determine the association of pain with index hospitalization (secondary outcome). We also performed a stratified analysis looking at ureteral vs. kidney (intrarenal) stones. **Results:** We studied 1053 patients, 66% male, with a mean age of 48 years. After controlling for patient and disease characteristics, we found no significant association between pain severity and stone size (b=−0.0004; 95%CI = -0.0015, 0.0008) or stone location (b = 0.0045; 95%CI: -0.020, 0.029). Nor did we find an association between pain and hydronephrosis severity (b = 0.016; 95%CI: -0.053, 0.022, p = 0.418). Stratified analyses using a Bonferroni correction for multiple comparisons revealed the same absence of associations in the kidney and ureteral stone subgroups. Arrival pain did not predict index admission (OR = 0.82, 95% CI: 0.59, 1.16). **Conclusion:** Arrival pain scores are not associated with stone size, stone location or hydronephrosis severity, and do not predict index visit hospitalization in ED patients with renal colic. Severe pain should motivate efforts to minimize treatment delays, but do not suggest the need to modify advanced imaging or admission decisions.
Keywords: pain, renal colic, stone

MP11
Emergency physician attitudes on opioid use disorder and barriers to providing buprenorphine/naloxone

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Introduction: Buprenorphine/naloxone (buprenorphine) has proven to be a life-saving intervention amidst the ongoing opioid epidemic in Canada. Research has shown benefits to initiating buprenorphine from the emergency department (ED) including improved treatment retention, systemic health care savings and fewer drug-related visits to the ED. Despite this, there has been little to no uptake of this evidence-based practice in our department. This qualitative study aimed to determine the local barriers and potential solutions to initiating buprenorphine in the ED and gain an understanding of physician attitudes and behaviours regarding harm reduction care and opioid use disorder management. **Methods:** ED physicians at a mid-size Atlantic hospital were recruited by convenience sampling to participate in semi-structured privately conducted interviews. Audio recordings were transcribed verbatim and de-identified transcripts were uploaded to NVivo 12 plus for concept driven and inductive coding and a hierarchy of open, axial and selective coding was employed. Transcripts were independently reviewed by a local qualitative research expert and themes were compared for similarity to limit bias. Interview saturation was reached after 7 interviews. **Results:** Emergent themes included a narrow scope of harm reduction care that primarily focused on abstinence-based therapies and a multitude of biases including feelings of deception, fear of diversion, feeling buprenorphine induction was too time consuming for the ED and differentiating patients with opioid use disorder from 'medically ill' patients. Several barriers and proposed solutions to initiating buprenorphine from the ED were elicited including lack of training and need for formal education, poor familiarity with buprenorphine, the need for an algorithm and community bridge program and formal supports such as an addictions consult team for the ED. **Conclusion:** This study elicited several opportunities for improved care for patients with addictions presenting to our ED. Future education will focus on harm reduction care, specifically strategies for managing patients desiring to continue to use substances. Education will focus on addressing the multitude of biases elicited and dispelling common myths. A locally informed buprenorphine pathway will be developed. In future, this study may be used to advocate for improved formal supports for our department including an addictions consult team.
Keywords: buprenorphine, harm reduction, opioid use disorder

MP12
Abdominal ultrasound image acquisition and interpretation by novice practitioners after minimal training on a simulated patient model

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Introduction: The FAST exam – Focused Assessment with Sonography in Trauma - is a rapid test using ultrasound to identify sonographic evidence of hemorrhage within the abdomen. In the prehospital setting, the information from a FAST examination can help triage patients, direct patients to the most appropriate facilities, assist with management strategies and potentially expedite time to definitive intervention. Few studies examine the accuracy of paramedic-only-performed FAST examinations. However, despite the potential benefits to the Canadian prehospital system, a potential barrier to implementation is the tremendous financial and operational burden if paramedics require prolonged ultrasound training courses. In this study, we conducted a double-blinded observational study comparing the accuracy of paramedic-performed FAST versus physician-performed tests on a sonographic Phantom, after a one-hour didactic training session. **Methods:** The interpretation of paramedic performed FAST exams was compared to the interpretation of physician performed FAST examinations on a mannequin model. The mannequin utilized in this study was a realistic model of a human torso where fluid could be injected into the abdomen to create a realistic ultrasound image of abdominal free fluid. Participants were required to scan the mannequin twice, once with 300 mL of fluid instilled and once with the abdomen free of fluid. Participants were blinded to the status of hemoperitoneum. The primary outcome of the study was accuracy rate of FAST examination by paramedics compared to emergency room physicians. Results were compared using the Chi-square test. Differences in accuracy rate were deemed significant if p < 0.05. Total scan time was reported using means, standard deviations and 95% CIs and was compared between groups using standard t-test. **Results:** Fourteen critical care flight paramedics and four emergency physicians were voluntarily recruited. The critical care paramedics were ultrasound-naive whereas the emergency physicians had ultrasound training. The correct interpretation of FAST scans was comparable between the two groups 85.6% and 87.5% (Δ1.79 95%CI -33.85 to 21.82, p = 0.90) for paramedics and emergency physicians respectively. Total scan time differed between groups but did not reach statistical significance. Paramedics took longer to complete the FAST examination with a mean (SD) time to complete the two scans of 10.35 (3.43) minutes compared to 7.34 (2.74) minutes for physicians, (Δ3.01 minutes 95%CI -0.97 to 7.00, p = 0.13). **Conclusion:** This study determined that critical care paramedics were able use ultrasound to detect free fluid on a simulated mannequin model and interpret the FAST exam with a similar accuracy as experienced emergency physicians following a one hour training course. This suggests the potential use of ultrasound in prehospital programs to determine the most appropriate transport destination and aid in the triage of trauma patients while limiting the financial and logistical burden of ultrasound training.

MP13

Injuries presenting to the ED following jumps from bridges into water: a multi-agency retrospective case series

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Introduction: Suicidal jumps from bridges into water are a unique blunt trauma mechanism. Impact into water produces substantial variation in injuries as compared to falls onto hard surfaces. Outcomes can be further complicated by submersion injuries. We identified cases through a multi-agency review in order to analyze injury patterns seen in EDs. **Methods:** Cases in British Columbia's Lower Mainland of jumps from bridges >12m into water between 2006 and 2017 were identified by retrospective review of Coast Guard and Police records. Records pertaining to identified incidents were located in ambulance and then hospital records. This multi-agency approach was necessary to generate a comprehensive case series, as case identification was not possible at the hospital level. Patient hospital charts were abstracted and injury incidence rates were analyzed. **Results:** Records were available for 41 of 52 patients. The population was 63% (26/41) male, median age 37 (IQR 29-48). Thirty-two cases were admitted to hospital, seven were deceased in the ED, one was discharged, and disposition is unknown for one. Most patients (85%) presented to Level One trauma centers. Bridge heights ranged from 15m to 70m; the mean fall height was 40.1m. Pulmonary injuries were nearly universal, including pneumothorax (51%), haemothorax (22%), and pulmonary infiltrate (34%). The primary cardiovascular concern was cardiac arrhythmia (51%). A quarter of cases had intraabdominal lacerations or ruptures (27%). Vertebral fractures at all levels were frequent (59%), although there was only one case each of cord transection and contusion. Neurological injuries were rare; 59% of patients presented to the ED with GCS $\geq$14 and the incidence of intracranial bleeding was low (7%). Rib fractures were commonly reported (37%) along with other fractures (32%). Body temperature was reported in 24 cases with 3 reports of moderate and 6 reports of mild hypothermia. **Conclusion:** This case series is the first to characterize injury patterns of jumps from bridges into water in Canada. Patterns are similar to reports in the literature from other countries. However, we found lower injury severity, and higher incidences of spinal fractures and cardiac arrhythmias. The low injury severity reflects the survivorship bias inherent to the sample: data was only obtained from patients who survived to be assessed the ED. These results suggest that patients with this mechanism of injury should be treated for both suspected trauma and cold-water immersion injuries.

Keywords: bridge, multi-agency, trauma

MP14

Quantification of head-neck motion in trauma patients in the emergency department under spinal motion restriction: a prospective observational study

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Introduction: This was a prospective observational study involving a convenience sample of low-risk trauma patients presenting to a Level 1 Trauma Centre under spinal motion restriction (SMR). To our knowledge no prior studies have objectively measured head-neck (H-N) motion in trauma patients with suspected spine injuries during emergency department (ED) care. The goal was to establish the feasibility of deploying non-invasive motion sensors on trauma patients in the ED and to provide initial estimates for H-N kinematics under SMR during different phases of treatment. **Methods:** Low-risk adult patients treated by Winnipeg Fire Paramedic Service who sustained non-life threatening trauma with the potential for spine injury were eligible for inclusion. Participants received usual pre-hospital care; application of spine board and/or cervical collar, as determined by local practice protocol. Inertial measurement units (IMUs) were placed on participant's forehead, sternum and stretcher upon arrival to the ED. Data was collected during three phases of care: patient handling (log rolls, transfers, clothing removal); stretcher movement (to imaging, etc); stretcher stationary. IMUs were removed upon disposition decision by the attending physician. IMUs yielded data on H-N motion in terms of linear acceleration (resultant) and angular displacement (rotation + flexion-extension + side-flexion = total). Peak (M +/- SE) displacements and accelerations are reported, with comparisons across treatment phases using repeated measures ANOVA. **Results:** Eleven patients were enrolled in the study (age: 49 +/- 16 years; Injury Severity Score 13.4 +/- 9.9; female = 2). Substantial H-N motion was observed during ED care. Total H-N displacement (28.6 +/- 3.6 deg) and acceleration (7.8 +/- 1.0 m/s2) were higher during patient handling compared to stretcher moving (13.0 +/- 2.5 deg; 4.6 +/- 0.9 m/s2; p < .05) but not while the stretcher was stationary (18.9 +/- 3.4 deg; 5.4 +/- 1.2 m/s2; p > .06). Similar differences were detected for side-flexion and flexion-extension (p < .05), with peak displacements of 11.4+/-1.5 deg and 14.6 +/- 2.2 deg during patient handling, respectively. **Conclusion:** IMU use on trauma patients safely described H-N motion kinematics in a small sample of patients with different spectrums of illness during their care in the ED. Future studies utilizing IMUs could inform ED spine motion restriction protocols and compare movement of patients in specific subsets (intoxicated, spinal tenderness, injury severity etc.).

Keywords: emergency department, spinal motion restriction, trauma

MP15

Predictors of emergency department opioid use and variability of prescribing practices in a large multicenter Canadian cohort

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Introduction: Emergency department (ED) opioid prescribing has been linked to long-term use and dependence. Anecdotally, significant opioid practice variability exists between physicians and institutions, but this is poorly defined. Our objective was to collate and analyze multicenter data looking at predictors of ED opioid use and to identify potential areas for opioid stewardship. **Methods:** We linked administrative and computerized physician order entry (CPOE) data from all four ED's within our municipality over a one-year period. Eligible patients included those with a Canadian Triage and Acuity Scale (CTAS) pain complaint or an arrival numeric rating scale (NRS) pain score of greater than 3/10. Patients with missing demographic or chief complaint data were excluded. Multiple imputation was used for missing NRS pain scores. We performed descriptive analyses of opioid-treated and non-treated patients, followed by a multivariable logistic regression to identify predictors of ED opioid administration. **Results:** A total of 129,547 patients were studied. The mean age was 47.4 years and 55.4% were female. The median