

of agreement was obtaining a 12-lead electrocardiogram following the primary and secondary survey for all older adults (DI=0.01). Two trauma care modifiers failed to reach consensus agreement: transporting older patients with ground level falls to a trauma centre and activating the trauma team based solely on an age  $\geq 65$  years. **Conclusion:** Using a modified Delphi process, an expert panel agreed upon 17 trauma care modifiers for older adults in the prehospital and ED phases of care. These modifiers may improve the delivery of senior-friendly trauma care and should be considered when developing local and national trauma guidelines.

**Keywords:** delphi, geriatrics, trauma

### LO62

#### Cannabis-induced psychotic disorder at a Canadian tertiary care emergency department

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**Introduction:** Acute psychosis is a disruptive change in mental state that requires the mobilization of significant resources for its immediate treatment and ongoing management in the emergency department (ED). Cannabis-induced psychotic disorder (CIP) is one potential cause; however, the diagnosis may be overlooked due to limited understanding of the etiology of CIP. **Methods:** This study employed a retrospective cohort analysis of all CIP cases admitted from a tertiary care ED in Edmonton, Alberta between 10/2016 and 10/2018 – the month cannabis was legalized in Canada. Charts were identified based on a most responsible diagnosis of CIP, as defined by ICD-10 code F12.5. Two reviewers abstracted data using a standardized form, which was entered into a database; 10% of charts were analyzed by both reviewers to examine inter-rater reliability. Patients were excluded if there was any documentation of methamphetamine use within the week prior to presentation. Outcomes included management, symptom profile, and length of stay. **Results:** In total there were 44 cases of CIP identified in 40 unique patients during the two-year period. The largest age group of patients ( $n=14$ , 35%) were between 15-20 years old and the median length of admission was 6 days. A minority of patients ( $n=13$ , 32.5%) had a previous psychiatric diagnosis. A distinct clinical picture evolved during the summation of patient symptoms in the ED with 65% of patients ( $n=26$ ) exhibiting persecutory delusions and 52.5% endorsing auditory hallucinations ( $n=21$ ). Only four patients were found to have visual hallucinations, three of which also had auditory hallucinations. Most patients ( $n=34$ , 85%) were treated with an antipsychotic medication in the ED and during their time as inpatients, but only 70% of patients were prescribed an antipsychotic medication at the time of discharge ( $n=28$ ). **Conclusion:** This study is the first of its kind describing a cohort of patients with CIP in a Canadian ED setting. The patients presenting to the ED who would later be diagnosed CIP were more likely to be 15-20 years old, experiencing persecutory delusions, and unlikely to be experiencing isolated visual hallucinations. With the recent legalization of cannabis in Canada, further prospective research is required to determine any changes in the characteristics, incidence, and prevalence of CIP, as well as data from other centers to look for any regional differences in the presentation and management of CIP.

**Keywords:** cannabis, psychosis, substance-induced psychosis

### LO63

#### Evaluation of epinephrine secondary effects in a Canadian emergency department anaphylaxis adult cohort

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**Introduction:** There are few large-scale studies assessing the true risk of epinephrine use during anaphylaxis in adults. We aimed to assess the demographics, clinical characteristics, and secondary effects of epinephrine treatment and to determine factors associated with major and minor secondary effects associated with epinephrine use among adults with anaphylaxis. **Methods:** From May 2012 to February 2018, adults presenting to the Hôpital du Sacré-Coeur de Montréal (HSCM) emergency department (ED) with anaphylaxis were recruited prospectively as part of the Cross-Canada Anaphylaxis Registry (C-CARE). Missed cases were identified through a previously validated algorithm. Data were collected on demographics, clinical characteristics, and management of anaphylaxis using a structured chart review. Multivariate logistic regression models were compared to estimate factors associated with side effects of epinephrine administration. **Results:** Over a 6-year period, 402 adult patients presented to the ED at HSCM with anaphylaxis. The median age was 38 years (Interquartile Range [IQR]: 27, 52) and 40.4% were males. The main trigger for anaphylaxis was food (53.0%). A total of 286 patients (71.1%) received epinephrine treatment, of which 23.9% were treated in the pre-hospital setting, 47.0% received treatment in the ED, and 5.0% received epinephrine in both settings. Among patients treated with epinephrine, major secondary effects were rare (1.4% of patients), including new changes to electrocardiogram, arrhythmia, and neurological symptoms. Minor secondary effects due to epinephrine were reported in 50.0% of patients, mainly inappropriate sinus tachycardia (defined as a rate over 100 beats/minute in 30.1%). Major cardiovascular secondary effects were associated with regular use of beta-blockers (aOR 1.10 [95% CI, 1.02, 1.18]), regular use of ACE-inhibitors (aOR 1.16 [95% CI, 1.07, 1.27]), and receiving more than two doses of epinephrine (aOR 1.09 [95% CI, 1.00, 1.18]). The model was adjusted for age, history of ischemic heart disease, trigger of anaphylaxis, presence of asthma, sex, and reaction severity. Inappropriate sinus tachycardia was more likely in females (aOR 1.18 [95% CI, 1.04, 1.33]) and palpitations, tremors, and psychomotor agitation were more likely in females (aOR 1.09 [95% CI, 1.00, 1.19]) and among those receiving more than two doses of epinephrine (aOR 1.49 [95% CI, 1.14, 1.96]). The models were adjusted for age, regular use of medications, history of ischemic heart disease, triggers of anaphylaxis, presence of asthma, reaction severity, and IV administration of epinephrine. **Conclusion:** The low rate of occurrence of major secondary effects of epinephrine in the treatment of anaphylaxis in our study demonstrates the overall safety of epinephrine use.

**Keywords:** anaphylaxis, epinephrine, secondary effects

### LO64

#### A systematic review of interventions to influence opioid prescribing from the emergency department

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**Introduction:** The opioid crisis has reached epidemic levels in Canada, driven in large part by prescription drug use. Emergency

physicians are frequent prescribers of opioids; therefore, the emergency department (ED) represents an important setting for potential intervention to encourage rational and safe prescribing. The objective of this study was to systematically review the literature on interventions aimed to influence opioid prescribing in the ED. **Methods:** Electronic searches of Medline and Cochrane were conducted and reference lists were hand-searched. All quantitative studies published in English from 2009 to 2019 were eligible for inclusion. Two reviewers independently screened the search output to identify potentially eligible studies, the full texts of which were retrieved and assessed for inclusion. Outcomes of interest included opioid prescribing rate (proportion of ED visits resulting in an opioid prescription at discharge), morphine milligram equivalents per prescription and variability among prescribers. **Results:** The search strategy yielded 797 potentially relevant citations. After eliminating duplicate citations and studies that did not meet eligibility criteria, 34 potentially relevant studies were retrieved in full text. Of these, 28 studies were included in the review. The majority (26, 92.9%) of studies were based in the United States and two (7.1%) were from Australia. Four (14.3%) were randomized controlled trials. The interventions were classified into six categories: prescribing guidelines (n = 10), regulation/rescheduling of opioids (n = 6), prescribing data transparency (n = 4), education (n = 4), care coordination (n = 3), and electronic medical record changes (n = 1). The majority of interventions reduced the opioid prescribing rate from the ED (21/28, 75.0%), although regulation/rescheduling of opioids had mixed effectiveness, with 3/6 (50%) studies reporting a small increase in the opioid prescribing rate post-intervention. Education had small yet consistent effects on reducing the opioid prescribing rate. **Conclusion:** A variety of interventions have attempted to improve opioid prescribing from the ED. These interventions include prescribing guidelines, regulation/rescheduling, data transparency, education, care coordination, and electronic medical record changes. The majority of interventions reduced the opioid prescribing rate; however, regulation/rescheduling of opioids demonstrated mixed effectiveness.

**Keywords:** intervention, opioid prescribing, systematic review

#### LO65

##### Assessing opioid-prescribing patterns for low back pain patients before and after the implementation of clinician performance indicators in the emergency department

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**Introduction:** Canada is in the midst of an opioid crisis. The number of apparent opioid-related deaths between January and March 2018 increased by 44% compared to the same period in 2016. The increasing use of prescription opioids and higher doses of opioids can lead to opioid addiction, toxicity and even death. Opioids are commonly prescribed for low back pain management in the ED, but the variability in opioid-prescribing patterns suggested an opportunity for improvement. Our centre implemented Clinician Performance Indicators (CPI) in 2015. CPIs were reported to each ED physician every 3 months and included the percentage of patients who were prescribed opioids. The intent was to raise awareness of opioid-prescribing patterns at our institution. Therefore, we evaluated opioid-prescribing patterns for patients with low back pain (LBP) before and after the CPI implementation. **Methods:** Data were obtained retrospectively for patients discharged from the ED from July 2015 to December 2018 with LBP-associated ICD 10 codes. We excluded admitted

patients, those with specialist consultations, and patients who left without being seen. The primary outcome was opioid prescribing patterns for patients with LBP before and after CPI implementation. We performed a descriptive analysis of the data and compared the prescribing rates pre-implementation (July-Dec 2015) to post-implementation (July-Dec 2016) following a 6-month wash-out period. Moreover, we analyzed opioid-prescribing patterns over an extended period until December 2018. **Results:** After the exclusion criteria were applied, 8993 patients were included in the analysis. 53.5% were female and the mean (SD) age was 48.3 (19.78). During the three years of the study period, the percentage of LBP patients who received opioids showed a decreasing trend. Comparison of the pre and post CPI implementation periods showed a decrease in opioid prescriptions (42.0% vs 35.5%, 95%CI 2.9% to 10.2%). There was variation in opioids prescribed at our institution, the most common being hydromorphone (29.9%), followed by acetaminophen-oxycodone (24.2%) and acetaminophen-tramadol (20.0%). **Conclusion:** The implementation of CPIs positively impacted physicians' opioid-prescribing patterns for patients presenting with LBPs at our institution. Future studies are required to further improve the effectiveness of CPIs in influencing opioid-prescribing patterns.

**Keywords:** clinician performance indicator, low back pain, opioid

#### LO66

##### Strengthening team communication may decrease medico-legal risk for physicians in the emergency department

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**Introduction:** In a busy emergency department (ED), effective communication is integral to the provision of safe medical care. Physicians working in the ED interact with multiple team members including patients, allied healthcare professionals and other physicians, who all need to understand their verbal and written instructions. Our study's objective was to identify and describe communication problems occurring in the ED setting, and how these problems contributed to patient safety events and increased medico-legal risk for physicians. **Methods:** The Canadian Medical Protective Association (CMPA) is a not-for-profit, medico-legal organization which represented over 97,000 physicians at the time of this study. We conducted a retrospective descriptive analysis where we extracted five years (2013-2017) of CMPA data describing closed medico-legal cases occurring in the ED involving physicians (any specialty) who experienced complaints due to communication issues. We then applied an internal contributing factor framework to identify data themes. Data were summarized using descriptive statistics. **Results:** We identified 517 eligible cases involving 521 patients (some cases involved >1 patient). We found that 99.8% (520/521) of patients experienced some form of healthcare-related harm in the ED. Specifically, there was poor communication between: the physician and patient or patient's family (202/517, 39.1%); two or more physicians (79/517, 15.3%), and physicians and other healthcare providers (55/517, 10.6%). Inadequate documentation was observed in more than half of the cases (324/517, 62.7%) and poor team communication affected physicians' decision making process (326/517, 63%) in areas such as deficient assessments, inadequate investigations, failure or delay to attend to the patient, and disposition decisions. **Conclusion:** Team communication issues are prevalent among physician medico-legal