Thematic analysis was used to group similar codes into themes. The analytic process was managed using the NVivo 11 software package. **Results**: Results: Eight nurses participated. All nurses were female and had a mean of 8.9 (range: 2.5 - 26) years of pediatric emergency nursing experience. Seven nurses had experience monitoring and administering INK to children for PSA. Five themes emerged: 1) attributes of INK, 2) INK effects on patients and families, 3) INK effects on health care providers, 4) INK effects on the ED environment, and 5) uncertainty regarding INK's effectiveness, predictability, and fit into institutional sedation protocols. Subthemes included 1) perceptions that INK produced a relatively shallower, slower-onset, and/or less titratable sedation, 2) the importance of patient cooperation (i.e. INK may be preferred by providers for older patients undergoing relatively painful or long procedures), 3) belief that INK was an effective anxiolytic and sedative with the potential to improve nursing resource utilization, and 4) belief that physician resistance to change and lack of personal familiarity were barriers to adoption. **Conclusion**: Conclusions: We identified clinical advantages to using INK in children, the importance of selecting appropriate patients, and barriers to widespread INK adoption. Importantly, our findings highlighted uncertainty about INK's effectiveness and incorporation into sedation protocols. Our findings will inform future knowledge translation strategies when implementing INK in the clinical setting.
**Keywords:** children, intranasal, ketamine

### P103
**Factors associated with non-optimal resource utilization of air ambulance for interfacility transfer of injured patients**
A. Quirion, BSc, MBA, MD, B. Nolan, MD, University of Toronto, Toronto, ON

**Introduction**: Timely access to definitive care has been associated with improved outcomes for injured patients. Air ambulance services have become an integral part of Canadian trauma systems to help provide earlier access to a lead trauma centre (LTC). Multiple factors can lead to non-optimal resource utilization resulting in potential transport delays. The goal of this study is to identify patient, institutional and paramedic risk factors for non-optimal resource utilization for interfacility transfers of injured adult patients transported by air ambulance to a LTC. **Methods**: Ornge is a paramedic-staffed organization that is the sole provider of air ambulance services from a non-trauma centre to a LTC for the province of Ontario, Canada. This is a retrospective cohort study of all Ornge adult emergent interfacility transports over a 5-year period. Data was collected on patient demographics and clinical status, sending facilities, transport details and paramedic qualifications. Optimal resource utilization was determined based on distance and historical times. A logistic regression model was used to explore patient, provider and institutional risk factors for non-optimal resource use. **Results**: Between January 1, 2013 and December 31, 2017 a total of 1777 injured patients underwent interfacility transport with Ornge. Of these 805 were identified as having non-optimal resource utilization. Patients who had an optimal resource use were found to be older and mechanically ventilated. Risk factors increasing odds of non-optimal transport included patients transported from a nursing station (OR 1.94), transport with primary or advanced care paramedics (OR 6.57 and 1.44, respectively) and transport between both 0800-1700 and 1700-0000 (OR 1.40 and 1.54, respectively). The median delay to arrival to receiving facility if a patient had a non-optimal resource use was 40 minutes **Conclusion**: We were able to identify several factors resulting in non-optimal

resource utilization. We believe that nursing stations as a sending facility and type of paramedics crew transporting patients resulted in non-optimal resource utilization mainly due to these patients being of lower acuity and this affecting their triage. However the timing of day is more likely to be a resource availability issue and something that can be further studied and potentially improved.
**Keywords:** emergency medical services, prehospital, trauma

### P104
**Can patients suffering traumatic cardiac arrest be identified using the National Ambulatory Care Reporting System (NACRS) database?**
N. Radulovic, BSc, A. Kim, C. Evans, MD, MSc, Queen's University, Kingston, ON

**Introduction**: Trauma is a common cause of mortality across all age groups and is projected to become the third greatest contributor to global disease burden. Recent studies have demonstrated that survival from traumatic cardiac arrest (TCA) is more favourable than once believed and further research on this population is being encouraged. Currently, it is unclear whether existing databases, such as the National Ambulatory Care Reporting system (NACRS), which includes all emergency department visits, could be used to identify TCAs for population-based studies. We aimed to determine the accuracy of NACRS administrative codes in identifying TCA patients. **Methods**: This retrospective validation study used data acquired from NACRS and our institutional Patient Care System. We identified a number of International Classification of Diseases, tenth revision (ICD-10) diagnostic, procedural and cause of injury codes that we hypothesized would be consistent with TCA. NACRS was subsequently searched for patients meeting the diagnostic code criteria (January 1 - December 31, 2015). The following inclusion criteria were: an eligible ICD-10 diagnostic code or a qualifying Canadian Classification of Health Interventions (CCI) procedure code and an eligible ICD-10 external cause of injury code. Electronic medical records for these patients were then reviewed to determine whether true TCAs had occurred. **Results**: Eighty-five patients met the inclusion criteria and one was excluded from analysis due to inaccessible health records, leaving 84 patients eligible for chart review. Overall, 55% (n = 46) of patients were found to have true TCA, 35% (n = 29) sustained a cardiac arrest of non-traumatic etiology and 11% (n = 9) were considered "unclear" (i.e. could not determine whether it was a true TCA based on the medical records). We found that true TCA patients were most accurately identified using a combination of ICD-10 CA cardiac arrest and external cause of injury codes (Positive predictive value: 70.6%, 95% CI 46.9-86.7). **Conclusion**: TCA patients were identified with moderate accuracy using the NACRS database. Further efforts to integrate specific data fields for TCA cases within existing population databases and trauma registries is necessary to facilitate future studies focused on this patient population.
**Keywords:** ambulatory care, cardiac arrest, trauma

### P105
**Charting in the electronic medical record: Perspectives of Emergency Medicine residents**
A. Rajaram, BSc, N. Patel, BA, BSc, Z. Hickey, BSc, J. Newbigging, MD, B. Wolfrom, MD, Queen's University, Kingston, ON

**Introduction**: The literature reveals that residents spend significant amounts of time working with and charting in electronic medical

records (EMR). As adoption of EMRs accelerates among emergency medicine (EM) departments, postgraduate programs will need to adapt curricula related to communication in the patient record. In order to make targeted changes, clinician-educators need a better understanding of how the documentation practices of trainees develop and change over residency, as well as the challenges they face in effectively charting. We gathered the perspectives of EM residents on data entry in the EMR to identify opportunities for such change. **Methods**: We recruited residents from all five years of the Royal College EM residency program at Queen's University and conducted focus groups from August to October 2018. Data collection was audio recorded and later transcribed. Line-by-line coding was performed independently by both AR and NP. A final codebook was validated by ZH. The codebook was then thematically analyzed to identify and characterize themes from the data. The study was approved by the Queen's University Health Sciences Research Ethics Board. **Results**: 15 EM residents participated. Groups discussed similar challenges with charting, including time constraints, ensuring sufficient, but appropriate detail, variable preceptor expectations, and an inability to draw diagrams. All residents noted formal teaching of the SOAP note framework during medical school and reported receiving an introductory EMR session. Groups highlighted the importance of feedback, especially from physicians with medicolegal experience. They also described more informal learning strategies, including receiving tips from preceptors during shifts and reading the notes of others. They also reported that changes in their documentation practices as junior and senior residents were largely due to a graduation of responsibility and medicolegal considerations. **Conclusion**: Our results suggest there is a lack of formal postgraduate training for EM residents with respect to documentation in the EMR with reliance on informal teaching and feedback. Future work should explore opportunities to address this gap with various educational strategies, including the development of specific objectives, application of consistent expectations, modelling of excellent chart notes in teaching, and instruction by preceptors with medicolegal experience.

**Keywords:** documentation, electronic medical record, postgraduate education

## P106
### The HINTS exam: An often misused but potentially accurate diagnostic tool for central causes of dizziness

A. Regis, BA, R. LePage, BSc, O. Bodunde, BSc, Z. Turgeon, BSc, R. Ohle, MBChB, MPH, MSc, MA, Northern Ontario School of Medicine, Sudbury, ON

**Introduction**: Dizziness is a common presentation in emergency departments (ED), accounting for 2-3% of all visits. The HINTS (Head impulse test, Nystagmus, Test of skew) exam has been proposed as a accurate test to help differentiate central from peripheral causes of vertigo. It is only applicable to patients presenting with acute vestibular syndrome (acute onset dizziness or vertigo, ataxia, nystagmus, nausea and/or vomiting, and head motion intolerance). We aimed to assess the diagnostic accuracy of HINTS in detecting central causes of dizziness and vertigo in adult patients presenting with AVS. **Methods**: We performed a medical records review of all patients with a presenting complaint of dizziness to a tertiary care ED between Sep 2014 and Mar 2018. We excluding those with symptoms >14days, recent trauma, GCS <15, hypotensive, or syncope/loss of consciousness. Data were extracted by 5 trained reviewers using a standardized data collection sheet. Individual patient data were linked with the Institute of Clinical Evaluation Science (ICES) database to assess for any patients with a missed central cause. The primary outcome measure was a central cause of dizziness; cardiovascular accident (CVA), transient ischemic attack (TIA), brain tumour (BT) or multiple sclerosis (MS) as diagnosed on either computed tomography, magnetic resonance imaging, neurology consult or diagnostic codes within ICES. **Results**: 3109 patients were identified and 2309 patients met the inclusion criteria, of those 450 patients (44% male) were assessed using HINTS exam. Of those examined with HINTS, 7 patients (1.6% - 4 CVA 2 TIA 1 MS) were determined to have a central cause for their dizziness. HINTS had a sensitivity of 28.6% (95% CI 3.7 – 71%), specificity 95% (95%CI 92.6-96.9%). Of the individuals assessed with HINTS, only 16 presented with AVS (3.6%), of which three patients were found to have a central cause (CVA 2, TIA 1). HINTS in AVS for all central causes is 66.7% (95%CI 9.4-99.2%)sensitive but is 100%(95%CI 15.8-100%) for CVA alone (excluding TIA). Only 38%(16/42) of patients presenting with AVS were assessed using the HINTS exam. **Conclusion**: The current use of HINTS is inaccurate and it is used inappropriately in a large number of patients. Future studies should focus on the correct implementation of HINTS in the ED only in patients presenting with AVS. **Keywords:** clinical exam, vertigo

## P107
### Understanding the sensory experience of performing a rare, high-stakes clinical procedure: a qualitative study of clinicians with lived experience

J. Riggs, BA, BSc, M. McGowan, MHK, C. Hicks, MD, MEd, Schulich School of Medicine, Western University; Department of Emergency Medicine, St. Michael's Hospital, Toronto, ON

**Introduction**: Emergency physicians (EP) are expected to be competent in a variety of uncommon but life-saving procedures, including the bougie assisted cricothyrotomy (BAC). Given the rarity and high-stakes nature of the BAC, simulation is often used as the primary learning and training modality. However, mental practice (MP), defined as the "cognitive rehearsal of a skill in the absence of overt physical movement", has been shown to be as effective as physical practice in several areas, including athletics, music, team-based resuscitation and surgical skill acquisition. MP scripts incorporate cues from different sensory modalities to supplement instructions of how to complete the skill. We sought to explore EPs perspectives on the kinesthetic, visual and cognitive aspects of performing a BAC to inform the development of a MP BAC script. **Methods**: We undertook a qualitative interview study of EPs at a single tertiary care centre who had done a BAC in clinical practice. Participants were recruited using purposive sampling. The primary method for data collection was in-depth semi-structured qualitative interviews, which were recorded and transcribed verbatim. Data collection and analysis were concurrent; transcripts were coded independently by two researchers using qualitative content analysis on a coding framework based on the previously developed BAC checklist. At each procedural step, the kinesthetic, visual and cognitive cues that enhance MP were identified. **Results**: Eight EPs (5 staff; 3 Royal College residents) participated in the interviews. All participants had completed at least one BAC in their clinical practice. Data analysis revealed recurrent themes signifying successful completion of each procedural step. These include visual (ie. seeing a spray of blood upon entry into the airway) and kinesthetic (ie. feel of the tracheal rings on a finger) cues that describe aspects of the procedure not found in traditional teaching