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Qualitative Analysis of Emergency Medicine Resident Logged Patient Safety Observations

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Results: As our study is ongoing, there are no results as of yet. However, we do anticipate having preliminary results in time for presentation at CORD.

Conclusion: We expect that massage therapy will have a positive impact by decreasing burnout rates. Since there is little research regarding the impact of wellness interventions on EM residents, we hope that our work inspires more of this research and that it motivates other programs to institute similar wellness programs for their residents.

42 Medical Student Attitudes and Perceptions After Implementation of a Clerkship Evidence-Based Medicine Curriculum

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Background: The Association of American Medical Colleges (AAMC) identifies incorporating evidence-based medicine (EBM) principles as a core entrustable professional activity for entering residency. In response to this direction, teaching of EBM has been integrated into undergraduate medical curriculum extensively, including the pre-clinical and clinical years. Studies assessing these curricula using validated tools have shown them to increase knowledge and improve critical appraisal skills. However, the majority of studies have focused on the effectiveness of teaching EBM to students in terms of knowledge and technical skills. An important potential barrier to the adoption of EBM includes attitudinal, perceptual and behavioral factors.

Objective: The overall aim of this study was to identify medical student perceptions on evidence based medicine prior to and after completing a structured EBM training program.

Methods: A structured “journal-club” style EBM training program in which students met weekly to critically appraise clinical articles was introduced into the curriculum of the fourth year emergency medicine clerkship for academic year 2018-2019. We developed a two part evaluation plan that included a 18 item voluntary survey questionnaire, administered pre- and post-clerkship, designed to evaluate attitudes and perceptions of medical students on the value of and barriers to an integrated EBM curriculum. Questions were taken from prior surveys studying EBM in medical trainees. Responses were anonymous and collected on a 5 point Likert scale. Data was analyzed using the Mann-Whitney U test.

Results: A total of 178 pre- and 144 post-clerkship responses were received. General attitudes towards EBM and the teaching intervention were positive. The intervention was associated with an increase in students’ self-assessed skills and attitudes of all items and nine items were statistically significant ($p < 0.05$, Figure 1).

Conclusion: Structured integration of EBM into the fourth year emergency medicine clerkship had a positive impact on student attitudes and perceptions, increasing interest in the topic

and confidence in EBM skills.

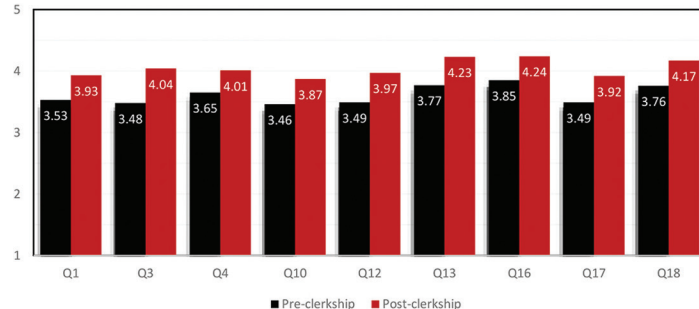


Figure 1. Statistically Significant Pre-Post Survey Questionnaire Responses.

Table 1. Pre- and Post- clerkship Survey Questionnaire.

Question Number	Item statement/question
1	I have the basic skills in appraising the medical literature
2	I know how to use information technology to access online medical literature.
3	I know how to apply what I find in the general medical literature to a specific patient
4	I use the medical literature to answer clinical questions
5	Journal club will change the way I manage patients
6	Journal club will help me feel up to date with the important literature
7	Journal club will increase my confidence when evaluating the medical literature
8	Journal club will increase my general medical knowledge
9	Journal club will increase my understanding of biostatistics
10	Attending journal club will motivate me to read more medical literature
11	The critical appraisal worksheet was useful
12	I was interested in the topic chosen for this journal club
13	Journal club is an improvement over just reading the articles myself
14	I read journal club articles prior to attending the meeting
15	Journal club is a good use of my time
16	Journal club should have attending physician involvement
17	Journal club will increase my sense of independence as a student
18	I think journal club should be implemented as a regular feature into the medical student curriculum

43 Qualitative Analysis of Emergency Medicine Resident Logged Patient Safety Observations

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Background: The Accreditation Council for Graduate Medical Education (ACGME) requires residencies to universally involve trainees in quality improvement (QI) and

patient safety (PS). Programs already track resident procedures.

Objective: To identify trends in resident recorded concerns about the clinical environment in the ED.

Methods: This study was conducted at a 4 year training program hosting 13 residents a year within a suburban health care system with two academic training sites. After IRB review, the residency procedure logging software New Innovations™ was used to collect resident observations of their concerns in the ED. The Residency Steering Committee required 3 logs per 28 day ED rotation. Use of the formal institutional PS reporting system was noted via submission number. Logs contained the resident’s observation, a suggested cause and a proposed countermeasure. Logs were reviewed qualitatively using methodology described by MacQueen et al and are analyzed descriptively.

Results: From 8/2016 through 5/2019 63 residents submitted 965 logs. Of these, 133 were PS reports, 6 were incomplete and 21 were deemed repeat submissions of the same event. The remaining 805 de-identified logs were reviewed and assigned to 1 of 19 themes each with sub-categories. Table One demonstrates this analysis. By PGY year, 1’s most commonly submitted concerns with nursing, 2’s issues with policies/ protocols, 3’s behaviors and 4’s triage issues. Notable were 24 logs from events outside the ED.

Conclusions: In this single site study of resident logs, it appears that required observations yields a variety of PS concerns. While the logs were a convenience sample, they can be used to inform future resident QI projects. With the submission of formal PS report numbers, the logs can document resident involvement in formal institutional PS systems. By submitting non-ED events, it appears the requirement contributed to a culture of PS.

Table 1. Qualitatively Analyzed Themes in Resident Patient Safely Logs By Order of Frequency.

Theme	Log Count (Percent)
Nursing Practices	103 (12.8%)
Communication	95 (11.8%)
Equipment, Stocking	80 (9.9%)
Hallway Beds	70 (8.7%)
Hospital Systems	68 (8.4%)
Issues with Triage	51 (6.3%)
ED Policies, Administration	40 (5.0%)
ED Providers	38 (4.7%)
Laboratory Issues	38 (4.7%)
ED Throughput, Operations	37 (4.6%)
Professionalism	33 (4.1%)
Issues with the EMR	33 (4.1%)
Factors Outside the ED/Hospital	28 (3.5%)
ED Staffing Issues	27 (3.4%)
Issues with Security	19 (2.4%)
Registration Concerns	16 (2.0%)
Need for Further Staff Education	12 (1.5%)
Scheduled IT Software Downtime	10 (1.2%)
Sanitation	8 (1.0%)

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Qualitative Feedback and a Revised AIR Score: An improved Quality Evaluation Tool for Online Educational Resources

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Background: Learners increasingly rely on online educational resources. However, most online resources lack peer-review, leading to concerns about content accuracy and quality. The Academic Life in Emergency Medicine Approved Instructional Resources (ALiEM AIR) score was developed for expert educators to appraise the quality of online educational resources and has demonstrated validity when used in this context.

Objective:

- We sought to evaluate the usability of the ALiEM AIR scoring tool among a diverse population of practicing physicians and medical trainees.
- We sought to use that qualitative feedback to improve the ALiEM AIR scoring tool.

Methods: As part of the larger METRIQ blog study, medical students, EM residents, and EM attendings used the ALiEM AIR score to assess 5 medical blog posts, after which they evaluated its usability, clarity of items, and the likelihood of recommending it to others via an online survey with free response items. Qualitative analysis using a thematic approach was performed by two independent analysts. Inter-rater agreement was 81.4%. Discrepancies were resolved through in-depth discussion and negotiated consensus.*

Results: Of 330 initially recruited, an international sample of 301 participants completed the ALiEM AIR Score evaluation. Results of qualitative analysis are shown in Table 1. Four major themes related to ease of use were identified including: clarity, logical structure, concise, and alignment with educational value. Major themes related to limitations of the tool included questionnaire best practices, validity concerns, and challenges assessing and limitations of evidence based medicine. Major themes in support of use included evaluative utility and usability.

Conclusions: While the ALiEM AIR score has numerous strengths, specific components require improvement to improve usability and utility.

*We are currently updating the AIR tool in response to the feedback.

Table 1. Results of Qualitative Analysis.

	Major Themes	Subthemes	Exemplar Quotes
Describe why the ALiEM AIR tool was easy to use	Clarity		"I gave relatively clear cut criteria for evaluating a blog post" "The ALiEM AIR tool asked simple questions and offered simple responses"
	Logical Structure		"It contains logical questions that are easily applied to each resource." "I think the tool was fairly intuitive to use" "Overall questions were direct and easy to apply to blog posts"
	Concise		"Relatively short" "It was easy to use because it was short and concise" "The questions are very relevant" "The tool is simple and hits on several major aspects of what makes a good quality blog post"
What was unclear about this these items?	Questionnaire best practices	Double barreled questions Lack of written anchors for all response items	"Gaps in the anchors levels leave some level of interpretation which reduced utilization" "More than a few blog posts did not match with any of the answers because some were 'interesting' but not 'new', some were not 'new' but were definitely 'important'
	Validity concerns	Score utility may vary according to purpose of the blog Scores may vary depending on audience/learner level Score is dependent on assessor's knowledge and experience	"Clinical educational pearls for residents" is a little too subjective and the group is too broad. Perhaps stratifying by year? Interns, juniors, seniors?" "ROADM has been criticized for over-emphasizing very new topics and under-representing core concepts and this question could systematically down-rate important topics that are not strictly 'new'" "Clinical pearls [was] challenging since I do not feel qualified to know whether the information presented would change current practice. I also did not feel qualified to comment on the key educational pearls with confidence...at this point in my training." "Regarding accuracy, I think this implies the reader of the blog has some previous knowledge which is often not the case, making it difficult at times to answer."
Why would you recommend the ALiEM score for the evaluation of blog posts?	Challenge assessing and limitations of evidence based medicine		"Just because it's 'EM' doesn't mean it's without bias." "It is very easy to appear to be practicing EBM but to do it badly."
	Evaluative utility		"It is more relevant and reflects usability better for clinical practice" "seems to encompass what I would care about in a blog" "Criteria used to rate the blogs are those that I feel are most important to establish valuable medical education sources"
	Usability		"Straightforward and easy to use" "It is a good and simple score to use"