

Project: Stanford Prehospital Education Project – Trainees as Educators
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1) Specific Educational Aims

The Stanford Prehospital Education Project (SPEP) is a collaborative educational web portal whose goal is to highlight Stanford Department of Emergency Medicine trainees (residents, E fellows) as educators of prehospital providers (EMTs, paramedics) and also reimagines the way that prehospital providers receive online education. The goals of the Project are twofold: to create a “leadership through teaching” curriculum with the Emergency Medical Service (EMS) fellow and senior EM residents and to improve the quality of EMS instruction. By producing and curating instructional video, simulations, problem-based learning, real-time online “office hours”, and audio podcasts, the goal of SPEP is to provide teaching opportunities to trainees as well as provide multimodal educational offerings that are a vast improvement on the current slide-based continuing medical education. With the increasing ubiquity of podcasts and video as legitimate methods of asynchronous learning, there are increasing demands from trainees to improve presentation and media production skills from beginning to end. The educational reach of this project is substantial and the possible effect on improved prehospital outcomes is tremendous. Stanford’s EMS section, one of the largest academic EMS groups in the country, provides medical advising and education to all Santa Clara County municipal fire services. By working with fire departments in Santa Clara County, we have the ability to improve the educational quality for 2,374 EMTs and 635 paramedics who serve a population of almost 2 million. Our EMTs and medics responded to over 130,000 911 calls in 2017. In addition to being collaborative between Stanford and public agencies, this project will generate continued interest and improvement over time, lending itself to become a relied upon source of educational content in the Bay Area and the state. Trainees will come away with the ability to produce, direct, and edit online content in the form of lecture-casts, podcasts, and videos.

2) Project Rationale

The Prehospital Education Project was conceived as a way to integrate adult learning theory and evolving models of medical education curricula and deploying these learning models to prehospital providers^{1,2}. Although evidence suggests that adult learners such as medics and EMTs have established patient care experiences and a knowledge base from which to draw on, they are subjected to passive learning modalities or superficial learning^{3,4}. EMS providers appreciate having access to multiple learning styles, being able to start and stop lessons, and searching for content instead of being forced into a proscribed advancement through material⁵. A strength of the project is that it can be constantly modified, updated, and tailored to individual levels of training, all goals consistent national EMS guidelines.⁶ The curriculum design process that the Stanford “instructors-in-training” will utilize is based on Kern’s model of curriculum development and each module and topic will have specific objectives that are transparent to the both the Stanford trainees and the EMT/medic learner⁷. Our goals and objectives for the Stanford trainees involve improvement in the cognitive, affective, and psychomotor realm of all that is required to improve teaching and performance as a necessary academic skill.

3) Approach

The goals of the Prehospital Education Project are 1) to increase user engagement and retention of prehospital educational material for practicing EMTs and paramedics and 2) instill Stanford medical students, emergency medicine residents, and EMS fellows with the skills necessary to prepare and research evidence-based practices for prehospital care and practice effective delivery of content through online lectures, simulation, and audio/videocast. Our unique

affiliation between EMS providers and the Emergency Medicine EMS faculty allows us to accomplish multiple educational initiatives and provide the type of up-to-date content that providers seek.

4) Timeline and plan for implementation

The creation of content is currently in process with the goal of starting to host videos and text cases by Summer 2019. However, without funding we will not be able to expand the reach of the project to include regularly updated professional video and audio content or to enable specific educational bonuses such as regular “memory reminders” to briefly assess retention of material that was completed in the previous 1-2 weeks. When fully functional in Fall 2019, the website will be able to remember user profiles and previously completed coursework. The period of increased activity will continue through the spring of 2020 as this is the time when most educational and protocol updates are pushed out to EMTs and medics.

5) Anticipated Work product

We propose creating a website where on-line educational content can be easily accessed and searched in order to give adult prehospital providers up-to-date clinical information about current practices. Faculty, fellows, and residents are currently creating online modules that provide 1) core content pertinent to the medical knowledge of paramedics 2) cutting edge topics regarding evolving practices and evidence-based practice 3) local county-wide initiatives and special projects. Presentation modes include audio podcasts, video lectures, video-captured slides, lectures, reviews of simulation cases, and text-based question and answer sessions. The website that we are creating will serve as the portal to access this information. With the backing of the EMS leaders of local fire departments, we will also be able to offer prehospital providers continuing education credit. This site will be updated regularly and will serve as a pedagogical departure from the current form of “educational updates” that providers receive once or twice a year. Stanford trainees who create content will have tangible evidence of their final work product and will be able to use this to demonstrate evidence of scholarly work and also may generate QI projects as they pertain to prehospital care.

6) Evaluation Plan

The evaluation plan will involve digital metrics embedded in the website that will allow for understanding user engagement including the number of completed assessments/quizzes after each module (CME for EMS providers will likely be granted in the future) and anonymized data about performance across the site. Additionally, the providers of content (EMS Faculty, EMS fellows, residents) will get feedback from end-users in post-quiz survey format and will be able to get basic Altmetric Attention scores to understand if their videos or posts are becoming more widely shared outside of a traditional published journal format⁸.

7) Dissemination of results

The results of this project, including digital metrics assessing engagement, time-involvement of medical directors and trainees, and best practices for this unique type of curriculum innovation, will be presented at the County-wide EMS Fire Chiefs meeting that is held quarterly, future EMDAC meetings (EMS Medical Directors Association of California), the Society of Academic Emergency Medicine, and the National Association of EMS Physicians (NAEMSP). Using the aggregated anonymous data from quizzes and assessments would allow for more rigorous research and publication regarding effectiveness of the portal.

Citations

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