

an eighteen-month period. PMRs were evaluated for demographic, physiologic and clinical variables. The information was entered into a database, which auto-filled a tool that determined SIRS criteria, shock index, prehospital critical illness score, NEWS, MEWS, HEWS, MEDS and qSOFA. Descriptive statistics were calculated. **Results:** We enrolled 298 eligible sepsis patients: male 50.3%, mean age 73 years, and mean prehospital transportation time 30 minutes. Hospital mortality was 37.5%. PMRs captured initial: respiratory rate 88.6%, heart rate 90%, systolic blood pressure 83.2%, oxygen saturation 59%, temperature 18.7%, and Glasgow Coma Scale 89%. Although complete MEWS and HEWS data capture rate was <17%, 98% and 68% patients met the cut-point defining “critically-unwell” (MEWS  $\geq 3$ ) and “trigger score” (HEWS  $\geq 5$ ), respectively. The qSOFA criteria were completely captured in 82% of patients; however, it was positive in only 36%. It performed similarly to SIRS, which was positive in only 34% of patients. The other scores were interim in having complete data captured and performance for sepsis recognition. **Conclusion:** Patients transported by ambulance with severe sepsis have high mortality. Despite the variable rate of data capture, PMRs include sufficient data points to recognize prehospital severe sepsis. A validated screening tool that can be applied by paramedics is still lacking. qSOFA does not appear to be sensitive enough to be used as a prehospital screening tool for deadly sepsis, however, MEWS or HEWS may be appropriate to evaluate in a large prospective study.

**Keywords:** prehospital, sepsis, early recognition

#### P008

##### **Implementation of a voluntary provincial knowledge translation intervention project to improve the appropriateness of CT imaging for patients with mild traumatic brain injury and suspected pulmonary embolism**

J. Andruchow, MD, MSc, D. Grigat, MA, A. McRae, MD, PhD, G. Innes, MD, E. Lang, MD, University of Calgary, Calgary, AB

**Introduction:** Utilization of CT imaging has risen dramatically with increases in availability, but without corresponding improvements in patient outcomes. Previous attempts to improve imaging appropriateness via guideline implementation have met with limited success, with commonly cited barriers including a lack of confidence in patient outcomes, medicolegal risk, and patient expectations. The objective of this project is to improve CT utilization and appropriateness by addressing common barriers through clinical decision support (CDS) embedded in clinical practice. **Methods:** This matched-pair cluster-randomized trial saw 12 Alberta EDs with CT scanners randomized to receive CDS for diagnostic imaging. After extensive site engagement to recruit emergency medicine and diagnostic imaging leadership and stakeholders and understand local contexts, half of the sites received CDS for mild traumatic brain injury (MTBI) based on the Canadian CT Head Rule, while the remainder received CDS for suspected pulmonary embolism (PE), including the Pulmonary Embolism Rule-out Criteria (PERC), Wells Score, age-adjusted D-dimer and CT pulmonary angiography (CTPA) use. Hardcopy CT order forms including quantitative decision support, source literature and patient handouts were developed and adapted and integrated into workflow as per local site preference. Regular physician and site report cards on CT utilization and CDS use were also provided. The primary outcome was diagnostic imaging utilization for patients with MTBI and suspected PE. **Results:** During the study period, 144 emergency physicians at 6 EDs saw 3,278 patients with MTBI and 146 emergency physicians at six matched comparison EDs saw 18,606 patients with suspected PE. Use of CDS was highly variable by site, ranging from 0% to 29% of CT orders for MTBI and

from 13% to 75% of CTPA orders for suspected PE. Impact on CT utilization, appropriateness, diagnostic yield is currently under investigation, but is expected to be limited at many sites given the variable adoption of decision support. **Conclusion:** A comprehensive CDS intervention to improve evidence-based imaging has met with variable uptake. Meaningful and widespread sustained improvements in practice will likely require incentives, accountability measures and leadership authority to enforce change.

**Keywords:** decision support, diagnostic imaging, knowledge translation

#### P009

##### **Improving elderly care transitions through the local adaptation and implementation of the Acute Care for Elderly (ACE) program**

P.M. Archambault, MSc, MD, H. Vaillancourt, MSc, V. Drouin, A. Dupuis, MA, C. McGinn, MSc, J. Rivard, L. Bernier, A. Savard, MPA, C. Girouard, MD, M. Poiré, J. Gilbert, C. Kroon, M. Ruel, D. Melady, MD, Centre de recherche de l'Hôtel-Dieu de Lévis, Centre intégré de santé et de services sociaux de Chaudières-Appalaches (CISSS-CA), Lévis, QC

**Introduction:** Decreasing readmission rates and return emergency department (ED) visits represent a major challenge for health organizations. Seniors are especially vulnerable to discharge adverse events which can result in unplanned readmissions and loss of physical, functional and/or cognitive capacity. The ACE Collaborative is a national quality improvement initiative that aims to improve care of elderly patients. We aimed to adapt Mount Sinai's Care Transitions program to our local context in order to decrease avoidable readmissions and ED visits among seniors. **Methods:** We performed a prospective pre/post implementation cohort study. We recruited frail elderly hospitalized patients ( $\geq 50$  years old) discharged to home and at risk of readmission (modified LACE index score  $\geq 7/12$ ). We excluded patients being discharged to long-term nursing homes or institutions. Our intervention is based on selected strategic ACE Care Transitions best practices: transition coach, telehealth personal response services and a structured discharge checklist. The intervention is offered to selected patients before hospital discharge. Our primary outcome is a 30-day post-discharge composite of hospital readmission and return ED visit rate. Our secondary outcomes are functional autonomy, satisfaction with care transition, quality of life, caregiver strain and healthcare resource use at recruitment and at 30-days follow-up. Hospital-level administrative data is also collected to measure global effect of practice changes. **Results:** The project is currently ongoing and preliminary results are available for the pre-implementation cohort only. Patients in this cohort ( $n = 33$ ) were mainly men (61%), aged  $75 \pm 10$  years and presented an OARS score (Activities of Daily Living instrument that ranges from 0-28) of  $5.6 \pm 4.9$ . At 30 days post-discharge, the patients in our cohort had a 42.4% readmission rate (14 hospitalisations) and a 54.5% return ED visit rate (18 visits). For the same time period, readmission and return ED rates for all patients in the same corresponding age-group at the hospital level were 14.4% and 21.9%, respectively. Further results for our post-intervention cohort will be presented at CAEP 2017. **Conclusion:** Our cohort of elderly patients have high readmission and return ED visit rates. Our ongoing quality improvement project aims to decrease these readmissions and ED visits.

**Keywords:** discharge, geriatrics, implementation

#### P010

##### **Code Silver: Lessons learned from the design and implementation of Active Shooter Simulation In-Situ Training (ASSIST)**

N. Argintaru, MD, A. Petrosoniak, MD, C. Hicks, MD, MEd, K. White, M. McGowan, MHK, S.H. Gray, MD, University of Toronto, Toronto, ON