

transcribed the audio records verbatim. Deductive thematic analysis based on the NPT was conducted using Nvivo 12.0. Two authors codified the content of each interview under the four NPT macro-level constructs: coherence, cognitive participation, collective action and reflexive monitoring. A kappa score was calculated to measure the coding inter-rater reliability. **Results:** We interviewed 10 ED physicians (50 % women; 60% certified by the College of Family Physicians of Canada (Emergency Medicine)). No new ideas emerged after the 9th interview. Our thematic analysis identified 13 themes. Inter-rater reliability of coding was substantial ($\kappa = 0.72$). The coherence construct contained the following themes: common concept of interpersonal communication, efficiency of care and anxiety generated by the discussion, the identification of an acute deterioration leading to the GCD, coming together of clinician, patient and family, and the importance of knowing patients' goals of care before medical handover. The cognitive participation construct involved the following themes: lack of training on the new goals of care form and availability of reminders to promote the recommendation. One theme characterized the collective action construct: heterogeneous prioritization for leading GCD. The reflexive monitoring construct contained 4 themes: need to take action before patients consult in the ED, need to develop education programs, need for legislation and the impossibility of systematic GCD for all patients. **Conclusion:** Goals of care discussion is possible and essential with selected patients in the ED. Nevertheless, policy-making efforts remain necessary to ensure the systematization of the recommendation.

Keywords: advanced care planning, emergency medicine, goals of care discussion

P050

The Northern Amazing and Awesome Model: Using positive deviance to impact patient care

R. Ohle, MBChB, MSc, MA, S. McIsaac, MBChB, MEd, Health Science North, Sudbury, ON

Introduction: Positive deviance recognizes that there are individuals and teams within our community of practice that succeed in spite of system constraints. Amazing and awesome rounds has been proposed as a forum to identify behaviours and processes that lead to exceptional results. The objective of this study was to determine the feasibility and acceptability of a structured amazing and awesome rounds model through an innovative educational intervention. **Methods:** The authors engaged a broad range of professional designations (physicians, surgeons, nurses, respiratory therapists, administrative staff) at a tertiary care institution. A&A rounds were open to all allied health professionals and administrative staff. The Northern A&A rounds model was developed, implemented, and then evaluated as a four-part intervention. This consisted of: 1) Allied health professional training on case selection and analysis, 2) Engaging inter professional members, 3) disseminating lessons learned, and 4) creating an administrative pathway for acting on issues identified through the A&A rounds. The measures of intervention feasibility included the proportion of sessions adherent to the new model and A&A rounds attendance. Post intervention surveys of presenters and attendees were used to determine intervention acceptability. A&A presentation content was reviewed to determine the most frequently adopted components of the model. **Results:** Nine out of 9(100%) of presented cases were adherent to the three components of the Northern A&A Model. A&A rounds were highest attended of all hospital wide grand

rounds ($N = 75$ SD 2.4 $P < 0.001$). Nine case presentations were analyzed and 7 action items were identified for amplification across the hospital. Including 3 case reports published of a novel approach to a patient case, a rapid referral for trauma patients at risk for PTSD, AED placement in all community clinics and routine debrief after resuscitations. Presenters included a broad representation of hospital staff including surgeons, emergency physicians, radiologists, nurses, and administrators. **Conclusion:** The Northern A&A Model was a feasible intervention that was perceived to be effective by both presenters and attendees. The authors believe that this could be readily applied to any hospital seeking to enhance quality of care and patient safety.

Keywords: quality improvement

P051

A chart review of emergency department visits following implementation of the Cannabis Act in Canada

M. O'Brien, BSc, P. Rogers, BSc, MD, E. Smith, MD, Memorial University of Newfoundland, St. John's, NL

Introduction: The legalization of cannabis for recreational use in 2018 remains a controversial topic. There are multiple perceived benefits of cannabis including pain relief, treatment of epilepsy syndromes, and improving body weight of cancer patients. However, there are also many potential risks. The short-term health consequences include cannabinoid hyperemesis syndrome and cannabis induced psychosis. These conditions directly impact the influx of patients presenting to Emergency Departments (ED). There is currently limited research in the area of cannabis legalization burden. However, the studies performed have shown a significant impact in those states which cannabis is legal. A study completed in Colorado found that hospitalization rates with marijuana related billing codes increased from 274 to 593 per 100 000 hospitalizations after the state legalization of recreational cannabis. This study aims to examine if Canada's hospitals are experiencing the same burden as other jurisdictions. **Methods:** A descriptive study was performed via a retrospective chart review of cannabis related visits in tertiary EDs in St. John's, NL, from six months prior to the date of legalization of cannabis for recreational use, to six months after. Hospital ED visit records from both the Health Science Centre and St. Clare's Mercy Hospital were searched using keywords to identify patients who presented with symptoms related to cannabis use. We manually reviewed all visit records that included one or more of these terms to distinguish true positives from false positive cases, unrelated to cannabis use. **Results:** A total of 287 charts were included in the study; 123 visits were related to cannabis use six months prior to legalization, and 164 six months after legalization. A significant increase in ED visits following the legalization of recreational cannabis was seen ($p < .001$). There was no significant difference in the age of users between the two groups. Additionally, the number one presenting complaint due to cannabis use was vomiting (47.7%), followed by anxiety (12.2%). **Conclusion:** Following the implementation of the Cannabis Act in Canada, EDs in St. John's, NL had a statistically significant increase in the number of visits related to cannabis use. It is important to determine such consequences to ensure hospitals and public health agencies are prepared to treat the influx of visits and are better equipped to manage the associated symptoms.

Keywords: cannabis, emergency department, legalization

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