

review methodology was used due to the range of interventions and the heterogeneity in study design and outcome. Inclusion criteria included: studies on interventions designed to reduce transfers from LTCFs, studies that reported key outcomes such as number of ED transfers, and studies with a control or comparison group. Articles were screened by two independent reviewers (Cohen's $k = 0.68$), and study quality was assessed using the National Heart, Lung, Blood Institute quality assessment tools. **Results:** Findings were organized into five intervention types (telemedicine, outreach teams, interdisciplinary teams, integrated approaches, and other), and both a tabular and narrative synthesis was completed. Eleven studies had a good quality assessment rating, 13 studies had a fair rating, and two studies had a poor rating. Twenty out of the 26 studies reported statistically significant reductions in ED transfer rate, ranging from 10-70%. Interdisciplinary healthcare teams staffed within LTCFs were the most effective interventions. **Conclusion:** There are several promising interventions that have successfully reduced the number of preventable transfers from LTCFs to EDs, in a variety of health system settings. Further analysis of the relative resource requirements of each intervention, and practices that can enable successful implementation are needed to inform healthcare policy and administrative decision making. Widespread implementation of these interventions has the potential to considerably reduce ED crowding.

Keywords: crowding, long-term care facility, preventable transfer

P090

Validation of a palliative or end of life care case-finding measure in emergency medical services

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Introduction: The novel Paramedics Providing Palliative Care at Home program has been developed to address the mismatch between traditional paramedic practice and patient's goals of care. Case-finding is key to estimate potential impact for systems looking to establish such programs, continuous quality improvement once operational, and for prospective identification of patients who might benefit from referral to palliative care. Typical paramedic charting templates do not provide direct identification of these cases. Our objective was to test the validity of a previously derived Palliative Support Composite Measure (PSCM) and two modifications. **Methods:** A priori Gold Standard criteria for determining whether a response was appropriate for a paramedic palliative care approach were identified by expert consensus. Excluding chief complaints and clinical conditions that were universally identified as not appropriate for paramedic palliative support, these criteria were applied by two trained chart abstractors to 500 consecutive charts to classify calls as appropriate for paramedic palliative support, or not. The PSCM and modifications (added criteria call location type and registration in a palliative care program, text mining terms) were applied to the same cohort, and sensitivity, specificity, positive and negative predicative (PPV/NPV) values calculated. **Results:** Of the 500 cases, 21 (4.2%) were classified as appropriate for paramedic palliative support by the Gold Standard ($\kappa = 0.734$). 9 cases with initial disagreement were reviewed with 8 ultimately being deemed to fit the palliative support criteria. The PSCM performed poorly (using the "potential palliative" cut point): sensitivity 71.4% (95%CI: 47.8-88.7), specificity 71.4% (95%CI: 67.1-75.4) and PPV of 9.9% (95%CI: 7.5-12.9) and NPV of 98.3% (95%CI: 96.7-99). The modified PSCM: sensitivity 61.9% (95% CI:

38.4-81.9), specificity 99% (95%CI: 97.6-99.7), PPV 72.2% (95% CI: 50.5-86.9) and NPV 98.3% (95%CI: 97.2-99). A Modified PSCM plus pall* text term performed similarly: sensitivity 100% (83.9-100), specificity 97.3% (95% CI: 95.4-98.5), PPV 61.8% (95%CI: 48.6-73.4) and NPV 100%. **Conclusion:** A modified PSCM provides moderate sensitivity, specificity and PPV, improved by the text term Pall* if feasible. This query will be helpful to systems considering a paramedic palliative care program or when one is already operational.

Keywords: emergency medical services, palliative, paramedic

P091

Essential elements to implementing the paramedics providing palliative care at home program: an application of the Consolidated Framework for Implementation Research (CFIR)

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Introduction: Providing comfort care support at home without transport to hospital has not traditionally been part of paramedic practice. The innovative Paramedics Providing Palliative Care at Home Program includes a new clinical practice guideline, medications, a database to share goals of care, and palliative care training. This study aimed to determine essential elements for scale and spread of this model of care through the application of an implementation science model, the Consolidated Framework for Implementation Research (CFIR). **Methods:** Deliberative dialogue sessions were held with paramedic, palliative care, primary care, and administrative experts in a province that had the Program (Nova Scotia, March 2018) and one that had not (British Columbia, July 2018). Sessions were audio recorded and transcribed. The CFIR was used as the foundation for a framework analysis, which was conducted by four team members independently. Themes were derived by consensus with the broader research team. **Results:** Inter-sectoral communication between paramedics and other health care providers was key, and challenging due to privacy concerns. Relationships with health care providers are critical to promoting the new model of care to patients, managing expectations, and providing follow up/ongoing care. Training was an essential characteristic of the intervention that can be adapted to suit local needs, although cost is a factor. There were challenges due to the culture and implementation climate as a shift in the mindset of paramedics away from traditional roles is required to implement the model. Paramedic champions can play an important role in shifting the mindset of paramedics towards a new way of practice. **Conclusion:** The CFIR construct of cosmopolitanism, emphasizing the importance of breaking down silos and engaging diverse stakeholders, emerged as one of the most important. This will be helpful for successful scale and spread of the program.

Keywords: end of life, palliative, paramedic

P092

Caregiver perspectives on children's functional outcomes following fracture: a qualitative study

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Introduction: Fractures are a common childhood presentation to the emergency department (ED). While ED providers are aware of treating pain, we are less aware of the functional impact of these fractures.

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

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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, Δ -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, Δ -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

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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