Putting the MeaT into TeaM Training: Development, Delivery, and Evaluation of a Surgical Team-Training Workshop

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BACKGROUND: Despite importance to patient care, team training is infrequently used in surgical education. To address this, a workshop was developed by the Association for Surgical Education Simulation Committee to teach team training using high-fidelity patient simulators and the American College of Surgeons-Association of Program Directors in Surgery team-training curriculum.

METHODS: Workshops were conducted at 3 national meetings. Participants completed preworkshop and post-workshop questionnaires to define experience, confidence in using simulation, intention to implement, as well as workshop content quality. The course consisted of (A) a didactic review of *Preparation*, *Implementation*, and *Debriefing* and (B) facilitated small group simulation sessions followed by debriefings.

RESULTS: Of 78 participants, 51 completed the workshops. Overall, 65% indicated that residents at their institutions used patient simulation, but only 33% used the American College of Surgeons—the Association of Program Directors in Surgery team-training modules. The workshop increased confidence to implement simulation team training (3.4 ± 1.3 vs 4.5 ± 0.9). Quality and importance were rated highly (5.4 ± 00.6, highest score = 6).

CONCLUSIONS: Preparation for simulation-based team training is possible in this workshop setting, although the effect on actual implementation remains to be determined. (J Surg Ed 73:136-142. © 2015 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: team training, patient simulation, continuing professional development, surgical education, debriefing, nontechnical skills

COMPETENCIES: Professionalism, Interpersonal and Communication Skills, Practice-Based Learning and Improvement

INTRODUCTION

Effective teamwork skills in medicine are essential for patient safety.[1-3] Tools such as Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS, http://teamstepps.ahrq.gov)[4] as well as simulator-based interventions have been used to increase the efficacy of complex interprofessional medical teams.[5-7] However, within surgery, although simulation-based team training has been undertaken at specialized centers, its overall implementation has been sparse. Although team training has been recognized as a significant research priority by the academic surgical community,[8] no requirements for systematic training in this area have been articulated by the Accreditation Council for Graduate Medical Education, except by inference.[9] The Accreditation Council for Graduate Medical Education-defined competencies of professionalism, interpersonal and communication skills, and systems are directly relevant to teamwork; however, skills associated with high-performance teams have been extensively characterized, most notably, by Salas et al.[10,11] These team-based competencies are rooted in decades of research in human factors science and have led to the development

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of crew (aka cockpit) resource management (CRM) in aviation.[12,13]

To address a need for widely available and standardized training opportunities, the American College of Surgeons (ACS) and the Association of Program Directors in Surgery (APDS) jointly organized working groups to develop skills curricula for surgical residents. The first 2 of these focused on traditional technical and procedural skills, and the last one aimed to develop a team-training curriculum. The latter effort resulted in a 10-module program for event-based training, most of which were designed to occur in simulated surgical environments around a high-fidelity, computer-driven, manikin patient simulator. Although this curriculum shared characteristics with the Anesthesiology Crisis Resource Management programs[14,15] that are directed at building both clinical management and CRM skills in anesthesiology trainees, the scenarios for the ACS-APDS curriculum were selected for relevance to surgical training. A particular emphasis was placed on opportunities to use components of teamwork during the simulated care.

However, even with the development of a full-scale, team-training curriculum, adoption has been very low. In an effort to address this shortfall, in 2010 the Association for Surgical Education (ASE) Simulation Committee directed efforts toward increasing the use of simulation-based team training among surgical educators. A simulation-based program to teach the basic skills and methods needed to implement team training using the ACS-APDS team-training curriculum was designed as a hands-on workshop experience. The purpose of this effort was to demonstrate the feasibility of using a national meeting venue to deliver this experience and to survey participants on the effectiveness of this "train-the-trainer" model, ultimately building capacity for delivering surgical team training. This article reports our preliminary experiences in delivering such a workshop.

METHODS

Setting

The ASE and International Meeting on Simulation in Healthcare annual meeting workshops were identified as the best vehicle to deliver the new team-training educators' workshop. These meetings were chosen as the most likely venues, where surgical educators with an interest in simulation-based training would be present. The course was modeled to deliver a practical hands-on experience in team training based on manikin patient simulation in the course of a half-day workshop. The title "Putting the MeaT into TeaM Training" was used to emphasize this purpose.

The workshop was conducted during 2 successive ASE annual meetings (San Antonio, TX and Boston, MA) and 1 International Meeting on Simulation in Healthcare annual meeting (New Orleans, LA). Each workshop used 2 high-fidelity patient simulators (iSTAN, Medical Education Technologies Inc./CAE, Sarasota, FL), programmed to run a standard clinical scenario (postoperative pulmonary embolism) selected from the ACS-APDS team-training curriculum (www.facs.org/elearning). This scenario was chosen for its scalable difficulty level and suitability to the meeting room environment.

The workshop was held in a conference room at the meeting site. It had a central seating area with a lectern and a large viewing screen, for didactic teaching, as well as 2 simulation stations. The 2 manikin simulators were positioned at opposite corners of the meeting room, with the basic medical equipment and the telemetry monitor positioned in the immediate area. A simulator operating station was set up a short distance away to represent a simulator control room. Given the workshop's goal to teach educators in simulation-based training techniques, no attempt was made to isolate or hide the control area from view. Laptops were available to support the manikins and displayed patient information, including laboratory data and diagnostic imaging.

Content of the Training Program

The workshop was divided into didactic and hands-on components. A brief description of the contents of each one is as follows.

Didactic Component

Didactic content consisted of a series of 3 PowerPoint presentations that introduced the requirements, methods, and general principles used in a model of team training centered on simulated patients. A general review of the history and status of team training and the ACS-APDS team-training curriculum preceded the focused presentations. The lectures were organized as *Preparation*, *Implementation*, and *Debriefing* segments (Table 1).

Preparation Segment (Getting Started)

Personnel and infrastructure requirements leading to a basic capability to use computer-driven manikin simulators in an appropriate environment for surgical team training were delineated. This segment included general consideration of procurement, staffing, and translation of curriculum content into an implementable activity. Logistical considerations discussed included estimations of time required, costs, potential staffing models, physical space, simulator options, and other material requirements. The specific logistical requirements to run the ACS-APDS postoperative pulmonary embolism module were also reviewed.

Implementation Segment (Getting Going)

This didactic segment covered the merging of necessary basic elements defined in *Preparation* in the context of a