receive training, as well as relative to the intervention groups own pre intervention values (both with p values below 0.05 using Mann-Whitney tests and an intention to treat analysis for loss to follow up). **Conclusion:** Our study demonstrated a significant improvement in CPR quality as a result of our intervention. Survey data also indicated positive feedback from participants in relation to comfort with in-hospital CPR. As such we intend to continue to run this program, identifying participants each year whom can move into training and leadership roles to help foster CPR and basic resuscitation in our medical community.

Keywords: innovations in emergency medicine education, near-peer, cardiopulmonary resuscitation

P108

Cannabis hyperemesis syndrome within emergency department users in the Calgary health region: a retrospective analysis

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Introduction: Cannabis hyperemesis syndrome (CHS) is associated with long-term, regular use of marijuana. CHS patients typically present to emergency departments (ED) during a hyper-emetic phase of paroxysmal nausea and vomiting. Despite extensive investigations as well as frequent ED presentations, CHS patients have a delayed time to diagnosis, and many are often missed. To date, there is a paucity of research examining CHS in emergency departments. Our objective was to identify CHS cases presenting to EDs within the Calgary health region, and to quantify the number of patients and frequency of ED visits for CHS. **Methods:** A retrospective chart review was performed on all patients who presented to any Calgary ED or urgent care center between January 1, 2015 and December 31, 2016 (ages 18 55 years) who had an ED discharge diagnosis of either nausea or vomiting alone, nausea with vomiting, or poisoning by cannabis, as identified in administrative data. Data abstraction from medical records was performed by trained personnel using standardized forms with comprehensive inclusion criteria for CHS. **Results:** The search strategy yielded a total of 320 ED visits from 156 individual patients. 55% of visits were by males, and 45% by females. The average age was 29.5 years. Of the 156 patients, 53% had cannabis use documented in the chart, with 51% reporting daily and/or regular cannabis use. Relief of symptoms from use of hot showers (a pathognomonic finding) was found in 17% of patients. 18% of patients (n = 28) met criteria for CHS, and 28% (n = 44) met partial criteria for CHS (having documented regular cannabis use, cyclic vomiting and abdominal pain) but no record of symptom resolution with cessation of cannabis use or from the use of hot showers. Patients meeting CHS criteria had an average of five repeat ED visits during the study period with 16% (n = 12) of ED visits resulting in hospital admission. **Conclusion:** We identified a large cohort of patients with confirmed or suspected CHS. Given that nearly one third of the sample met partial criteria for CHS highlights the need for improved patient screening, as it is possible that this cohort may include missed cases. Further, many CHS patients are not responsive to first-line antiemetics and accurate diagnosis is crucial for managing these patients effectively in the ED. This is of particular importance given the admission rate for CHS and resulting burden on the health system.

Keywords: cannabis hyperemesis syndrome, cannabis, vomiting

P109

Education innovation: pediatric emergencies curriculum for emergency physicians

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Introduction: Tertiary care emergency departments (EDs) in large urban environments may have a low volume of high acuity pediatric presentations due to their proximity to dedicated childrens hospitals or large community centres. This may lead to discomfort among emergency physicians (EPs) and registered nurses (RNs) in managing these patients and a waning of knowledge and skills for this unique population. Among the EP group at our institution, 68% indicated they managed pediatric patients in less than 25% of their shifts, 68% also indicated they were uncomfortable managing an undifferentiated critically unwell neonate and only 32% indicated they would be comfortable teaching pediatric topics to emergency medicine residents. At our institution, our innovation was to create a useful curriculum for certified EPs and RNs to improve the interdisciplinary teams comfort level, knowledge and skill set when managing pediatric emergencies. **Methods:** A needs assessment was undertaken of the EPs and RNs working in our centre. This information was used to develop intended learning outcomes in a collaborative manner with the clinical nursing educator and physician curriculum leads. The team further collaborated with the local simulation centre and a pediatric emergency physician from the local childrens hospital. **Results:** A one-year, three-module curriculum was developed to cover the areas felt to be highest yield by the EP group: febrile illness, respiratory disease and critically ill neonates and infants. Each module contains three components: an in person interactive lecture delivered by an EP who routinely manages pediatric patients, either at a childrens hospital or large community centre; an online component with e-mail blasts of high yield pediatric content; and, culminating in an interdisciplinary interdepartmental simulation held in situ. This latter is particularly important so that all members of the interdisciplinary team can practice finding and using equipment based on its actual location within the ED. Each component of each module is then evaluated by the participants to ensure improvement for subsequent delivery. **Conclusion:** Well delivered continuing professional development (CPD) will become increasingly important as competence by design becomes the model for maintenance of certification. Maintaining skills for pediatric patients is an important component of CPD for physicians working in general emergency departments that see a low volume of high acuity pediatric presentations. Our curriculum seeks to address this identified need in an innovative manner using a modular and interdisciplinary approach with a diversity of teaching methods to appeal to the learning styles among our health care team.

Keywords: innovations in emergency medicine education, pediatric emergency medicine, continuing professional development

P110

A prospective cohort study to evaluate sex differences in presentations and management for patients presenting to emergency departments with atrial fibrillation and flutter

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Introduction: Atrial fibrillation and flutter (AFF) represent the most common arrhythmia presentations to emergency departments (EDs). Some research suggests that women with AFF experience different symptoms, receive different treatment and have worse outcomes than men. This study explored sex differences in risk factors, medication, and outcomes before and after ED visits for acute AFF. **Methods:** Adult patients presenting to the one of three hospitals affiliated with the

University of Alberta with acute AFF were enrolled. Following informed consent, each patient completed a survey administered by a trained researcher, administrative ED information (e.g., ED times) was collected from the ED information system, a chart review on treatments was conducted and patients were contacted for follow-up at 7 days via telephone. Descriptive (median and interquartile range {IQR} and proportions) and simple (Wilcoxon-Mann-Whitney, chi-square, z-proportion) statistics are presented for continuous and dichotomous outcomes. **Results:** Overall, 217 patients were enrolled; the median age was 64 years (IQR: 55, 73) and 39% were female. Males presenting to the ED with AFF were 10 years younger than females ($p < 0.001$); however, females weighed significantly less (median weight 69 vs. 95 kg; $p < 0.001$), consumed less alcohol (12 vs. 60 drinks/year; $p < 0.001$) and were less likely to be ex-smokers ($p = 0.022$) than men with AFF. Women arrived by Emergency Medical Services (EMS) ($p = 0.037$), experienced palpitations ($p = 0.042$), and reported a history of hypertension ($p = 0.022$) more frequently than men. Females were more often prescribed oral anticoagulants before ($p = 0.041$) and after ($p = 0.011$) the ED visit, and females with a history of AFF were less likely to present without anticoagulant/antiplatelet therapy ($p = 0.015$). Overall, both sexes had similar attempts at cardioversion (59.4% vs. 61.3%) and hospitalizations (12.5% vs. 8.6%), respectively. If initial chemical cardioversion failed, females were more likely to receive subsequent electrical cardioversion (60.0% vs. 26.7%, $p = 0.036$) than men. **Conclusion:** Overall, both women and men present frequently to the ED with AFF. Compared to men with AFF, women present with symptoms 10 years later, have different risk factors, experience more severe symptoms and use EMS more commonly; however, outcomes were similar. Unexplained sex-based variations in-ED and post-ED management are evident and these differences warrant further scrutiny.
Keywords: atrial fibrillation, anticoagulation, sex differences

P111

Burnout among emergency physicians working at a large tertiary center in London, Ontario

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Introduction: Emergency medicine (EM) is known to be a high-stress specialty. Work related stress and burnout have been reported to negatively impact physician-patient interactions, collaboration and ultimately overall physician mental and physical health. We sought to assess the rates of burnout among emergency physicians working at a single large Canadian tertiary care center and to identify higher risk groups. We hypothesized burnout rates to be uniformly high. **Methods:** We conducted a local cross-sectional study to assess burnout among adult and pediatric emergency physicians, fellows and residents at London Health Sciences Centre (LHSC). A total of 118 participants were invited to complete an anonymous online survey encompassing demographics, the validated MBI tool (Maslach Burnout Inventory) with additional questions aimed at identifying determinants of emergency physician burnout at LHSC. Each respondents three MBI scale scores for Emotional Exhaustion, Depersonalization and Personal Accomplishment were recorded with a possible range of 0-6. Descriptive statistics were calculated and relationships between risk factors (age, gender, years of practice, marital status, and credentials) and burnout scores were examined using t-tests, one-way ANOVAs, and/or regression analyses where appropriate. **Results:** To date the survey had a 50% (59/118) response rate. Of the 59 respondents 24 (40%) were female, the mean (SD) age was 40.6 years (10.5) and years of practice ranged from 1 to 35, with a mean of 13. Survey results indicated a high degree of burnout among LHSC EM physicians with a mean (SD) Emotional Exhaustion Score of 2.9 (1.3) and Depersonalization score of 2.4 (1.3), indicating that physicians felt burnt out from work between once a day to once a week. Inversely, the protective variable of Personal Accomplishment, with a score of 4.7 (0.9), indicated daily to weekly feelings of accomplishment. Female physicians (independent samples t-test, $p = 0.003$) and those having fewer years of practice (linear regression, $R2 = 0.188$, $p = 0.04$) were identified to have higher burnout. We did not identify any factors associated with Personal Accomplishment. **Conclusion:** Consistent with previous literature, LHSC emergency physicians were shown to be at risk for moderate to severe burnout. High risk groups identified included gender (female) and fewer years of practice. We did not identify any factors to be protective. Despite this, LHSC emergency physicians showed a high degree of personal accomplishment. While all physicians experience burnout, targeted interventions to newer female staff could have the highest benefit.
Keywords: wellness, burnout, emergency medicine consultant

P112

FLO on flow: front line ownership of emergency department, hospital, and health system patient flow a novel approach to ED overcrowding (Part 1)

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Introduction: Hospital access block, often called Emergency Department (ED) overcrowding when it manifests there, is an important public health issue and seemingly intractable problem in our evolving Health Care system. The multiple, dynamic, and inter-dependent factors influencing its cause (and potential solutions) may best fit a complex adaptive systems analysis and approach. One technique described in similar contexts is Front Line Ownership (FLO) based on the theoretical framework of positive deviance. The aim of this study is to discover where pragmatic bottom-up insights and adaptive work-arounds can be elicited, described, iterated, and potentially implemented at a broader scale to catalyze systems change, in service of improving patient flow. **Methods:** This is a qualitative study which identified, convened, and surveyed stakeholders representing three components of the system. Purposive sampling was used to gather a full range of perspectives from three groups: 1) patients and or families, 2) front-line providers, and 3) management/leaders. Interviews were recorded and transcribed by a third party, then each transcription was coded independently by two investigators (at least one of which was the PI). Informed consent was obtained from all participants and each was offered the opportunity to review the transcription to ensure accuracy. A framework analysis was used to synthesize, reflect upon, and interpret the data from multiple perspectives using a structured, iterative approach. **Results:** In part 1 of this study, three broad over-lapping themes emerged from the analysis as being areas of opportunity for reducing hospital access block. They are: 1) Boundary Conditions (the historical, organizational cultural, psychological, economic, and other contexts influencing system performance), 2) Systems Integration (how well the parts interface with each other relate to the whole), and 3) Operations management (the more technical aspects of patient flow). When these three broad themes are cross-analyzed with a more conventional input-throughput-output approach, previously under-emphasized avenues for improvement may become apparent. **Conclusion:** A front-line ownership analysis of ED overcrowding is feasible. There are adaptive behaviors by some front-line individuals at each "level" of perspective that have been identified

https://doi.org/10.1017/cem.2018.308