quality measures. Although a lack of randomized controlled trials (RCTs) conducted in the prehospital field continues to limit guideline development, suboptimal methodology is also commonplace within the existing literature.
Keywords: emergency medical services, prehospital care, guidelines

LO25

How safe are our pediatric emergency departments? A multicentre, prospective cohort study

A. Plint, MD, L. Calder, MD, MSc, Z. Cantor, BSc Hon, M. Aglipay, MSc, A.S. Stang, MD, MBA, MSc, A.S. Newton, PhD, S. Gouin, MD, CM, K. Boutis, MD, MSc, G. Joubert, MD, Q. Doan, MD, A. Dixon, MD, R. Porter, MD, S. Sawyer, MD, M. Bhatt, MD, MSc, K. Farion, MD, T. Crawford, BSocSc, D. Dalgleish, BHScN, D.W. Johnson, MD, T. Klassen, MD, MSc, N. Barrowman, PhD, for Pediatric Emergency Research Canada, University of Ottawa, Ottawa, ON

Introduction: Data regarding adverse events (AEs) (unintended harm to the patient from health care provided) among children seen in the emergency department (ED) are scarce despite the high risk setting and population. The objective of our study was to estimate the risk and type of AEs, and their preventability and severity, among children treated in pediatric EDs. **Methods:** Our prospective cohort study enrolled children <18 years of age presenting for care during 21 randomized 8 hr-shifts at 9 pediatric EDs from Nov 2014 to October 2015. Exclusion criteria included unavailability for follow-up or insurmountable language barrier. RAs collected demographic, medical history, ED course, and systems level data. At day 7, 14, and 21 a RA administered a structured telephone interview to all patients to identify flagged outcomes (e.g. repeat ED visits, worsening/new symptoms, etc). A validated trigger tool was used to screen admitted patients' health records. For any patients with a flagged outcome or trigger, 3 ED physicians independently determined if an AE occurred. Primary outcome was the proportion of patients with an AE related to ED care within 3 weeks of their ED visit. **Results:** We enrolled 6377 (72.0%) of 8855 eligible patients; 545 (8.5%) were lost to follow-up. Median age was 4.4 years (range 3 months to 17.9 yrs). Eight hundred and seventy seven (13.8%) were triaged as CTAS 1 or 2, 2638 (41.4%) as CTAS 3, and 2839 (44.7%) as CTAS 4 or 5. Top entrance complaints were fever (11.2%) and cough (8.8%). Flagged outcomes/triggers were identified for 2047 (32.1%) patients. While 252 (4.0%) patients suffered at least one AE within 3 weeks of ED visit, 163 (2.6%) suffered an AE related to ED care. In total, patients suffered 286 AEs, most (67.9%) being preventable. The most common AE types were management issues (32.5%) and procedural complications (21.9%). The need for a medical intervention (33.9%) and another ED visit (33.9%) were the most frequent clinical consequences. In univariate analysis, older age, chronic conditions, hospital admission, initial location in high acuity area of the ED, having >1 ED MD or a consultant involved in care, (all $p < 0.001$) and longer length of stay ($p < 0.01$) were associated with AEs. **Conclusion:** While our multicentre study found a lower risk of AEs among pediatric ED patients than reported among pediatric inpatients and adult ED patients, a high proportion of these AEs were preventable.
Keywords: pediatrics, patient safety, adverse events

LO26

The efficacy of high dose cephalexin in the outpatient management of moderate cellulitis for pediatric patients

B. Farley St-Amand, E. D. Trottier, MD, J. Autmizguine, MD, MHS, M. Vincent, MD, S. Tremblay, BPharm, MSc, I. Chevalier, MD, S. Gouin, MD, CM, CHU Ste Justine, Université de Montréal, Montréal, QC

Introduction: Children with moderate cellulitis are often treated with IV antibiotics in the hospital setting, as per recommendations. Previously in our hospital, a protocol using daily IV ceftriaxone with follow-up at the day treatment center (DTC) was used to avoid admission. In 2013, a new protocol was implanted and suggested the use of high dose (HD) oral cephalexin with follow-up at the DTC for those patients. The aim of this study was to evaluate the safety and efficacy of the HD cephalexin protocol to treat moderate cellulitis in children as outpatient. **Methods:** A retrospective chart review was conducted. Children were included if they presented to the ED between January 2014 and 2016 and were diagnosed with a moderate cellulitis sufficiently severe to request a follow up at DTC and who were treated according to the standard of care with the HD oral cephalexin (100 mg/kg/day) protocol. Descriptive statistics for clinical characteristics of patients upon presentation, as well as for treatment characteristics in the ED and DTC were analyzed. Treatment failure was defined as: need for admission at the time of DTC evaluation, change for IV treatment in DTC or return visit to the ED. Outcomes were compared to historic controls treated with IV ceftriaxone at the DTC, where admission was avoided in 80% of cases. **Results:** During the study period, 682 children with cellulitis were diagnosed in our ED. Of these, 117 patients were treated using the oral HD cephalexin outpatient protocol. Success rate was 89.5% (102/114); 3 patients had an alternative diagnosis at DTC. Treatment failure was reported in 12 cases; 10 patients (8.8%) required admission, one (0.9%) received IV antibiotics at DTC, and one (0.9%) had a return visit to the ED without admission or change to the treatment. This compares favorably with the previous study using IV ceftriaxone (success rate of 80%). No severe deep infections were reported or missed; 4 patients required drainage. The mean number of visits per patient required at the DTC was 1.6. **Conclusion:** Treatment of moderate cellulitis requiring a follow-up in a DTC, using an oral outpatient protocol with HD cephalexin is a secure and effective option. By reducing hospitalization rate and avoiding the need for painful IV insertion, HD cephalexin is a favourable option in the management of moderate cellulitis for pediatric patients, when no criteria of toxicity are present.
Keywords: cellulitis, ambulatory care, children

LO27

System outcomes associated with an emergency department clinical decision unit

D. Karacabeyli, D.K. Park, MN, G. Meckler, MD, MSHS, Q. Doan, MD, University of British Columbia, Vancouver, BC

Introduction: A clinical decision unit (CDU) is an area within the emergency department (ED) that allows for protocol-driven treatment & observation of patients who may not require hospital admission, but are not ready for discharge after initial assessment & treatment. A CDU was established at BC Children's Hospital in 2014 as a means to optimize hospital resource utilization. Preliminary administrative data review revealed a return to ED (RTED) rate of 15% following a CDU stay, 2-3 times the RTED rate reported in the literature. Whether this is the expected cost of reducing hospital admissions remains unclear. Research exploring the underlying reasons for RTED following a CDU stay is limited. Objectives: Following a CDU stay, to describe 1) disposition outcome distribution; 2) underlying reasons for RTED; and 3) the proportion of potentially preventable RTED. **Methods:** Retrospective cohort study of all ED visits with a CDU stay from Jan 1, 2015 to Dec 31, 2015. Health records data was extracted & entered into standardized online forms by trained research assistants, then blindly reviewed by two investigators to determine a) the most probable cause