

from two graduating classes at the Schulich School of Medicine & Dentistry in London, ON were screened for eligibility. Two students did not complete the study, and were excluded. There were 13 students in the NEJM group, and 15 students in the ATLS group. **Results:** The NEJM group's average score was 45.2% (± 9.6) on the pre-questionnaire, 67.7% (± 12.9) for the procedure, and 60.1% (± 7.7) on the post-questionnaire. The didactic group's average score was 42.8% (± 10.9) on the pre-questionnaire, 73.7% (± 9.9) for the procedure, and 46.5% (± 7.5) on the post-questionnaire. There was no difference between the groups on the pre-questionnaire ($\Delta +2.4\%$; 95% CI: $-5.2, 10.0$), or the procedure ($\Delta -6.0\%$; 95% CI: $-14.6, 2.7$). The NEJM group had better scores on the post-questionnaire ($\Delta +11.15\%$; 95% CI: $3.7, 18.6$). **Conclusion:** The NEJM video was as effective as video-recorded training for teaching the knowledge and technical skills essential for chest tube insertion. Participants expressed high satisfaction with this modality. It may prove to be a helpful adjunct to standard instruction on the topic.

Keywords: chest tube, medical education, clinical medicine videos

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High-risk clinical features for acute aortic syndrome

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Introduction: Acute aortic syndrome (AAS) is a rare clinical syndrome with a high mortality encompassing acute aortic dissection, intramural hematoma and penetrating atherosclerotic ulcer. The objective of our study was to assess the diagnostic accuracy of high risk historical, examination and basic investigative features for AAS, in confirmed cases of AAS and a low risk control group in order to address the spectrum bias in previous diagnostic accuracy studies. **Methods:** We performed a historical matched case-control study: participants were adults >18 years old presenting to two tertiary care emergency departments (ED) or one regional cardiac referral center. Cases: new ED or in-hospital diagnosis of non-traumatic AAS confirmed by computed tomography or echocardiography. Controls: triage diagnosis of truncal pain (<14 days) and an absence of a clear diagnosis on basic investigation. Cases and controls were matched in a 4:1 ratio by sex and age. A sample size of 165 cases and 660 controls was calculated based on 80% power and confidence interval of 95% to detect an odds ratio of greater than 2. **Results:** Data were collected from 2002-2014 yielding 194 cases of AAS and 776 controls (mean age of 65(SD 14.1) and 66.7% male). Of the 194 cases of AAS, 32 (16.5%) were missed on initial assessment. Chest pain unspecified (20.7%), abdominal pain unspecified (9.9%) and acute coronary syndrome (8.7%) were the top diagnoses in the control population. Absence of acute onset pain (Sensitivity 95.9% negative likelihood ratio (LR-) 0.07(0.03-0.14)), and a negative D-dimer (Sensitivity 96.7%, LR- 0.05(0.01-0.18)) can help rule out AAS. Presence of tearing/ripping pain (Specificity 99.7%, LR+ 42.1 (9.9-177.5)), a history of aortic aneurysm (Specificity 97.8%, LR+ 6.35(3.54-11.42)), hypotension (Specificity 98.7%, LR+ 17.2 (8.8-33.6)), pulse deficit (Specificity 99.3, LR+ 31.1(11.2-86.6)), neurological deficits (Specificity 96.9%, LR+ 5.26(2.9-9.3)), and a new murmur (Specificity 97.8%, LR+ 9.4(5.5-16.2)) can help rule in the diagnosis of AAS. **Conclusion:** Patients with one or more high-risk feature should be considered high risk, whereas patients with no high risk and multiple low risk features are at low risk for AAS. Further research should focus on a combination of these factors to guide who warrants further investigation thus reducing miss rate, morbidity and mortality.

Keywords: acute aortic syndrome

P098

Addiction medicine training in Canadian emergency medicine residency programs: a needs assessment survey

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Introduction: Emergency department visits related to substance use are becoming more serious and increasingly costly in Canada. Emergency physicians must be able to effectively screen, manage, refer, and advocate for these complex patients. This study sought to describe the current state of addiction medicine training in Canadian emergency medicine (EM) residency programs and to assess the need for a formal curriculum. **Methods:** All Royal College and College of Family Physicians EM Program Directors (PDs) were asked to participate in a ten-question needs assessment survey on addiction medicine training for residents. Questions were developed through consensus after reviewing the relevant literature and conducting a formal pilot survey with staff physicians experienced in survey methodology. Responses were collected securely using the Research Electronic Data Capture (REDCap) database. **Results:** 19 out of 31 (62%) eligible PDs completed the survey. The importance of addiction medicine training received a median score of 69.5 (IQR = 74.0) on a scale of 1-100. Most programs devoted two hours or less per year of formalized teaching on individual topics (such as opioids, alcohol, harm reduction) over the past two academic years. The two most common teaching modalities used were didactic lectures (15/19, 78.9%) and case-based tutorials (12/19, 63.2%). Case-based tutorials were identified as the most effective teaching method (12/19, 63.2%). Topics highlighted as most important to include in a curriculum were: screening for substance use disorders and referral for further treatment (14/19, 73.7%), social determinants of health (14/19, 73.7%), alcohol, opioid, and stimulant intoxication and/or withdrawal (14/19, 73.7% each), and management of patients on opioid agonist therapy (14/19, 73.7%). The most commonly perceived barriers to implementing such a curriculum were insufficient curriculum time (10/19, 52.6%) and lack of qualified teaching staff (7/19, 36.8%). **Conclusion:** This needs assessment provides an understanding of the current state of addiction medicine training for EM residents in Canada. A case-based addiction medicine workshop is currently being developed to address identified curriculum gaps. Integrating this curriculum longitudinally into a time-constrained academic schedule is an important next step.

Keywords: addiction medicine, resident curriculum, medical education

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Age related rates of abnormal CT findings in otherwise low risk minor head injury patients over 65

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Introduction: The Canadian CT Head Rules (CCTHR) is the gold standard clinical decision rule for minor head injuries (MHIs) & has been shown to have 100% sensitivity in identifying patients that would have an abnormal CT scan. Within the CCTHR age 65+ is considered to be an independent risk factor for abnormal head CT. However, a previously published Italian study indicated that the rate of pathological findings in otherwise low risk MHI patients under the age of 79 was less than 1% & significantly lower than those over the age of 80, which brings to question whether the traditional age cut off of 65 as a factor in the CCTHR is too conservative when considering the appropriateness for imaging. Therefore this study aimed to quantify the extent to which

low risk MHI patients between the ages of 65-79 present with abnormal CT findings or require neurosurgical intervention when compared to patients over 80 years of age as one of the criteria used in the CCTHR is the age threshold of 65. A secondary objective of this study was to explore abnormal CT rates across these age groupings for otherwise low risk patients on anticoagulants. **Methods:** A retrospective chart review was conducted on all patients over the age of 65 that received a head CT for a MHI in the Kelowna General Hospital ED between 2006-2016. The imaging results for all patients that had no other risk criteria of the CCTHR other than age were reviewed & rates of pathological findings were compared between patients ages 65-79 & 80+ for both patients on anticoagulants & those not on anticoagulants. Differences in rates by age were compared for statistical significance using the chi-squared & Fisher's exact test. **Results:** To date 248 patients have been reviewed & meet the criteria of being >65 & with no other CCTHR criteria. 65% of patients were female & 30% of patients were on anticoagulants. For the patients that were not on anticoagulants, 6 of the 75 (8%) individuals between 65-79 & 9 of the 94 (10%) of those over 80 had abnormal findings on CT ($p = 0.128$). **Conclusion:** Preliminary results of this study population indicate that there are a significant number of abnormal CT findings in patients under the age of 80 suggesting that patients ages 65-79 without any other CCTHR criteria may still benefit from a head CT. Chart reviews are ongoing & updated results including findings for anti-coagulated patients will be presented at CAEP 2017.

Keywords: Canadian CT Head Rules, minor head injury, elderly

P100

Iterative prototype development of a mobile tele-simulation unit for remote training: an update

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Introduction/Innovation Concept: Rural and remote practice of emergency medicine presents unique challenges, particularly when faced with infrequently encountered cases and procedures. Simulation-based training is a valuable tool in the acquisition and maintenance of knowledge and skills; however, simulators are often located in larger centers and they are not widely outside these centers due to geographic, cost and time constraints. Mobile tele-simulation has the potential to overcome barriers but challenges such as comfort, technical issues and ability to teach desired content via tele-simulation must be addressed. We are developing a mobile-tele-simulation unit (MTU) prototype that will enable emergency medicine practitioners and trainees to access simulation-based instruction in rural and remote settings. **Methods:** Through application of a mixed-methods approach with input of a multidisciplinary team we are iteratively developing an MTU prototype to assess key factors in design and function, including: technical issues, environmental features, and human factors. The Delphi method is being used to collect input from experts on key design components and feedback is also being collected from trainees after participating in trial deployments of the MTU in different educational and environmental settings. **Curriculum, Tool, or Material:** The effective application of the MTU in a variety of learning settings will be optimized through ongoing evaluation in the iterative design cycle. Feedback to ensure a quality learning experience in the MTU will direct features of physical design and technical performance that can be applied in deployment of the unit. In addition, challenges to the delivery of module content and instructional modality/ features of lessons to be executed will be important considerations as we move toward developing content that can effectively be taught using the MTU. **Conclusion:** To ensure

effective use of tele-simulation in the delivery of a meaningful simulation experience to rural and remote trainees a number of important challenges must be overcome. We describe our evolving multi-disciplinary mixed-methods approach to develop an effective mobile tele-simulation unit.

Keywords: innovations in emergency medicine education, simulation, rural medicine

P101

Quality of life in patients discharged from the emergency department with atrial fibrillation or flutter (AF/AFL): a prospective cohort study

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Introduction: Following an emergency department (ED) presentation for acute atrial fibrillation and/or flutter (AF/AFL), patients often experience anxiety, depression and impaired health-related quality of life (QoL). Emergency physicians may prescribe appropriate thromboembolic (TE) prophylaxis upon discharge; however, the QoL of these patients is unclear. This study measured the QoL of patients with AF/AFL following discharge to determine the factors associated with QoL. **Methods:** Patients ≥ 18 years of age identified by the attending physician as having a diagnosis of acute AF/AFL confirmed by ECG were prospectively enrolled from three Edmonton, AB EDs. Using standardized enrollment forms, trained research assistants collected data on patient demographics factors and management both in the ED and at discharge. Patients' health-related QoL was assessed up to 20 days after their initial ED visit by a telephone interview based on six domains of the short-form 8 health survey. **Results:** From a total of 196 enrolled patients, 121 (62%) were male and the mean age was 63 years (standard deviation ± 14). Most patients had previous history of AF/AFL (71%), and emergency physicians had the opportunity to treat or revise TE prevention therapy in 19% of the patients. The majority (89%) were discharged with prescriptions for antiplatelet or anticoagulant agents, and 188 (96%) were contacted by telephone at a median of 7 days. Most patients rated their overall health between good and excellent (70%); however, 30% assessed their health as fair or very poor. Many also reported having physical limitations (54%), difficulties completing their daily work (42%), bodily pain (32%) and limitations in social activities (32%). Finally, some patients reported having low energy (25%). At follow up, patients receiving adequate TE prevention rated their health to be similar to those without adequate TE prevention (30% vs 23%; $p = 0.534$). **Conclusion:** Overall, patients with acute, symptomatic AF/AFL seen in the ED have impairments in health-related QoL following discharge from the ED. Many factors contribute to this impairment; however, providing patients with appropriate TE prophylaxis at discharge did not explain these findings. Further research is required to explore the impact of AF/AFL on patient's health-related QoL after discharge from the ED.

Keywords: quality of life

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Education and training on mild traumatic brain injury among emergency department physicians: a systematic review

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Introduction: Mild traumatic brain injury (mTBI) is the most common emergency department (ED) brain injury presentation in Canada; however, an evidence-practice gap in mTBI management exists among ED