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From Triage to Transformation: Medical Students Navigating Health Systems Science in the Emergency Medicine Clerkship

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Authors

Olaf, Mark
Willner, Keith
Bremer, Devon
et al.

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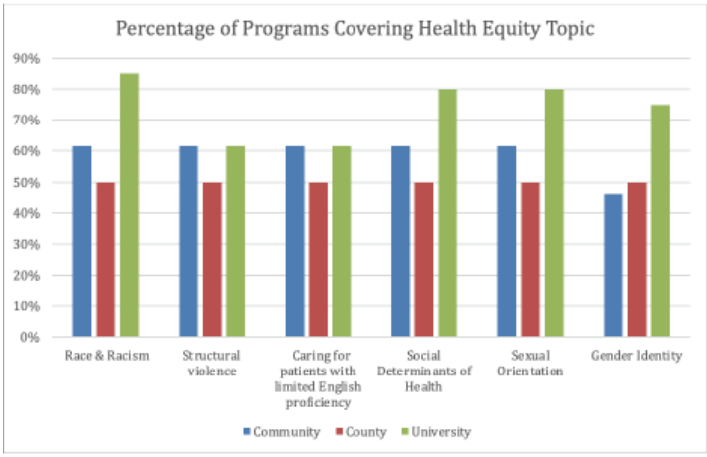

Figure 1. Percentage of programs covering health equity topic.

17 From Triage to Transformation: Medical Students Navigating Health Systems Science in the Emergency Medicine Clerkship

Mark Olaf, Keith Willner, Devon Bremer, Jennifer Spinozzi

Introduction: Health System Science (HSS) is the third pillar of medical education and addresses the underpinnings of how medical care is delivered, how populations of patients are cared for, and how to reduce the cost of care while optimizing outcomes. There is a paucity of literature regarding incorporating HSS principles and education into clinical curricula.

Educational Objectives: We aimed to develop clinically based, EM-centered, constructive learning opportunity to emphasize and teach students about Health Systems Science Principles and to assess its efficacy through a qualitative approach.

Curricular Design: Using a constructivist learning theory framework, we instituted a HSS shift into our clinical curriculum and asked students to reflect on their experiences. Students spent time in triage, with charge nurses, with care managers, EMS, and in patient transfer centers. Students were also asked to involve themselves in meaningful patient care opportunities when they became apparent. Students then submitted reflections regarding opportunities to meaningfully contribute to patient care, and the process of and challenges relating to managing ED patient flow, based on these experiences. We then performed a qualitative analysis using a constructivist learning theory framework using phenomenological methods adapted to the reflections provided by this experience.

Impact/Effectiveness: 115 students completed the exercise and all responses were analyzed. Identified themes and respective sub-themes included patient care roles and contributions including triage mechanisms, interdisciplinary collaboration, and interpersonal patient interactions; challenges to ED flow, including staffing shortages, patient overcrowding, bed availability; and solutions and suggestions for improvement, including education and training opportunities, improved communication, and resource allocation. The development of this curricular content appears to have generated thoughtful insight into elements of health systems science in the clinical environment. Future work should focus on assessing HSS related outcomes, including medical knowledge principles, and expanding this experience to more fully integrate with HSS principles learned elsewhere in their medical school curricula.

18 Einstein's Last Words: Enhancing On-Shift Learning in the Busy Emergency Department

Dylan Krause, Jessica Parsons

Introduction: The ED is a fast-paced environment where residents must acquire and apply knowledge. While traditional teaching methods are effective, active learning during shifts can improve knowledge retention. Whiteboard teaching offers a flexible way to highlight learning points without disrupting patient care. We developed a method called "Einstein's Last Words," where learning points are recorded on a whiteboard and shared with all learners after sign-out of patient care. This efficiently disseminates and reinforces learning points, enhancing on-shift education.

Educational Objectives:

• Promote active learning and knowledge retention on-shift by collecting and reinforcing key points.

• Implement whiteboard teaching as an efficient strategy that does not distract from workflow of the ED.

• Provide opportunities for peer teaching.

Curricular Design: In December 2024, residents completed a pre-survey on their perception of on-shift teaching. Following a didactic presentation in January regarding this method, ED team members began writing learning points on whiteboards related to active cases, covering topics like differential diagnosis and management (figure 1). These notes were shared at sign-out to reinforce learning. After six months, residents completed a post-survey. This project was met initial challenges in consistent use, which was resolved by frequent reminders.

Impact/Effectiveness: Of the 41 residents who completed the pre-survey and 28 who completed the post-survey, 89% reported that whiteboard teaching enhanced on-shift learning without detracting from patient care (figure 2), and 100% recommended it for ongoing use. This low-cost, effective strategy can be readily adopted by other ED programs. Future goals include optimizing session frequency and exploring interdisciplinary expansion.