uninterrupted time, efficiency expectations, unknown patients, provider lack of knowledge and moral distress. Solutions were directed at improving communication between teams and humanizing care to develop a sensibility to quality PPC in the ED. **Conclusion:** Although the perspective of pediatric ED's role in caring for PPC patients is heterogeneous, several barriers to providing high quality emergency PPC can be overcome. Future studies will explore the experiences of PPC families presenting to the ED.
Keywords: paediatric palliative care, emergency department, ethics

P039

Potential impact on receiving hospital of a prehospital triage system for refractory cardiac arrest: a simulation study

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Introduction: Extracorporeal cardiopulmonary resuscitation (E-CPR) has been used successfully to increase survival in patients suffering from out-of-hospital cardiac arrest (OHCA). However, few OHCA patients can benefit from E-CPR since this procedure is only performed in dedicated centers. Prehospital triage systems have helped decrease mortality from other acute conditions, by directly transporting patients to dedicated centers, often bypassing primary care centers. Our study aimed to quantify the possible impact of a prehospital triage system on the proportion of E-CPR eligible patients transported to E-CPR centers. **Methods:** We used a registry of adult OHCA collected between 2010 and 2015 from the city of Montréal, Canada. Included patients were adults with non-traumatic witnessed OHCA refractory to 15 minutes of resuscitation. Using this cohort, we created 3 scenarios in which potential E-CPR candidates could be redirected to E-CPR centers. We used strict eligibility criteria in our first pair (e.g. age <60 years old, initial shockable rhythm), intermediate criteria in our second pair (e.g. age <65 years old, at least one shock given) and inclusive criteria in our third pair (e.g. age <70 years old, initial rhythm ≠ asystole). These 3 scenarios were compared to their counterpart in which patients would be transported to the closest hospital. The proportions of patients who would have been transported to an E-CPR centers were compared using McNemar's test. To obtain a power of 99%, expecting 1% of discordant pairs and using a unilateral alpha of 0.83% (after Bonferroni correction), we needed to include at least 1000 patients. **Results:** A total of 3136 patients (2054 men and 982 women) with a mean age of 69 years (standard deviation 15) were included. In each simulation, prehospital redirection would have significantly increased the proportion of patients transported to an E-CPR center (pair 1: 1.3% vs 3.8%, $p < 0.001$; pair 2: 2.6% vs 7.3%, $p < 0.001$; pair 3: 7.6% vs 29.8%, $p < 0.001$). **Conclusion:** In an urban setting, a prehospital triage system could triple the number of patients with refractory OHCA who would have an access to E-CPR. This implies that centers with E-CPR capability should prepare themselves accordingly for such a system to effectively improve survival following OHCA.
Keywords: out-of-hospital cardiac arrest, prehospital system, extracorporeal resuscitation

P040

Epidemiology of gun related injuries among Canadian children and youth from 2005-2013: a CHIRPP study

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Introduction: Gun related injuries were last reported by the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) in 2005. Since that time, Canadian gun control is less stringent and non-powder guns are increasingly popular. We aim to describe trends in pediatric gun related injuries and deaths since 2005. **Methods:** This is a retrospective review of CHIRPP data. The dataset included pediatric (age 0-19 years) gun-related injuries and deaths reported by participating CHIRPP emergency departments (ED) from 2005-2013. Variables were tested using Fisher's exact test and simple linear regression. **Results:** There were 421 records of gun-related injuries in the database. Three hundred and twenty-nine occurred from use of non-powder guns, 85 occurred from use of powder-guns, and in 7 cases the type of gun was not clear. The number of gun-related injuries per 100 000 ED visits remained stable from 2005-2013 with a male predominance (n = 366, 87%). Most injuries resulted from non-powder guns and were unintentional. Injuries most often occurred in the context of recreation (n = 181) and sport (n = 51). One hundred fifty four eye injuries were reported, 98% of which were from a non-powder gun. Forty-six individuals required admission to hospital and 2 died in the ED. Nine of 10 intentional self-harm injuries were inflicted with a powder gun. **Conclusion:** This study describes the injuries and circumstances in which pediatric gun-related injury and death occur in Canada. Unintentional injuries caused by non-powder guns were most common. Though less fatal than powder guns, non-powder guns can still cause life-altering eye injuries. This evidence can inform injury prevention programs to target specific circumstances in which the pediatric population is most vulnerable.
Keywords: guns, epidemiology, injury prevention

P041

The nursing shift: measuring the effect of inter-professional education on medical students in the emergency department

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Introduction / Innovation Concept: Inter-professional education (IPE) involves 'occasions when two or more professions learn with, from and about each other to improve collaboration and the quality of care'. Current literature has found IPE to increase knowledge and skills, improve attitudes towards other professions, and to promote superior clinical outcomes. Health Canada has collaborated to form accreditation standards to support IPE in Canadian medical schools. The proposed educational innovation termed the 'nursing shift,' based out of Kelowna General Hospital's Department of Emergency Medicine, in partnership with UBC's Southern and Island Medical Programs, endeavors to enhance IPE in our institution. **Methods:** This nursing shift was first trialed with third year medical students as a pilot rotation beginning in March of 2016. Based on overwhelmingly positive results obtained from narrative feedback, a formal rotation with the same structure will be implemented in the form of a prospective cohort study with 48 medical students from two UBC sites. One group will attend a nursing shift, while the other group will complete the standard emergency medicine rotation without this nursing shift. Impact will be measured using a mixed-method analysis where students will be asked to provide both quantitative feedback in the form of a questionnaire, and qualitative feedback in the form of a narrative response. The primary outcome will be quantitative score differences between the groups of students, and the secondary outcome will be qualitative results for those who completed the nursing shift. **Curriculum, Tool, or Material:** The innovative educational concept consists of an 8-hour nursing shift where medical students spend the first 4 hours at triage with a nurse learning about

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patient intake. The remaining 4 hours are in the emergency department where students collaborate with a nurse on a number of tasks including preparing and administering medications, starting intravenous lines, and inserting Foley catheters. **Conclusion:** Healthcare systems are shifting to a more collaborative team oriented approach, and IPE has been shown to prepare students for this changing workplace. We seek to understand third year medical students' experience of the nursing shift, and to evaluate any changes in attitudes towards inter-professional collaboration after engaging in this intervention. Evaluation of this novel implementation will enable us to assess and optimize the nursing shift, and if it is well received, encourage widespread adoption.
Keywords: inter-professional education, undergraduate medical education, emergency medicine

P042

Are we ready for a gunman in the emergency department? A qualitative study of staff perceptions of personal health risks, workplace safety, and individual and institutional readiness to respond to "code silver"

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Introduction: Hospital-based gun violence is devastatingly traumatic for everyone present and quite tragically on the rise. The Ontario Hospital Association (OHA) has recently designated active shooter situations as "Code Silver" and advised member hospitals to develop policies and train health care workers on how best to respond. Given that emergency departments (ED) are particularly susceptible to opportunistic breach by an active shooter and staff members are likely to be called upon as first responders, the impact of a Code Silver on ED functioning and staff members may be particularly severe. We hypothesized that there may not be a simple, one-size-fits-all-hospital-staff solution about how best to prepare ED physicians and staff to respond to a Code Silver situation. **Methods:** In order to inform and support future staff training initiatives related to Code Silver and other disaster situations in hospitals, we conducted a robust qualitative study to investigate perspectives and behaviour related to personal safety at work and Code Silver in particular among the multi-disciplinary ED staff at a single tertiary care centre in Toronto, Ontario. Participants for in-depth interviews and focus groups were recruited using a combination of stakeholder and maximum variation sampling strategies. Data analysis occurred in conjunction with data collection and standard thematic analysis techniques were employed. **Results:** Initial data analysis has revealed the following thematic concepts: the ubiquitous banality of personal health risk as an expected, acceptable feature of everyday life at work for ED staff, the perception of active shooters as a transgressive threat that violates the boundaries of professional responsibility, and the perceived fallacy of "readiness" to respond to disastrous situations. A fulsome analysis will be ready for presentation in June. **Conclusion:** Knowledge from this study indicates that ED staff members have unique and specific training needs in relation to an active shooter situation, and gives us deeper insight into potential areas of focus for training and opportunities for knowledge translation on the topic of Code Silver for EDs across the country.
Keywords: workplace violence, code silver, policy

P043

Outcomes associated with prehospital refractory ventricular fibrillation

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Introduction: When ventricular fibrillation (VF) cannot be terminated with conventional external defibrillation, it is classified as refractory VF (RVF). There is a paucity of information regarding prehospital or patient factors that may be associated with RVF. The objectives of this study were to determine factors that may be associated with RVF, the initial ED rhythm for patients with prehospital RVF, and the incidence of survival in patients who had RVF and were transported to hospital. **Methods:** Ambulance Call Records (ACRs) of patients with out of hospital cardiac arrest between Mar. 1 2012 and Apr. 1 2016 were reviewed. Cases of RVF (≥5 consecutive shocks delivered) were determined by manual review of the ACR. ED and hospital records were analyzed to determine outcomes of patients who were in RVF and transported to hospital. Descriptive statistics were calculated and all variables were tested for an association with initial ED rhythm, survival to admission, and survival to discharge. **Results:** Eighty-five cases of RVF were identified. A history of coronary artery disease (47.10%) and hypertension (50.60%) were the most common comorbidities in patients transported to the ED with RVF. Upon arrival to the ED, 24 (28.2%) remained in RVF, 38 (44.7%) had a non-shockable rhythm, and 23 (27.1%) had return of spontaneous circulation. Thirty-four (40%) survived to admission, while only 18 (21.2%) survived to discharge. Pre-existing comorbidities, time to first shock, time on scene, and transport time were not statistically associated with initial ED rhythm, survival to admission or discharge. Patient age was statistically associated with improved rhythm on ED arrival ($p = 0.013$) and survival to discharge (58.24 yrs vs 67.40 yrs, Δ9.17, 95% CI 1.82 to 16.52, $p = 0.015$). **Conclusion:** The majority of patients with prehospital RVF have a rhythm deterioration by the time care is transferred to the ED. Of these patients with a rhythm deterioration, few survive to hospital discharge. Younger patients are more likely to remain in RVF and survive to discharge. Further research is required to determine prehospital treatment strategies for RVF, as well as patient populations that may benefit from those treatments.
Keywords: ventricular fibrillation, prehospital, return of spontaneous circulation

P044

Factors influencing laboratory test ordering by physicians and nurses in the emergency department

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Introduction: Understanding factors that influence laboratory test ordering in emergency departments (EDs) can help to improve current laboratory test ordering practices. The aim of this study is to compare patterns and influences in laboratory test ordering between emergency physicians and nurses at two ED sites, Halifax Infirmary (HI) and Dartmouth General (DG). **Methods:** A mixed-methods approach involving administrative data and telephone interviews was employed. Data from 211,279 patients at HI and DG EDs were analyzed. Chi-square analysis and binary logistic regression were used to determine significant factors influencing whether a test was ordered, as well as significant factors predicting likelihood of a nurse or a physician ordering a test. All significant associations had a p-value of <0.0001. Interviews were conducted ($n = 25$) with doctors and nurses in order to explore areas of potential influence in a clinician's decision-making process, and discuss what makes decision making difficult or inconsistent in the ED. These interviews were analyzed according to the Theoretical Domains Framework. The interviews were coded by two individuals using a consensus methodology in order to ensure accuracy of coding. **Results:** Overall, laboratory tests were more likely to be

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