

Patients with a VOC diagnosis during the study periods were selected in each department's database. The primary outcome was to evaluate the hospitalization rate. The rate of oral administration, as well as the opiate administration time from inscription in the ED or arrival in the HOC were also calculated. We estimated that 35 patients per arm would be sufficiently powered to detect at least a 30% rate reduction of admissions, with a power of 80% and a significance of 0.05. **Results:** Over the two periods, a total of 105 patients (49 pre and 56 post) were included from the ED and 62 patients (36 pre and 26 post) from the HOC. Both departments showed a reduction in hospitalization rate: a difference of 48% (95% CI 32, 61) in ED and 38% (95% CI 13, 57) in HOC. Both showed an increase in the rate of oral administration: a difference of 36% (95% CI 19, 50) in ED and 33% (95% CI 8, 53) in HOC. There was a non-significant difference of 10 min (95% CI -10, 25) in the opiate administration time in ED, as opposed to HOC where a significant difference of -45 min (95% CI -71, -6) was found, with both presenting median times over the recommended 60 minutes post implementation. Both settings showed an increase in the percentage of patients without IVs; a difference of 17% (95% CI 4, 30) in ED and 55% (95% CI 72, 31) in HOC. **Conclusion:** This study validates the use of our oral morphine protocol for the treatment of VOC, by showing a significant reduction in hospitalization rates. Although delays remain in our opiate administration time, our protocol decreased the number of painful IV procedures.

**Keywords:** pain, pediatrics, sickle cell disease

#### P098

##### **Development and evaluation of a mobile simulation lab with acute care telemedicine support**

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**Introduction / Innovation Concept:** Skillful performance is central to the provision of quality healthcare. Well-organized, deliberate practice with instruction and feedback leads to the best learning and patient outcomes. Professionals in rural/remote locations often face significant challenges in maintaining procedural proficiency and delivering acute care medical services. This is especially important with low-frequency high-stakes procedures. Simulation can play an important role in skills maintenance but limited access to simulation labs and resources in rural areas due to time, cost and distance are often prohibitive. Mobile telesimulation has the potential to facilitate high-quality instruction and overcome these barriers. Our goal is to develop a mobile simulation unit (MSU) that uses acute-care telemedicine mentoring techniques to meet the needs of rural physicians. **Methods:** The MSU design process is a prototype development series with qualitative results from each prototype (A and B) informing design and development of the next. This serves as an assessment of the functionality and set-up of the MSU for housing the simulation equipment/mannequin and providing an acceptable learning environment. The final design (C) will be evaluated for educational effectiveness. Medical students will be taught endotracheal intubation on a mannequin in the MSU under one of 2 conditions. The experimental group will receive instruction, demonstration and feedback from an expert in the telesimulation lab at Memorial University. The control group will receive the same instructions and feedback face-to-face from an expert located in the MSU. Participants will complete a retention test 1 week after the intervention. Performance between the 2 groups will be compared and user satisfaction will be assessed. **Curriculum, Tool, or Material:** The MSU will be a portable, inflatable structure equipped with telecommunication equipment to provide efficient interaction between the rural/remote learner and their instructor at a different site. The design and components of the MSU will facilitate easy transport and

deployment for telesimulation in rural/remote areas. A combination of fixed and wearable cameras will facilitate instruction, demonstration and feedback to the learner. **Conclusion:** Mobile telesimulation may play an important role in overcoming the barriers of geography, cost and access to expert instruction. Implications of this research are far reaching and extend beyond healthcare education and training.

**Keywords:** innovations in EM education, simulation, rural medicine

#### P099

##### **Development and qualitative evaluation of an emergency medicine simulation book to facilitate the use of simulation for our local EM program**

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**Introduction / Innovation Concept:** Simulation-based medical education (SBME) has seen increased application in medical education. Emergency medicine (EM) trainees must develop a diverse skill set to smoothly transition to clinical practice and ensure optimal patient outcomes. The competency-based medical education (CBME) framework helps ensure residents develop the required expertise relevant to each of the CanMEDs roles. Simulation is a valuable supplement to hands-on clinical experience and allows skill development in a low-risk setting. The EM Simulation book serves to facilitate the effective application of simulation in our curriculum. **Methods:** A number of resources were compiled to meet the needs of our simulation program within Memorial University of Newfoundland. Personal knowledge/experience of the author and local contacts provide site relevant content. Prior training helped in review and selection of materials on simulation theory and debriefing. Core EM resources were sourced for information on procedural training. Literature review on simulation was used to compile a list of resources and materials for further reading. The development and revision of the manual continues as an iterative process with sequential edits based on review and feedback. Qualitative evaluation of the design and value of this document is planned to get feedback from key stakeholders including learners, faculty and simulation lab staff. **Curriculum, Tool, or Material:** The final product is a 94-page document provided in print and electronic format to the EM residents and several faculty involved in simulation. It introduces residents to our simulation program, provides relevant background information and orients them to this modality of curriculum delivery. Theory and rationale behind SBME is included. Information on the key role of debriefing is highlighted. Several core EM procedural topics are covered with tips on practice station set up. Additional learning resources are noted, including information on case development for potential teachers. **Conclusion:** The simulation book brings together key information to optimize the simulation-based medical education experience for EM residents at Memorial University.

**Keywords:** innovations in EM education, simulation, residency education

#### P100

##### **It's more than just Travel CME: an embedded ethnography of a unique emergency medicine conference**

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**Introduction:** Travel-based continuing medical education (CME) has become a popular format for physicians looking to combine education with travel. However these programs do not usually include shared group activities and when they do, they are often social, sedentary events. Emergency Medicine Update (EMU) Europe is a unique

biennial accredited CME program which combines high quality Emergency Medicine focused education with organized group physical and social activities in European locales. **Methods:** We undertook a participant observation-based ethnographic study of the EMU Europe program in Provence, France in 2015. Participant interviews and in-depth observation methods were used to understand (1) the impact of shared group activities on learning and (2) the ethos that is created during this type of program. **Results:** We describe three phenomena from the data that we feel are highly influential in the success of the program and impact on learning. The first is “social engagement and a sense of community”. Involvement in group physical and social activities supports more interactive learning and people affiliate with this as a group that they enjoy and feel good learning with. The second is “a stimulating escape”. This is the opportunity for high quality education and stimulating travel to be provided in an efficient package. The third is “the ‘flat’ faculty-learner relationships”. This is created through accessibility and innovative teaching and is a key component of the quality of the education. **Conclusion:** While each trip in and of itself might be unique, there appears to be some common elements - building a sense of community, providing a stimulating escape and choosing faculty with specific teaching styles - that contribute to the educational success of this model. We will discuss how this relates to medical education theory and how it is generalizable to other groups considering this type of program. To our knowledge this is the first empirical research in this area and improves our understanding of how to leverage this approach for more effective continuing medical education.

**Keywords:** continuing medical education (CME), ethnography, travel

#### P101

##### **Needs assessment study for the inter-professional procedural sedation course: methods of adult procedural sedation (MAPS)**

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**Introduction:** Procedural sedation and analgesia (PSA) is a common practice for non-anaesthesiologists. While complication rates for PSA are low, many of them are preventable. Professional regulatory body requirements state that practitioners should have adequate knowledge and skills to safely administer PSA. However, no certification process currently exists to develop and maintain these competencies. A standardized PSA training course would help close the gap between the best evidence for safe administration of PSA and its implementation in everyday practice. Therefore, we conducted a needs assessment to guide the development of such a PSA training course. **Methods:** Using modified Dillman methodology, an electronic survey was sent to a convenience sample of 50 potential learners and two groups of stakeholders: 20 hospital administrators and 35 experts in PSA. Questions assessed practice demographics, experience as well as support and interest in the development and attendance of a PSA training course. Prior to distribution, the questionnaire was peer reviewed and pilot-tested for feasibility and comprehension. Responses were stratified based on clinical role. **Results:** 35 potential learners completed the needs assessment (70% response rate): 15 emergency physicians, 19 registered nurses and 1 nurse practitioner. 48% have been in practice for over 10 years and over 90% participate in PSA at least weekly. 38% received informal training in PSA while 16% obtained no training at all. 86% strongly supported the development of a PSA certification course and were in favour of an inter-professional format. 13 experts responded to the questionnaire within the departments of anesthesia, emergency medicine (EM) and respiratory therapy (37% response rate). 80% supported the need for a PSA training course. 6 hospital administrators

responded to the questionnaire within the departments of anesthesia, EM, gastroenterology and respirology (30% response rate). All agreed that standardization of PSA is an important part of patient safety and 80% stated certification in PSA should be a prerequisite for granting privileges to health care professionals to participate in PSA. 60% believed the course should be developed and supported by hospital funds. **Conclusion:** There is strong support from potential learners and stakeholders for the development of a formal PSA training course.

**Keywords:** procedural sedation and analgesia, emergency medicine, needs assessment

#### P102

##### **TeamSTEPPS: promoting a culture of safety**

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**Introduction / Innovation Concept:** Adverse events due to medical error are a significant source of preventable morbidity and mortality in Canada's emergency departments. Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) was introduced in 2006 as a strategy to minimize these errors. Although these strategies have been available and widely implemented in hospitals over the last decade, the optimal method of teaching these tools and strategies has not been elucidated. **Methods:** We endeavoured to introduce a twelve month longitudinal TeamSTEPPS program to physicians, nurses, and allied health care professionals in a busy tertiary care hospital via a multi-pronged approach consisting of group huddles, props in the department, and several social media strategies. Dedicated observers in the emergency department recorded the use of the strategies by staff members to identify improved and sustained use of TeamSTEPPS behaviours after they were introduced. **Curriculum, Tool, or Material:** The program that consists of five modules to improve patient safety outcomes: Team structure; Leadership; Situation Monitoring; Mutual support; and Communication. Each module consisted of educational tools including posters in the department explaining the concepts, twice weekly department huddles to discuss the importance of the monthly topic and promote team sharing with real life examples, as well as stimulating and generating discussions around the monthly theme on social media (Facebook, Twitter, and an on-line blog). For several modules, extra prompts, such as I PASS the BATON handover cards were also provided to act as reminder visual cues. The first two modules were rolled out with on-line music videos rewritten to promote the significance of the modules. A team performance observation tool was adopted from the TeamSTEPPS program, and behaviors were evaluated and recorded under the five domains. **Conclusion:** Although unable to detect a meaningful difference in our pre and post-implementation observations, we present a novel approach to educating a multi-disciplinary team about TeamSTEPPS in a busy emergency department, along with the challenges encountered in this unique area of research, and recommendations for further study to interested parties. The TeamSTEPPS program likely could offer as much to the emergency department as similar programs have to the aviation industry yet it requires extensive investigation within this health care venue.

**Keywords:** innovations in EM education, patient safety, communication

#### P103

##### **Emergency medicine as a career choice: what influences medical students throughout their schooling?**