

with decreased LOC whose family asks for an ACP discussion in the ED. Participants were divided into groups (5-6 members). Each small group analyzed and discussed each case before the participants reconvened and discussed their opinions in one large group. ACP experts from palliative care, emergency medical services and EM facilitated the discussions highlighting the best practices from the literature for each case reviewed. Pre and post Likert surveys were distributed to workshop participants to assess changes in confidence in a variety of domains. A Wilcoxon Signed Rank Test showed statistically significant improvement in learner confidence within the following areas ($N=21$; $p<0.05$): identifying patients appropriate for GOC discussions, initiating GOC discussions, and identifying barriers to GOC, in the ED. The majority (89%) of participants agreed the workshops should become part of our academic curriculum. **Conclusion:** An ACP/GOC workshop was successfully implemented and further ACP/GOC sessions are planned for the upcoming academic year. Looking ahead, we will look at using other teaching modalities such as simulation to further enhance the delivery of the curriculum. We will also attempt to capture defined physician behaviors (e.g. documenting GOC in the ED chart, sending letters to family physicians documenting GOC discussions) to gauge uptake of the workshop principles into clinical practice.

Keywords: innovations in emergency medicine education, advanced care planning, goals of care

MP19

Interprofessional airway microskill checklists facilitate the deliberate practice of direct intubation with a bougie and airway manikins

J. P. French, MB, BSc, K. David, BN, S. Benjamin, BN, J. Fraser, BN, J. Mekwan, MBBS (Lond), P. Atkinson, MB, BCh, BAO, MA, Dalhousie University, Rothesay, NB

Introduction: Deliberate practice (DP) is the evolution of practice using continually challenging and focused practice on a particular task. DP involves immediate feedback, time for problem-solving and evaluation, and opportunities for repeated performance. Microskills training breaks down larger tasks into multiple smaller subtasks and then adds opportunities for feedback and adjustment for each subtask. Microskills training is routinely used to achieve excellence in competitive sports, martial arts, military operations, and music. Endotracheal intubation is a complex task with a clinically significant complication and failure rate. **Methods:** Two doctors and three nurses developed stepwise team microskills checklist from case review, simulations and published evidence. The checklist was tested, evaluated and developed during four days of simulation faculty team training. The final 36 item checklist was used to facilitate skills training for doctors, nurses, respiratory therapists and ACPs in one level 2, and two level 3 trauma centers from April 2017 to October 2017. The microskills checklist was used in four phases: 1. Group discussion of each microskill step 2. Groups of three team members; operator, assistant and microskill facilitator (using the checklist) to enable the deliberate analysis of the teams current performance. Each subtask is performed with immediate peer and where necessary faculty feedback. Changes are recorded. 3. Total task run though without interruption. Changes are recorded. 4. Repetition and feedback using different team members, manikins, including time pressure. User satisfaction surveys were collected after the skills training session **Results:** Results. Teams were composed of Registered Nurses (8), Physicians (9), and Respiratory Therapists (2). All of the teams experienced a change in practice. The median number of microskills changed for MDs 13/30, RNs 7/16. The commonest changes in practice were patient positioning (all teams). All professions agreed strongly that

the approach produces a positive change in practice (median score 4.8/5). **Conclusion:** Microskills checklist facilitate endotracheal intubation with a bougie skill development in interprofessional teams in this provisional analysis.

Keywords: innovations in emergency medicine education, airway management, deliberate practice

MP20

ImageSim - performance-based medical image interpretation learning system

K. Boutis, MD, MSc, M. Pecarcic, PhD, M. Pusic, MD, PhD, Hospital for Sick Children and University of Toronto, Toronto, ON

Introduction: Medical images (e.g. radiographs) are the most commonly ordered tests in emergency medicine. As such, emergency medicine physicians are faced with the task of learning the skill of interpreting these images to an expert performance level by the time they provide opinions that guide patient management decisions. However, discordant interpretations of these images between emergency physicians and expert counterparts (e.g. radiologists) is a common cause of medical error. In pediatrics, this problem is even greater due to the changing physiology with age. **Methods:** ImageSim (<https://imagesim.com>) is an evidence-based on-line learning platform derived and validated over an 11 year period (<https://imagesim.com/research-and-efficacy>). This learning system incorporates the concepts of cognitive simulation, gamification, deliberate practice, and performance-based competency in the presentation and interpretation of medical images. Specifically, ImageSim presents images as they are experienced in clinical practice and incorporates a normal to abnormal ratio is representative of that seen in emergency medicine. Further, it forces the participant to commit to the case being normal or abnormal and if abnormal, the participant has to visually locate the specific area of pathology on the image. The participant submits a response and gets text and visual feedback with every case. After each case, the participant gets to play again until they reach a desired competency threshold (80% is bronze resident; 90% silver staff emergency medicine physician; 97% gold radiologist). Importantly, the learning experience also emphasizes deliberate practice such that the learning system provides hundreds of case examples and therefore each participants performance has the opportunity to improve along their individual learning curve. **Results:** Course selection was made based on known medical image interpretation knowledge gaps for practicing emergency physicians. Currently, ImageSim live courses include pediatric musculoskeletal radiographs (2,100 cases, 7 modules) and pediatric chest radiographs (434 cases). In 2018, we will also release a pediatric point-of-care ultrasound course (400 cases, 4 modules) and the pre-pubertal female genital examination (150 cases). For a demo, go to <https://imagesim.com/demo>. Using ImageSim, the deliberate practice of about 120 cases (1 hour time commitment) increases accuracy on average by 15%. Currently integrated into 10 emergency medicine training programs and there are about 300 continuing medical education world-wide participants. **Conclusion:** While acquiring mastery for these images may take years to acquire via clinical practice alone, this learning system can potentially help achieve this in just a few hours.

Keywords: deliberate practice, computer assisted learning, competency

MP21

Global emergency medicine fellowship: establishing a global EM training program at Queen's University

A. Collier, MD, S. A. Bartels, MD, MPH, D. Messenger, MD, Department of Emergency Medicine, Queen's University, Kingston, ON

Introduction: Global Emergency Medicine (Global EM) is growing rapidly as an academic niche in Canada. An increasing number of Canadian emergency physicians work internationally as part of their practice, and trainees consistently seek out international projects and electives. For the most part however, residents have had to create their own training opportunities as formal Global EM fellowship training has been lacking in Canada. To address this identified need, Queens University established a Global EM fellowship, the first of its kind in the country. **Methods:** The fellowship is designed to provide the skills necessary for an academic career in Global Emergency Medicine. Curriculum and objectives are modeled on similar well-established fellowships in the United States. Areas of expertise include emergency medicine systems development, humanitarian medicine, disaster response, public health, tropical medicine, research, administration and education. Fellows have the opportunity to tailor their training according to their specific interests within these domains. Importantly, the fellowship provides direct mentorship from academic global EM and public health physicians, and networking opportunities within the global health sphere. **Results:** The two-year fellowship curriculum is divided between: 1) coursework to complete a Master of Public Health (MPH) Degree 2) fieldwork 3) relevant international emergency medicine training courses and 4) clinical work in the emergency departments at the Kingston Health Sciences Center. The Queens Global EM fellowship admitted its first fellow in August 2017. To date, the inaugural fellow has completed the MissionCraft Leadership in Disaster Relief course as well as a Humanitarian U Disaster and Response course, in addition to submitting a research grant as a co-principal investigator, starting coursework for an MPH degree and giving several invited lectures on humanitarian medicine. The fellow also travelled to Lebanon to support research in collaboration with aid organizations responding to the Syrian crisis. Upcoming fieldwork involves teaching at a newly established emergency medicine residency program in Haiti as well as a humanitarian crisis deployment. **Conclusion:** In response to a lack of formal international emergency medicine training opportunities in Canada, Queens University has established a Global Emergency Medicine fellowship. The fellowship aims to provide protected time, access to field opportunities and dedicated mentorship to develop the skills necessary to succeed as an academic Global EM physician. We believe it provides a unique opportunity to significantly expand fellows experiences in global health fieldwork, education and research while continuing to practice in a Canadian tertiary emergency department. **Keywords:** innovations in emergency medicine education, global emergency medicine, global health training

MP22

Improving treatment of children's presenting and procedural pain for emergency department visits: a province-wide quality improvement collaborative

J. Thull-Freedman, MD, MSc, E. Pols, BSN, A. McFetridge, BSN, T. Williamson, PhD, S. Libbey, BSc, S. Ali, MD, CM, K. Lonergan, BSc, A. Stang, MD, MPH, MBA, Clinical Associate Professor, Departments of Pediatrics and Emergency Medicine, University of Calgary, Calgary, AB

Introduction: Pediatric pain is often under-treated in emergency departments (EDs), which is known to cause short and long-term harm. A recent quality improvement collaborative (QIC) was successful in improving treatment of children's pain across 4 EDs in our city. A new QIC was then formed among EDs across our province to improve treatment of presenting and procedural pain. Aims were to improve the proportion of children <12 years of age who receive topical anesthetic

before needle procedures from 13% to 50%; and for children <17 years of age with fractures: to 1) improve the proportion who receive analgesic medication from 35% to 50%; 2) improve the proportion who have a documented pain score from 23% to 50%, and 3) reduce median time to analgesia from 59 minutes to 30 minutes, within 1 year. **Methods:** Invitations to participate in the QIC were sent to all 113 EDs in the province that treat children and had not participated in the previous QIC. Each site was asked to form a project team, participate in monthly webinars, develop key driver diagrams and project aims, undertake PDSA tests of change, and audit charts to assess performance. Sites are given a list of 20 randomly selected charts per month for audit. Audit data was entered into REDCap and uploaded to a provincial run chart dashboard. All participating sites received a "comfort kit" consisting of distraction items for children as well as educational materials. Measures of presenting pain included proportion of children <17 years with a diagnosis of fracture who have a documented pain score, proportion who receive an analgesic medication, and minutes to analgesia. The measure for procedural pain was the proportion of children <12 years who receive topical anesthetic prior to a needle procedure for a laboratory test. Length of stay for pediatric patients and all patients were balancing measures. Run charts were used to detect special cause. Difference in proportions were compared using 2. Final analysis will include interrupted time series. **Results:** 34 of 113 invited sites (30%) agreed to participate, including rural and regional representation from all geographic zones; 4222 visits since June 2016 were analyzed. Implementation began June 2017. Comparing the first 4 months following implementation to the preceding year, the proportion of children receiving topical anesthetic prior to needles increased from 13% to 25% ($p < 0.001$). For children with fractures, the proportion with pain scores increased from 23% to 35% ($p < 0.001$), proportion receiving analgesic medication increased from 35% to 42% ($p < 0.001$), and median minutes to analgesia decreased from 59 to 43. Insufficient time points at this stage preclude identification of special cause. **Conclusion:** This province-wide QIC has already resulted in significant progress toward aims during the first 4 months of implementation. The QIC approach shows promise for improving pain outcomes in children visiting diverse EDs across a province.

Keywords: quality improvement and patient safety, quality improvement collaborative, pediatric pain

MP23

A collaborative quality improvement initiative to improve the time to electrocardiogram in patients with chest pain presenting to the emergency department

H. C. Lindsay, MD, MPH, J. Gallaher, BSN, MSN, C. Wright, BSN, L. Korchinski, BSN, C. Kim Sing, MD, Vancouver General Hospital, Vancouver Coastal Health; University of British Columbia, Vancouver, BC

Introduction: For patients with chest pain, the target time from first medical contact to obtaining an electrocardiogram (ECG) is 10 minutes, as reperfusion within 120 minutes can reduce the risk of death and adverse outcomes in patients with ST elevation myocardial infarction (STEMI). In 2007, Vancouver Coastal Health (VCH) began tracking key indicators including time to first ECG. The Vancouver General Hospital (VGH) Emergency Department (ED) has been troubled with the longest door to ECG times in the region since 2014. In 2016, the VGH ED Quality Council developed a strategy to address this issue, with an aim of obtaining ECGs on 95% of patients presenting to the VGH ED with active chest pain within 10 minutes of presentation within a 6 month period. **Methods:** The VGH ED Quality Council brought together frontline clinicians, ECG technicians, and other