

## **UC Irvine**

### **Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health**

#### **Title**

Evaluation of Simulation as an Adjunct to Didactics for Teaching Emergency Medical Management of Septic Shock

#### **Permalink**

<https://escholarship.org/uc/item/72b36775>

#### **Journal**

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 17(4.1)

#### **ISSN**

1936-900X

#### **Authors**

Dolan, M  
Moadel, T  
Kim, A  
[et al.](#)

#### **Publication Date**

2016

#### **Copyright Information**

Copyright 2016 by the author(s). This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

patient safety ensured during signout. 60% felt their signout ensured patient safety; 31% did not feel patient safety was ensured, but did not feel it was clearly compromised; 9% felt patient safety is compromised.

Residents were also asked if they thought their signouts were accurate (68% agree, 28% neutral, 4% disagree); if they thought their signouts were effective (75% agree, 16% neutral, 9% disagree); and if they were confident with the information given during signout (67% agree, 25% neutral, 7% disagree). Information missing during signout included HPI (35%), Significant PE findings (45%), Plan for ED workup (11%), Plan for disposition (31%), and Code status (1%). Only 6.5% of residents felt their signouts were not missing any relevant information.

**Conclusions:** Many signout tools are routinely used. Although the majority of residents are satisfied with their method of signout, a significant percentage feel that signouts lack completeness and do not ensure patient safety.

## 28 Evaluating Resident Transitions of Care in the Emergency Department

*Dolan M, Moadel T, Kim A, Hile L / Yale University School of Medicine, Department of Emergency Medicine, New Haven, CT*

**Background:** Simulation has been shown to be an effective training tool for Emergency Medicine providers. Its effectiveness in comparison to didactic learning is still unclear.

**Objectives:** To test the effectiveness of full manikin simulation as an additional teaching modality compared to didactic learning alone by comparing test scores of simulation participants to a control group. We hypothesized that test scores of simulation participants would improve more on immediate and delayed post-tests compared to control subjects.

**Methods:** Third-year medical students in their surgical clerkship between June and November 2015 were enrolled

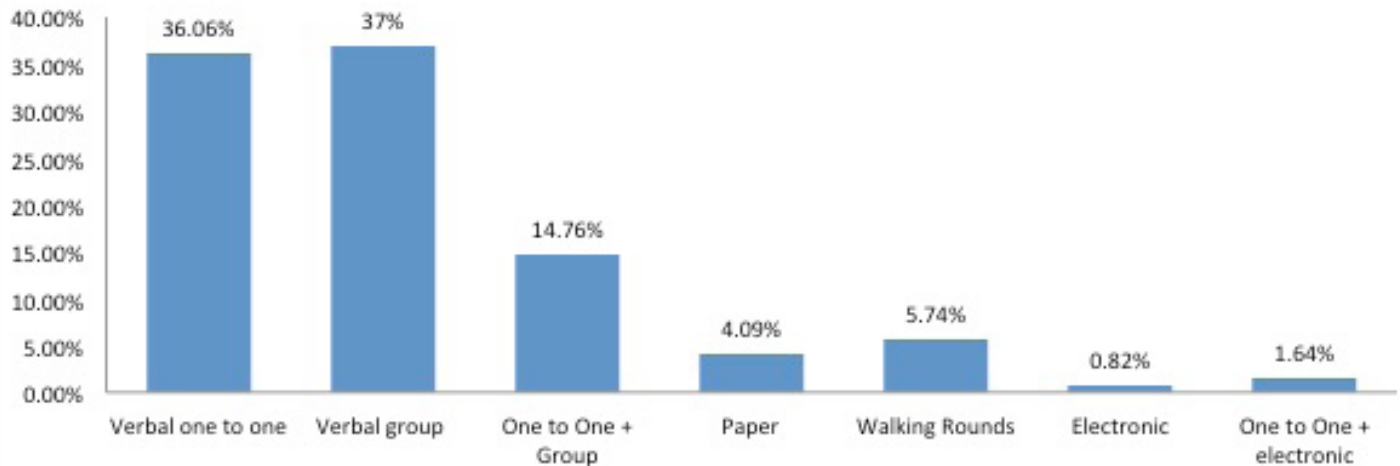


Figure 1. Sign Out Modality.

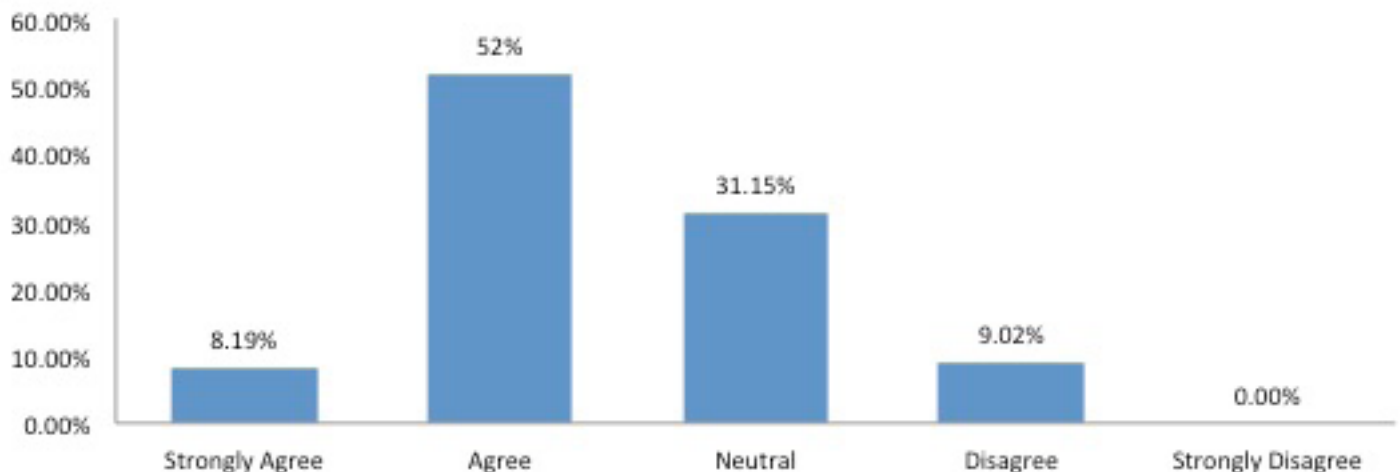


Figure 2. Patient Safety related to Sign Out.

in this experimental study at the Yale Center for Medical Simulation. Students were randomly divided into control and experimental groups. Students who refused participation or were unable to complete pre- or post-intervention testing were excluded. All students completed a 26-question test on emergent medical management for septic shock based on the 2013 “Surviving Sepsis Campaign” guidelines. Both groups attended a didactic session based on those guidelines. Each student in the experimental group also participated in a full manikin simulation of a patient in septic shock. All students then repeated the test immediately after the didactic session and again at 12 weeks. Improvement between baseline and post-tests were compared between the two groups using Student’s t-test.

**Results:** 54 students were enrolled in the study. 1 was excluded due to failure to complete post-testing. 25 students were placed in the control group, and 28 were placed in the experimental group. After adjusting for baseline testing, immediate post-test scores in the control group were an average of 1.69 points lower than those in the experimental group (95% CI, -3.07,-.32). No significant differences in scores were found between groups on delayed post-testing (95% CI, -1.75, 1.01).

**Conclusions:** Third-year medical students who participated in both didactics and simulation of emergent medical management of septic shock improved more on immediate post-testing compared to students who participated in didactics alone. However, there are no significant differences in scores 12 weeks after intervention. Full manikin simulation may be a useful modality for teaching emergent medical management of sepsis, but its benefits over didactics alone may diminish after time.

## 29 Expectations and Outcomes for the Development of an Ultrasound Curriculum in a Resource-limited Environment

*Berkowitz R, Mangan J, Rose G, Siadecki S, Chhaganlal K, Saul T / Mount Sinai St. Luke’s Roosevelt, New York, NY; Catholic University of Mozambique, Mozambique*

**Background:** Point-of-care ultrasound (POC US) can be an invaluable tool in resource-limited settings. Emergency physicians from developed countries are increasingly traveling to such areas to teach POC US. However, how to best perform a needs assessment and develop a curriculum in an unfamiliar setting can be unclear.

**Objectives:** The objective of this study was to determine if instructors could design appropriate didactics for Mozambican medical students based on limited knowledge of students’ backgrounds and needs, and if surveying novice learners before training would be informative for curriculum development.

**Methods:** Our ultrasound division traveled to Beira, Mozambique to teach a 3-day course in POC US for 5th-year medical students. It was developed based on experience

conducting similar courses in developed countries and research on regional healthcare. A survey was administered to the instructors before and after the course about local morbidity and the utility of different POC US modalities. Students were given similar surveys at the same times.

**Results:** Overall, instructors accurately identified the diseases perceived by students as most prevalent and responsible for the most mortality; however they overestimated the rate of obstetrical complications. 75% listed it in their top 5 before the course, and 25% after. They also overestimated the extent of trauma and infectious diseases other than HIV, TB, and malaria. Regarding the utility of each POC US modality, instructors rated FASH, late OB and IV access highest before the course, and thoracic and procedural guidance highest after the course. Students rated cardiac and late OB highest before the course. These were listed in the top 3 by 80% and 70% of students, respectively. After the course, 40-50% rated cardiac, thoracic, FAST, early OB, and late OB in their top 3. No students rated IV access or procedural guidance highly at any time. Additionally, 20% of students suggested adding an application that instructors had not considered.

**Conclusions:** Based on limited research, instructors designed a well-received course for medical students; however, the curriculum could have been improved by several changes. Other methods of needs assessment may be indicated. Consideration of students’ input before training should be taken with caution as their perspectives changed significantly after the course.

## 30 Faculty and Resident Perception of Mastery of Level One Emergency Medicine Milestones

*Fowlkes E, Runde D / University of Iowa Hospitals and Clinics, Iowa City, IA*

**Background:** Emergency medicine residents begin training with varied levels of experience. The Level 1 Emergency Medicine (EM) milestones describe elements of physician competency expected of incoming residents in emergency medicine.

**Objectives:** To measure the self-reported competency of all EM residents with Level 1 milestone at the start residency and to measure the concordance between resident and faculty perceptions of competency.

**Methods:** We conducted an anonymous online survey of all current EM residents and faculty in a Midwestern university-based EM residency program. Residents were asked to rate themselves on the ability to consistently perform each of the 37 items based on the milestones at the beginning of internship (dichotomous), and faculty were asked to rate the proportion of interns who could consistently complete each milestone task based. Descriptive statistics are reported, and ANOVA was used to compare concordance between resident and faculty responses.