Engaging the Audience During Medical Simulation

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Background: Today’s medical students rely on smartphones, tablets and various apps to enhance their individual knowledge. During medical simulation, the audience often passively observes team performance. While much research exists on enhancing simulation performance, little is known about audience learning methods and outcomes. Interactive software could engage observers, providing increased knowledge and skill to all participants.

Objectives: To evaluate the effect of using interactive software as a teaching tool for a simulation audience.

Methods: Early in their EM clerkship, students participated in a DKA simulation case. One student was team leader, while the others (up to 6) were observers. Students were randomized to one of two groups: Nearpod or control. Nearpod is web or app-based software which allows delivery of interactive content to learners. Students in group 1 used a web-connected device to receive questions and prompts, through the Nearpod software, during the case. Students in group 2 simply observed. All students were debriefed together. 2-3 weeks later, a 2nd DKA sim case was administered. Comparison was made between groups on performance of 7 DKA-specific critical actions. Evaluators were blinded as to group allocation. Goal recruitment is 40 students.

Results: To date, 28 students have completed the protocol. Sixteen students have been randomized to Nearpod, 12 to control. Students who used Nearpod accomplished on average 5.06 of the 7 (SD 1.4, 72.3%) critical actions successfully vs 5.42 out of 7 (SD 1.4, 77.4%) critical actions for those in the control group. There is no significant difference between groups (p=0.5).

Conclusions: Based on the current data, the use of interactive software to engage students during audience observation of high fidelity simulation did not result in increased performance of critical actions during a later simulation case. Further study may reveal ideal learning strategies to enhance observer education.
limits the opportunity for all trainees to perform the critical initial skin incision. Cadaveric autografting is a novel way to simulate all steps of the cricothyroidotomy procedure.

Objectives: To determine if cadaver tissue autografted to simulate native neck tissue improved perceived competency of cricothyroidotomy. The investigators hypothesized that autografted cadaver tissue would improve participants’ self-assessment of competency.

Methods: In this prospective crossover study, volunteers were randomized to perform cricothyroidotomy initially on previously incised native neck tissue or on grafted tissue, then vice-versa. A board-certified emergency physician instructed all participants in cricothyroidotomy. The autograft consisted of cadaveric iliotibial band covered with lateral thigh skin to simulate cricothyroid membrane and native anterior neck anatomy (Figures 1 and 2). Volunteers met inclusion criteria if they were currently in residency training or participating in an emergency medicine sub-internship and had not performed a cricothyroidotomy on the study day. Twenty-seven residents and nine students participated. Outcomes were evaluated via Likert scale.

Results: Thirty of 36 (83%) of participants agreed or strongly agreed that they preferred cadaver grafting over previously incised native tissue. Thirty-two of 36 (89%) agreed or strongly agreed that performing cricothyroidotomy with a cadaver graft was useful, versus 23/36 (64%) who felt similarly regarding previously incised native tissue (p = .001). Twenty-six of 36 (72%) felt more comfortable with cricothyroidotomy in the emergency department after using cadaveric grafting versus 19/36 (53%) who felt more comfortable after using the native tissue (p = .003).

Conclusions: Grafted cadaveric tissue maximizes the educational potential of each cadaver by allowing multiple participants to perform cricothyroidotomy from start to finish and appears to be a useful training adjunct in this rare but essential emergency procedure.

Figure 1.

Evaluating Resident Transitions of Care in the Emergency Department

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Background: Transition of care of patients between residents at change of shift happens multiple times per day in the emergency department. There are many opportunities for error in patient care to occur when there is handoff to a new team, as pertinent information may be lost. According to Kessler et al (2013 survey of program directors) effectively communicating patient care handoffs is not formally taught to most EM residents. Consequently, there are many variations in transition of care. Sinha et al (2007) suggested that a standardized sign out tool would more effectively communicate pertinent information to the next team of providers.

Objectives: Our goal was to determine the methods most frequently used in patient care handoffs at shift change and the information most frequently lost in transitioning care to a new team. Also, to assess resident’s perception of safety and effectiveness of signout.

Methods: 122 residents representing 7 different Emergency Medicine residency programs in eastern Pennsylvania were surveyed while together in a conference at Einstein Medical Center. The survey data was collected anonymously, then correlated and analyzed using Excel.

Results: Figure 1 represents the range of sign out modalities reported to be used. 88% of programs use a verbal signout - either 1 to 1, group, or both. 4% use paper, and 6% do walking rounds. Figure 2 represents the residents’ sense of