

P052**Who are the super-users of the emergency department?**

R. North, MD, D. Savage, MD, PhD, D. VanderBurgh, MD, G. McKay, MD, C. McMillan, MD, A. Jefferies, BHSc, B. Piper, MD, R. Stonebridge, MD, Northern Ontario School of Medicine, Thunder Bay, ON

Introduction: All emergency departments (EDs) across Canada can identify a group of high frequency users, which are typically defined in the literature as eight to ten visits per year. Although frequent users of the ED are well-studied in the literature, there is little published in terms of identifying the “super-user” group who present to the ED much more often than 10 visits per year. Faced with multiple co-morbidities and a high mortality rate, the ED is often the most appropriate environment to manage this population. In order to inform future initiatives to improve health outcomes, we aimed to identify the specific characteristics of this super-user group. **Methods:** A retrospective chart review was conducted using the electronic medical record from the Thunder Bay Regional Health Sciences Centre to identify patients who had at least 25 visits in the year 2017. A total of 75 patients presented to the ED greater than 25 times in 2017. The following data was then collected on each individual patient: demographic characteristics including age, gender, address, access to a primary care provider. In addition, we collected date, time, diagnoses at each visit, admission rate and surgical interventions. **Results:** Our preliminary results reveal this population presents to the ED on average 32 times per year. The population is 53% male. Most have a private address and half have a primary care provider for all 2017 with one quarter having a primary care provider for part of the year. The percentage of visits for infections was 30%, mental health and addictions presentations comprised 28% of the visits, with gastrointestinal and cardiac visits comprising a total 22% of the visits. Approximately 7% of visits required admission to hospital, and the average length of stay was 5 days. **Conclusion:** Super-users of the ED are a unique population that are typically well connected with primary care and have a very low admission and surgical rate. The most common reasons for visit are infections and mental health and addictions. The next steps include collecting mortality data. This data should be used to inform ED and community initiatives aimed at improved health outcomes for this population.

Keywords: frequent visitors, high volume, super-users

P053**Adverse events and errors in trauma resuscitation: a systematic review**

A. Nikouline, MD, BMSc, A. Quirion, BSc, MBA, MD, B. Nolan, BSc, MD, University of Toronto, Toronto, ON

Introduction: Trauma resuscitations are plagued with high stress and require time sensitive and intensive interventions. It is a landscape that is a perfect hot bed for clinical errors and adverse events for patients. We sought to describe the adverse events and errors that occur during trauma resuscitation and any associated outcomes. **Methods:** Medline was searched for a combination of key terms involving trauma resuscitation, adverse events and errors from January 2000 to May 2019. Studies that described adverse events or errors in initial adult trauma resuscitations were included. Two reviewers analyzed papers for inclusion and exclusion criteria with a third reviewer for any discrepancies. Descriptions of errors, adverse events and associated outcomes

were collated and presented. **Results:** A total of 3,462 papers were identified by our search strategy. 18 papers met our inclusion and exclusion criteria and were selected for full review. Adverse events and errors reported in trauma resuscitation included missed injuries, aspiration, failed airway, and deviation from protocol. Rates of adverse events and errors were reported where applicable. Mortality outcomes or length of stay were not directly correlated to adverse events or errors experienced in the trauma resuscitation. **Conclusion:** Our study highlights the predominance of adverse events and errors experienced during initial trauma resuscitation. We described a multitude of adverse events and errors and their rates but further study is needed to determine outcome differences for patients and possibility for quality improvement.

Keywords: adverse events, errors, trauma

P054**Delay in decision to transfer time for critically ill patients transported by air ambulance in Ontario**

V. Myers, BSc, MD, B. Nolan, BSc, MD, University of Toronto, Toronto, ON

Introduction: Delays in definitive management of critically ill patients are known to drive poor clinical outcomes. A scarcely studied time period in interfacility transfer is the time between initial patient presentation and the decision to transfer. This study seeks to identify patient, environmental and institutional characteristics associated with delays in decision to transfer critically ill patients by air ambulance to a tertiary care centre. **Methods:** Patients >18 years old who underwent emergent air ambulance interfacility transport to a tertiary care centre were included. Patient records were located in a provincial air ambulance database. The primary exposure variable was time from patient presentation to initial call to facilitate transfer. Patient, environmental and institutional characteristics were identified using stepwise variable selection at a significance of 0.1. These characteristics were then explored using quantile regression to identify significant factors associated with delay in transport initiation. **Results:** A total of 11231 patients were included in the analysis. There were 5009 females (44.60%) and 6222 males (55.4%). The median age of patients was 57. The median time to initiate the transfer was 3.05 hours. The variables identified with stepwise selection were gender, category of illness, heart rate, systolic blood pressure, Glasgow coma scale, vasopressor usage, blood product usage, time of day, and type of sending site. The following factors were significantly ($p < 0.05$) associated with an increase in time to initiate transfer compared to the reference category at the 90th centile of time: cardiac illness (+1.45h), gastrointestinal illness (+3.27h), respiratory illness (+4.90h), sepsis (+3.03h), vasopressors (+2.31h), and an evening hour of transport (+3.67h). The following factors were significantly ($p < 0.05$) associated with a decrease in time to initiate transfer compared to the reference category at the 90th centile of time: neurologic illness (-1.45h), obstetrical illness (-1.56h), trauma (-3.14h), GCS <8 (-0.98h), blood transfusion (-1.47h), and sending site being a community hospital >100 beds (-2.26h), <100 beds (-4.71h), or nursing station (-10.02h). **Conclusion:** Time to initiate transfer represents a significant window in a patient's transport journey. In looking at the predictors of early or late initiation of transfers, these findings provide education and quality improvement opportunities in decreasing time to definitive care in critically ill populations.

Keywords: delay, transport