UC Irvine

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

Title

Realistic Dual-Setting Mass Casualty Incident Simulation to Enhance Triage and Definitive Care Skills

Permalink

https://escholarship.org/uc/item/48v8h6h4

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 27(2.1)

ISSN

1936-900X

Authors

Russo, Scott
Basilio, Molly
Laterza, Cosimo
et al.

Publication Date

2026-03-26

DOI

10.5811/westjem.64065

Copyright Information

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

eScholarship.org Powered by the California Digital Library
University of California

education, workforce development, and institutional climate in graduate medical education. Because residency websites are often the first source of information about program culture, clear communication of program values is important; however, the extent to which EM programs include DEI content (and what that content entails) is unknown.

Objective: To evaluate the prevalence of DEI statements on EM residency program websites and examine whether program characteristics were associated with the presence of DEI content. A secondary aim was to characterize common themes within publicly posted DEI statements.

Methods: A cross-sectional analysis of all available ACGME accredited emergency medicine (EM) residency program websites (N=283) was conducted in 2025 to assess the presence and content of DEI statements. Chi square tests assessed whether DEI information was associated with program size, age, length, and region; thematic analysis identified recurrent content domains within DEI statements.

Results: Of the included 283 programs, most (n=213, 75.3%) did not include a DEI statement.

Four-year programs were more likely than 3-year programs to include a DEI statement (36.7% vs 22.2%; $\chi^2(1,N=283)=4.58$, p=0.03). Larger (≥11 annual positions) and older (est. 2006 or earlier) programs demonstrated higher inclusion of DEI language compared with smaller [31.9% vs 17.6%; $\chi^2(1,n=283)=7.78$, p=0.005] and newer [31.6% vs 18.4%; $\chi^2(1,N=283)=6.66$, p=0.01] programs. Regional differences were also observed, with programs in the Northeast (33.3%) and West (30.8%) more frequently including DEI statements than those in the South (13.5%) [$\chi^2(3,N=283)=10.54$, p=0.01]. Among those with DEI statements (n=70, 24.7%), thematic analysis identified recurrent domains (Table 1).

Conclusions: DEI content on EM residency websites is uncommon and varies significantly by program characteristics, highlighting gaps in transparency and opportunities for programs to better communicate their DEI priorities to applicants seeking programs aligned with their values.

Theme	n (%)
Commitment or mission-oriented language	36 (51.4%)
Health equity or social justice emphasis	32 (45.7%)
Education or training initiatives	26 (37.1%)
LGBTQ+ or gender-inclusive language	21 (30.0%)
Support for URiM or historically excluded groups	16 (22.9%)
References to underserved or marginalized communities	11 (15.7%)
Non-discrimination policy statements	5 (7.1%)
Description of formal DEI structures (e.g., committees, offices)	3 (4.3%)

**Some websites included more than one theme, so percentages do not total to 100.*

5 Do Year-To-Year Changes in In-Service Training Exam Performance Predict First-Attempt Success on Written Board Certification?

Brian Walsh, Fred Fiesseler

Background: In-service training examinations (ITE) are used annually to gauge resident progress, but the predictive value of changes in ITE performance for successfully passing the ABEM Qualifying Board Exam remains under-explored. We sought to determine whether year-to-year ITE percentile changes / improvements (deltaITE) forecast first-pass success on specialty written boards.

Methods: Retrospective cohort of all residency graduates (2015–2024). ITE percentiles were recorded in PGY-1, PGY-2, and PGY-3. deltaITE1-2 and deltaITE2-3 were computed as percentile point gains. Primary outcome was passing the ABEM Qualifying Board Exam on the first attempt as reported by the residents to the program director. Logistic regression modeled odds of first attempt pass success by deltaITE thresholds, adjusted for initial ITE percentile. ROC analysis evaluated deltaITE-based prediction. We further analyzed a subgroup of at-risk residents who had a low baseline ITE defined as less than the 30th percentile.

Results: 86 total residents were included in the analysis. Mean deltaITE1-2 was +19.4 (SD16.1); deltaITE2-3 was +12.8 (SD10.3). Each +10-point gain in deltaITE1-2 raised odds of first-pass success by 2.9-fold (OR 2.91, 95% CI: 1.8–4.7, p<0.001). DeltaITE2-3 of +15 points independently predicted success (OR 5.6, 95% CI: 2.3–13.8, p<0.001). Combined deltaITE model AUC = 0.91 (95% CI: 0.85–0.97). In the low-baseline subgroup (n=28), sustained deltaITE > +10/year yielded 93% first-pass rate versus 43% if deltaITE <= 0 (p<0.001). DeltaITE alone explained 41% of variance in first-pass success.

Conclusion: Year-to-year ITE improvement is a robust, independent predictor of first-attempt board success, outperforming static scores. Monitoring deltaITE enables early identification of at-risk residents, supporting targeted intervention to maximize first-pass rates.

"Best of the Best" Innovation Abstracts

1 Realistic Dual-Setting Mass Casualty Incident Simulation to Enhance Triage and Definitive Care Skills

Scott Russo, Molly Basilio, Cosimo Laterza, Michael Berkenbush, Michael Brown

Background: Mass casualty incidents (MCI) require rapid triage, coordinated teamwork, and high-stakes decision-making that traditional instruction cannot replicate. Although

SALT (Sort, Assess, Lifesaving Interventions, Treatment/Transport) triage provides a structured approach, learners rarely practice it in realistic, time-pressured environments. To address this need, we developed a dual-setting field and hospital simulation integrating triage, procedures, resource allocation, and team leadership.

Objectives: Our objective is to improve SALT triage accuracy, strengthen teamwork and communication, enhance management of life-threatening injuries in a surge environment, and develop effective resource-allocation strategies.

Curricular Design: Learners completed a one-hour session on SALT and resource management before participating in a dual-environment MCI simulation. Teams rotated between field and treatment-tent roles. The field station emphasized trauma procedures including tourniquet use, wound packing, airway management, and needle decompression. The treatment tent required coordination and decision-making under resource constraints; learners performed available procedures—cricothyrotomy, intubation, chest tube placement, and CPR—or verbalized steps when models were unavailable. Faculty used structured case sheets to maintain scenario pace and cognitive load, while paintball between rounds added fatigue and enabled equipment reset. Faculty evaluated triage accuracy, treatment appropriateness, and patient outcomes.

Impact/Effectiveness: Pre- and post-simulation surveys (1–5 scale) demonstrated significant confidence gains. SALT triage confidence improved from 1.90 to 4.14 ($p < 0.001$; 95% CI 1.6–2.9). Confidence in traumatic airway management increased from 2.55 to 3.85 ($p < 0.001$; 95% CI 0.9–1.7), and managing multiple trauma patients improved from 2.35 to 3.76 ($p < 0.001$; 95% CI 0.9–1.92). Participants reported that procedures (92.9%) and paintball-induced stress (85.7%) enhanced realism, and 71.4% felt comfortable managing an MCI afterward. Future iterations should incorporate objective performance metrics to further quantify skill acquisition.

2 Provider Directed Automated Clinical Case Review for Enhanced Medical Education in the Emergency Department

Sara Lin, Laura Hopson, Karan Desai, David Somand, Sarah Tehranisa, Florian Schmitzberger, Alexander Janke

Introduction/Background: Emergency providers (EPs) shape the initial trajectory of patients but often lack feedback on outcomes after ED disposition, limiting learning and quality improvement. Manual chart review and peer feedback are time-intensive or infrequent, often after unusual or poor outcomes. Artificial intelligence tools, particularly large language models (LLMs), offer promising ways to enable reflective learning from clinical cases.

Educational Objectives: We developed a feedback pipeline for EPs to flag cases for later follow-up on clinical course, enabling reflection and learning. This process, based on self-directed learning theory, allows EPs to submit specific questions for follow-up, receiving concise summaries via e-mail at chosen intervals.

Curricular Design: Clinicians request feedback by clicking a "Tell Me What Happens Next" button in the medical record, linking to a secure Qualtrics form to input case-specific queries and select follow-up intervals (three days, one week, or two weeks). Summaries are generated by expert clinician reviewers; concurrently, we piloted our institution's HIPAA-compliant LLM toolkit to assess AI-generated summary accuracy and scalability.

Impact/Effectiveness: Over 45 days, we received 103 feedback requests (average 2.3 requests per day) from 40 users: residents (24, 60%), attendings (12, 30%), and physician assistants (4, 10%). Most summaries were requested at two weeks (55, 53.4%). In 46 (44.7%) of cases, clinicians included a free-text question (e.g., "What was the final diagnosis from neurology?"). A sample of 19 initial LLM-generated summaries showed high accuracy on initial expert review. Our pilot demonstrates that user-directed feedback with patient summaries and custom inquiries on downstream events is feasible. This model has the potential to foster learning and case-based reflection for trainees and faculty. In the future, we aim to validate and automate feedback with LLMs and scale across departments and clinical roles while looking at impact on learners.

3 The Ramer - A Formal Resident as a Teacher Rotation as an Introduction to Medical Education

Timothy Khowong, Richa Gupta, Thomas Sanchez, Saumil Parikh, Anita Lui, Brian Smith, Sheetal Sheth

Introduction: Emergency Medicine (EM) residents are increasingly expected to contribute to medical education, produce scholarship, and provide high-quality learner assessment; thus, there is a need for structured training in educational theory, curriculum design, and teaching skills. To address these gaps, we developed the Research and Medical Education Resident (RAMER) Rotation, a two-week curriculum designed to develop foundational educator skills while simultaneously improving assessment quality within the clerkship.

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

- Apply principles of curriculum design and educational theory to teaching activities
- Provide effective, structured feedback to medical students using a Standard Direct Observational Assessment Tool (SDOT)
- Critically appraise and translate research for educational dissemination