study was designed to explore lung health in the ED. **Methods:** We investigated the prevalence of exposure to vaping, tobacco and cannabis among patients presenting to a Canadian ED from July to November 2019. Ambulatory (CTAS 2 to 5), stable, adult (≥ 17 years) patients were prospectively identified and invited to complete a survey addressing factors related to lung health (previous diagnosis of respiratory conditions and respiratory symptoms at the ED presentation) and information on current exposure to vaping, tobacco and cannabis smoking. Categorical variables are reported as frequencies and percentages; continuous variables are reported as medians with interquartile range (IQR). The study was approved by the Health Research Ethics Board. **Results:** Overall, 1024 (71%) of 1433 eligible patients completed the survey. The median age was 43.5 (IQR: 29, 60), and 51% were female. A total of 351 (31%) participants reported having been previously diagnosed with ≥1 respiratory conditions, and 177 (17%) were visiting the ED as a result of ≥1 respiratory symptoms (e.g., cough, shortness of breath, wheezing). Daily tobacco smoking was reported by 190 (19%), and 83 (8%) reported using vaping/e-cigarette products. Cannabis use within 30 days was described by 80 (15%) respondents. Exposure to tobacco and vaping products was reported by 39 (4%) participants, 63 (6%) reported using tobacco in combination with cannabis smoking, and 3% reported combining vaping and cannabis use. **Conclusion:** Patients seeking care in the ED are exposed to a large quantity of inhaled toxins. Vaping products, considered the cause of the most recent epidemic of severe lung injury, are used in isolation and in combination with other smoking products in Canada. These exposures should be documented and may increase the risk of lung health injuries and exacerbations of chronic respiratory conditions.

Keywords: cannabis, tobacco, vaping

MP51

The relationship between entrustment scores in the simulated and workplace environments among emergency medicine residents

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Introduction: The Emergency Medicine Specialty Committee of the Royal College of Physicians and Surgeons of Canada (RCPSC) has specified that resuscitation Entrustable Professional Activities (EPAs) can be assessed in either the workplace or simulation environments; however, there is minimal evidence that such clinical performance correlates. We sought to determine the relationship between assessments in the workplace versus simulation environments among junior emergency medicine residents. **Methods:** We conducted a prospective observational study to compare workplace and simulation resuscitation performance among all first-year residents (n = 9) enrolled in the RCPSC-Emergency Medicine program at the University of Ottawa. All scores from Foundations EPA #1 (F1) were collected during the 2018-2019 academic year; this EPA focuses on initiating and assisting in the resuscitation of critically ill patients. Workplace performance was assessed by clinical supervisors by direct observation during clinical shifts. Simulation performance was assessed by trained simulation educators during regularly-scheduled sessions. We present descriptive statistics and within-subjects analyses of variance. **Results:** We collected a total of 104 workplace and 36 simulation assessments. Interobserver reliability of simulation assessments was high (ICC = 0.863). We observed no correlation between mean EPA scores assigned in the workplace and simulation environments (Spearman's rho=−0.092, p = 0.813). Scores in both environments improved significantly over time ($F(1,8) = 18.79$, $p < 0.001$, $\eta p2 = 0.70$), from 2.9(SD = 1.2) in months 1-4 to 3.5(0.2) in months 9-12 (p = 0.002). Workplace scores (3.4(0.1)) were consistently higher than simulation scores (2.9(0.2)) ($F(1,8) = 7.16$, $p = 0.028$, $\eta p2 = 0.47$). **Conclusion:** We observed no correlation between EPA F1 ratings of resuscitation performance between the workplace and simulation environments. Further studies should seek to clarify this relationship to inform our ongoing use of simulation to assess clinical competence.

Keywords: entrustment, resuscitation, simulation

MP52

Effectiveness of an outpatient parenteral antibiotic therapy clinic for adults with non-purulent cellulitis

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Introduction: Emergency department (ED) patients with cellulitis that are treated with intravenous (IV) antibiotics may be eligible for outpatient parenteral antibiotic therapy (OPAT). The primary objective of this study was to determine whether the implementation of an OPAT clinic results in decreased hospitalization and return ED visits for patients treated with IV antibiotics. **Methods:** We conducted a before-after implementation study involving adults (age >=18 years) that presented to two tertiary care EDs with cellulitis and were treated with IV antibiotics. The intervention was referral to an infectious disease physician within one week of the index ED visit at the newly created OPAT clinic. The primary outcomes were hospital admission and return ED visits within 14 days. Secondary outcomes were treatment failure (admission after 48 hours of OPAT) and adverse events (e.g. vomiting, diarrhea). We conducted an interrupted time series analysis from January to December both pre-intervention (2013) and post-intervention (2015), with 24 monthly data points. The year of clinic implementation (2014) was considered a transition period. A segmented non-linear regression autoregressive error model was used to aggregate the monthly data to evaluate the effectiveness of the intervention. **Results:** A total of 1,666 patients met inclusion criteria: 858 pre-intervention (mean age 59 years, 53.1% male) and 808 post-intervention (mean age 62 years, 54.5% male). Hospitalization rates were not significantly higher one year after clinic implementation (p = 0.53) although there was a non-statistically significant gradual increase of 0.8% per month (95%CI -0.3% to 1.9%). One year after introduction of the OPAT clinic, return ED visits were significantly lower (change in intercept -24.4%, 95%CI -34.2% to -14.6%; p < 0.001), followed by an additional drop of 1.4% per month (95%CI -2.1% to -0.6%; p = 0.002). By the end of the study, return visits were 40.7% lower (95%CI 25.6% to 55.9%) than if the intervention had not been introduced. Treatment failure rates were <2% and adverse events were <5% in both groups. **Conclusion:** Implementation of an OPAT clinic significantly reduced return ED visits for cellulitis, which is critically important given the current ED overcrowding crisis. There was no significant change in hospital admission rates. There were low rates of treatment failures and adverse events. An OPAT clinic should be considered to reduce ED crowding while maintaining safe patient care.

Keywords: cellulitis, infectious disease, outpatient parenteral antibiotic therapy

MP53

A feasibility analysis for successful completion of IVC ultrasound in hypotensive emergency department patients

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Introduction: Determining fluid status prior to resuscitation provides a more accurate guide for appropriate fluid administration in the setting of undifferentiated hypotension. Emergency Department (ED) point of care ultrasound (PoCUS) has been proposed as a potential non-invasive, rapid, repeatable investigation to ascertain inferior vena cava (IVC) characteristics. Our goal was to determine the feasibility of using PoCUS to measure IVC size and collapsibility. **Methods:** This was a planned secondary analysis of data from a prospective multicentre international study investigating PoCUS in ED patients with undifferentiated hypotension. We prospectively collected data on IVC size and collapsibility using a standard data collection form in 6 centres. The primary outcome was the proportion of patients with a clinically useful (determinate) scan defined as a clearly visible intrahepatic IVC, measurable for size and collapse. Descriptive statistics are provided. **Results:** A total of 138 scans were attempted on 138 patients; 45.7% were women and the median age was 58 years old. Overall, one hundred twenty-nine scans (93.5%; 95% CI 87.9 to 96.7%) were determinate. 131 (94.9%; 89.7 to 97.7%) were determinate for IVC size, and 131 (94.9%; 89.7 to 97.7%) were determinate for collapsibility. **Conclusion:** In this analysis of 138 ED patients with undifferentiated hypotension, the vast majority of PoCUS scans to investigate IVC characteristics were determinate. Future work should include analysis of the value of IVC size and collapsibility in determining fluid status in this group.

Keywords: hypotension, inferior vena cava, point of care ultrasound

MP54

Management algorithm for the treatment of intoxications with calcium channel blockers: a simulation trial (MATRICS)

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Introduction: Cardiotoxicants poisonings are rare but have the potential to be highly lethal. Given the precarious nature of these poisonings, the Quebec Poison Control Center (CAPQ) has established a management protocol for optimal treatment. This study seeks to evaluate whether CAPQ's Calcium Channel Blocker (CCB) poisoning management protocol improves treatment delivery by physicians using simulation. The primary outcome is whether the management protocol decreases time to delivery of calcium and insulin. The secondary outcome is whether use of the management protocol increases appropriate dosing. **Methods:** For this randomized AB / BA crossover trial, Emergency Medicine and Internal Medicine residents were randomly assigned to one of two groups; one group received the management protocol during the simulation and the other did not. The crossover occurred 3-months later whereby the groups were reversed. Inverse probability weighting was used to compensate for losses at follow-up. Differences in baseline characteristics, as well as carry-over effect, were evaluated. The outcomes were analyzed with a two-level hierarchical model. **Results:** Twenty-three residents were included in the study. No significant differences in baseline characteristics were noted between the AB / BA groups, and no carry-over effect was identified on statistical analysis for all variables. As for the primary outcomes, time to administration of IV calcium decreased by 87 seconds (CI -266 to 92), time to insulin bolus decreased by 52 seconds (-217 to 114), and time to insulin infusion decreased by 115 seconds (-213 to -18) when the protocol was used. As for the secondary outcomes, there were no statistically significant differences for the percentage of adequate doses of IV calcium (RR: 1.27; 95% CI: 0.80–2.02), insulin bolus (RR: 1.30; 95% CI: 0.80–2.12) and insulin infusion (RR: 1.37; 95% CI: 0.99–1.91). **Conclusion:** This randomized crossover study, which uses simulation to evaluate the performance of CAPQ's CCB poisoning management protocol, does not statistically demonstrate decreased time to administration or increased accuracy of dosing, due to the large confidence intervals. Unfortunately, we were not able to obtain the planned sample size due to limited participation. However, our results trend towards more optimal dosing and rapid dosing of treatments, and from a qualitative standpoint, the protocol appeared to increase the structure of patient care.

Keywords: calcium channel blocker, management protocol, simulation

MP55

Reducing barriers to successful cardiac resuscitation: intervention in elementary schools

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Introduction: The incidence of out-of-hospital cardiac arrest (OHCA) in school is approximately 2.1 for 100,000 per year. Although rare, it is a devastating event for the local community. Schools with public access to automated external defibrillators (AED) and an emergency response plan have demonstrated increased survival rates of up to 70% for students who suffer cardiac arrest. Previous studies identified numerous barriers to successful cardiac resuscitation in public school systems. The main objectives of this study were to identify those barriers in the Quebec region elementary school system and to assess the impacts of an AED focused training session. **Methods:** A previously validated survey focused on the potential barriers to successful defibrillation in OHCA and on demographic variables was sent to 139 elementary schools. Later, 92 employees within three elementary schools who responded to the survey were evaluated before and after receiving training on the use of AED in a mock cardiac arrest scenario. The primary outcome was the time to first shock and the secondary outcomes included correct AED pad placement and safety of the procedure. **Results:** Survey response rate was 53%, which is comparable to previous studies assaying barriers to cardiac resuscitation in public school systems. 95% of school respondents reported the presence of an AED on the school premises but 46% stated that no formal AED training course was provided to employees. Out of the four schools who reported a previous OHCA, only one had access to an AED at the time of the event. Following focused AED training, 92% of school workers successfully completed a defibrillation sequence in a mock scenario, from 53% before ($p < 0.001$, McNemar test). The time to first shock went from 66 seconds (95% CI 63-70) to 47 seconds (95% CI 45-49; -29%, $p < 0.001$). Proper pad placement was the most problematic step for participants and personnel who reported previous training had better performance (OR 3.15, 95% CI 1.33-7.42, $p = 0.009$). **Conclusion:** Most elementary schools in the Quebec region have

https://doi.org/10.1017/cem.2020.201 Published online by Cambridge University Press