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

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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.

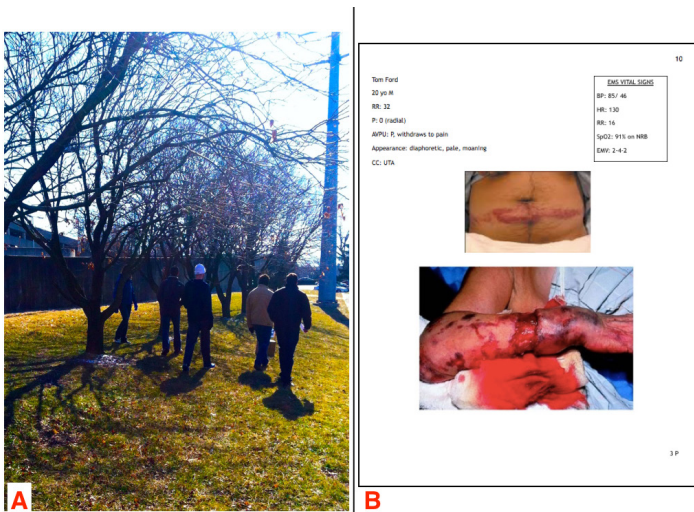


Figure 1.

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.

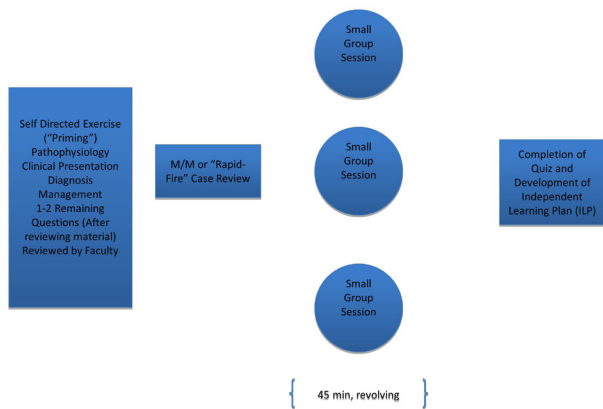


Figure.

7 A Novel Flipped-Classroom Curriculum for Intern Education

Shappell E, Ahn J/University of Chicago, Chicago, IL

Background: Traditional conference education emphasizes lecture-based instruction. However, evidence supports non-traditional classroom teaching for this generation of millennial learners. Also, the conference setting is used to achieve a common foundation of knowledge, but scheduling demands can limit conference attendance. We have addressed both of these challenges by developing a flipped-classroom curriculum with stand-alone asynchronous content.

Educational Objectives: We aim to achieve a common foundation of knowledge, skills and attitudes in interns using a flipped-classroom model. We focus on 25 topics common to all emergency medicine interns. We strive to produce interns uniformly comfortable with the management of each covered condition.

Curricular Design: A group of educators identified a need to provide core content for interns, the breadth of which required a longitudinal year-long design. A needs assessment across two separate EM programs confirmed the need for an intern curriculum (87% stated this would improve education) and learner interest in this format (84% favored dedicated conference time, 73% favored asynchronous resources). The 25 highest-rated topics by learners were chosen to be covered. We created a website to host asynchronous resources (EMFundamentals.blogspot.com). Each content page includes goals and objectives as well as references (e.g. journal articles, podcasts, institutional guidelines). For interns attending conference, faculty-led small-group sessions reinforced key concepts. For interns unable to attend, this web-based content delivery ensured a baseline knowledge. Current assessment methods include a post-curriculum attitudinal survey and pre/post knowledge quiz.

Impact/Effectiveness: This is our first year with full deployment of the curriculum; feedback from our pilot year is

promising. 75% preferred the flipped-classroom model (versus traditional lecture) and 100% of users reported a positive impact from the asynchronous resources. The knowledge test for Kirkpatrick level 2 data has begun this year and plans to collect Kirkpatrick level 3 data via simulation are in development.

8 A Novel Game for Introducing Important Aspects of Effective Patient Consenting

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Background: Informed consent is one of the most important tenets of modern medicine and has significant legal and ethical implications. Unfortunately during medical education there is little instruction on what makes up informed consent. Often the senior level resident teaches it, however topics like prior knowledge, therapeutic privilege, alternative treatments and expected outcomes without intervention are rarely discussed formally. This leaves the process of informed consent nebulous to the detriment of the patient and the provider.

Educational Objectives: To design a game that is both interactive and informative that teaches and instructs learners about the important aspects of informed consent and the specific odds that certain common ED procedures carry.

Curricular Design: EM residents are divided into groups of 4-5 residents. They are then given 5 scenarios which contain common ED procedures. Each scenario has two rounds. In the first each team lists what they believe are the risks, benefits, alternative treatments and expected outcomes without intervention. A discussion follows where teams debate which answers were correct. During this time the moderator helps facilitate a discussion based on what aspects of informed consent were covered and what that scenario was meant to highlight. Each correct answer is worth one point. The second round then requires the groups to guess the odds of common risks for the five scenarios' procedures. The closest team gets three points. At the end of the game the team with the highest total wins.

Impact/Effectiveness: This game is designed to fill the gap in education regarding informed consent. By being interactive and engaging it is intended to stimulate thought about what important aspects of informed consent. The discussions simulate what might happen in a courtroom and allows the moderator to delve deeper into topics. Finally this game's format can easily be used and adapted for other specialties.

9 A Novel Method to Monitor Participation for Individual Interactive Instruction

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