

medicine (EM) residencies. Review of EMITE performance helps programs identify resident weaknesses in core content knowledge, but its use as a formative assessment tool is limited by infrequent administration. If EM faculty could accurately predict residents' EMITE scores, then residents with medical knowledge deficiencies could be identified earlier, providing time to institute remediation.

**Objectives:** To conduct a multicenter trial to evaluate the ability of EM faculty to predict EMITE scores.

**Methods:** This was a prospective, multicenter trial involving five EM residencies. Institutional review board approval was obtained by all sites. EM faculty were asked to predict 2014 EMITE scores of their residents using an online survey instrument. The primary outcome was prediction accuracy (the proportion of predictions within 6% of the actual score). The secondary outcome was prediction precision (the mean deviation of predictions from the actual scores). We also assessed faculty background variables, including years of experience, educational leadership status, and clinical hours worked.

**Results:** 111 faculty physicians participated, rendering 3,219 predictions for 147 residents. The mean prediction accuracy was 60% (95% CI:[57.5-62.6%]) and the mean prediction precision was 6.3% (95% CI:[6.0-6.6%]). Prediction accuracy was not significantly different between educational leaders (63.9%, 95% CI:[60.4-67.4]) and non-educational leaders (58.4%, 95% CI:[44.2-61.6]) and there was no correlation with other faculty background variables. Only eight participants predicted scores with high accuracy (>80%).

**Conclusion:** In this multicenter study, EM faculty possess only moderate accuracy at predicting resident EMITE scores. This finding calls into question the ability of faculty to accurately assess a standardized marker of resident medical knowledge.

## 26 Feasibility of Improving Bedside Teaching through Targeted Simulation-Based Education for Faculty

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**Background:** Long lasting learning is maximized when educational activities are paired with matched clinical bedside teaching. Conversely, lack of bedside teaching for a given topic likely impairs any educational initiative to close knowledge gaps. Managing ventilators in the emergency department is an example of a topic with potential asynchrony of formal education and practical bedside teaching.

**Objectives:** To determine if targeted simulation-based faculty education could enhance bedside teaching in the domain of mechanical ventilation.

**Methods:** First, a needs analysis was performed at an urban community academic hospital, asking emergency medicine

residents to rate the frequency of bedside teaching when caring for patients who require mechanical ventilation on a rating scale of 1 to 4 (1=never, 4=always). A prospective cohort study was then done on 27 out of 44 faculty members who participated in a one-hour advanced simulation-based mechanical ventilation course. Faculty self-rated their pre- and post-course competency of ventilator management on a novice to expert Dreyfus scale from 1 to 5. They also rated their current frequency of bedside teaching regarding ventilator management and their anticipated frequency of teaching after completing the course on a rating scale from 1 to 4 (1=never, 4=always).

**Results:** 33 of 48 residents responded to the needs analysis survey, with average and median ratings of 1.52 and 1, respectively. Before and after the course, average faculty self-ratings of competency on the Dreyfus Scale improved from 2.7 to 3.6 ( $p<0.001$ ), with median ratings improving from 3 to 4. Average ratings of current and anticipated frequency of bedside teaching improved from 2.3 to 3.1 ( $p<0.001$ ), with median ratings improving from 2 to 3.

**Conclusion:** Emergency medicine residents report a low frequency of bedside teaching related to mechanical ventilation. Targeted simulation-based education for faculty has the potential to significantly improve the frequency of bedside teaching of this topic.

## 27 Get Feedback Now: How to Best Use Your Residency Management Software to Increase the Response Rate and Quality of Conference Evaluations

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**Introduction:** Feedback is a vital ingredient for successful post-graduate medical education. It is required by the Accreditation Council for Graduate Medical Education for assessment and improvement of key aspects of the residency program, one of which is the mandatory weekly conferences. Audience feedback allows for presenters and residency leadership to make adjustments to future content to better meet the needs of the residents. It is most useful when the collective feedback is numerous, timely, and organized.

**Educational Objectives:** Optimize collection of feedback survey forms using a residency management software, handheld technology (tablet/smartphone), internet access, and protected time following presentations.

**Curricular Design:** A prospective cohort study of emergency medicine residents and teaching faculty at an academic hospital was conducted. Evaluations of weekly residency conferences were collected from 8/7/14-11/20/14 using the "Conference Survey" function within the New Innovations?

residency management software. Three subgroups: random, delayed, and immediate response, were analyzed. Evaluation survey forms were web-based and automatically emailed to all attendees following each conference presentation. The random group completed evaluations at their leisure. The delayed group was provided a 10-minute block of protected time to complete evaluations at the end of the 4-hour conference block. The immediate group was given 2-3 minutes of protected time to complete evaluations after each hourly presentation. All residents had handheld devices and Internet access.

**Impact:** By providing residents with handheld technology, internet access, web-based surveys, and protected time immediately following presentations, we doubled the response rate to the feedback surveys (Table 1). The residency management software automated the generation, collection, and storage of surveys. Additional functions can easily configure, manipulate, summarize, and export the data.

**Table 1.** Response rate to survey forms evaluating residency conferences.

	Survey response rate	Comment rate
Random group	35% (507/1435)	7.5% (107/1435)
Delayed response	66% (67/101)	8.9% (9/101)
Immediate response	74% (79/107)	21% (22/107)

## 28 Global Health and Graduate Medical Education: A Systematic Review

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**Background:** Global health (GH) interest is peaking in graduate medical education (GME); many residencies now offer curricula in GH. The popularity of GH has created growth in medical education literature surrounding this topic.

**Objectives:** We aim to provide a systematic review of published approaches to GH in GME. **Methods:** We searched PubMed using variable terms to identify articles? with abstracts published between January 1975-April 2014 focusing on GH GME. Methodological quality was assessed using the Medical Education Research Study Quality Instrument (MERSQI), which has demonstrated reliability and validity. Articles meeting inclusion criteria were evaluated for content by two reviewers to ensure reliability.

**Results:** Overall 60 articles met inclusion criteria; 16 articles were evaluated by two authors to ensure inter-rater reliability. Intraclass correlation coefficient was excellent (Table 1). Articles represented research and curriculum from a number of specialties at variable institutions. Overall study quality was found to be poor. Many studies lacked multiple institution analysis, randomization, evidence supporting clinical benefit and poor

**Table 1.** Intraclass correlation coefficient for individual MERSQI questions.

MERSQI item	Intraclass correlation coefficient (95% CI)
Study design	1.00 (NA)
Institutions	1.00 (NA)
Response rate	0.99 (0.88-1.00)
Type of data	1.00 (0.99-1.00)
Validity-internal structure	1.00 (0.99-1.00)
Validity-content	1.00 (0.94-1.00)
Validity-relationships to variables	1.00 (NA)
Appropriateness of analysis	1.00 (NA)
Sophistication of analysis	1.00 (0.83-1.00)
Outcome	1.00 (0.99-1.00)
Total	1.00 (0.99-1.00)

MERSQI, medical education research study quality instrument

reliability and validity evidence. The mean MERSQI score was 7.57  $\hat{A}\pm$  2.79 ( $\hat{A}\pm$  SD) out of a possible score of 18 (Table 2).

**Conclusions:** Overall there is significant heterogeneity in curriculum with no single strategy for teaching GH in medical education. The quality of literature (as determined by MERSQI scores) were of poor methodological quality. Deficiencies in medical education research are already widely acknowledged and GH literature is no different. GH-related manuscripts have a lower mean MERSQI score than previously studied medical education manuscripts (7.57 vs. 10.7). GH medical education literature is a field that must demand increased rigor in study methodology. Improved methods of curriculum evaluation and publication guidelines would ensure positive impact on educational quality.

**Table 2.** Average and standard deviation of individual MERSQI scores (n=60).

Question	Average	Standard deviation
1	1.13	0.33
2	0.61	0.29
3	0.65	0.67
4	1.34	0.91
5	0.20	0.40
6	0.52	0.50
7	0.13	0.34
8	0.74	0.44
9	1.15	0.44
10	1.10	0.26
Total	7.57	2.79

MERSQI, medical education research study quality instrument