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A Novel Approach to Medical Student EMS Education

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The model was fitted to a resident (Figure 1), and a surprise cardiac arrest was staged. A resuscitative hysterotomy was then performed on the resident fitted with the mock pregnancy model to demonstrate the procedure.

Afterward, 3 resuscitative hysterotomy models were made available to residents to practice the procedure. This approach allowed staged repetition of the procedure with a description, then demonstration, and then an opportunity for hands on practice.

Impact/Effectiveness: Our residency program uses E-value to provide feedback to presenters. Feedback from the teaching session was universally favorable (Table 1), with attendees commenting on the quality and realism of the resuscitative hysterotomy simulation, and the improved educational benefit from both seeing and doing the procedure, rather than just having it described. The benefit of using this model on a live volunteer is the extra degree of realism that it brings to the procedure. This novel approach using a cost effective model on a realistic patient in a clinical scenario of resuscitative hysterotomy has the potential to improve performance when the opportunity arises in clinical practice.

Table. Results from survey to evaluate performance of presenter at resident conference.

Question	n/a	Needs improvement (1)	Good (2)	Excellent (3)	Outstanding (4)	Total	Average (1-4)
The content presented was relevant to the practice of emergency medicine	1	0	0	3	16	20	3.84
The speaker presented material at an appropriate level for resident training	1	0	0	3	16	20	3.84

4 A Novel Apprenticeship Model Providing Progressive Educational Responsibility and Individual Development to Emergency Medicine Residents

Moll J, Troendle M, Moffett P/Virginia Commonwealth University, Richmond, VA

Background: In many clinical environments, patient care demands limit the opportunity to provide direct mentorship and individual instruction to new interns, or progressive teaching responsible to more senior residents. We developed an apprenticeship rotation to accomplish both early in the academic year.

Educational Objectives: The objective of the curriculum was to use an apprenticeship model to provide individual personalized educational guidance and development to new emergency medicine interns from a senior resident. By doing so, the senior resident will learn adult educational theory, and develop skills in bedside teaching and assessment of a learner.

Curricular Design: EM1 residents in a PGY1-3 emergency medicine training program were paired 1:1 with a final year EM resident over a two-week period. The rotation took place at a moderate acuity 25,000 annual census Veterans Administration emergency department. Senior residents had no individual patient care responsibility, functioning

solely in the preceptor role. Seniors received education on adult learning theory using self directed materials, then subsequently developed bedside teaching topics, performed structured observation assessments, and completed specific mid and end rotation evaluations.

Impact/Effectiveness: Over the initial 6 months, 100% of seniors strongly agreed the rotation was a valuable addition to their education, emphasized their development as an educator, and felt the rotation should continue in future years. Eighty percent of interns felt it was a valuable addition to their education, with 20% neutral. All felt the rotation emphasized and was valuable to their development as an emergency medicine intern. The majority (80%) felt the rotation should continue, with 20% neutral. The only negative cited was parking availability. Our early experience has shown enthusiasm and perceived value from final year senior residents for progressive responsibility not available to them at the primary clinical site. New interns, while slightly less enthusiastic, all found development value.

5 A Novel Approach to Medical Student EMS Education

Lubbers W, Adkins B/University of Kentucky, Lexington, KY

Background: Emergency medical services (EMS) and prehospital medicine is a critical component of most any healthcare system in the US and throughout the developed world, yet medical students rarely, if at all, receive formal or informal training on even the basics of prehospital care. A formal introduction to EMS medicine would benefit both the physician and the practice of EMS medicine.

Educational Objectives: Provide an introductory educational experience for 3rd year MD students on EMS systems, prehospital care, mass casualty triage and management, and prehospital transport considerations.

Curricular Design: Our EMS division developed an EMS workshop for all third year medical students on their EM rotation. The program begins with a 15-20 minute didactic session to discuss history of EMS, provider capability, system components and design, and the concepts of on-line/ off-line medical direction. Students are then given instructions on basic mass casualty triage and are “dispatched” to an outdoor scene to a simulated bus accident involving 18 “paper patients” that they must locate, triage, and treat (Fig 1). As the teams progress through the exercise, individual patients generate “breakout skill stations” (Table 1). The final task is for students to determine a transport mechanism (air vs ground), priority, and destination in a simulated trauma system.

Impact/Effectiveness: Physicians in most any specialty may be called on to serve as medical directors, educators or advisors, and will at some point most certainly call on EMS for care of an ill patient, yet if their chosen specialty is not EM, the

likelihood that they will have had any formal education in EMS is very low. While a two hour workshop cannot cover the length and breadth of EMS, our curriculum has been able to provide an introductory education on the topics most applicable across specialties (ie transport decisions, prehospital care/ provider capabilities, mass casualty medicine). We've provided this course for more than 180 3rd year students, and have been able to package it for use in multiple settings (ie the university's partner institutions, indoors in case of inclement weather). It would be easily translatable to other institutions and settings. We believe universal education for medical students on the basics of prehospital care will create better physicians and strengthen EMS medicine.

6 A Novel Approach to Self-Directed Learning and the Flipped Classroom Method for Residency Didactic Curriculum

King A, McGrath J, Greenberger S, Panchal A, Thompson L, Khandelwal S /Ohio State University, Columbus, OH

Background: The flipped classroom learning approach is recognized as the preferred curricular model in medical education. We recently innovated our residency didactic curriculum to create a novel flipped classroom design with small group discussions rather than traditional lectures. Education faculty create small group modules based on the core content of emergency medicine with objectives and recommended reading material.

Educational Objectives: Create and execute a novel flipped classroom approach to teach learners the core content of emergency medicine utilizing self-directed learning and small group discussions.

Curricular Design: Prior to weekly conference, learners complete self-directed learning on the core content topics to be covered using faculty provided or independently identified resources. Residents are asked to submit a question that developed during their self-directed learning in addition to an ABEM style question which is used to develop a quiz to assess participation. Weekly conference begins with a morbidity/mortality conference utilizing a cognitive autopsy approach or a resident led "rapid-fire" case review. Learners then divide into their assigned small groups and rotate among three different small group sessions. Two of the sessions discuss topics within the core content of emergency medicine focusing on clinical controversies and higher level thinking. The third session is composed of either a procedure lab/simulation or evidence based medicine discussion. Procedure labs allow faculty to teach and evaluate residents on procedure based milestones, while simulation sessions evaluate milestones identified as difficult to routinely assess in the clinical environment. Following conference, residents complete a quiz composed of their submitted questions as well as an independent learning plan which consists of questions that remain following the discussion with a plan to answer them.

Impact/Effectiveness: The institution of this novel curriculum was not without challenges as both faculty and residents were initially skeptical of the concept and concerned about the increased workload. We were able to overcome the challenges and skepticism to execute a successful novel curricular model. Both resident learners and faculty members have provided an overwhelming amount of positive feedback. Minor adjustments will continue in order to perfect our method.

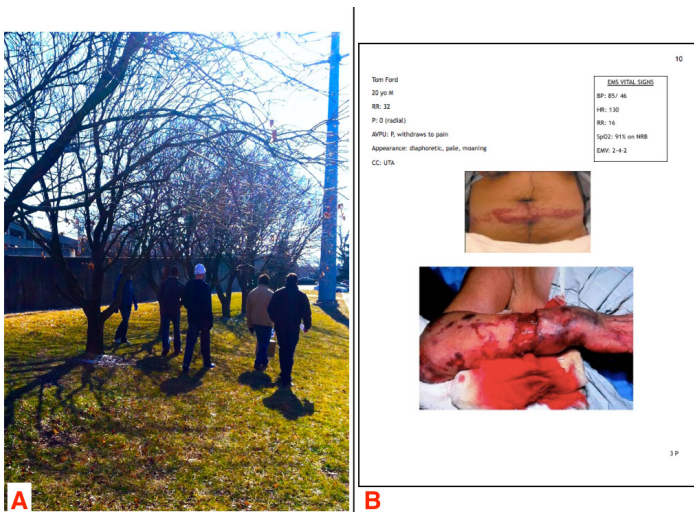


Figure 1.

EMS Workshop Objectives					
	DIDACTIC	SCENARIO	BREAKOUT SKILL	BREAKOUT DISCUSSION	
EMS Systems	History	*			
	System models	*			*
	Provider scope	*			*
	Medical direction	*			
Mass Casualty	Scene safety		*		*
	Wide area search		*		
	Triage schemes		*	*	*
	Rescue vs Treatment		*		
	Multiple victim management		*	*	*
Prehospital Care	Treatment Priority		*	*	*
	Hemorrhage control		*	*	*
	Increased ICP		*	*	*
	Airway mgmt		*	*	*
	Immobilization/ SMR		*	*	*
	Contamination/ Tox				*
	Irradiated patient				*
	Altered MS				*
Transport	Transport priorities		*	*	*
	Destination choice	*	*	*	*
	Systems of care	*		*	*
	Ground Ambulance Considerations	*		*	*
	Aeromedical Considerations				*
	Flight crew characteristics				*
	Flight physiology				*
	Alternative Transport				*

Figure 2.