

and disposition decision and identify factors driving the discordance. Secondary outcome measures included comparing 30-day readmission rate, 30-day and 90-day mortality between the discordant PESI groups. **Results:** 365 patients were diagnosed with PE in the study period with 60% being admitted and 40% discharged. The median PESI score in admitted patients was 85 (26-172) vs. 68 (20-163) in discharged patients. 51% of admitted patients had a low-risk PESI score and 24% of the discharged patients were high-risk PESI. 30-day readmission rate was 22.9% vs. 5.3% ($p=0.002$) in discharged patients with high-risk PESI vs. discharged patients with low-risk PESI. Hypoxemia was the most common (62%) justification for admission in low-risk PESI groups. Among discharged patients we noted an 8.6% 90-day mortality in the high-risk vs. 0% in the low-risk PESI groups. **Conclusion:** Discharging a PE patient from the ED with a high PESI score carries a significant risk of ED revisit and readmission. Hypoxia was the reason for admission in majority of low risk PE patients.

Keywords: pulmonary embolism severity index, acute pulmonary embolism

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Pain free laceration repairs using intra-nasal ketamine: DosINK 1- A dose escalation clinical trial

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Introduction: Laceration is common in children presenting to the emergency department (ED). They are often uncooperative related to pain and distressed during repair. Currently, there are wide variations regarding sedation and analgesia practices when sutures are required. There is a growing interest in the intranasal (IN) route for procedural sedation and pain control because of its effectiveness potential and ease of administration. Few studies have evaluated IN ketamine for procedural sedation in children with reported doses ranging from 3 to 9 mg/kg. The objective is to evaluate the optimal IN ketamine dose for effective and safe procedural sedation for laceration repair in children aged 1 to 12 years. **Methods:** A dose escalation clinical trial with an initial dose of 3 mg/kg of IN ketamine up to a maximum dose of 9 mg/kg in children 1 to 12 years old, using a 3+3 trial design. For each tested dose, 3 patients are enrolled. Escalation to the next dose is permitted if sedation is unsuccessful in at least one patient without serious adverse event (SAE). Regression to prior dose is warranted in the occurrence of two or more SEAs. This process is repeated until effective sedation for 6 patients at two consecutive doses is achieved with a maximum of 1 SAE or if regression occurs. The primary outcome is the optimal dose for successful procedural sedation as per the PERC/PECARN consensus criteria. Secondary outcome, namely, pain and anxiety levels, parent, patient and provider satisfaction, recovery time, length of stay in the ED, side effects and adverse event are recorded. **Results:** Nine patients have been recruited from March to December 2017 with median age of 2.9 years-old and with laceration length of 2 to 5 cm and with facial involvement in 55% of cases, respectively. Sedation was successful in 1/3, 1/3 and 3/3 of patients at doses of 3, 4, 5 mg/kg respectively, without any SAE. Median time from ketamine administration to return to baseline status and discharge were 35 and 98 min, respectively. We expect to complete patient recruitment in March 2018. **Conclusion:** The results from our trial is a groundwork for future dose-finding study. Pending study completion, a multicentric dose validation trial, is set up to further validate the optimal dose from dosINK1 trial. IN ketamine has the potential to improve the field of procedural sedation for children by introducing an effective IN agent

with respiratory stability but without the need for an IV line insertion not otherwise needed.

Keywords: intranasal, ketamine, procedural sedation

P120

Rapid hepatitis C virus screening and diagnostic testing for high-risk patients in an urban emergency department: a pilot project

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Introduction: Hepatitis C virus (HCV) infection represents a significant public health problem in Canada and it is estimated that nearly half of individuals with chronic hepatitis C infection are unaware of their disease status. Previous studies of urban emergency department (ED) based screening programs have shown a prevalence ranging from 7.3 to 26% in high risk patients presenting to the ED. The advent of new treatment regimens with high rates of virologic cure strengthens the case for identifying the optimal setting for screening and testing individuals who may benefit from treatment. The proposed pilot project of ED-based screening for hepatitis C virus will aim to determine the prevalence of undiagnosed HCV infection and to link patients with chronic HCV infection to appropriate specialized follow-up care. **Methods:** We will be conducting a prospective cohort study of patients presenting to an urban emergency department between March and May 2018. Patients will be screened using high risk criteria for HCV infection as per national guidelines. Eligible patients will be offered and consented for a rapid point of care antibody test. Individuals with a positive antibody screen will have confirmatory testing and be linked to hepatology follow-up. The primary outcome will be the prevalence of hepatitis C virus among tested patients. Secondary outcomes will include the proportion of high risk patients without a primary care MD or access to alternate care settings where screening may occur, as well as the proportion of HCV-positive patients who are successfully linked to care. **Results:** We expect to screen approximately 2000 participants during the study period leading to an estimated 400 rapid antibody tests. Based on published results from other centres, we estimate that a significant proportion of screened patients will test positive for chronic HCV infection ($> 10%$). Descriptive analyses will be performed for all variables using proportions with 95% confidence intervals. **Conclusion:** To our knowledge, no emergency department in Canada has undertaken protocolized HCV screening using rapid antibody testing in the ED. Results will inform the future development of integrated ED-based screening programs in novel settings more likely to be accessed by the at-risk population. Linking patients with chronic HCV infection to appropriate care will decrease the number of individuals developing HCV-related cirrhosis and hepatocellular carcinoma, thereby improving patient outcomes and reducing the future impact on our health care system.

Keywords: screening, public health, hepatitis C virus

P121

Derivation of a clinical decision tool for predicting adverse outcomes among emergency department patients with lower gastrointestinal bleeding

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Introduction: Lower gastrointestinal bleeding (LGIB) can result in serious adverse events, including recurrent bleeding, need for intervention

and death. Endoscopy is important in the management of LGIB, however gastroenterologists have limited resources to safe endoscopy. Risk stratification of LGIB patients can aid physicians in disposition decisions. **Objective:** to develop a clinical decision tool to accurately identify LGIB patients presenting to the emergency department (ED) who are at risk for 30-day serious adverse events. **Methods:** We conducted a health records review and included 372 adult ED patients who presented with an acute LGIB. The outcome was a 30-day composite outcome consisting of all-cause death, recurrent LGIB, need for intervention to control the bleed and ICU admission. A second researcher confirmed data-collection of 10% of the data and we calculated a κ -value for inter-rater reliability. We analyzed the data using stepwise backwards selection and SELECTION=SCORE option and calculated the diagnostic accuracy of the final model. **Results:** Age 75 years, hemoglobin 100 g/L, INR 2.0, a bloody stool in the ED and a past medical history of colorectal polyps were significant predictors in the multivariable regression analysis. The AUC was 0.83 (95% CI 0.77-0.89), sensitivity 0.96 (0.90-1.00), specificity 0.53 (0.48-0.59), and negative likelihood ratio 0.08 (0.02-0.30) for a cut-off score of 1. **Conclusion:** This model showed good ability to identify LGIB patients at low risk for adverse events as evidenced by the high AUC, sensitivity and negative likelihood ratio. Future, large prospective studies should be done to confirm the data, after which it should be validated and implemented.

Keywords: lower gastrointestinal bleeding, decision tool, risk stratification

P122

Ready for the story? A mixed methods systematic review of factors that influence handovers between prehospital personnel and emergency department nurses receiving patients arriving by ambulance

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Introduction: Safe and efficient handovers between emergency medical services (EMS) practitioners and emergency nurses are vital as poor transitions may lead to loss of information and place patients at risk for adverse events. We conducted a mixed methods systematic review to a) examine factors that disrupt or improve handovers from EMS practitioners to emergency department nurses, and b) investigate the effectiveness of interventional strategies that lead to improvements in communication and fewer adverse events. **Methods:** We searched electronic databases (DARE, MEDLINE, EMBASE, Cochrane, CINAHL, Joanna Briggs Institute EBP; Communication Abstracts); grey literature (grey literature databases, organization websites, querying experts in emergency medicine); and reference lists of the included studies. Citation tracking was conducted for the included studies. Two reviewers independently screened titles/abstracts and full-texts for inclusion and methodological quality using the Effective Public Health Practice Project Quality Assessment Tool for quantitative studies and the Joanna Briggs Institute Critic Appraisal Checklist for Qualitative Research. Narrative and thematic synthesis were conducted to integrate and explore relationships within the data. **Results:** Twenty-two studies were included in this review from the 6150 records initially retrieved. Our analysis suggests that qualitative, quantitative, and mixed methods research approaches have been utilized to explore handovers. Studies ($n=11$) have predominantly explored existing patterns of handovers focusing on barriers and facilitators. Interventions (e.g. multimedia transmission of pre-hospital information, tailored e-learning program) were investigated in five studies. Results suggest that lack of formal

handover training, workflow interruptions, workload, and strained working relationships between EMS and nursing are perceived threats to optimal handovers. **Conclusion:** The findings from this review can inform the development of handover interventions and contribute to a more rigorous approach to researching handovers between EMS practitioners and emergency nurses. Furthermore, there is a need for studies in which specific interventions to optimize handovers are examined.

Keywords: handovers, emergency medical services, emergency department nurses

P123

Mental practice for technical skills training in emergency medicine: a scoping review

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Introduction: Emergency physicians must achieve and maintain competence in numerous procedural skills, many of which are high stakes, time dependent, and used infrequently in clinical practice. Mental practice (MP) is the systematic use of mental imagery to see and feel an action in ones imagination without engaging in actual physical movement, and has been shown to enhance skill acquisition and performance in music and athletics. In this scoping review, we describe the utility and effectiveness of MP as a tool for procedural skill acquisition in medicine. **Methods:** An electronic search of MEDLINE, EMBASE, the Cochrane Library, CINAHL, PsycINFO, Open Grey, Conference Proceedings Index, ProQuest Dissertations and Theses and Google Scholar was conducted. Included studies evaluated MP for learning medically related technical skills using any method of mental training (script memorization, hypo-therapy, psychotherapy). Two independent reviewers screened articles for inclusion, and data was extracted using a standardized tool. **Results:** Our search returned 2028 results, of which 61 were eligible for inclusion. Forty-three studies evaluated MP interventions for technical skill development. Of these, 69.6% focused on minimally invasive surgical skills. The most common outcome measure was quantitative evaluation of skill via observer-scored checklist (69.6%). Other outcomes included stress, time to task completion, and haptic and movement data from surgical simulators. 82.6% of studies demonstrated a positive effect of MP on skill acquisition or performance. The quality of the trials was modest, and only 34.7% of published work provided clear detail on specific MP strategies. **Conclusion:** MP is an effective tool for procedural skills training. Areas outside of minimally invasive surgery are under-represented, and more data is needed on MP for rare or emergent procedures that typify emergency care. The minority of studies reviewed reported methods for developing and validating MP interventions in sufficient detail, a practice that should be adopted in future trials.

Keywords: mental practice, airway, cricothyroidotomy

P124

A new in-skates balance error scoring system for the sideline assessment of concussion in hockey players

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Introduction: During a hockey game, athletes who are suspected of having sustained a concussion are removed from the game and evaluated. The modified balance error scoring system (MBESS) assessment, an essential part of the concussion evaluation, is performed in the dressing room, barefoot on a hard surface after equipment removal.