A CONTINUING EDUCATION PROGRAM FOR GENERAL EMERGENCY MEDICINE PROVIDERS TO ENHANCE THE CARE OF PEDIATRIC CRITICAL ILLNESS

Kristin J Dolan[1], Satid Thammasitboon[2], Renan Orellana[2], Lindsay Cameron[3], Emily Krennerich[2], Corrie Chumpitazi[4], Faria Pereira[4], Jeanine Graf[2], Megan Arnold[2], Riad Lufti[5], Kamal Abuleda[5], Erin Montgomery[6]

[1] Baylor College of Medicine, Department of Pediatrics, Critical Care

[2] Baylor College of Medicine, Pediatrics, Critical Care

[3] Baylor College of Medicine, Pediatrics, Infectious Disease

[4] Baylor College of Medicine, Pediatrics, Emergency Medicine

[5] Indiana University School of Medicine, Pediatrics, Critical Care

[6] Indiana University School of Medicine, Pediatrics, Emergency Medicine

Background: There are alarming disparities in the quality of care of pediatric patients in emergency departments (EDs) in the community compared to large volume EDs in children's hospitals. The care disparity and competency gap highlights the need for a robust educational program in addition to ongoing system-related strategies. We, a team of critical care and emergency medicine (EM) providers at Texas Children's Hospital and Riley Children's Hospital, have developed a novel continuing education (CE) program targeting general EM providers in community EDs.

Materials/Methods: We used the Design-Based Research model (analysis, design, evaluation) to guide program development. We analyzed the educational problem through literature review and scan of existing education outreach efforts. Given the barriers identified, we used Harden's CRISIS criteria to guide the CE program. To design the CE prototype, we used Adaptive Learning as the conceptual framework. Adaptive learning uses learning analytics to identify individual knowledge gaps. The learning analytics data offer feedback to both the individual learners and course directors ensuring delivery of a customized learning. We created 3-component modules: 1) Curricular Component: provides knowledge content and guidelines; 2) Web-based Testing: uses "spaced repetition" principles; 3) Virtual Case Learning: "choose your own adventure" game for each topic. We integrated three easily accessible web-based platforms (Survey Monkey, Qstream and Blackboard) to promote reproducibility of this CE model. The final portion, on-site simulation sessions, is tailored toward site needs and practice gaps identified in the instructional components.

Results: We developed the logic model for evaluation of the program including process and outcome evaluations. We will examine provider reaction and satisfaction, knowledge gained and attitudes changed, and specific clinical metrics. We currently have three prototypes: dysrhythmias, diabetic ketoacidosis, and acyanotic critical cardiac lesions. The development of these modules included an extensive iterative process by experts in both the emergency medicine and critical care department. The program underwent a pilot launch with plans to disseminate the program to community sites in Houston and Indianapolis.

Conclusions: With the conceptual framework of adaptive learning, we have created online CE prototypes that will provide knowledge and expertise to enhance the care of pediatric critical illness in the community emergency departments.