for the emergency physician (EP) is determining if a patient with a mental health concern has concomitant underlying medical illness. We defined "serious medical illness" (SMI) as a pathological condition that requires inpatient treatment on a medical or surgical ward. SMI undetected by emergency physicians in patients presenting with mental health concerns may result in adverse patient outcomes. The aim of this study was to determine the prevalence, timing, and etiology of undetected SMI in the ED among adult patients presenting with mental health concerns. **Methods:** A retrospective chart review was performed on all patients age 18 and older who presented to the ED at Victoria Hospital, London Health Sciences Centre between October 1, 2014 and April 30, 2015, who were subsequently referred to psychiatry by the EP. The primary outcome was the number of patients transferred to a medicine or surgery inpatient unit for treatment of their SMI within seven days of psychiatry admission from the ED. **Results:** 1,255 patients were referred to psychiatry during the study period. 803 patients were admitted and 452 were discharged. Of the admitted patients, 14/803 patients (1.7%) met our primary outcome. The mean age of patients in the SMI group (n = 14) was 64 years. The mean age in the non-SMI group (n = 1,241) was 38. In the SMI group, 3/14 patients died, 2/14 patients required an ICU admission, and 2/14 patients underwent a surgery for their missed SMI. The average length of psychiatry admission prior to transfer was 3.7 days. The average length of medical/surgical admission after transfer from psychiatry was 8.3 days. Undetected diagnoses included NSTEMI, serotonin syndrome, lithium toxicity, thoracic aortic aneurysm, gastrointestinal stromal tumour, forearm abscess, Parkinsonian crisis, and others. **Conclusion:** This chart review demonstrated a 1.7% rate of undetected serious medical illness in patients who presented to the ED with mental health concerns. Adverse outcomes included death, ICU admissions, and surgeries. This rate is similar to other studies on the topic. The SMI group tended to be older than the non-SMI group. This research may have implications on the appropriate workup and disposition of elderly patients presenting to the ED with mental health concerns.

Keywords: mental health, undetected medical illness

LO030

Inter-rater agreement of nurse and clinical expert tremor assessments for patients with alcohol withdrawal syndrome in the emergency department

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Introduction: Of the domains assessed by the CIWA-Ar, tremor is the most objective, and reliable clinical symptom of alcohol withdrawal syndrome. Even so, anecdotal evidence suggests that the ability of health care workers to reliably rate tremor severity is highly variable, and there is no high quality, readily available training to teach this competency. Improper evaluation and interpretation of tremor may result in under or over treatment, posing serious risks to patient safety, prolonging emergency department (ED) length of stay, and increasing the likelihood of complications/hospital admission. The objective of this study was to prospectively compare tremor assessment scores assigned by nurses and clinical experts for patients with alcohol withdrawal syndrome in the ED. **Methods:** A prospective observational study was conducted for patients ≥18 years presenting to an academic ED in alcohol withdrawal from Oct 2014 to Aug 2015. Individual tremor assessments were videotaped by a research assistant and subsequently reviewed by 3 clinical experts, blinded to the primary clinical assessment. Tremor severity was scored using the 8-point CIWA scale (0 = no tremor, 7 = severe tremor). Tremor severity scores assigned in real-time by the nurses were compared to expert assessments of each video. Inter-rater agreement was estimated using Cohen's kappa (k) statistic. **Results:** 31 patients with 62 tremor recordings were included. Nurse-derived tremor scores matched exactly with expert assessor scores in 11 (17.7%) cases, within 1 point for 29 (46.8%) cases and differed by ≥ 2 points in 33 (53.3%) cases. The overall kappa for agreement within 1 point for tremor severity was 'fair' 0.39 (95% CI: 0.25, 0.53). **Conclusion:** These results confirm the high variability in the assessment of alcohol withdrawal tremor by health care workers. Future research should focus on ways to improve the accuracy of tremor in alcohol withdrawal patients, and the development and implementation of an educational program to improve the individual competencies of clinical staff in the recognition and treatment of alcohol withdrawal in the ED.

Keywords: alcohol withdrawal, tremor, inter-rater agreement

LO031

The epidemiology of emergency department visits for dog-related injuries in Alberta

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Introduction: Injuries due to interactions with dogs (e.g. bites, collisions, etc) are an important public health concern from both a health and an economic perspective. The consequences of these injuries can be both physical (injury, pain, infection, disfiguration) and psychological. The purpose of this study is to understand the prevalence and characteristics of dog-related injuries among patients presenting to Alberta emergency departments (EDs). Further, this study describes the burden of these injuries on ED economic health care resources. **Methods:** This retrospective, administrative database cohort study utilised the National Ambulatory Care Reporting System (NACRS) to identify all visits made to Alberta EDs in fiscal years 2010/11 through 2014/15 for dog-related injuries. ED visits where the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Canada (ICD-10-CA) code "W54-Bitten or Struck by Dog" appeared in the first four diagnosis fields were captured. The Canadian Institute for Health Information costing model utilising the Comprehensive Ambulatory Classification System and Resource Intensity Weights was employed to calculate average unit health care costs for ED visits excluding physician fees. Data were analyzed using descriptive statistics. **Results:** During the 5 year study period, Albertans made 21,821 ED visits for dog-related injuries. The ED visit rate was highest in children under 2 years of age, namely 234 per 100,000 for males and 206 per 100,000 for females. ED visit rates were highest for patients residing in the northern health region of the province (220/100,000) compared to metropolitan areas (90/100,000 and 64/100,000 for Edmonton and Calgary zones respectively). One third of visits occurred in the summer months, with a greater proportion of visits occurring on the weekend (34.4%). The predominant areas of injury were wrist/hand/fingers (n = 7756 visits; 35.5%) and head/face/neck (n = 5152 visits; 23.6%). In 287 visits (1.3%), the patient was admitted to hospital. ED visit costs were highest for children 4 years of age and younger ($243.86/visit; p < 0.001). **Conclusion:** Dog-related injuries result in a substantial number of ED visits and significant costs in Alberta. Understanding the characteristics of these injuries provides an opportunity for prevention, including strategies focussed on higher risk groups involving children and residents of rural areas.

Keywords: injury