

Eighty percent of children with a fracture experience compromise in their daily function. Understanding the functional outcomes of fractures will help optimize discharge instructions for at-home care. The primary objective of our study was to describe caregivers' perspectives on the impact of their child's fracture on: (1) child functioning, (2) caregiver functioning and (3) family life. **Methods:** We performed a qualitative study interviewing caregivers of children (5 to 11 years) who received care for acute (< 24 hours old), non-operative long bone fractures at a Canadian tertiary care pediatric ED. Audio-recorded, semi-structured telephone interviews were completed 1-2 weeks post-ED visit, until thematic saturation was achieved. Transcripts were read and coded by two researchers concurrent with data collection. We applied content analysis to the interview material, explicating themes to summarize the data utilizing NVivo software. **Results:** Twenty-five interviews were completed. Most children (23/25) suffered upper extremity fractures and most participants were mothers (21/25). All caregivers reported a change in their child's function. The most commonly affected areas included: sleep, play and activities of daily living (ADL's; ie. dressing, bathing, eating). Children were impacted by pain and related negative emotional responses. All children required additional help from their caregivers to carry out ADL's. Strategies included changing household routines and missing work. Importantly, caregivers described a disrupted family dynamic. Adapting to their injured child's functional deficits and caring for pain and distress took time and attention away from the household's previously well-functioning routine. This burden was felt by all family members. Key concerns from caregivers included pain management, fracture healing/complications, and regression of their child's independence. **Conclusion:** Function is universally impaired in younger children with fractures. We suggest 5 main points to include in discharge instructions: (1) monitoring pain and providing analgesia, (2) helping children with ADL's, even if previously independent, (3) allotting extra time for morning and bedtime routines, (4) offering safe choices for play and (5) coaching children in positive thinking and problem-solving.

**Keywords:** children, fractures, functional outcomes

### P093

#### Evaluating factors related to effective interpersonal communication during mandatory paramedic patches

D. Kelton, BSc, MD, S. Doran, BA, BSc, MD, BEd, M. Davis, MD, MSc, K. Van Aarsen, MSc, J. Momic, BSc, Western University, London, ON

**Introduction:** Delegation of controlled medical acts by physicians to paramedics is an important component of the prehospital care framework. Where directives indicate that physician input is needed before proceeding with certain interventions, online medical control (a "patch") exists to facilitate communication between a paramedic and a Base Hospital Physician (BHP) to request an order to proceed with that intervention. Many factors contribute to success or failure of effective interpersonal communication during a patch call. The aim of this study was to examine areas of potential improvement in communication between paramedics and physicians during the patch call. **Methods:** Prehospital paramedic calls that included a mandatory patch point (excluding requests for termination of resuscitation and those records which were unavailable) were identified through review of all patch records from January 1, 2014 to December 31, 2017 for Paramedic Services in our region. Written Ambulance Call Reports (ACRs) and audio recordings of paramedic patches were

obtained and reviewed. Pre-specified time intervals, clinical factors, specific patch requests and resulting orders from the BHP to the paramedics were extracted. Differences between groups were compared using t-tests. **Results:** 214 records were initially identified and screened. 91 ACRs and audio patch records were included in the analysis. 51/91 (56%) of patch order requests for interventions were granted by the BHP. Clarification of information provided by the paramedic or reframing of the paramedic's request was required less often, but not statistically significant, in calls ultimately resulting in granted requests versus those that were not granted (mean 1.4 versus 1.7,  $\Delta$ -0.28; 95% CI -0.75-0.18  $p$ =0.64). The mean time from first contact with the BHP to statement of the request was similar in patches where the request was granted and not granted (44.9 versus 46.3,  $\Delta$ -1.4; 95% CI -12.9-10.2,  $p$ =0.49). **Conclusion:** The communication between BHPs and paramedics is an important and under-investigated component of prehospital emergency care. This retrospective review presents some novel targets for further research and potential education in patch communication to improve efficiency and quality of prehospital care for patients.

**Keywords:** mobile communication, online medical control, prehospital

### P094

#### Use of high fidelity simulation to improve quality of care within Correction Canada's maximum security facilities: A Canada's first

F. Gilic, MD, A. Valeriano, BSc, E. Johannessen, BHSc, MSc, J. Nickason, BAA, I. Irving, BN, Queen's University, Kingston, ON

**Innovation Concept:** Nurses working in corrections facilities are routinely faced with acute care scenarios requiring skilled management. There are also increasing numbers of inmates with chronic health conditions and acute exacerbations. Correctional Service Canada (CSC) has partnered with the Clinical Simulation Lab at Queen's University to develop a simulation-based training program aimed at improving acute care skills of Corrections nurses and staff. This novel quality improvement program encompasses a range of presentations that commonly occur in correctional environments. **Methods:** The program consisted of two laboratory sessions focused on acute care and trauma followed by an in-situ simulation session. The sessions were organized around the 4-component instructional design that enhances complex learning. Both lab sessions began with scaffolded part-task training (IV insertion, ECG interpretation, airway, circulatory support, etc) and then progressed to six team-based high-fidelity simulations that covered cardiac arrhythmias, hypoglycemia, agitated delirium, drug overdoses, and immediate trauma management. Participants rated the effectiveness of each session. Lastly, an in-situ session was conducted at the Millhaven maximum security facility for nursing and correctional staff. It comprised of five scenarios that incorporated actors, a high-fidelity manikin, and simulated security issues. Participants completed a validated self-assessment before and after the session grading themselves on aspects of acute care. **Curriculum, Tool, or Material:** Our multi-modal simulation curriculum enhanced self-assessed knowledge of CSC learners. Of 71 attendees in the acute care skills session, 70 agreed or strongly agreed that the exercise enhanced their knowledge, satisfied their expectations, and conveyed information applicable to their practice. All 13 participants in the trauma session agreed or strongly agreed to these sentiments. We used Wilcoxon signed rank test item by item on the in-situ questionnaire. There was significant improvement in majority of skills

sampled: airway management, O2 delivery, team organization and assessment/treatment of cardiac arrest. **Conclusion:** This initiative is the first time high-fidelity simulation training has been used with Corrections nurses and the first in-situ simulation in a maximum security institution in Canada. The sessions were well-liked by participants and were assessed as very effective, validating the demand for further implementation of clinical simulation in correctional facilities. **Keywords:** acute care, innovations in EM education, simulation training

#### P095

##### **Bridging knowledge gaps in anaphylaxis management through a video-based educational tool**

S. Gabrielli, MSc, J. Karim, MD, B. Torabi, MD, MSc, A. Byrne, MD, MSc, S. De Schryver, MD, V. Gadoury-Lévesque, MD, R. Alizadehfar, MD, C. McCusker, MD, MSc, M. Vincent, MD, J. Morris, MD, MSc, J. Gerds, BComm, M. Ben-Shoshan, MD, MSc, McGill University Health Centre, Montreal, QC

**Introduction:** Cases of anaphylaxis in children are often not appropriately managed by caregivers. We aimed to develop and to test the effectiveness of an education tool to help pediatric patients and their families better understand anaphylaxis and its management and to improve current knowledge and treatment guidelines adherence. **Methods:** The GEAR (Guidelines and Educational programs based on an Anaphylaxis Registry) is an initiative that recruits children with food-induced anaphylaxis who have visited the ED at the Montreal Children's Hospital and at The Children's Clinic located in Montreal, Quebec. The patients and parents, together, were asked to complete six questions related to the triggers, recognition and management of anaphylaxis at the time of presentation to the allergy clinic. Participants were automatically shown a 5-minute animated video addressing the main knowledge gaps related to the causes and management of anaphylaxis. At the end of the video, participants were redirected to same 6 questions to respond again. To test long-term knowledge retention, the questionnaire will be presented again in one year's time. A paired t-test was used to compare the difference between the baseline score and the follow-up score based on percentage of correct answers of the questionnaire. **Results:** From June to November 2019, 95 pediatric patients with diagnosed food-induced anaphylaxis were recruited. The median patient age was 4.5 years (Interquartile Range (IQR): 1.6–7.4) and half were male (51.6%). The mean questionnaire baseline score was 0.77 (77.0%, standard deviation (sd): 0.16) and the mean questionnaire follow-up score was 0.83 (83.0%, sd: 0.17). There was a significant difference between the follow-up score and baseline score (difference: 0.06, 95% CI: 0.04, 0.09). There were no associations of baseline questionnaire scores and change in scores with age and sex. **Conclusion:** Our video teaching method was successful in educating patients and their families to better understand anaphylaxis. The next step is to acquire long-term follow up scored to determine retention of knowledge.

**Keywords:** anaphylaxis, education tool

#### P096

##### **Non-legislative interventions to promote helmet use in adult cyclists: a scoping review**

A. Javidan, BHSc, A. Kirubarajan, BHSc, D. Lee, BSc, D. Porplycia, BSc, MSc, S. Friedman, MD, MPH, University Health Network, University of Toronto, Toronto, ON

**Introduction:** Helmets are effective in preventing brain injury and fatality in cyclists. Methods to promote their use include legislation

and non-legislative interventions (NLI) such as education, social interventions, and subsidies. These have been systematically reviewed and proven effective in pediatric populations. We conducted a scoping review regarding NLI to promote helmet use amongst adult cyclists.

**Methods:** We conducted a scoping review of NLI to promote helmet use amongst cyclists age 18 or older. PRISMA guidelines were followed. Databases searched included MEDLINE, EMBASE, CINAHL, PsycINFO, and SportDiscus, in addition to grey literature. Articles were excluded if non-English, focused on age <18, on legislative interventions, or did not report on outcomes related to helmet use or ownership. Study inclusion and data extraction were conducted in duplicate. Data were extracted regarding participant demographics, setting, intervention details and effects, and were reported using descriptive statistics with a narrative synthesis. A limited quality assessment was conducted. **Results:** A total of 16 papers were included, stratified as 4 randomized-controlled trials and 12 pre-post studies. Only 4 were specific to adults. Community cyclists (5/16, 31%) and community members were most commonly targeted, with most interventions taking place in the community (8/16, 50%) or in a healthcare setting (4/16, 25%). Most interventions were multi-faceted, involving components of community awareness programs, education, information distribution, helmet giveaways and monetary incentives, use of mass media, motivational interviewing, and social marketing. The studies were heterogeneous in quality. Changes in helmet rate use varied between -6% and 26%, with half the studies (8/16, 50%) noting a statistically significant increase. Duration of follow-up of helmet use rates following the intervention varied between 4.5 weeks and 11 years (median 1.38 years, mean 3.0 years.) **Conclusion:** NLI to encourage bicycle helmet use were frequently multi-faceted and generally associated with an increase in use amongst adults. Studies were heterogeneous in quality, varied in their targeted audiences and often not focused on adults. Further evidence is needed to better characterize the efficacy of non-legislative interventions to achieve sustained helmet use in adult cyclists.

**Keywords:** bicycle helmet, cycling, head injury

#### P097

##### **The emergency department experience for patients and caregivers referred from an outpatient oncology clinic**

M. Freymond, MSc, E. O'Connor, MD, MSc, University of Toronto, Toronto, ON

**Introduction:** Outpatient oncology clinics have become the mainstay of cancer treatment, but their limited services and hours of operation often lead to emergency department (ED) referrals. With Canada's aging population and cancer survival rates improving, cancer-related ED visits are becoming a significant aspect of emergency medicine. A cancer-related visit to the ED is associated with unique challenges for patients, their caregivers and clinicians. This study focuses on understanding the ED experience of patients and their caregivers sent from an outpatient oncology clinic to a separate affiliated large academic hospital. **Methods:** A descriptive, phenomenological study of interviews was conducted using the method of Giorgi. The sample included 12 participants (n = 9 patients, 3 caregivers) referred to the ED at a large academic hospital (i.e., Toronto General Hospital, TGH) following a same-day outpatient oncology appointment at an affiliated cancer centre (i.e., Princess Margaret Hospital, PMH). Interviews continued until thematic saturation. All transcripts were analyzed by 2 reviewers with bracketing to ensure accuracy. **Results:** Four themes were identified from analysis: (1) communication; (2)