$) or across the five-month period ($p=0.2719$). Preceptors appreciated the opportunity to provide more candid evaluations, while students valued the targeted feedback that highlighted strengths and areas for growth.

Conclusion: Modifying the transparency of evaluations did not affect performance scores, but further qualitative studies will be pursued to determine how this new feedback impacts both students and preceptors' relationship.

29 Coaching Efficiency – Finish Shift on Time to Win This Game!

Damian Lai

Background: Residents must learn to manage ED flow and care for multiple patients simultaneously. We developed a customizable exercise emphasizing the logistics of managing patients with varied acuity while considering efficiency of documentation.

Objectives: Identify practices to optimize patient management, charting and other physician tasks.

Curricular Design: Residents participated in a 9 minute timed exercise. Each 10 second (s) interval represented 10 minutes of "real time" to proportionally mirror a 9-hour shift. Participants received identical stacks of cards with each card representing a patient with an assigned complexity level. The amount of time required for each step of the patient encounter was specified: H&P (10s), H&P documentation (10s), MDM documentation (10s), and disposition (10s). Each task required a 10s "run off" from the clock. Documentation tasks not completed during the exercise comprised "time spent after shift". Each card also stipulated 30s blocks required for clinical evaluation and workup. The number of blocks increased with higher patient complexity (max of 4). These tasks did not require "run off" time, other tasks could be completed during this time. Each card with outstanding tasks after 9 minutes was a "sign-out". Interruptions (10s run off) occurred periodically to mimic flow-disrupting tasks. The following were compiled at the end of 9 minutes: patients seen, patients dispositioned, sign-outs, charts completed, and time spent charting after shift.

Impact: This exercise highlighted the importance of time management and task switching. Residents who focused on maximizing the number of patients seen accordingly spent up to 3 hours charting after shift. Residents appreciated the opportunity to discuss and compare their approach. The game itself can be customized to any ED shift format. We followed up with a "Best Practices" faculty panel on efficiency and flow. We also discussed approaches to different sign-out environments, as well as the impact of charting on physician burnout.

30 Optimizing Resident Engagement and Educational Outcomes in Emergency Medicine Oral Boards Preparation Using Morning Report pro (MR PRO)

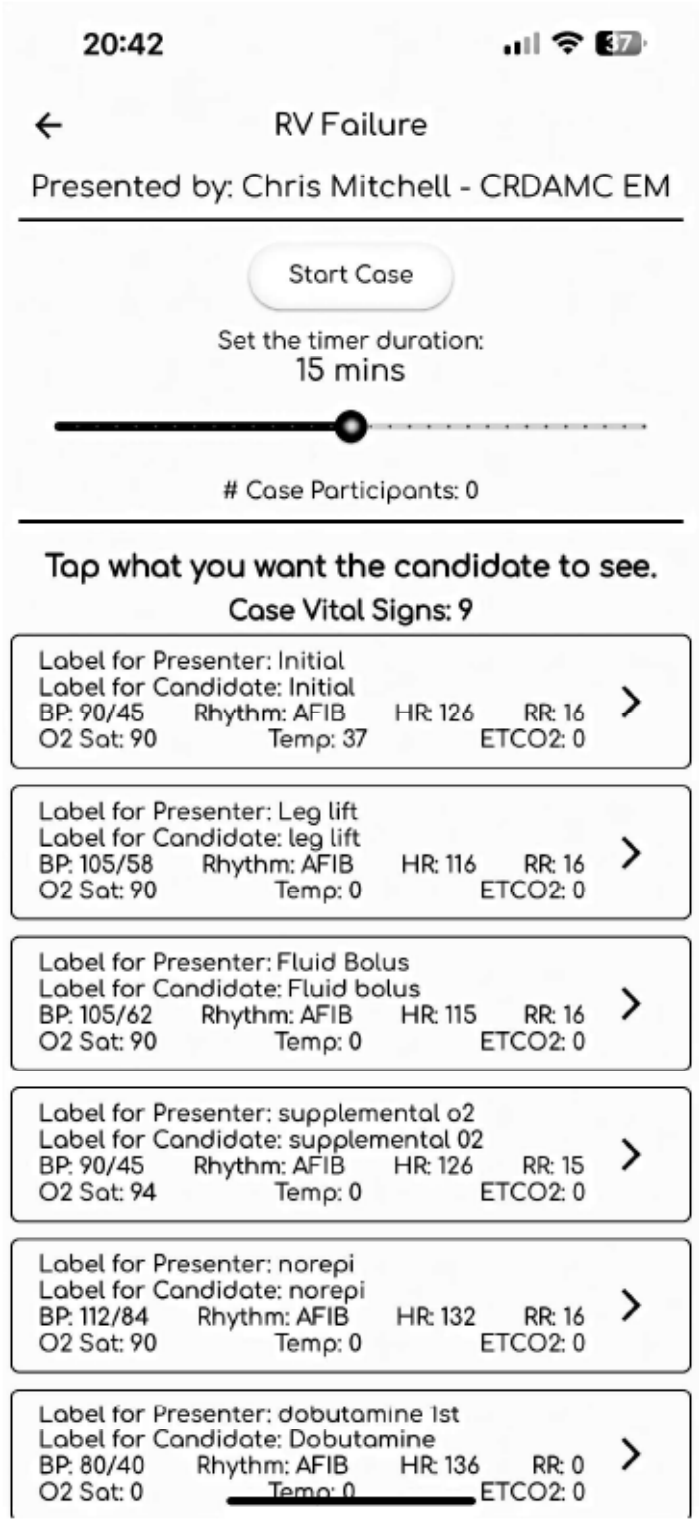
Christopher Mitchell, Kevin Schlicksup, Lawrence Masullo

Introduction: Effective oral board exam preparation is essential for EM residents, especially for interpreting EKGs and X-rays. Traditional methods, like textbooks, lack the interactive components needed for optimal learning in these image-based scenarios. MR PRO, a digital app aligned with ABEM standards, was developed in-house by the Carl R. Darnall Army Medical Center EM Residency Program and has been successfully utilized for five years, earning positive resident feedback. It enhances realism, active learning, and structured feedback, demonstrating clear advantages over traditional methods.

Educational Objectives: MR PRO aims to: Boost resident engagement and confidence in managing image-based cases. Enhance skills in visualization, interpretation, and clinical decision-making with high-resolution images.

Provide ABEM-aligned, structured feedback to improve oral board performance. Support flexible learning environments from individual to group settings.

Curricular Design: MR PRO simulates realistic oral board scenarios, integrating EKGs, X-rays, and ultrasounds into interactive case analyses. Embedded feedback tools enable continuous improvement and reflective learning.



Regular sessions focus on image-based cases, and lectures use MR PRO's distribution feature to improve engagement and create active learning. Assessments include resident and faculty feedback, with performance outcome comparisons pre- and post-MR PRO integration. Initial challenges in adapting the app to various educational settings were addressed through iterative adjustments.

Impact/Effectiveness: MR PRO has improved resident proficiency, particularly in image-based learning. Resident feedback over five years confirms enhanced performance in oral board simulations. A paired t-test showed statistically significant improvements over textbook methods ($t = -7.17$, $p<0.001$), underscoring its effectiveness in increasing engagement and preparedness. Future plans include expanded sessions and advanced scenarios to further enhance resident readiness. Image 1 and 2 demonstrate screenshots of the MR PRO visuals when in use.

31 Impact of a Grading Committee on Addressing Inequities in Assessment for a Fourth-Year Emergency Medicine Clerkship

Meredith Thompson

Introduction: Achieving equity in assessment in medical education has been described as a wicked problem. Prior research has hypothesized that grading committees for the assessment of medical students on clinical clerkships may help to mitigate the inherent inequities that currently exist.

Objective: The objective of this study was to assess the impact of a grading committee for a fourth-year emergency medicine (EM) clerkship on addressing inequities in assessment.

Methods: A retrospective cohort study was conducted using demographic and grade data from fourth-year medical students enrolled in a required emergency medicine clerkship at a state university-based medical school The grading committee process was previously derived based on review of a prior work for clinical competency committees and instituted at the start of the 2021-2022 academic year.1 A series of one-way ANOVAs were conducted on student grade points (GP) for the EM clerkship (0-4). Three cohorts prior to the committee's formation (2018–2021; N=412) were compared with three cohorts after its implementation (2021–2024; N=419). The analyses included the following comparison groups: 1) Male vs Female, 2) Overall URM (Underrepresented in Medicine) vs Non-URM, 3) URM Male vs Non-URM Male, 4) URM Female vs Non-URM Female, and 5) URM Male vs URM Female.

Results: Prior to the grading committee, significant GP differences ($p<0.05$) were observed between Males and

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

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

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

Christopher Mitchell, Kevin Schlicksup

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

Objective: Our program aims to:

Ensure procedural proficiency through structured testing across training stages.

Facilitate skill retention with progressive, interval-based assessments.

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

Promote self-reflection, reinforcing procedural mastery.

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

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

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

Adam Roussas, Sean Dyer, Tarlan Hedayati

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

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

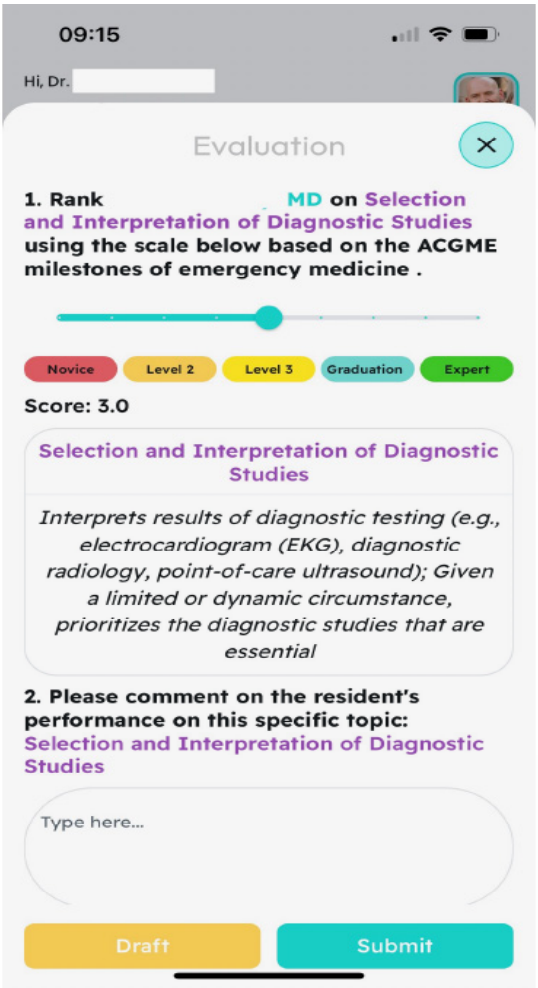
Curricular Design: We utilized a 3-pronged approach with case based learning, academic lectures, and on shift reference materials. First, we utilized a pre-existing small group, case-based clinical curriculum and created tables of the out-of-pocket costs of all possible ED testing and treatment related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

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

34 Project Emma (Emergency Medicine Milestone Application)

Robert Sobehart, Aleta Mizner

Receiving written and verbal feedback is a crucial aspect of emergency medicine (EM) residents' training. This can be a cumbersome and time consuming process for attending physicians and is often overlooked at the end of a busy shift. This challenge led to the development of EMMA the Emergency Medicine Milestone Application.



The primary goal of developing this mobile application was to increase the amount and quality of formative feedback, both in real time and through written evaluations. Building on previous research, we sought to build an application that combined timed prompts and short milestone based evaluations to facilitate faculty evaluation of residents during shifts. This was accomplished via grant funding to develop the smart-phone application through a partnership with data and information science graduate students. In our estimation, there were three critical aspects for application success: shift matching of residents and attendings; beef, targeted evaluations, and time-prompted notifications to complete evaluations and provide verbal feedback. Using the ACGME milestones for emergency medicine, we developed twelve targeted evaluation prompts. Each was mapped to the corresponding milestone and the corresponding shift evaluation card allowed the attending to rate the resident on a likert scale matching the ACGME milestone descriptions. The evaluation card also asked for directed narrative feedback on the prompted topic, provided a reminder for verbal feedback and allowed for additional generalized narrative feedback.

EMMA was officially launched on August 5, 2024 the Allegheny General Hospital Emergency Medicine Residency. The initial implementation included downloading the application on 34 resident and 20 attending faculty cellular devices. Prior to the deployment of EMMA only 19% of resident shifts were captured via the prior evaluation system utilizing a QR code system. Within the first two months of deployment of EMMA 75% of resident shifts were being captured with evaluations via the application with a reported increase in quality of feedback as well. The initial derivation phase of this study is ongoing with completion planned in January of 2025. EMMA an ongoing project in precision medical education with development of metrics and administrative components currently underway.

35 Thinking about the End: Addressing Resident Perceptions of Palliative Care in the Emergency Department

Max Trojano, Harrison Goldenberg, Kendall Stevens, Kurt Weber, Sara Baker

Introduction: Individuals with poor prognosis diseases will visit an emergency department (ED) at the end of life. Historically, the emphasis for these vulnerable patients was the same for all comers: avoidance of death. However, early initiation of palliative care from the emergency department has been shown to reduce in-hospital deaths and increase overall quality of life. Yet, EM clinicians report feeling unprepared to address the palliative needs of their patients.

Objectives: Our primary objective was to assess the perceptions of palliative care preparedness among EM residents before and after a palliative care training activity.

Methods: This was an observational study at a three-year residency program. The training included a lecture regarding end-of-life issues, a panel discussion with palliative physicians, and simulation scenarios (Figure 1). Residents were asked to participate in a survey regarding their self-efficacy in palliative care both pre- and 3 months post-training. The survey included both the Self-Efficacy in Palliative

Care (SEPC) and Thanatophobia scales (TS). The SEPC is a 23-item survey that measures efficacy in communication, management, and teamwork, while the TS has 7 items that assess attitudes towards palliative care.

Results: Seventeen residents completed the pre-intervention survey out of a body of 54. Five of these residents completed a follow-up (29.4%). All training years were represented: 35.3% PGY1, 47.1% PGY2, 17.6% PGY3. The majority were female (64.7%), white (94.1%), and non-Hispanic (82.4%). Mean pre-intervention SEPC and TS were 51.2 (SEM = 3.1) and 24.5 (SEM = 2.7) respectively. Neither SEPC (p = 0.342) nor TS (p = 0.770) differed across PGY year. Among those who completed both a pre- and post-survey, initial SEPC scores (x = 54.4, SEM = 3.9) improved after the training event (x = 79.3, SEM = 4.3); (p = 0.002) (Figure 2). There was no significant difference in TS scores (x pre = 27.6, SEM = 4.1; x post = 23.2, SEM = 2.7); (p = 0.450).

Conclusion: Resident preparedness for palliative care in the ED is suboptimal. These data suggest that residents are unlikely to passively absorb palliative principles during their training. However, improving self-efficacy in this discipline appears to be trainable, so long as there is a dedicated effort and emphasis on its curricular importance.

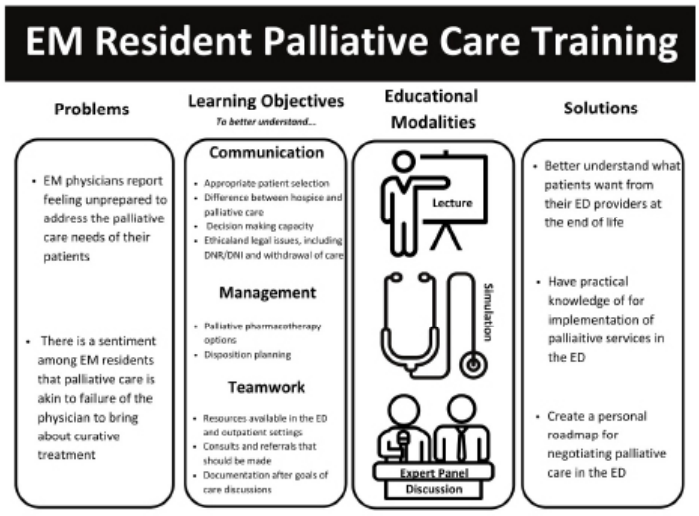


Figure 1. Schematic of EM resident palliative care training event.

36 Physician-Patient Communication in Emergency Medicine Resident vs Attending Physicians

Katarzyna Gore, Callan Coghlan, Danielle Raslan, Aylin Ornelas Loredo, Dustin Brown, Galeta Clayton, Gary Peksa, Michael Gottlieb

Introduction: Patients provide feedback on attending physicians through surveys, whereas residents usually do not have the same opportunity. Feedback residents receive is often based on secondhand accounts.

Objective: We aimed to evaluate resident and attending physicians' communication with patients using the Communication Assessment Tool (CAT). We hypothesized that attending physicians would score higher on individual survey questions.

Methods: We conducted a single center prospective observational study at a tertiary care Emergency Department (ED). After being treated in the ED, patients completed a survey on both resident and attending physicians independently. If no ED resident was caring for the patient, only the attending was evaluated. Off-service residents were excluded. Only English speaking patients were included. A mixed-effects model was used to compare attending and resident data, accounting for participant-level random effects. Open ended questions were graded as positive, negative, or neutral.

Results: 36 residents and 49 attendings were eligible for assessment. Between May and July 2024, we gathered responses from 144 participants. In the 90 resident surveys and 144 attending surveys, responses were predominantly positive, with "Very Good" making up 87.2% of responses for residents and 89.5% of responses for attendings. Open-ended feedback was positive or neutral, highlighting physician strengths or focusing on unrelated patient conditions. Results comparing residents and attendings on

Table 1. Results of Communication Assessment Tool (CAT) Questions in Residents vs Attendings.

CAT question	Resident mean (SD)	Attending mean (SD)	Difference (95% CI)	p-value
Greeted me in a way that made me feel comfortable	3.85 (0.05)	3.88 (0.03)	-0.03 (-0.13, 0.07)	0.52
Treated me with respect	3.89 (0.03)	3.90 (0.03)	-0.01 (-0.10, 0.07)	0.77
Showed interest in my ideas about my health	3.84 (0.05)	3.87 (0.04)	-0.03 (-0.13, 0.08)	0.6
Understood my main health concerns	3.86 (0.05)	3.88 (0.04)	-0.02 (-0.12, 0.08)	0.65
Paid attention to me (looked at me, listened carefully)	4.10 (0.04)	4.12 (0.04)	-0.02 (-0.11, 0.07)	0.68
Let me talk without interruptions	3.75 (0.06)	3.77 (0.05)	-0.02 (-0.15, 0.10)	0.71
Gave me as much information as I wanted	3.92 (0.03)	3.95 (0.03)	-0.03 (-0.12, 0.07)	0.5
Talked in terms I could understand	3.88 (0.04)	3.91 (0.03)	-0.03 (-0.13, 0.07)	0.59
Checked to make sure I understood everything	3.72 (0.05)	3.75 (0.05)	-0.03 (-0.14, 0.08)	0.66
Encouraged me to ask questions	4.00 (0.03)	4.03 (0.03)	-0.03 (-0.10, 0.05)	0.45
Involved me in decisions as much as I wanted	4.05 (0.03)	4.08 (0.03)	-0.03 (-0.10, 0.05)	0.42
Discussed next steps including any follow up plans	4.02 (0.04)	4.04 (0.03)	-0.02 (-0.11, 0.06)	0.71
Showed care and concern	3.80 (0.05)	3.82 (0.05)	-0.02 (-0.14, 0.10)	0.75
Spent the right amount of time with me	3.70 (0.06)	3.72 (0.05)	-0.02 (-0.16, 0.11)	0.78

each discrete survey question showed p-values from 0.42 to 0.77, indicating no significant difference between groups.

Conclusion: The CAT survey administered to ED patients generally reported positive resident and attending assessments. This suggests that current tools may not effectively differentiate between the communication skills of physicians, highlighting the need for a more discerning method to evaluate resident communication.

37 Gender-Coded Language in Recruitment Materials Influences Student Choices during Application to Summer Externships and Residencies

Chloe Jeanmonod, Adriana Facchiano, Genevieve Schmitt, Christopher DeFeo, Marykate Decker, Jonathan Pester

Introduction: Research in technology and finance has shown that gender-coding in advertisements impacts the gender make-up of the applicant pool. We have previously shown that emergency medicine physician job recruitment materials are frequently masculine-coded. We sought to determine whether gender-coded language in pre-medical summer programs and residency recruitment materials influence pre-medical and medical student choice during the application process.

Methods: Generic advertisements (not for specific specialties) for summer programs and residency programs were generated using artificial intelligence, and modified to include gender-coded language as per Gaucher's prior research on gender-coded words, creating highly masculine-coded and highly feminine-coded ads. Premedical and medical students were recruited to complete anonymous web-based surveys. College students were recruited via email to 200 college programs chosen at random, with emails sent to the coordinators for their medical professional interest groups. Medical students were recruited via email to 200 medical schools chosen at random, with emails sent to the dean of students and to the director of diversity, equity, and inclusion, if the school had such a position. Students were also recruited on shift at the primary study site via QR codes hung prominently in the emergency department. Choices between male-identifying and female-identifying students were compared using chi square. The study was reviewed by the IRB and found to be exempt.

Results: Two hundred seven students have been recruited to date. Of these, 64 identify as male, 142 identify as female, and one identifies as non-binary. The non-binary student was excluded from further analysis. 67.6% of female students would choose to apply to feminine-coded programs over masculine-coded programs. 53% of male students would also choose to apply to feminine-coded programs over masculine-coded programs, although female students showed a statistically significant preference (p=0.03).

Conclusion: Gender-coding in recruitment materials for students may influence the gender make-up of the recruitment pool.

38 Calculating Work Relative Value Units for EM Residents: Another Piece of the Productivity Puzzle

Susan Owens

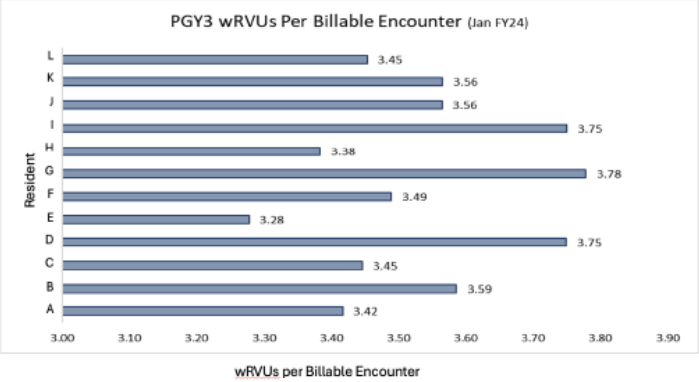
Introduction: In EM, efficiency and productivity are key to success in clinical practice. The current measure for productivity in clinical practice is relative value unit (RVU) generation, a topic lacking direct instruction at the residency level. At the University of Kentucky (UK) patients per hour is the efficiency metric used to evaluate residents, which does not reflect how productivity is measured in clinical practice. The work component of the RVU (wRVU), a numerical value that represents the medically necessary work performed and documented in a patient encounter, could be a more holistic measurement of resident productivity and efficiency. At UK there is no direct mechanism to obtain resident wRVUs despite senior resident requests for this information.

Educational Objective: Develop a process to determine resident wRVUs

Project Design: At UK the billing department assigns wRVUs to the last EM attending to sign a provider note in the encounter but they receive no data regarding residents. I developed a process to connect the resident data from the electronic medical record (EMR) to the data provided by the billing department. I generated a list of all ED encounters in January 2024 (8,000 charts) then removed encounters completed by non-EM residents. I manually assigned a billing resident to each encounter (5,500 charts) and worked with a relative cycle manager to generate total wRVUs, wRVUs per billable encounter, and wRVU per hour for each resident in addition to coding curves for each class (Image 1, Table 1). There is no reasonable way to parse out individual procedure wRVUs for the residents; the assigned billing resident was awarded all wRVUs for the encounter. This project consumed 75 hours.

Impact/Effectiveness: The data from this project was confidentially shared during a monthly faculty meeting and with residency leadership. The data provided a reasonable approximation of wRVUs generated by the residents and anecdotally was received well by the residents, particularly senior residents entering community practice. This project also allowed for review of thousands of resident notes which generated a conference didactic series on documentation and informed major changes to the EM provider note template.

Image 1. Resident (PGY3) wRVUs per billable encounter.



39 Fascia Iliaca Block vs Combined Fascia Iliaca Block with Femoral Nerve Block for Pain Control for Proximal Hip Fractures in the Emergency Department

Austin Poulson, Joseph Betcher, Benjamin Black, Alexander Glogoza, Oliver Snyder

Introduction: There is conflicting evidence in the literature on the effectiveness of fascia iliaca and femoral nerve blocks for pain control in patients with proximal hip fractures. This study sought to determine if a combined fascia iliaca with femoral nerve block would improve pain control compared to the standard fascia iliaca block.

Objectives: To compare pain scores of proximal hip fracture patients 30 minutes after undergoing fascia iliaca plus femoral nerve block or standard fascia iliaca block.

Methods: A retrospective cohort study included all isolated proximal hip fracture patients greater than or equal to 18 years of age who underwent regional anesthesia by ultrasound fellowship-trained emergency physicians in a community hospital emergency department between 1/1/2022 and 9/26/2024. Institutional review board approval was obtained. Patients with distal femur fractures, those who received additional pain medications within 30 minutes of the block, or could not reliably relay a pain score were excluded. The primary outcome was subjective pain scores (scale 1-10) after undergoing regional anesthesia.

Results: Eighty-nine patients underwent regional anesthesia for proximal hip fracture; 20 patients were excluded. Thirty-one fascia iliaca blocks and 38 combined blocks were performed. Patient age, weight, and pre-procedure scores were similar between the groups (Table 1). Females were more predominant in the fascia iliaca block group. On average, patients who received the combined block rated their post-procedure pain score 1.4 points lower than those who received a fascia block (3.8+2.4 vs 5.2+2.0; p=0.011).

Conclusions: Undergoing combined fascia iliaca + femoral nerve block was associated with lower pain scores after 30 minutes compared to isolated fascia iliaca block in patients with proximal hip fractures. Proximal hip fracture patients may benefit from using this single-injection procedure for improved pain control.

	Fascia + Femoral Block n=38	Fascia Block n=31	p-value
Age	76.2 ± 13.8	74.6 ± 11.6	0.601
Weight (kg)	71.8 ± 19.6	73.7 ± 21.0	0.709
Sex, % female	42.1%	67.7%	0.034
Pre score	7.9 ± 2.4	7.8 ± 2.2	0.867
Post score	3.8 ± 2.4	5.2±2.0	0.011

40 Tele - Telemedicine Education Landscape Evaluation

Destinee Soubannarath Gwee, Christopher Reisig, Neel Naik

Introduction: The integration of Telehealth into medical care is reshaping healthcare delivery, with the American Association of Medical Colleges (AAMC) providing guidelines for its incorporation into medical education.

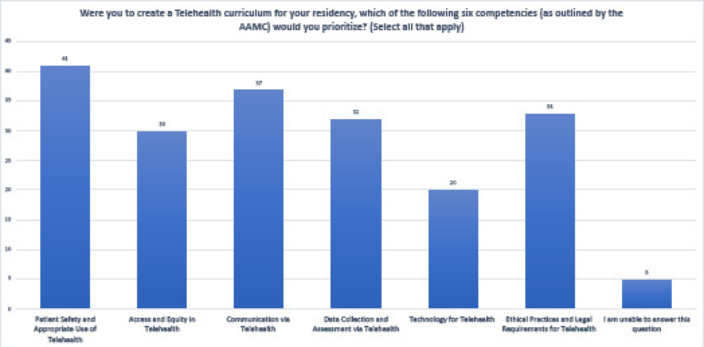
Objectives: This study examines the implementation of AAMC Telehealth competencies in emergency medicine residency programs across the U.S.

Methods: We conducted a literature review and found a lack of surveys on Telehealth education following the 2021 AAMC guidelines. To address this, we developed a survey, refined through cognitive interviews and external feedback. The survey was distributed to program directors of U.S.Emergency Medicine residency programs.

Results: Of the 280 programs contacted, the response rate was 24%. Of the 68 responses, 93% (63 programs) reported not having a formal Telehealth curriculum. Regarding the importance of Telehealth education, 16% (11 programs) deemed it "not at all important," while 84% (57 programs) recognized varying degrees of importance. Among the five programs offering formal Telehealth training, Real-Time Telehealth was the most common method (4 programs). For those with a formal curriculum, 80% would like access to educational content on the topic of "Ethical Practices and Legal Requirements for Telehealth." Among those without a curriculum, 68% would like access to educational content on "Patient Safety and Appropriate Use of Telehealth." Of the 63 programs without a curriculum, 77% do not consider it a priority, and 66% cited having insufficient faculty.

Conclusion: Most Emergency Medicine residencies lack a formal Telehealth curriculum. While we recognize the

low response rate, based on the near uniformity of data, we suspect there is validity to these findings. Time constraints impede integration of Telehealth into residency curricula. There is a demand for resources on ethical practices and legal requirements and patient safety and appropriate use of Telehealth, highlighting areas for future development.



41 Relationship between Gender Identity and Underrepresented-In-Medicine Identity on Emergency Medicine Resident Feedback

Nickolas Srica, Ryan Coughlin, Jessica Bod, Alina Tsyrulnik, Dylan Devlin, David Della-Giustina, Katja Goldflam, Katarzyna Gore, Michael Gottlieb

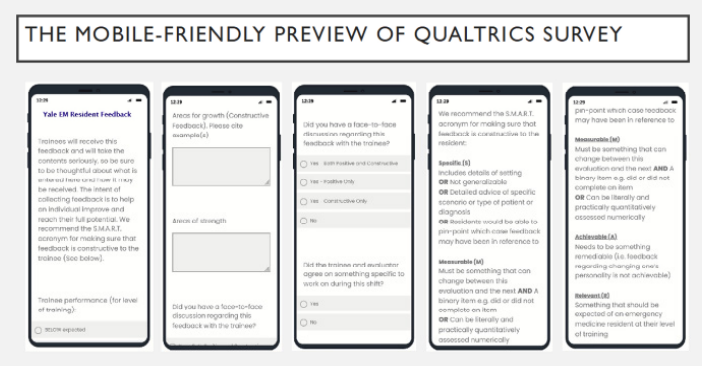
Introduction Effective delivery of feedback is critical to enhancing learning, clinical performance, and professional growth among residents. However, disparities may exist in how feedback is given to different learner groups.

Objectives: To determine if resident gender or underrepresented–in medicine (UiM) identity influenced the likelihood of receiving feedback.

Methods: This was a retrospective study of feedback delivery at an academic, four-year, emergency medicine residency program over a 28-month period in New Haven, CT. All resident physicians in the EM program were eligible for inclusion. Generalized estimating equation models were performed to assess the odds of receiving feedback, feedback delivery, feedback content, or use of deliberate practice with respect to resident and assessor gender identity and UiM identity, or resident-assessor gender identity or UiM identity concordance.

Results: The data set contained 3,480 consecutive feedback entries from interactions between 127 unique residents and 102 unique assessors during the study period. Resident gender identity (OR 0.96; 95%CI 0.84-1.11) and UiM identity (OR 1.02; 95%CI 0.81-1.27) were not associated with differences in receiving written feedback. Analysis among those who received face-to-face feedback revealed no significant differences in feedback delivery method by gender (OR 1.13; 95%CI 0.83-1.52) or UiM identity (OR 1.40; 95%CI 0.97-2.02). There were no significant differences in the use of deliberate practice (gender OR 0.94; 95%CI 0.81-1.09 and UiM OR 1.009; 95%CI 0.77-1.33). Neither faculty-resident gender concordance (OR 0.95; 95%CI 0.83-1.08) nor faculty-resident UiM concordance (OR 1.07; 95%CI 0.92-1.24) were significantly associated with receiving written feedback.

Conclusions: In this single-center, retrospective study, there were no significant differences in the odds of receiving feedback, feedback delivery, self-reported feedback content, or use of deliberate practice with respect to resident gender identity and resident UiM identity, or resident-faculty gender or UiM concordance. Further research with larger, multi-site datasets is needed to draw more definitive conclusions regarding disparities in these areas on a larger scale and to further assess the quality of the feedback being delivered.



42 A Low-Fidelity, Active Learning Approach to Resuscitation Leadership Education

Damia Michael Sobin, Peter Prescott, Brett Todd, Danielle Turner-Lawrence

Introduction: Effective resuscitation leadership is crucial in improving the quality of resuscitation efforts and patient outcomes. Despite its importance, formal curricula for cultivating resuscitation leadership skills are lacking. Existing published resuscitation leadership training programs predominantly rely on high-fidelity simulations, while low-fidelity options remain underrepresented in the literature.

Educational Objectives: This curriculum aimed to improve resident resuscitation leadership knowledge and skills using active learning techniques. We utilized the Leadership Behavior Description Questionnaire (LBDQ) as learning objectives.

Curricular Design: We designed a three-part guided discussion series employing active learning techniques to cover and review the learning objectives. The sessions utilized a flipped-classroom model, with learners engaged in self-directed learning before participating in case-based

small-group discussions. General leadership confidence and confidence in each LBDQ objective were anonymously surveyed before the curriculum and after each session using a five-point Likert scale (1- Very Confident, 3- Neutral, 5- Very Unconfident). The sessions were conducted at six-week intervals over six months.

Impact/Effectiveness: Figure 1 shows improved resident confidence as a resuscitation leader after participating in each didactic session. Impacts diminished as with increased resident seniority. Figure 2 details improved average resident confidence in each LBDQ objective after the curriculum. These findings suggest that incorporating active learning low-fidelity strategies offers a replicable and effective curriculum for enhancing resuscitation leadership skills among emergency medicine residents, especially when initiated early in their training. Further validation and objective measurement of the curriculum impact is planned.

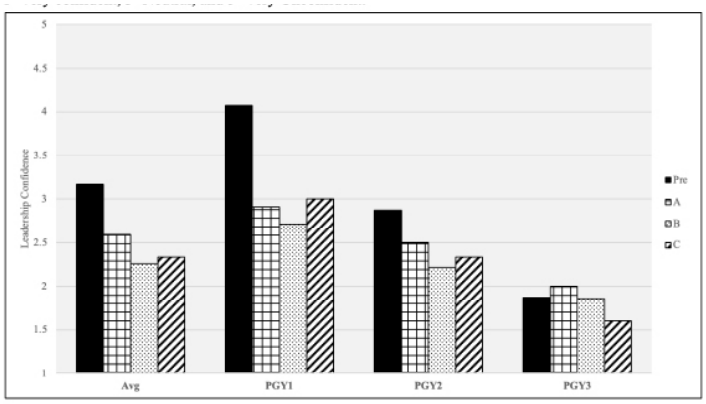


Figure 1. Average confidence acting as a resuscitation leader by residency and PGY class before the curriculum and after each didactic. Resident confidence was rated on a five-point Likert Scale with 1 = Very confident, 3 = Neutral, 5 = Very unconfident.

43 Interprofessional Slit Lamp Training for Emergency Medicine Residents

Mahima Avanti, Susan Wojcik, Jennifer Campoli

Introduction: Interprofessional education enhances collaboration in healthcare, particularly in Emergency Medicine (EM) where diverse skills are essential. EM physicians frequently perform ophthalmological examinations, with 3-5% of emergency department visits requiring slit lamp evaluations. Unlike EM residency, slit lamp training is a core teaching component of ophthalmology residencies, where residents learn to examine various portions of the eye. Many EM residents report limited exposure and insufficient training during residency to comfortably preform thorough eye examinations. This can hinder accurate diagnoses and patient care outcomes, highlighting the need for focused educational programs to enhance residents' comfort.

Objective: To design an interprofessional curriculum with ophthalmology residents that enhances EM physicians' comfort in diagnosing ocular pathologies using the slit lamp

Curricular Design: 27 EM residents (PGY 1–3) participated in a curriculum that included a video lecture on slit lamp usage followed by an in-person training session led by ophthalmology residents at an outpatient clinic. The session covered techniques for adjusting, focusing, and visualizing ocular structures in addition to assessing pathologies like corneal abrasions and glaucoma. Participants completed an 18-item questionnaire via RedCap before and after training utilizing a 5-point Likert scale and open-ended questions. Questions addressed the amount, type, and perceived adequacy of ophthalmic training. Challenges such as equipment readiness and concerns from previous usage were addressed.

Impact/Effectiveness: The training led to significant improvements ($p<0.001$) in residents' comfort with slit lamp usage. The mean comfort level increased by 1.67 (95% CI 1.27-2.06). Residents also reported a greater likelihood of incorporating the slit lamp into exams, with a mean difference of 0.40 (95% CI -0.74 to 0.06). Overall, these improvements suggest that similar interprofessional programs could enhance EM physicians' expertise in managing ocular emergencies. Future modifications may include long-term follow-ups to assess skill retention, simulation-based practice, and new interprofessional initiatives.

44 Evaluating the Impact of Electronic Interventions on EM Standardized Letter of Evaluation Part B Ratings

Alexis Pelletier-Bui, Douglas Franzen, Erin Karl, Cullen Hegarty, Anna von Reinhart, Nicole Dubosh, Amanda Doodlesack, Christopher Doty, Joseph House, Kevin Hamilton, Sharon Bord

Introduction: While program directors rate the EM Standardized Letter of Evaluation (SLOE) as the most valuable aspect of residency applications, it has demonstrated inflated scores for applicants, a trend also noted in other specialties' standardized letters. For the 2024-25 application cycle, the CORD SLOE Committee implemented automated cues within the electronic letter platform, with the goal of encouraging SLOE writers towards a bell-shaped distribution in Section B ratings, which pertains to competencies related to communication and professionalism.

Objective: This study aims to determine whether two electronic interventions to the EM SLOE Part B diminished the positive skew of ratings.

Methods

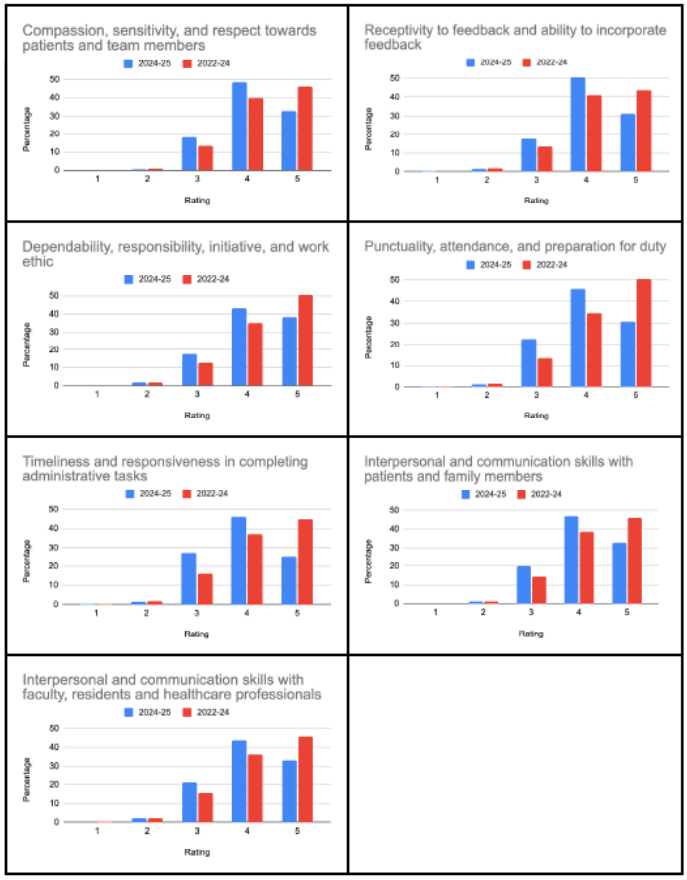
Design: This is a retrospective cohort study comparing anonymized 2024-25 SLOE Part B data to prior cycles (2022-24 aggregate data).

Interventions: For the 2024-25 SLOE, radio buttons for ratings in Part B were pre-populated to a rating of 3 out of 5, rather than being blank. If a rating of 1 or 5 was selected, a pop-up message prompted the writer to provide narrative justification.

Data Analysis: Descriptive statistics were used to summarize the distribution of ratings pre- and post-intervention. Absolute differences in the percentage of students rated 5 were calculated.

Results: Data were extracted from 17,727 letters (5,938 from 2024-25; 11,789 from 2022-24). The distribution of responses to Part B can be seen in Figure 1. The absolute difference in the percentage of students rated 5 for each characteristic ranged from -12.3% to -19.7% (Table 1).

Figure 1. EM Standardized Letter of Evaluation (SLOE) Part B Rating Distributions, 2024-25 vs. 2022-24.



Conclusions: Pre-population of SLOE Part B ratings to 3 out of 5 and pop-up messages prompting letter writers to justify extreme ratings led to a shift in the distribution of scores and a reduction in the percentage of 5 ratings in the 2024-25 cycle, as compared to the prior two cycles. The individual contribution of each intervention to the reduction cannot be determined.

45 Rapid Decisions, Real Evidence: Shaping Tomorrow's Emergency Physicians with an Innovative Evidence-Based Medicine Curriculum

Sydney Miller, Brett Todd

Introduction: Evidence-based medicine (EBM) is an important facet of medical education, yet surveys show that residents have low confidence in EBM skills and poor understanding of EBM concepts. The literature on EBM education is particularly limited in emergency medicine (EM). To close this gap, we developed a novel longitudinal curriculum for teaching EBM to EM residents.

Educational Objectives: We aimed to develop and deliver a year long curriculum covering EM-relevant EBM topics and to evaluate resident attitudes towards EBM and knowledge in EBM concepts.

Curricular Design: We administered 11, 15-minute lectures to PGY1 - 3 EM residents (Table 1) monthly during the 2023-2024 academic year. The lecture topics included were as follows: EBM basics, critically appraising literature, research study types, sample size and power, nominal/ordinal/continuous variables, p-values/confidence intervals/t-test/chi-squared, sensitivity/specificity/PPV/NPV, NNT/NNH/odds ratios, likelihood ratios, and multivariate risk models/regression. Content was reinforced during residency journal clubs and a summary document was distributed after presentations for spaced repetition.

Table 1. Resident demographic data.

	Pre (N=32)	Post (N=26)	Total (N=58)	p value
Level of Training				0.378
PGY-1	11 (34.4%)	9 (34.6%)	20 (34.5%)	
PGY-2	11 (34.4%)	5 (19.2%)	16 (27.6%)	
PGY-3	10 (31.2%)	12 (46.2%)	22 (37.9%)	
Sex				0.789
Female	12 (38.7%)	9 (34.6%)	21 (36.8%)	
Male	19 (61.3%)	17 (65.4%)	36 (63.2%)	
Race				0.544
White	24 (75.0%)	17 (65.4%)	41 (70.7%)	
Asian	5 (15.6%)	5 (19.2%)	10 (17.2%)	
Other	2 (6.2%)	4 (15.4%)	6 (10.3%)	
Decline to answer	1 (3.1%)	0 (0.0%)	1 (1.7%)	
Ethnicity				1
Hispanic or Latino	3 (9.4%)	2 (7.7%)	5 (8.6%)	
Not Hispanic or Latino	29 (90.6%)	24 (92.3%)	53 (91.4%)	

Impact/Effectiveness: Prior to administering the curriculum, we developed a survey and quiz assessing

residents' attitude toward and understanding of EBM. The survey was sent to four content experts in EBM to review questions for clarity, neutrality, and completeness. Questions were then modified based on their feedback. The survey and quiz were administered before and after the curriculum was presented. In the post-curriculum survey, residents reported increased confidence in their understanding of EBM ($p = 0.028$). Residents also noted a preference for 15 minute lecture length and delivery of lectures quarterly or monthly (Table 2). There was a non-significant trend towards improvement in quiz scores. We plan on curricular modifications to improve retention of EBM concepts.

46 Drivers of Past and Present Interview Practices for Emergency Medicine Residencies

Elizabeth Werley, Cullen Hegarty, Melanie Camejo, Alexis Pelletier-Bui, Mary Edens, Bryanne Macdonald, Erin McDonough, Eric Blazar, Leah Colucci, Brian Milman

Introduction: GME recruitment is changing. The COVID-19 pandemic necessitated virtual interviews. Discussions on "best practices" for programs and applicants followed. Numerous factors are at play: improving equity for applicants, environmental concerns, budgetary constraints, compliance with recommendations, and improving chances at match success, to name a few.

Objective: CORD's Application Process Improvement Committee sought to determine the drivers of interview practices in the 2020-2024 cycles, hypothesizing that recruitment practices as well as the driving factors behind those decisions evolved over time.

Methods: EM residency programs were surveyed via the CORD listserv September-December 2023. Participation in the survey was voluntary; all responses were confidentially collected via REDCap.

Results: There were 67 survey respondents. In the 2020 cycle, in-person interviews predominated with either optional second look events (49.20%) or no second looks events (36.9%). All virtual interviews with no second looks predominated in the 2021 (81.50%) and 2022 (67.70%) cycles. 55.40% of programs began hosting all virtual interviews with optional in-person second looks in the 2023 and 2024 cycles. For the 2024 cycle, 26.30% of programs preferred hybrid interviews with optional in-person second look events but only 16.9% intended to use that format. (Figure 1) In the 2020 cycle, programs used an established interview day pattern at the program (90.60%) or institution (35.90%). 43.80% of programs hoped to combat misperceptions about the area or program. In the 2021 and 2022 cycles, the two most common drivers of interview format were institutional restrictions on visitors (65.60%, 53.10% respectively) and a desire to maintain compliance with national recommendations (62.50%, 75.00% respectively). There has been increased interest in improving equity to applicants over time (54.70% in the 2024 cycle, up from 10.90% in 2020). (Figure 2) Programs estimated their recruitment budget for the 2021 cycle was 60.47% from previous years. Budgets have trended up slightly but still remained at <75% of baseline for the 2024 cycle. (Figure 2)

Conclusion: Interview practices have changed in recent years. While COVID-19 may have been the impetus, there appear to be numerous factors that drive recruitment practices.

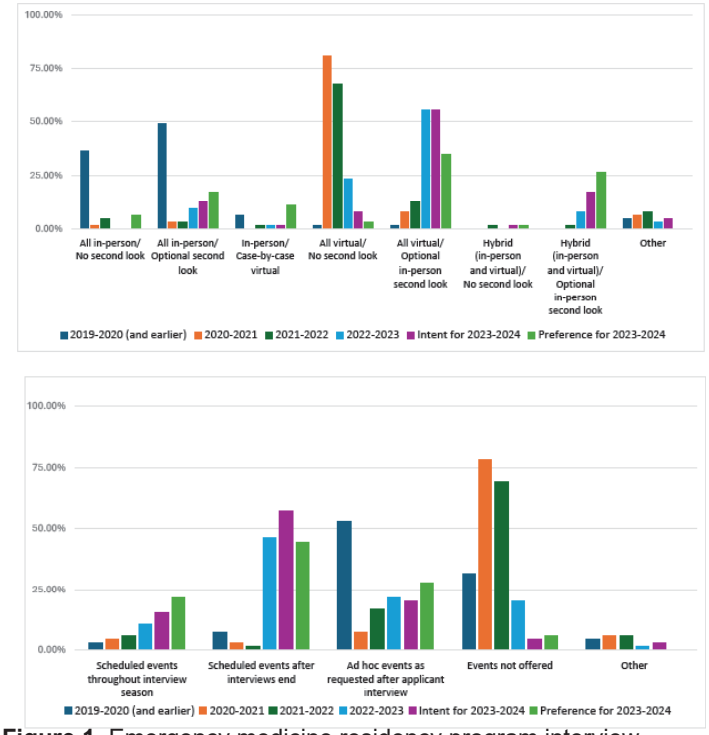


Figure 1. Emergency medicine residency program interview practices by year.

47 Impact of Simulation-Based Training on Procedural Competency

Patrick Olivieri, Shaila Quazi, Holly Stankewicz, Moira Davenport, Joshua Davis, Andrew Mittelman, Michael Gottlieb, Jennifer Yee, Wendy Coates, Annemarie Cardell, Jason Hine

Introduction: The ACGME model for procedural competency utilizes index procedure minimums as a measure of procedural competency for Emergency Medicine. As clinical opportunity for these procedures is inconsistent; simulation has been used increasingly to address these gaps.

Purpose: The purpose of this study was to characterize the impact of simulation-based training during residency.

Methods: This was a cross-sectional survey of recent graduates of 17 EM residency programs. Content validity evidence was developed via literature review and expert involvement. Response process validity evidence was developed by piloting with think-aloud resting. Programs represent a diverse sample of national residencies. Each program contact sent 3 weekly emails to their recently graduated residents. IRB approval was obtained from St. Luke's Hospital. Descriptive statistics were used to summarize the data, and a chi-squared analysis was done to compare 3- and 4-year programs.

Results: 88 out of a possible 195 respondents answered (45%). Respondents were from both 3-year (46/114 from 11 programs) and 4-year programs (42/81 from 6 programs). 5/88 (6%) reported their simulation curriculum was inadequate, 34/88 (39%) reported it was adequate, 43/88 (49%) reported it was superb, and 6/88 (7%) reported it was superfluous. The most common procedure requiring simulation to graduate was cricothyrotomy (78/88; 89%), followed by pericardiocentesis (77/88, 88%), and lateral canthotomy (64/88, 73%). Of procedures in 4 year programs, 531/601 (88%) were done without simulation; while 580/782 (76%) of procedures in 3 year programs were done without simulation ($p<0.05$).

Discussion: Simulation plays an important role in resident education. Participation in simulation was a graduation requirement at every surveyed program. In addition, for each unique procedure, we found at least one instance of a graduate relying upon simulation to supplement their minimum procedure numbers. Most residents report their simulation training is at least adequate. Graduates of 4-year programs indicated less reliance on simulation. This study adds to literature supporting robust simulation training to fill gaps in procedural clinical opportunity. More work is needed to guide timing of trainings, and assessment of competency through non-numerical methods.

48 Resuscitation Leadership Performance in Emergency Medicine Residents

Michael Sobin, Brett Todd, Peter Prescott, David Berger, Danielle Turner-Lawrence

Introduction: Numerous studies have shown that effective leadership during resuscitations significantly improves patient outcomes. However, few EM residency programs incorporate formal resuscitation leadership training into their curricula. To address this gap and work toward the development of learning objectives for a standardized resuscitation leadership curriculum, we conducted a targeted needs assessment through bedside evaluation during live resuscitations.

Objectives: The goal of this study was to assess EM resident resuscitation leadership knowledge and skills.

Methods: Resuscitation leadership behaviors of EM residents were assessed during the Spring and Summer of 2024 at a single tertiary academic medical center. Attending physicians used the Leadership Behavior Description Questionnaire (LBDQ) to evaluate residents' leadership during medical resuscitations. Attendings completed the LBDQ immediately after each resuscitation. Residents were evaluated through convenience sampling when a volunteer resident or medical student was available to distribute forms to EM attendings. Results: 244 LBDQ forms were completed, with 39 of 42 residents being assessed at least once. To quantify the LBDQ results, 2 points were equated to "performed", 1 point for "partially performed", and 0 points for "not performed." Figure 1 demonstrates average scores per LBDQ question for all residents and postgraduate year (PGY).

Conclusion: Resuscitation leadership skills improved in our resident cohort with seniority. Residents demonstrated proficiency in adhering to resuscitation guidelines, maintaining a positive team atmosphere, and making decisions on resuscitation interventions. Areas for improvement include enhancing team communication, particularly in clearly defining team roles and articulating plans to foster a shared mental model. Further research across additional residency programs is necessary to validate these findings

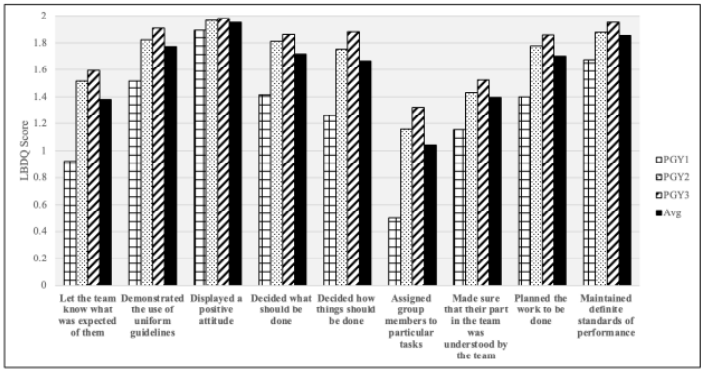


Figure 1. Average scores per question of the Leadership Behavior Description Questionnaire averaged across all residents and per postgraduate year class.

49 Factors Influencing Applicants' Decisions to Not Pursue Emergency Medicine Residency in 2023: A National Survey

Hannah Sodergren, Martin Wegman, Jennifer Chapman

Introduction: A sharp decline in the number of applicants to emergency medicine residency programs has been observed in recent years. This study describes the factors of concern and their relative influence in recent residency applicant decisions to consider, but not apply to the field of emergency medicine (EM).

Methods: We conducted a cross-sectional survey during the spring of 2023 of all newly matched applicants to first-year post-graduate programs amongst the largest sponsor for United States graduate medical education. Respondents differentiated between whether they matched into, or considered, but did not match into, EM and were asked to rank factors influencing their decision-making. Knowledge of EM workforce projections and source of information regarding the potential for limited availability of EM jobs was also ascertained. The analysis included comparing differences in influence between the main study groups.

Results: 1336 newly matched applicants completed at least one question in the survey. Of these, 326 considered EM but pursued alternative specialties, and 138 pursued EM. Relative to those pursuing EM, there was disproportionately more influence for concerns regarding relatively high rates of burnout and the limited number of future jobs available and disproportionately less influence for concerns regarding boarding, compensation, and corporatization. The most common source of information regarding an EM physician surplus were fellow medical students whereas deans, advisors, and mentors were the least.

Conclusion: Concerns regarding burnout and job availability appear to have been the most substantial influences in deciding not to apply to EM residency among those considering the specialty. These findings inform efforts to engage prospective applicants and address larger systemic issues affecting the field.

50 The State of the Profession: A National Survey of Emergency Medicine Assistant/ Associate Program Directors

Mary McLean, Alina Tsyrulnik, Geoffrey Comp, Richard Wilkerson, Justin Holmes, Cynthia Price, Elspeth Pearce, Leah Bralow, Kristen Whitworth, Anna von Reinhart, Leigh McLean

Introduction: Associate/Assistant Program Directors (APDs) are crucial for residency programs to function, but there is no standard definition for the EM APD role. This may lead to discrepancies in expectations, responsibilities, and support. No literature exists specifically defining the EM APD role.

Objectives: We surveyed EM APDs on responsibilities, support, challenges, and perceptions to frame the professional landscape and expose areas for improvement.

Methods: A cross-sectional observational study was conducted. The CORD APD Community of Practice developed, validated, and administered an electronic survey to EM APDs in the United States from 4/8/24–10/31/24. Participants were identified via CORD's Member Directory, filtered for APD designation. Likert scale data were normally distributed and analyzed with means and 95% confidence intervals. Frequency distributions and descriptive statistics were used for other data.

Results: Of 493 potential subjects, 362 consented and participated (73.4% overall response rate). Of participants providing item-level data for preliminary analyses, 147/286 (51.4%) were men, 205/285 (71.9%) were White, 248/287 (86.7%) were less than 50 years old, 248/289 (85.8%) were allopathic graduates, 171/289 (59.2%) had been chief residents, 165/286 (57.7%) were Assistant Professors, 184/329 (55.9%) were Associate Program Directors, and 145/329 (44.1%) were Assistant Program Directors. Participants reported widely varied resident-to-APD ratios (from 4:1–32:1), annual scholarly works (mean 6, SD 7), and years from residency graduation to becoming an APD (mean 5.3, SD 5.1). On Likert scales items, rated from 1 (worst/lowest agreement) to 5 (best/highest agreement), respondents reported a mean work engagement score of 3.90 (95%CI 3.80-4.00) and mean role satisfaction of 3.57 (95%CI 3.51-3.64).

Conclusions: The wide variations described in this study highlight the need for transparency and greater consistency across APD role descriptions, expectations, and institutional support structures.

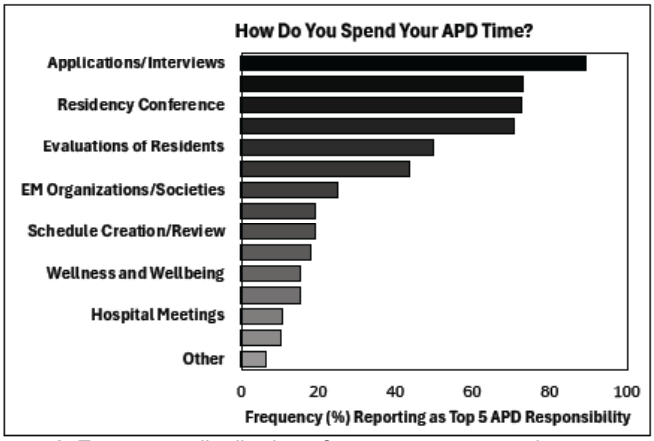


Figure 1. Frequency distribution of responses to top 5 time-consuming APD responsibilities. Categories are sorted form most frequently cited (top) to least frequently cited (bottom). Participants utilizing the "Other (Specify)" category reported additional responsibilities: management of educational and simulation curricula, journal clubs, scholarly tracks, elective rotations, board exam preparation, intern orientation and boot camps, residency interviews and recruitment, and residency events and retreates.

51 Use of End-Of-Block Milestone Assessments by Clinical Competency Committee to Generate Real-Time Milestone Ratings

Dami Sharon Kim, Richard Austin, Kristin Delfino, Robert Tennill, James Waymack

Introduction: Emergency medicine (EM) milestones were first published in 2013 and updated in 2021. Previous

work has demonstrated that end-of-shift assessments often overestimate proficiency. There is a lack of literature regarding the role of consistent portfolio assessments by the Clinical Competency Committee (CCC) in real-time to establish milestone rankings expediently.

Objectives: We developed an assessment tool to generate improved real-time milestone-based feedback for EM residents and program leadership.

Methods: We developed an end-of-block (EOB) assessment to be completed at the end of every block by core faculty trained in milestone assessment in the 2022-2023 academic year at a single institution. This assessment evaluated 20 of the 22 current sub-competencies in EM. Every core faculty member assessed each resident they clinically worked with in the preceding block and assessed their performance in simulated settings, didactic presentations, and other interactions. The sub-competencies were averaged and reported to the CCC as a baseline dataset. We analyzed differences in the average of the assessment compared to the ultimate milestone rating assigned by the CCC.

Results: Faculty completed 399 EOB assessments, resulting in 960 independent milestone averages. The intraclass coefficient was 0.976 for single measures and 0.9888 for average measures. These correlations were strongest in postgraduate year (PGY)-3 class but less for PGY-2 residents.

Conclusions: While this study was conducted at a single site and in a specific specialty, which may limit the generalizability of the results, our results indicate that a CCC can utilize EOB assessments as an assessment tool for milestone determinations. The shorter interval assessment allows for immediate review of resident performance and can be used in real-time by residents to track their progression through the milestones.

52 Not so Soporific: 3 Years of Stimulating Sleep Curricula

Luz Silverio, Ashley Rider

Introduction: The ACGME requires EM residency programs to provide education on recognizing signs of fatigue, managing alertness, and mitigating fatigue. This is critical for EM trainees due to frequent night shifts and circadian disruptions. While sleep and wellness education positively impacts learners, programs often struggle with presenting this material in an engaging way that avoids tedium.

Educational Objectives: Learners will be able to: Describe strategies for maintaining sleep and mitigating fatiguein an engaging format. Contrast positive and negative sleep patterns, including the effects of substances on sleep.

Curricular Design: Modules were delivered annually within the conference curriculum. The first module was presented virtually in pajamas from bed, incorporating visual cues to encourage healthy sleep habits. The session included recent sleep research, audience polls, and interviews with attendings on night shift strategies. The second in-person module reviewed substance influence on sleep and literature on fatigue impact during driving and test-taking. Residents rotated through small group sessions using sleep masks and a modified "heads up, 7 up" game, to reinforce learning. The third module was a virtual flipped classroom. Residents tracked their sleep, exercise, and substance use in NIH sleep diaries prior to the session, and reviewed their tracking in small groups, followed by a large group debrief. Residents provided written anonymous feedback to faculty on sessions 2 and 3.

Impact: This curriculum meets ACGME requirements while promoting healthy sleep. For session 2, residents appreciated the small, rotating groups and interactive elements. For session 3, residents liked the journaling exercise and the opportunity to discuss shared challenges. Suggestions for improvement included offering a checklist of tips and holding all sessions in person. The curriculum will be repeated every three years with ongoing refinement for engagement.

53 Impact of the Away Rotation on Program Match Rates in Era of Virtual Residency Recruitment

Jennifer Kaminsky, Leslie Bilello, Nicole Dubosh

Introduction: Since the COVID-19 pandemic, many EM residencies have transitioned to virtual interviews, providing less in-person exposure for applicants. Away rotations offer applicants the opportunity to gain in-person exposure to EM programs beyond the virtual interview environment. Whether or not the away rotation is more important now and leads to higher rotator match rates in the virtual recruitment era remains unclear and warrants investigation.

Objectives: The aim of this study was to determine the percentage of EM interns who completed an in-person rotation with the residency program in which they matched and compare this to pre-COVID match rates.

Methods: This was a multicenter study of EM residency programs. Surveys were distributed via email from August to September 2024 to a convenience sample of programs representing the 9 SAEM US geographic regions. Only programs that shifted to virtual interviews post-pandemic were included. Respondents answered questions regarding the number of matched interns who completed an in-person rotation in their respective ED and the number of matched interns who were "home" versus "away" rotators. Data was

gathered for the 2017-2024 application years. The first 3 years were defined as pre-COVID and the last 3 as post-COVID. The 2020-2021 academic year was excluded given the pandemic and elimination of most away rotations.

Results: Of the 13 EM programs surveyed, 11 (85%) responded representing 8 of the 9 SAEM regions. Pre-COVID, 95/384 (24.7%, 95%CI 20.5-29.4%) of interns completed a rotation at the residency program in which they matched. Post-COVID, this ratio decreased to 84/384 (21.9%, 95%CI 17.8-26.3%), p = 0.63. Focusing solely on "away" rotators, 48 matched interns completed a rotation at their residency program pre-COVID compared to 47 interns post-COVID (p = 0.819).

Conclusions: EM residency program match rates of interns who completed an in-person rotation remain unchanged despite the recent shift to virtual interviews.

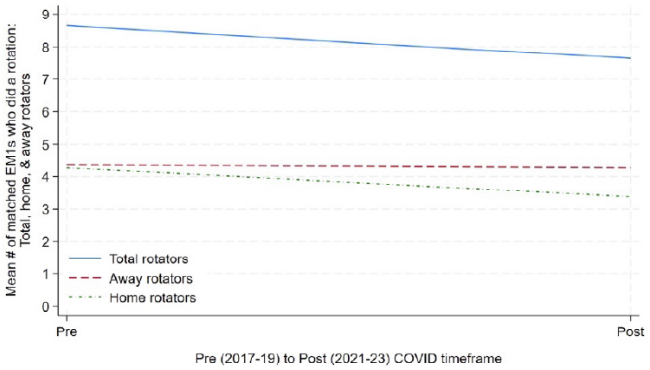


Figure 1. Pre- and post- COVID EM rotator match rates.

54 Development and Results of a Novel Emergency Medicine Residency Research Immersion Program

Kaitlin Ray, Catherine Burger, Alexander Clark, Emily Pauw, Wesley Self, Jesse Wrenn, Jin Ho Han, Michael Ward

Introduction: Barriers to emergency medicine (EM) resident research exist at the individual, program, and departmental levels.1 Given the demands of clinical residency, residents have difficulty completing scholarship as outlined per the ACGME requirement.2 Barriers to scholarly projects include lack of interest, time, mentoring, support, and skills.3 Implementation, interpretation, and quality of the scholarly project vary considerably among programs.4 To address these challenges, the Residency Leadership Team and Research Division collaborated to develop and implement a novel immersive research program.

Objectives: 1) Advance the quality of the resident scholarly activity through implementation of a sustainable immersive research program for first-year EM residents. 2) Assess residents' confidence in research methodology, interest in research, and perceived importance of research experience before and following the program.

Design: The year-long curriculum consists of five phases and four 1-hour didactic sessions. The phases included: 1) preparation; 2) study design and research question; 3) data collection; 4) analysis; and 5) scientific communication. Didactics were led by a senior EM resident with research faculty mentors in attendance. We utilized a 32-item survey to evaluate resident confidence in research methodology, interest in research, and importance of the research experience.

Table 1. Participant demographics from both first-year resident cohorts.

	Year 1 Cohort (2022-2023) N=12		Year 2 Cohort (2023-2024) N=13		Overall	
Variable	N	%	N	%	N	%
Prior research experience	10	83%	12	92%	22	88%
Type of Research Experience						
Clinical	6		7		13	
Basic Science	3		2		5	
Both	1		3		4	
Years of research experience, mean, SD	3.4	2.9	2.6	1.6	3.0	2.3
Additional graduate degree	3	25%	2	15%	5	20%
Prior formal course on statistical analysis	6	50%	5	38%	11	44%

Table 2. Survey questions to assess confidence in research methodology, emjoyment of research, interest in pursuing research during and after residency, and the perception of research importance using a 5-point Likert Scale.

Survey Questions	Pre-Curriculum Survey Response (n=25)	Post-Curriculum Survey Response (n=21)	Difference (95%CI)
Confidence in Research Knowledge – How confident are you in your ability to…			
appraise the quality of a scientific journal article?	2.48	2.81	0.33 (-0.19, 0.85)
to define research?	3.00	3.24	0.24 (-0.25, 0.73)
identify various types of research?	2.68	3.29	0.41 (-0.06, 0.89)
recognize stages of clinical/translational research?	2.32	3.00	0.68 (0.12, 1.24)*
to list different types of epidemiology studies?	2.17	2.57	0.40 (-0.19, 1.00)
to define key characteristics and limitations of cross-sectional studies?	2.56	2.86	0.30 (-0.30, 0.90)
define key characteristics and limitations of cohort studies?	2.52	2.86	0.34 (-0.25, 0.93)
Confidence in Research Skills - How confident are you in your ability to…			
identify an appropriate research mentor and to develop a research project?	2.56	2.67	0.11 (-0.52, 0.74)
identify steps of the scientific method?	3.24	3.43	0.19 (-0.39, 0.77)
use PubMed for literature searches?	3.32	3.52	0.20 (-0.46, 0.87)
use Google Scholar for literature searches?	3.16	3.43	0.27 (-0.40, 0.93)
identify resources for conducting an effective literature search?	3.20	3.36	0.16 (-0.47, 0.84)
list the various types of publications?	2.76	3.10	0.34 (-0.29, 0.96)
describe the elements of a manuscript?	3.00	3.57	0.57 (-0.09, 1.23)
describe an effective abstract?	2.68	3.10	0.22 (-0.42, 0.85)
list resources for improving one's writing skills?	2.44	2.90	0.46 (-0.17, 1.10)
describe the need for transparency and its impact on the research process?	3.00	3.48	0.48 (-0.08, 1.04)
describe the need for rigor and reproducibility and their impact on the research process?	3.12	3.48	0.36 (-0.26, 0.99)
identify approaches to enhance the transparency, rigor, and reproducibility of your research project?	2.68	3.29	0.61 (0.02, 1.19)*
list resources for study design and data analysis?	2.29	2.86	0.57 (0.00, 1.13)*
list venues for presenting research projects?	2.28	3.00	0.72 (0.07, 1.38)*
Interest in Research			
How much do you enjoy conducting research?^	2.36	1.95	-0.41 (-0.97, 0.15)
I am interested in pursuing research opportunities DURING residency.†	3.52	3.00	-0.52 (-1.16, 0.12)
I am interested in pursuing research opportunities AFTER residency.†	2.96	2.39	-0.58 (-1.29, 0.13)
Perception in Importance#			
Research experience is important to my residency training.	3.44	3.24	-0.20 (-0.76, 0.35)

Impact: In two cohorts, 25 first-year residents completed the program and met the scholarly project requirement by the end of their first year. Two conference abstracts and one peer-reviewed publication were accepted for publication, and one is currently under review. Survey responses indicated there was an increase in residents' perceived confidence of research methodology across 4 of 21 elements, but this was limited by the small sample size. There was no significant change in likelihood to pursue research during and after residency or perceived importance of research experience for their residency training. This novel resident research curriculum demonstrated a standardized, reproducible, and sustainable approach to provide residents with an immersive research experience and improve quality of scholarship produced by EM residents.

55 Diverging Paths: Examining Initial Career Choices of Chief Residents in Emergency Medicine!

Abagayle Bierowski, Erin Hoag, Casey Morrone, Ridhima Ghei, Peter Tomaselli, Kelly Kehm, Carlos Rodriguez

Introduction: The career trajectories of emergency medicine physicians can be influenced by various factors, including residency leadership roles. Previous research exploring chief resident career outcomes has yielded mixed results. This study aims to investigate whether serving as a chief resident influences the likelihood of pursuing academic or fellowship positions.

Objective: To determine if emergency medicine physicians who served as chief residents are more likely to pursue academic or fellowship positions in their first post-residency jobs compared to their non-chief resident peers.

Methods: We examined data from a single academic emergency medicine residency program from 2013 to 2024, encompassing 170 total residents (35 chief residents, 135 non-chief residents). The post-residency positions of each graduate were analyzed. Chi-square tests were performed to compare the frequencies of career outcomes between chief and non-chief residents, and effect sizes were calculated to determine the strength of the associations.

Results: Of 35 chief residents, 9 pursued fellowship (25.71%), 7 accepted an academic position (20%), and 19 obtained a community position (54.29%). Fifteen non-chiefs pursued fellowship (11.11%), while 13 accepted an academic position (9.63%), and 107 obtained a community position (79.26%). Chief residents were statistically more likely to pursue fellowship positions (χ^2: 5.19, p = 0.028) compared to non-chief residents. Though chief residents were twice as likely to accept an academic position compared to their non-chief colleagues, this result was not statistically significant (χ^2: 3.14, p = 0.0766). Non-chief residents were statistically more likely to pursue community positions (χ^2: 8.87, p = 0.0029).

Conclusions: Although multiple factors influence career decisions, this study suggests that serving as a chief resident in emergency medicine may increase the likelihood of pursuing fellowship or academic positions. Chief residents were statistically more likely to pursue fellowships, indicating that leadership roles during residency could encourage further specialization. The implications of these findings could extend to other GME programs, highlighting the potential influence of residency leadership roles in shaping future career trajectories.

56 Unpacking Diversity: LGBTQIA+ Representation among Emergency Medicine Residents

Lea Moujaes, Kayla Luliucci, David Rudolph, Blake Denley, P. Logan Weygandt

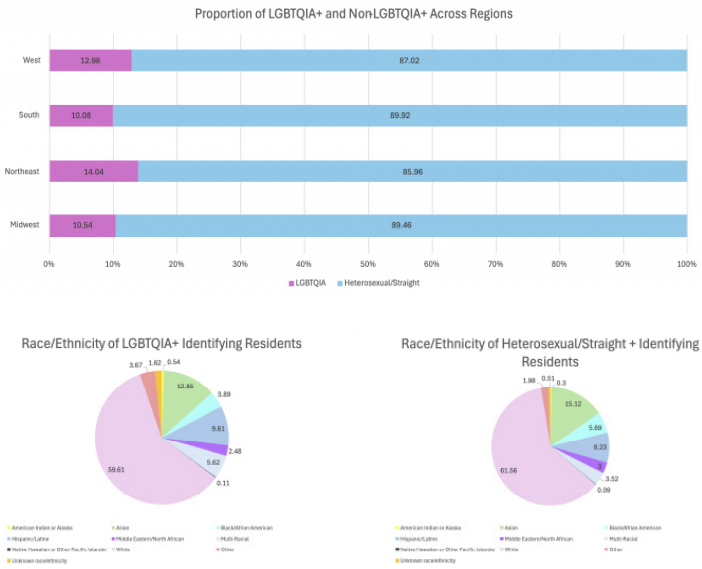
Introduction: There are limited data on LGBTQIA+ representation in EM trainees. While diversity impacts rank lists, it is often generalized in surveys without disaggregated data exploring subpopulations of LGBTQIA+ individuals. To better assess LGBTQIA+ representation, we analyzed cross-sectional demographic information, including LGBTQIA+ identities, age, program location, and race/ethnicity among PGY1-4 EM residents.

Methods: From February 27 to March 2, 2024, 9,485 residents took the ABEM In-Training Exam and completed the post-examination survey. The survey collected data including age, gender, program location and duration, sexual orientation, and ethnicity. 7,859 (82.9%) answered questions regarding their LGBTQIA+ status. We used descriptive statistics and Chi-Square analysis to examine associations between LGBTQIA+ status and demographic information.

Results: The mean age of residents was 30.6 years. Of the 7,859 respondents, 929 (11.8%) identified as LGBTQIA+. A total of 3,366 (42.9%) identified as female, 4,421 (56.4%) identified as male, and 56 (0.7%) identified as non-binary. There were 42 (0.5%) asexual, 329 (4.2%) bisexual, 317 (4%) gay or lesbian, 6,930 (88.2%) heterosexual/straight, 42 (0.5%) pansexual, 97 (1.2%) queer, and 102 (1.3%) "other" sexual orientations. In the study, the Northeast had the largest proportion of LGBTQIA+ residents (14.0%) (Figure 1). Additionally, the majority (59.6%) of LGBTQIA+ residents identified as white with varying proportions by race/ethnicity (Figure 2).

Conclusions: There is a wide breadth of unexplored diversity among LGBTQIA+ residents, emphasizing the need to better characterize this underrepresented group in EM. Future research should explore trends in LGBTQIA+

representation and highlight areas in which residency programs can support LGBTQIA+ populations. Future LGBTQIA+ surveys should include specific information on gender identity diversity that is not reflected in this data set.



57 Through the Prism: Shining Light on LGBTQIA+ Applicant Identities and Influences

Kayla Luliucci, Lea Moujaes, David Rudolph, Blake Denley, Samuel Paskin, Jaime Jordan, Edgardo Ordonez, Laura Smylie, Simiao Li-Sauerwine, P. Logan Weygandt, Arlene Chung

Introduction: Program diversity impacts rank list creation for EM-bound applicants, but how LGBTQIA+ identities influence residency selection is unknown. This study investigates general trends in EM applicant LGBTQIA+ identities, disclosure of those identities, and how LGBTQIA+ factors influence residency selection.

Methods: We surveyed 2,287 EM-bound US MD/DO applicants who applied to one of five EM programs via Qualtrics from May 16 to June 30, 2024. Participants did not provide their names or programs attended to maintain confidentiality. The survey included binary, multiple choice, open-ended, and Likert scale questions. Descriptive statistics and chi-square tests were used.

Results: Of 445 respondents (19.45%), 59 (13.26%) identified as LGBTQIA+. Gender identities included 173 cis men (38.88%), 254 cis women (57.08%), 1 trans man (0.22%), 1 trans woman (0.22%), 4 non-binary (0.90%), 1 genderqueer (0.22%), and 7 preferred not to answer (1.57%). Applicant sexual orientation is shown in Figure 1. Among LGBTQIA+ respondents, 7 (11.86%) disclosed their status during the application, 9 (15.25%) during the interview, 18 (30.51%) in both, and 25 (42.37%) did not disclose. Among 56 respondents, 36 (64.29%) supported adding LGBTQIA+ status to the residency application; 20 (35.71%) did not. Of program factors considered, program diversity and commitment to underserved communities were significantly more important, while proximity to partner(s) was less important for LGBTQIA+ applicants compared to non-LGBTQIA+ applicants. Multiple additional factors influenced LGBTQIA+ applicants' rank list creation as shown in Figure 2.

Conclusion: Many LGBTQIA+ applicants do not disclose their identities when applying for residency. LGBTQIA+ respondents value program diversity, commitment to underserved communities, and LGBTQIA+-specific factors. These insights can inform residency programs and recruitment practices

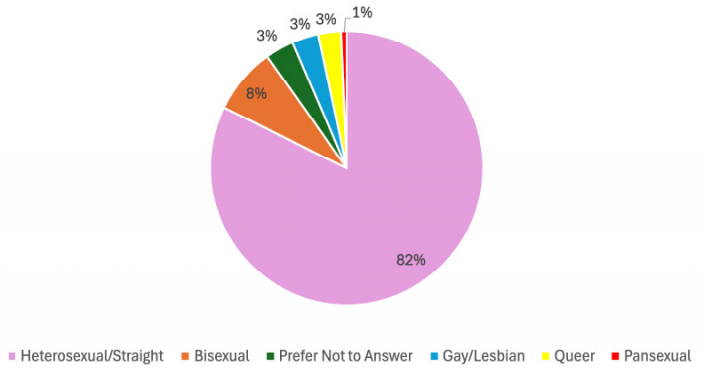


Figure 1. Sexual identities of EM applicants.

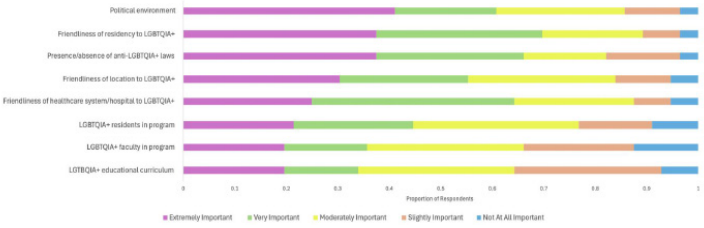


Figure 2. LGBTQIA+ factors that influence EM applicants.

58 Billable Student Documentation in Emergency Medicine: Implementation, Experience, and Outcomes

Mark Olaf, Jennifer Spinozzi, Devon Bremer

Introduction: The development of documentation skills is a necessary part of medical training but students receive limited documentation feedback. Billable student documentation has been allowed by CMS since 2018 and offers an opportunity to develop these skills but the financial impact has not been studied. We implemented student billable notes in our ED in 2022.

Objectives: We sought to evaluate the impact of the implementation of student billable notes on professional level of service (PLOS) in our Emergency Departments.

Methods: The primary outcome of interest was PLOS which was measured in three levels, '3 or less', '4', or '5.' A one-level increment in PLOS pre- vs post-implementation of student billable notes was studied. Billing note attributes were summarized using frequencies and percentages, and unadjusted differences were evaluated using Fisher's Exact tests. Ordinal logistic regression was used to estimate the odds of a billing note having a one-level increment in PLOS during the two billing periods, adjusting for chief complaint categories.

Results: Differences in proportions of notes based on chief complaint and billing level were identified to allow for appropriate modeling. Odds ratios (OR) and 95% confidence intervals (95% CI) corresponding to billing period and all chief complaint categories were reported for the full model and a final model. Notes collected after the implementation of student billing notes had about one-fifth of the odds of having a higher-level (e.g., '4' or '5') PLOS than prior to implementation. Adjusting for billing period, billing notes with psychiatric, chest pain/shortness of breath, syncope, and generalized weakness chief complaints had higher PLOS levels, and fever chief complaints had lower.

Conclusions: The two-stage model building approach was effective in constructing a parsimonious final model and identified subtle differences in billing in the two time periods stratified by chief complaint type. This information highlights the limited effect of student billable notes on ED coding levels, and provides opportunity to limit financial impact while increasing student learning in this domain. Limitations to the study include convenience sampling and a relatively small sample number that allows for only moderate effect size estimates.

59 Factors that Influence Medical Student Perception of Emergency Medicine

Ambika Anand, Stephen Miller, Nathan Lewis, Joel Moll, Eric Steinberg

Introduction: Emergency Medicine (EM) has seen declining interest among medical students despite prior growth. Factors such as the COVID-19 pandemic, EM job market concerns, and burnout have been speculated to influence specialty choice, prompting a need to explore shifting perceptions of EM and their impact on the future EM workforce.

Objectives: This study aimed to identify current perceptions of EM among fourth-year medical students, explore factors influencing their specialty choice, and uncover barriers to selecting EM as a career. The goal is to inform strategies to combat misinformation and enhance recruitment for EM positions.

Methods: A single-site prospective cohort mixed methods study focusing on qualitative analysis was performed at an academic urban emergency department. Fourth-year medical students on an EM rotation were surveyed voluntarily from September 2023 to March 2024. Visiting student rotators were excluded. The survey covered specialty choice, interest in EM, advising sources, and perceptions of EM. Data was analyzed using descriptive statistics and thematic analysis.

Results: Among 40 respondents (40.4% response rate), key factors attracting students to EM included lifestyle (50.0%), shift schedule (51.4%), diversity of patients (64.9%), and procedural opportunities (64.9%). Deterrents were shift schedule (56.8%) and burnout (86.5%). Additionally, 34.2% were advised against choosing EM, suggesting potential misinformation. Thematic analysis revealed concerns about shift schedules, lack of continuity of care, burnout, impact of social determinants of health (SDoH), and limited EM specialty knowledge as barriers to choosing EM.

Conclusions: This study identified opportunities to increase interest in EM, including earlier exposure to EM, better education of medical school leaders and physicians of other specialties about EM, and candid discussions with medical students about burnout and handling SDoH. Future research should include multi-center studies with larger sample sizes and further qualitative analysis to gain deeper insights into current trends and create targeted interventions.

60 Point of Care Ultrasound to Expedite Emergency Department Disposition

Deseray Sileo

Introduction: This retrospective study aims to further evaluate the potential of ED U/S to reduce ED length of stay (LOS) in patients presenting with biliary or renal colic, as compared to those who had radiology-performed studies (RPS). It also seeks to identify other factors that influence the potential of ED U/S to reduce LOS. Prospectively, we will use study findings to provide individual feedback to residents and assess the effect on U/S utilization and its impact on ED LOS at the provider level.

Methods: A retrospective chart review of ED patients at Olive View-UCLA in January 2023 identified patients with discharge diagnoses related to biliary or renal colic and those with a renal or hepatobiliary ED U/S. Analysis included a two-tailed t-test with unequal variance to compare ED LOS between ED U/S and RPS groups.

Results: A total of 257 patients (55.6% female, 44.4% male) were analyzed. Common comorbidities included:

obesity (30.7%), hypertension (21.0%), diabetes (18.3%). Only 7.4% met SIRS criteria. Mean LOS in ED U/S group and RPS group was 334 minutes (95%CI 303.5-364.3) and 390.6 minutes (95%CI 352.2-429) (P = 0.023) respectively. In the ED U/S group, mean LOS in patients with a surgical consult (11.6%) and without was 500.4 mins (95%CI 412.3-588.4) and 312.2 minutes (95%CI 281.3-343.1) (P = 0.0003), respectively. Hospital admission in the ED U/S group (23.1%) accounted for a mean LOS of 460.1 min (95%CI 394.5-526.7) compared to 300.1 minutes (95%CI 332.1-268.1) (P < 0.005) for patients with ED discharge (76.9%).

Conclusions: ED U/S use was associated with a 56.6 minute shorter LOS in the study population, which was statistically significant when compared to patients who had RPS, exemplifying the potential of ED U/S to expedite ED disposition in a county setting. These reductions in LOS were consistent across all PGY levels. Variables such as surgical consult and hospital admission influenced the potential of ED U/S to reduce LOS.

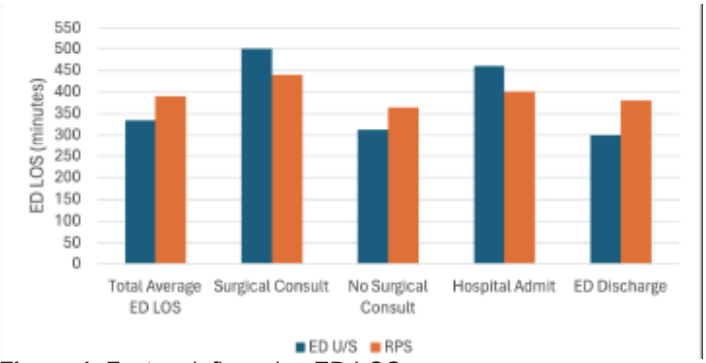


Figure 1. Factors influencing ED LOS.

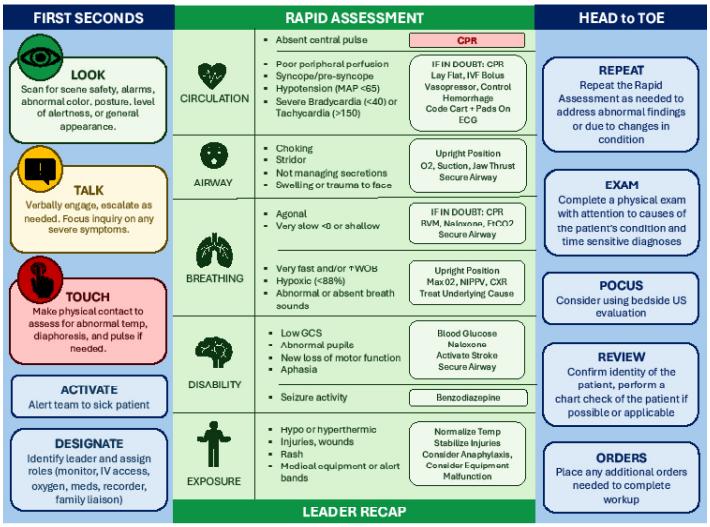
61 Teaching the ABCs

Elspeth Pearce, Mojibade Hassan

Introduction: One of the most important skills to learn early in residency is identifying "sick" or "not sick" patients and initiating stabilizing interventions. Starting EM Interns have differing levels of experience in these domains, which may lead to anxiety and poor performance clinically. Our residency identified a need for a structured program to develop these skills at the beginning of intern year. Educational Objectives: 1. Interns will learn and practice identifying sick patients and initiating stabilizing interventions using the "EM Rapid Assessment" cognitive aid as a structured approach. 2. The team leader will practice key leadership tasks, including verbalizing assessment steps, delegating tasks, and conveying information promptly. Curricular

Design: The "EM Rapid Assessment" cognitive aid (Image 1) was developed for use in an EM intern "bootcamp" simulation by the author and vetted by a group of critical care and EM educators. It includes the identification of sick vs not sick by outlining the explicit actions of expert clinicians. Next are the "ABCs", the five critical systems to assess when first evaluating an ill patient, and it explicitly outlines the exam findings to look for and interventions to initiate. The third section of the cognitive aid includes the team's next steps once the patient is stabilized. Interns learned this framework through lectures and simulations, practicing patient stabilization, including fluid resuscitation, bag-valve-mask ventilations, and managing hypoglycemia and opioid overdose.

Impact: Ten EM interns participated in the simulation during their first residency month, all demonstrating skills aligned with EM Milestone Patient Care 1: Emergency Stabilization Level 2. All interns completed a post-event survey. 10/10 felt the activity enhanced clinical quality and safety, with 8/9 reported feeling either very (4) or extremely (4) confident in applying their training in a clinical setting. The cognitive aid and simulation event successfully introduced our EM interns to the initial stabilizing steps of resuscitation and team leadership skills



62 Analyzing Trends in DO Match Rates for Primary vs. Non-Primary Care (2020-2024)

Christopher Reilly, Amir Jafari

Objectives: The aim of this study is to analyze match rates of DO seniors into primary care specialties, compared to non-primary care specialties over the past five years (2020-2024). It seeks to determine overall match rates of DO seniors, analyze trends in match rates over the five-year period, and assess if primary care specialties are matched into more favorably. Given that osteopathic programs have

a strong tradition in producing primary care physicians, we hypothesize that by analyzing the past five years of NRMP match data for DO seniors, we will see favorable match results into primary care specialties compared to non-primary care specialties.

Methods: A retrospective analysis of NRMP data from 2020 to 2024 was conducted.10-14 The study included DO seniors who participated in the NRMP match and focused on match outcomes for primary care and non-primary care specialties. Exclusion criteria included DO Graduates, all non-DO applicants, specialties with less than 50 senior DO applicants, specialties that were dual/combined, and specialties with no senior DO applicants. By excluding non-DO applicants, we focused solely on DO seniors to provide a clear and unbiased analysis of this group. Specialties with fewer than 50 senior DO applicants were excluded to minimize the impact of small sample sizes on the overall analysis. Dual/combined specialties were excluded to maintain the definition of "Primary Care specialties" and to again minimize skewing of data. The match rate was defined as the ratio of the total number of DO senior matches to the total number of DO senior applicants. Match rates for five-year periods were calculated by dividing the sum of successfully matched applicants by total number of applicants. Descriptive statistics, trend analysis, and chi-squared testing were utilized to analyze match data. A p-value of less than 0.05 was considered statistically significant.

Results: The analysis revealed that DO seniors consistently matched into primary care specialties at higher rates compared to non-primary care specialties. Over the five-year period, the average match rates for primary care specialties (Family Medicine, Internal Medicine, and Pediatrics) were significantly higher than those for non-primary care specialties, with p-values < .001) for non-primary care. Averaged match rates for all primary care specialties vs non-primary care specialties were 75.77% vs 65.13% (PC matches 3264, NPC matches 2073, p < .001) in 2020, 77.01% vs 62.05% (PC matches 3441, NPC matches 2189, p < .001) in 2021, 77.80% vs 62.45% (PC matches 3676, NPC matches 2272, p < .001) in 2022, 79.48% vs

Table 1. Observed frequencies of successful and unsuccesful matches for Primary Care and Non-Primary Care Specialties.

Year	Matched Primary Care	Matched Non-Primary Care	Unmatched Primary Care	Unmatched Non-Primary Care	p-values
2020	3264	2073	1044	1110	<.001
2021	3441	2189	1027	1339	<.001
2022	3676	2272	1049	1366	<.001
2023	3807	2326	983	1386	<.001
2024	3864	2872	951	1556	<.001
2020-2024	18052	11732	5054	6757	<.001

Table 2. Match rates for Primary Care and Non-Primary Care specialties by year.

2020 Primary Care	75.77%
2020 Non-Primary Care	65.13%
2021 Primary Care	77.01%
2021 Non-Primary Care	62.05%
2022 Primary Care	77.80%
2022 Non-Primary Care	62.45%
2023 Primary Care	79.48%
2023 Non-Primary Care	62.66%
2024 Primary Care	80.25%
2024 Non-Primary Care	64.86%
2020-2024 Primary Care	78.13%
2020-2024 Non-Primary Care	63.45%

Table 3. 5-year Match rate average by specialty.

Specialty	2020-2024 Match Rate Average
Anesthesiology	0.523771791
Emergency Medicine	0.851158835
Family Medicine	0.756686977
Internal Medicine (Categorical)	0.78327746
Neurology	0.665267576
Obstetrics-Gynecology	0.643268727
Orthopedic Surgery	0.540592168
Pathology	0.807775378
Pediatrics (Categorical)	0.847607437
Physical Medicine & Rehab	0.259347653
Psychiatry	0.739327541
Radiology-Diagnostic	0.164812942
Surgery (Categorical)	0.580370556

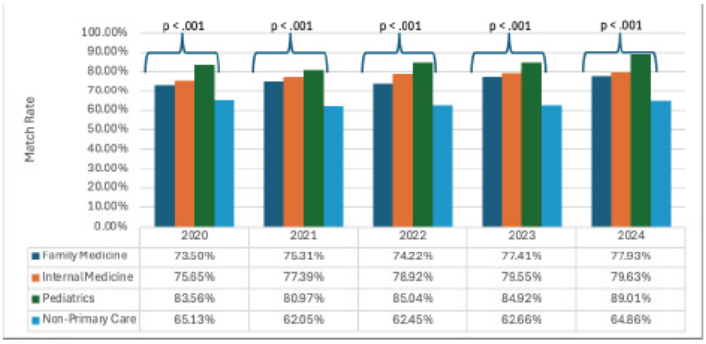


Figure 1. Breakdown of different Primary Care specialties compared to Non-Primary Care specialties. Pediatrics had a drop in 2021, but then continued to increase in match rates each year. Internal Medicine saw a steady increas in match rates. Family Medicine saw a drop in 2022, but continued to increase afterwards. Over the five-year period, Non-Primary Care match rates fluctuated, showing an overall slight decline and recover.

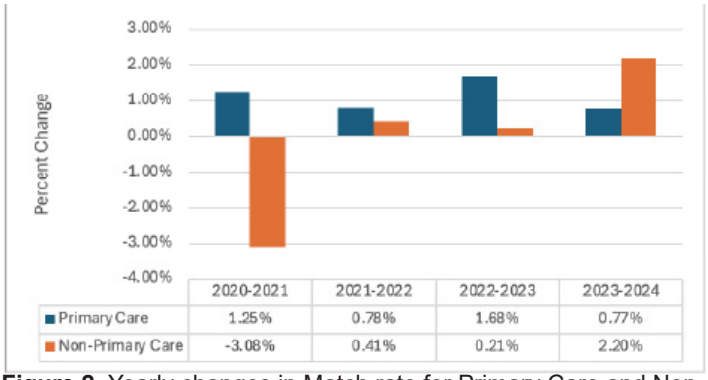


Figure 2. Yearly changes in Match rate for Primary Care and Non-Primary Care Specialties.

62.66% (PC matches 3807, NPC matches 2326, $p < .001$) in 2023, and 80.25% vs 64.86% (PC matches 3864, NPC matches 2872, $p < .001$) in 2024. From 2020 to 2024, there was an increase in match rates for primary care specialties, from 75.77% in 2020 to 80.25% in 2024. This monotonic increase was observed each year with a positive percent increase in match rates.

Conclusion: The findings of this study support the preference and success of DO seniors matching into primary care specialties compared to non-primary care specialties over the past five years (2020-2024), with an average match rate of 78.13% for primary care versus 63.45% for non-primary care specialties. This growth, particularly from 75.77% in 2020 to 80.25% in 2024, suggests increased competitiveness of DO seniors within the primary care residency match, potentially influenced by improved training programs and the merger of the ACGME and AOA accreditation systems. While DO seniors excelled in matching to primary care, non-primary care specialties like Emergency Medicine also showed favorable match rates, indicating that DO graduates are securing positions in both primary care and other critical areas of medicine. The success of DO seniors in matching to primary care specialties positions them as pivotal players in managing the projected shortage of primary care physicians in the U.S., aligning with national healthcare objectives. Further research is needed to explore factors influencing these trends and their implications for the future of healthcare, particularly with the predicted shortage of primary care physicians. Recommendations for osteopathic programs and policymakers include focusing on supporting and expanding primary care training to meet future healthcare needs.

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