

50 micrograms (51.8%). Adverse events occurred in 8 (2.5%) patients with 5 patients having new hypotension (MAP <65 mm Hg). There was no significant difference in administration of analgesia based on patient's age or sex (68.8% of females and 75.3% of male patients received analgesia). Interestingly, 30.8% of patients repatriated to originating-hospital received analgesia compared to 72.3% of patients receiving analgesia for all other reasons for transfers. **Conclusion:** More than 73% of intubated patients transported by Ornge received an opioid analgesic, most commonly fentanyl. We found no clinically relevant difference in the administration of analgesics based on age, sex or reason for transfer other than home repatriation.

**Keywords:** emergency medical services operations, pain management, intubation

### MP35

#### The CanadiEM Junior Editor Program: Integrating medical students and junior residents into a dedicated FOAMed training program

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**Introduction/Innovation Concept:** Free Open Access Medical education (FOAM) is a rapidly emerging medium for the dissemination of medical knowledge, especially in Emergency Medicine. However, the most contributors to FOAM are EM attendings who write on established platforms which they also maintain. EM learners have difficulty breaking into this quickly evolving field. In an effort to encourage FOAM involvement of trainees early in their careers, CanadiEM recruited 10 junior residents and medical students with the purpose of developing the skills necessary to contribute to FOAM. These Junior Editors actively participate in the blog workflow, developing writing, editorial, and management skills necessary to operate a high-traffic EM website. **Methods:** Potential candidates were recruited by placing an advertisement and application on the CanadiEM website. 10 medical students or junior residents were invited to online group video interviews and were all accepted as Junior Editors (JE). Senior CanadiEM staff held online training sessions for all new JEs on how to use Wordpress to create, edit and publish posts, as well as basics in Search Engine Optimization. The junior editors collaboratively developed an instructional document containing the information they learned during these sessions. JEs then volunteered for editorial jobs via an online messaging system (Slack) as they became available. After uploading the draft of each post, the final products are reviewed by senior Editor and feedback was given to each JE. **Curriculum, Tool, or Material:** All JEs have learned to use the Wordpress blogging platform to create, edit, and upload posts; optimize blog posts for search engines. Following their own interests, some JEs have also learned to edit podcasts, promote the blog on social media resources (Twitter and Facebook), create infographics, and copy-edit blog posts. **Conclusion:** After 8 months, the JE program has yielded 6 very active editors who maintain a strong blog workflow, have well-developed social media skills, and are actively involved in developing their own content for future posts. The JE program is a strong pathway to introduce medical trainees to both the technical and creative aspects of FOAM and serves as a novel approach to transition students from passive utilization of online content to active contributors.

**Keywords:** free open access medical education (FOAM), innovation

### MP36

#### Safety and clinically important events in PCP-initiated STEMI bypass in Ottawa: a health record review

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**Introduction:** In Ottawa, STEMI patients are transported directly to percutaneous coronary intervention (PCI) by advanced care paramedics (ACPs), primary care paramedics (PCPs), or transferred from PCP to ACP crew (ACP-intercept). PCPs have a limited skill set to address complications during transport. The objective of this study was to determine what clinically important events (CIEs) occurred in STEMI patients transported for primary PCI via a PCP crew, and what proportion of such events could only be treated by ACP protocols. **Methods:** We conducted a health record review of STEMI patients transported for primary PCI from Jan 1, 2011-Dec 21, 2015. Ottawa has a single PCI center and its EMS system employs both PCP and ACP paramedics. We identified consecutive STEMI bypass patients transported by PCP-only and ACP-intercept using the dispatch database. A data extraction form was piloted and used to extract patient demographics, transport times, and primary outcomes: CIEs and interventions performed during transport, and secondary outcomes: hospital diagnosis, and mortality. CIEs were reviewed by two investigators to determine if they would be treated differently by ACP protocols. We present descriptive statistics. **Results:** We identified 967 STEMI bypass cases among which 214 (118 PCP-only and 96 ACP-intercept) met all inclusion criteria. Characteristics were: mean age 61.4 years, 78% male, 31.8% anterior and 44.4% inferior infarcts, mean response time 6 min, total paramedic contact time 29 min, and in cases of ACP-intercept 7 min of PCP-only contact time. A CIE occurred in 127 (59%) of cases: SBP <90 mmHg 26.2%, HR <60 30.4%, HR >100 20.6%, malignant arrhythmias 7.5%, altered mental status 6.5%, airway intervention 2.3%, 2 patients (0.9%) arrested, both survived. Of the CIE identified, 54 (42.5%) could be addressed differently by ACP vs PCP protocols (25.2% of total cases). The majority related to fluid boluses for hypotension (44 cases; 35% of CIE). ACP intervention for CIEs within the ACP intercept group was 51.6%. There were 6 in-hospital deaths (2.8%) with no difference in transport crew type. **Conclusion:** CIEs are common in STEMI bypass patients however a smaller proportion of such CIE would be addressed differently by ACP protocols compared to PCP protocols. The vast majority of CIE appeared to be transient and of limited clinical significance.

**Keywords:** ST-segment elevation myocardial infarction bypass, emergency medical services bypass

## Poster Presentations

### P001

#### Do all toddler's fractures need to be managed by orthopaedic surgeons?

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**Introduction:** There is increasing evidence that emergency room physicians or primary care physicians can definitively manage many uncomplicated paediatric fractures without orthopaedic follow-up. This strategy leads to a reduction in radiation exposure and decreased costs to patient families and the healthcare system without impacting patient outcomes. The aim of this study was to determine whether patients who sustained a toddler's fracture of the tibia required orthopaedic surgeon follow-up. **Methods:** A retrospective analysis including patients who presented to the Hospital for Sick Children (SickKids) for management of toddlers' fractures between Jan 2009 and Dec 2014 was performed.

**Results:** 186 patients (115 males, 72 females) with an average age of 2.00 (range 0.2-3.9) were included in the study. The mean number of clinic visits including initial consultation in the emergency department was 2.00 ( $\pm 1.0$ ). The mean number of radiology department appointments was 2.76 ( $\pm 1.1$ ) where patients received a mean number of 5.86 ( $\pm 2.6$ ) radiographs. Complications were minimal and no patient developed a non-union nor re-fractured. All patients achieved clinical and radiographic union. To date, no patient has returned to clinic or undergone surgery for concerns regarding leg length inequality or malalignment. **Conclusion:** Our series supports reduced clinical follow-up of patients with a toddler's fracture of the tibia. If the diagnosis can be made on the initial radiographs, emergency room physicians or primary care providers can definitively manage these patients with appropriate immobilization that can be removed by the parents between 3-4 weeks after the injury. A fracture clinic follow-up is only necessary if the diagnosis cannot be made on the initial radiographs. Our toddler's fracture pathway will reduce patient radiation exposure and reduce costs incurred by the healthcare system and patients' families without jeopardizing patient outcomes.

**Keywords:** toddlers fracture, clinical care pathway

#### P002

##### Do 5<sup>th</sup> metatarsal fractures need to be managed by orthopaedic surgeons?

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**Introduction:** There is increasing evidence that emergency room physicians or primary care physicians can definitively manage many uncomplicated paediatric fractures without orthopaedic follow-up. This strategy leads to a reduction in radiation exposure and decreased costs to patient families and the healthcare system without impacting patient outcomes. The aim of this study was to determine whether patients who sustained an isolated 5<sup>th</sup> metatarsal fractures require orthopaedic surgeon follow-up. **Methods:** A retrospective analysis including patients who presented to the Hospital for Sick Children (SickKids) for management of metatarsal fractures from 2009-2014 was performed. **Results:** 124 patients (66 males, 58 females) with mean age of 11.3 (SD = 2.9) years old were included in the study. Complications were minimal with no patients requiring operative management. There were zero non-unions and 3 delayed unions. Despite zero instances of surgical correction and a low complication rate, fracture clinic resource utilization was substantial. Fractures were managed with a mean number of 3.1 (SD = 0.98) clinic visits, including initial evaluation in the emergency department. A mean number of 2.8 (SD = 1.1) radiology department visits were conducted, with a mean of 8.1 (SD = 3.8) x-rays total per patient. **Conclusion:** Our series supports reduced clinical follow-up of patients with isolated 5<sup>th</sup> metatarsal fractures. If the diagnosis can be made on the initial radiographs, ER physicians or primary care providers can definitively manage these patients with appropriate immobilization. A fracture clinic follow-up is only necessary if the diagnosis cannot be made on the initial radiographs. Our clinical care pathway will reduce radiation exposure and reduce costs incurred by the healthcare system and patients' families without jeopardizing patient outcomes.

**Keywords:** metatarsal, fracture, clinical care pathway

#### P003

##### Emergency department quality assurance sepsis project: why are more people dying in southwestern Ontario?

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**Introduction:** London Health Sciences Centre (LHSC) includes two academic, urban hospitals in London, Canada. The hospital-standardized mortality ratio (HSMR) is consistently higher than provincial and national averages. Unpublished data reveals that sepsis contributes the largest number of statistically unexpected deaths to LHSC's HSMR calculation. Factors contributing to in-hospital sepsis mortality are hypothesized to include demography, emergency department (ED) flow or sepsis treatment. **Methods:** Retrospective chart review of patients aged  $\geq 18$  years, presenting to an LHSC ED between 01 Nov 2014 and 31 Oct 2015, with  $\geq 2$  SIRS criteria and/or ED suspicion of infection and/or ED or hospital discharge sepsis diagnosis (ICD-10 diagnostic codes A4xx and R65). Data were abstracted from electronic health records. Regional, provincial and national data was retrieved from CIHI and Statistics Canada. **Results:** Median age and sex in London and across Canada are similar (48.2 years vs 48.9 years; 48% male vs 49% male). Baseline prevalences of diabetes, hypertension, COPD and mood disorders were similar in the Local Health Integration Network and Ontario (6% vs 7%, 19% vs 19%, 3% vs 4%, and 10% vs 8%). Median "Physician Initial Assessment," (PIA) times for sepsis patients at LHSC were faster than median Canadian PIA times for CTAS I and II patients (CTAS I: 7 min vs 11 min, CTAS II: 34 min vs 54 min), and slower for CTAS III-V patients (CTAS III: 98 min vs 79 min, CTAS IV: 99 min vs 66 min, CTAS V: 132 min vs 53 min). Median ED length of stay for admitted, high acuity (CTAS I-III) patients was 6h at LHSC versus 10h across Canada. Median [IQR] time to intravenous fluid resuscitation was 60.5 min [29.8-101.2] for septic shock patients and 77.0 min [36.0-127.0] for expired patients. Median [IQR] time to antibiotics was 130 min [73.0-229.0] for sepsis patients, 106 min [60.0-189.0] for severe sepsis patients, and 82 min [42.2-142] for septic shock patients. **Conclusion:** Excess sepsis-related mortality at LHSC is not convincingly related to patient demographics or ED flow. Gains may be made by improving time to antibiotics and IV fluids.

**Keywords:** sepsis, risk stratification, comorbidity

#### P004

##### Hair cannabinoid concentrations in hyperemesis cannabis: a case-control study

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**Introduction:** Emergency physicians increasingly encounter young patients with protracted, forceful hyperemesis associated with heavy cannabis use, previously termed "cyclic vomiting." The national discourse on liberalization of cannabis has largely ignored this poorly understood condition. We wondered to what degree hyperemesis cannabis is an idiosyncratic reaction, like motion sickness or migraine, versus a more predictable dose-response effect of heavy, prolonged use. **Methods:** As part of a larger case-control study using structured interviews, we measured cannabinoid concentrations in scalp hair of both cases and controls. Cases were required to have an emergency visit for vomiting, 2+ episodes of severe vomiting in the previous year, history of near-daily use of cannabis for 6+ months, positive urine  $\Delta 9$ -tetrahydrocannabinol (THC) and age 16-55 years; exclusion criteria were chronic opioid use, synthetic cannabinoid use, or established alternative diagnosis. Age- and sex-matched chronic cannabis-using controls without vomiting were identified via social referral primarily from the cases themselves. Scalp hair was analyzed for THC, cannabidiol (CBN), cannabidiol (CBD) and 11-nor-9-carboxy-THC (THC-COOH) by LC-MS/MS (limit of quantification  $\sim 15$  pg/mg hair; accuracy  $< 5\%$ ) in an independent laboratory blinded to subject