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Development of a Novel Ultrasound Peritonsillar Abscess Model for Simulation Training

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measure residents' progress.

Impact/Effectiveness: Accurate, automated tracking of residents' clinical experience provides powerful data that can guide learning plans and patient selection for the individual, and broader curriculum planning for the program.

19 Development of a Multidisciplinary Curriculum for Education of Trauma Teams During Weekly Emergency Medicine Residency Conference

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Background: Coordination and collaboration between trauma surgery, emergency medicine, anesthesia, nursing, and EMS is necessary for care of trauma patients. While many institutions have developed multidisciplinary in-situ team training programs to work on communication and teamwork in the setting of trauma, formal residency didactic education on trauma care has remained isolated to individual department weekly conferences.

Educational Objectives: To develop a multidisciplinary conference curriculum involving trauma surgery, emergency medicine, anesthesia, nursing and EMS to improve knowledge, skills and collaboration in trauma care.

Curricular Design: Educators from trauma surgery, emergency medicine, anesthesia, and nursing developed an interdisciplinary curriculum focusing on abdominal and pelvic trauma. The curriculum sought to incorporate multiple modalities of education to focus on medical knowledge, application of knowledge, procedural skills, teamwork and communication used in trauma resuscitations over a four hour conference during weekly EM didactics. Over 50 learners including EM residents, surgery residents, anesthesia residents, EM physician assistants, EM nurse practitioners, SICU nurses, EM nurses, and EMS personnel participated in the four hour conference. Two thirty minute lectures were used to educate all services on the medical approach to abdominal and pelvic trauma. Three hours were split into rotating small groups involving 1) hands-on skills stations focusing on FAST exam and use of pelvic binders and tourniquets, 2) a high fidelity simulation focusing application of medical knowledge and critical thinking in a case of abdominal trauma resulting in diaphragmatic rupture, and 3) a high fidelity pelvic fracture simulation focusing on teamwork, communication, role definition, and handoffs between services. A wrap-up discussion provided an opportunity for the learners to summarize concepts they learned that would change their practice in the clinical environment. In-situ trauma simulations provide

opportunities to reinforce these concepts.

Impact/Effectiveness: A multidisciplinary educational trauma conference during weekly EM residency conference enables unified and collaborative learning to enable coordinated care of the trauma patient.

20 Development of a Novel Ultrasound Peritonsillar Abscess Model for Simulation Training

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Background: Peritonsillar abscess (PTA) is a common presentation to emergency departments. Often, residents perform their first PTA needle aspiration in the clinical setting, a nerve-racking experience with multiple potential complications. Few PTA task trainers have been described, none of which allow for ultrasound image acquisition, which improves procedural safety. Simulating PTA needle aspirations under ultrasound guidance with a realistic model can build confidence and proficiency prior to performing this procedure on a clinical shift.

Educational Objectives: To create a realistic task trainer that allows emergency medicine residents to acquire ultrasound and needle aspiration skills when draining a PTA.

Curricular Design: The task trainer was built with low-cost, replaceable, and easily cleanable materials. An airway mannequin head, internally stripped aside from the tongue, was placed upright on a mesh wire cylinder attached to a wooden base. Water and barrier lotion were combined to simulate abscess material and injected into a small water balloon. The balloon was glued to the bottom of a paper cup with a tongue depressor taped to the inside, allowing insertion into a slit made at the base of the tongue, thereby maintaining correct abscess orientation. The cup was filled with ballistic gelatin and layered with cotton to obscure the balloon. After setting, a uvula and two tonsils were painted on top. Cups were replaced after each needle aspiration.

Impact/Effectiveness: Residents were surveyed on their comfort performing PTA needle aspirations and on task trainer utility. Eleven of 16 residents have previously drained 1-3 PTAs, with the rest having no prior experience. On a 1-5 visual analog scale, residents rated their comfort with the PTA procedure as 2.07 before and 3.64 after practicing the procedure on the trainer. Similarly, residents felt ultrasound images were representative of real PTAs (mean 3.41, range 1-5). The model was felt to be realistic (mean 3.73, range 1-5) and easy to use (mean 4.08, range 1-5). An ultrasound guided PTA task trainer has not yet been reported. This low-cost model increased resident comfort in performing PTA needle aspiration, provided realistic ultrasound images, and allows for

repeated practice outside of the clinical setting. Improvements to the model have already been made, including the addition of a carotid artery to increase anatomic fidelity.



21 Development of a Palliative Care Curriculum for Yale Emergency Medicine Residents: A Novel Approach

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Background: Emergency physicians frequently care for patients with serious illness, including those near the end of life. The 2013 Choosing Wisely Campaign goals defined by the American College of Emergency Physicians emphasize early use of hospice and palliative care (PC) services in the Emergency Department for patients likely to

benefit. Few emergency medicine (EM) residencies include a PC curriculum; we created an EM-PC curriculum to meet this need.

Educational Objectives: To design and implement a curriculum for EM residents to integrate PC into their clinical practice.

Curricular Design: We identified 6 core PC topics to integrate into our existing EM didactic curriculum using lecture, small groups, and simulation to deliver content in an effective and practical manner. Topics included Trajectories & Prognosis, Stages of Death, Symptom Management, Legal & Ethical Considerations, Goals of Care Conversations, and Conflict Management/Spiritual Consideration. Faculty and residents with a particular interest in PC designed and delivered the content. The chosen topics were delivered in eight 1-hour sessions in the 2015-16 academic year.

Impact/Effectiveness: As part of an IRB approved study, a voluntary survey was distributed to residents participating in the curriculum. Of the 27 residents surveyed, 92.6% reported they will “use the concepts” taught in the curriculum, 92.6% reported “increased comfort level having goals of care conversations” and 88.9% reported they felt “more knowledgeable” managing end-of-life symptoms. When surveyed about the future of the curriculum, 55.6% of residents responded that the curriculum should be kept the same, while 37% felt the curriculum should be expanded. Of those responding that the curriculum should expand, 50% were at the PGY-4 level of training. A small minority, 7.4% reported that the curriculum should have less emphasis in the curriculum.

Our impact study demonstrated that integration of PC concepts into the EM resident curriculum was well received and potentially practice changing. Given the support for expansion of the curriculum we believe it has filled a vital knowledge gap in our curriculum. Our sample curriculum is geared towards adult learners and is easily adaptable to most residency conference schedules.

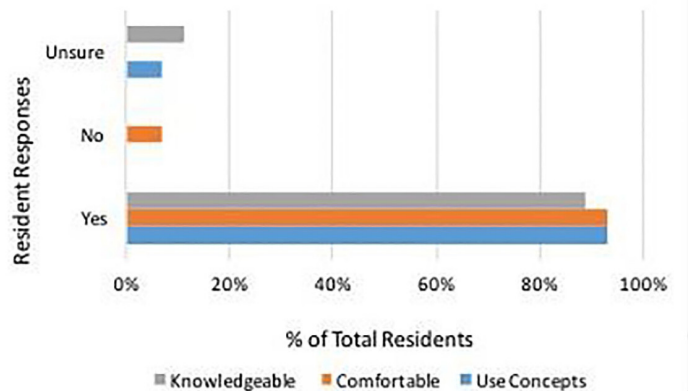


Figure 1. Resident perception of knowledge, comfort level, and usefulness of concepts after curriculum exposure.