Back in My Day: A Journal Club Using Landmark Articles for Emergency Medicine-Bound Medical Students

https://escholarship.org/uc/item/5zq5n03n

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 21(1)

1936-900X

San Miguel, Christopher E.
Leung, Cynthia
Kman, Nicholas
et al.

2019


https://creativecommons.org/licenses/by/4.0/ 4.0

Peer reviewed
BACKGROUND

The ability to critically appraise scholarly literature and apply results to patient care is a core component of medical practice as evidenced by its inclusion as a milestone for emergency medicine (EM) trainees by the Accreditation Council for Graduate Medical Education (ACGME). Milestones are the knowledge, skills and attitudes required for successful practice within a given specialty, organized in a developmental framework from levels 1 through 5 to demonstrate advancing proficiency. Level 1 milestones are those skills expected on the first day of residency. The level 1 anchor for EM Milestone 19, “Practice-based Performance Improvement” requires that a learner “describes basic principles of evidence-based medicine,” whereas one of the level 3 anchors of the same milestone requires that a learner “demonstrates the ability to critically appraise scientific literature and apply evidence-based medicine to improve one’s individual performance.”

Traditionally, medical schools have focused their curricula on teaching principals of evidence-based medicine (EBM) via journal clubs. While medical schools report formal EBM activities occurring in the clinical environment during the third year of medical school, the most common environment for fourth-year EBM training was in fact “none.” Consequently, it is possible that new EM trainees could arrive at residency having not used or revisited EBM concepts at all over the final year of their medical school training and having never been exposed to EBM application within the field of EM.

Our institution has a longitudinal boot camp course for medical students pursuing an EM residency. This boot camp experience was redesigned after the introduction of the ACGME Milestone Project in an effort to teach and assess EM-bound medical students on their progress toward and beyond level 1 proficiency. In an effort to better teach and assess EM Milestone 19, a curriculum was designed to reinforce core concepts of EBM while exposing senior medical students to historical articles that had widespread practice-changing effects.

OBJECTIVES

The culminating objective of our curriculum was to enable students to analyze a recently published article and discuss its implications in clinical practice, thus ensuring
that each student at minimum had achieved level 1 in EM Milestone 19. To gain the skills necessary to complete this objective the students 1) analyzed landmark articles in EM to become familiar with common research methodologies, 2) studied the development process of clinical decision rules and the limitations of their application to clinical practice, and 3) discussed how research findings have historically influenced practice change within EM.

**CURRICULAR DESIGN**

This EBM curriculum was delivered in a traditional journal club format. Sessions were held monthly throughout the academic year and ran on average 90 minutes. Two faculty members, one fellowship-trained in education and the other fellowship-trained in research, co-facilitated all but two of the sessions. Both faculty members had experience facilitating small group discussions, but no further specific training was undertaken prior to the implementation of the curriculum. There were 10 total sessions, and to accommodate away rotations and interviews, students were required to attend a minimum of five sessions. Because of the relatively low rate of required attendance there was intentional redundancy within the curriculum in terms of the emphasized principles and learning points for each session. For instance, sessions on head trauma and cervical spine trauma were similar in that they both discussed the development and use of clinical decision tools.

During each of the first nine sessions, we reviewed two to three articles that were related by content. For example, the syncope session reviewed the original validation article of the San Francisco Syncope Rule and two subsequent external validation studies of the rule. Articles were chosen by the curriculum developers after review of the Academic Life in EM 2016 list of landmark articles. Articles were chosen to ensure the curriculum covered different topics within EM, reviewed different core topics within EBM such as research methodologies, and included the study of articles with conflicting results. This curriculum was certainly not designed to be comprehensive in its breadth of clinical or EBM topics. See Table 1 for a complete list of articles included within the curriculum.

Articles were distributed to the students via the course’s online learning platform, and they were expected to read the articles prior to each session. During the sessions, the articles were individually analyzed in a small-group discussion format, with one or two faculty members facilitating the discussion. Particular attention was paid to the clinical question, the research methodology, the results, the interpretation of the results, and the historical, clinical impact of the article, including its relation to other articles reviewed during that session.

The 10th session was slightly different in format. It was attended by all the students taking part in the course, and they were split into two groups. Each group presented a critical analysis of a contemporary article and commented on whether and how it should change clinical practice. Although there was no formal evaluation of this presentation, it did allow students to independently apply the skills they had developed throughout the curriculum.

**IMPACT**

Institutionally designed and mandated surveys assessing the quality of the sessions on a five-point Likert scale were distributed to the participating students after each session. A total of 15 students were enrolled in the curriculum and generated a total of 83 surveys. The overall rating of the sessions was positive with 79 (95.2%) scoring either a 4 or 5 on the Likert scale. Each survey contained two open-ended items: one asking for positive feedback, and the other asking for constructive feedback. Two authors conducted reflexive thematic review of these comments, which revealed three main themes: 1) students are supportive of the journal club model of teaching EBM; 2) students value discussion of study design and statistics; and 3) sessions should target key clinical topics.

The curriculum’s impact is limited both by our outcome measures and our cohort size. Although we can only present satisfaction data, the fact that this curriculum was the only formal EBM received by our students in the fourth year of medical school leads us to believe that its implementation was worthwhile. Our cohort size was limited by the number of students who are EM bound each year, but our cohort reflects the experience of students interested in EM at a large medical school; thus, our findings are likely applicable to institutions nationwide.

The implementation of this journal club-style curriculum designed to advance fourth-year medical students’ proficiency in EM Milestone 19 was positively reviewed by the target audience.

**Address for Correspondence:** Christopher E. San Miguel, MD, The Ohio State University, Department of Emergency Medicine, 779 Prior Hall, 376 W 10th Avenue, Columbus, OH 43210. Email: Christopher.SanMiguel@osumc.edu.

**Conflicts of Interest:** By the WestJEM article submission agreement, all authors are required to disclose all affiliations, funding sources and financial or management relationships that could be perceived as potential sources of bias. No author has professional or financial relationships with any companies that are relevant to this study. There are no conflicts of interest or sources of funding to declare.

**Copyright:** © 2020 San Miguel et al. This is an open access article distributed in accordance with the terms of the Creative Commons Attribution (CC BY 4.0) License. See: http://creativecommons.org/licenses/by/4.0/
Table 1. Journal club sessions and articles.

<table>
<thead>
<tr>
<th>Session topic</th>
<th>Article citation</th>
</tr>
</thead>
</table>
REFERENCES


