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Multisource Feedback in a Simulation-Based Milestone Assessment of Emergency Medicine Residents

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conferences over a three-year period) used a mixed linear regression model to assess whether post-conference speaker evaluations were associated with image fraction (percent of slides with at least one image) and text density (number of words per slide).

Results: A total of 105 lectures were given by 49 faculty members. A total of 17,397 evaluations were included. On average, 47.4% (SD=25.36) of slides had at least one image, modeled as “image fraction” 0.474. Image fraction significantly predicted overall higher evaluation scores [F(1, 100.676)=6.158, p=.015] in the adjusted model. The mean (SD) number of words per slide was 25.61(8.14) but was not a predictor [F(1, 86.293)=0.55, p=.815]. Of note, the speaker [χ²(1)=2.952, p=.003] and speaker seniority [F(3, 59.713)=4.083, p=.011] significantly predicted higher scores.

Conclusions: This is the first published study to date assessing the association between slide design and CME speaker evaluations by an audience of practicing clinicians. The incorporation of images was correlated with higher evaluation scores, in alignment with Mayer’s theory of multimedia learning. Contrary to this theory, however, text density was not a predictor. This suggests that predictors speaker evaluations are multifactorial. Faculty development efforts should focus on teaching best practices in both slide design and presentation skills.

41 Inside the Black Box: Using Think Aloud to Study Clinical Reasoning During Simulation

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Background: Medical educators use simulation to assess how EM trainees develop differential diagnoses. Trainees reflect retrospectively on their clinical reasoning during post-scenario debriefings. Debriefings, however, mask individual decision making due to hindsight bias and peer influence. We posit that adopting “think aloud” from cognitive psychology, in which individuals express thoughts as they occur, avoids such biases.

Objectives: Explore the feasibility of using think aloud methods during SIM scenarios to elicit how trainees, in real time, construct differential diagnoses.

Hypotheses:

1. Using think aloud methods during scenarios is feasible.
2. Think aloud methods prompt trainees to describe how they construct differential diagnoses.

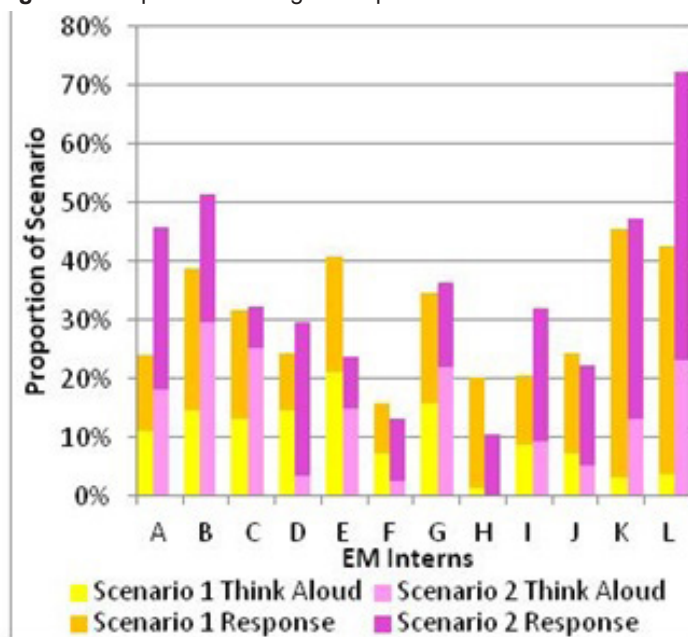
Methods: All EM interns from two residency programs participate during an orientation day (n=21). This experiment generates qualitative and quantitative data by coding videos.

We use convergent parallel mixed methods to analyze the data. The intervention includes group think aloud exercise (n=5,6); individual participation in two Standardized Patient (SP) scenarios (anaphylaxis, myocardial infarction); group debriefing; and individual questionnaires. We instruct interns to think aloud and SPs to ask about diagnoses during scenarios. Two blinded researchers independently code each second of 10 minute scenarios. They use content analysis, applying researcher generated predetermined descriptive codes to qualitative data. Codes include diagnoses and cues (e.g., symptoms).

Results: Using think aloud methods during scenarios is feasible. Interns think aloud as they interview and examine SPs (n=12/21 Limitation: Data lost due to technical error). Scenario 1: Interns think aloud 9.91% median of scenario time (range 1.33 - 20.95); they address SP questions for 18.77% median time (range 8.66 - 42.55). Scenario 2: Interns think aloud 14.16% median time (range 0 - 29.67); they address SP questions for 19.41% median time (range 7.19 - 49.12) (See Cassara Figure 1). Initial content analysis suggests that these methods prompt interns to describe how they use cues to construct differential diagnoses.

Conclusions: Thinking aloud during scenarios prompts interns to describe how they construct differential diagnoses, providing educators with vital data for assessing and remediating diagnostic reasoning.

Figure 1. Proportion thinking aloud per scenario.



42 Multisource Feedback in a Simulation-Based Milestone Assessment of Emergency Medicine Residents

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Background: Multisource feedback provides the resident learner with multiple perspectives on their performance, which is particularly useful in assessing communication skills. Prior work has shown the utility of using standardized patients (SP) to provide feedback, but we sought to compare faculty versus SP ratings in the context of a patient-centered communication (ICS-1) milestone assessment.

Objectives: We hypothesized that SP assessments of communication would differ from faculty assessments.

Methods: This was a prospective observational study conducted at a single urban emergency medicine (EM) residency program. EM year 1-3 residents participating in mandatory individual simulation assessments were assessed by both a board certified EM faculty member and a single trained SP who participated in the case. Five identical questions to assess ICS-1 were used by all raters during a fifteen minute simulated encounter about a patient with back pain, each item having a yes/no response. Faculty and SP scores for each group with percent agreement were calculated, and Cohen’s kappa scores were included to account for agreement by chance. Items scored as unable to assess (UTA) were excluded from analysis.

Results: All 62 residents participated in the simulation, with 14 faculty and 1 SP serving as raters. Faculty total scores exceeded those of the SP for 60% of residents (Figure). Only 30% of total ratings from faculty and SP were in agreement. The Table details percent of ratings scored affirmatively for specific questions by each rater with kappa values.

Conclusions: Obtaining feedback from SPs in addition to faculty provided a second, often discordant assessment of the residents’ communication skills. The individual rating items need validation, and may serve as a confounder in this analysis. Further work will be needed to understand the discrepancy in ratings.

Figure 1. Total Score by Faculty and SP.

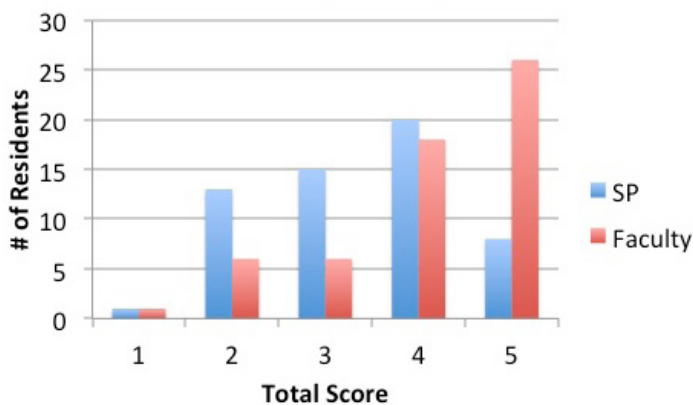


Table 1. Percent of Residents Receiving Credit for Individual Items.

	Faculty (n)	Faculty (%)	SP (n)	SP (%)	% Rater Agreement	Kappa Score
Demonstrated empathy.	53	85	45	73	66	0.34
Listened effectively.	59	95	62	100	95	N/A
Asked questions to understand the nature of back pain.	52	84	47	76	76	0.26
Respectfully communicated with patient about drug use habits.	45	74	21	34	54	0.20
Respectfully discussed reasons for not giving IV narcotics	40	69	33	57	81	0.60

43 Personal and Professional Risk of Social Media Utilization by Emergency Medicine Residents and Faculty

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Background: The use of social media (SM) platforms in emergency medicine (EM) residency programs is on the rise, yet many residents and faculty are unaware of the risk due to inappropriate SM use.

Objectives: We sought to identify frequency and differences of observed SM behavior with potential personal and professional risk to EM residents and faculty.

Methods: This is a multi-site 18-question survey study administered via the online tool SurveyMonkey[®] by e-mail to the residents and faculty in 14 EM programs and the CORD listserv. Faculty and resident responses were compared using the chi square or Fisher’s exact test.

Results: There were 1,314 responses (63% male, 36% female; 40% age<30 years, 39% ages 31 to 40, and 21% age>40) with 772 residents and 542 faculty [15% Program Directors (PDs), 85% other faculty]. PDs noted the following SM postings at least once a year: 64% of non-resident peers or nursing colleagues (NRPONC) and 57% of residents in an intoxicated state; 63% of NRPONC and 57% of residents in inappropriate photographs; 76% of NRPONC and 67% of residents with inappropriate posts; and 30% of NRPONC and 22% of residents terminated or reprimanded. Residents noted the following SM postings at least once a year: 84% of peers