

to assess feedback, asking questions about the applicability of the videos to the viewer's clinical practice, how interesting they found the content of the videos, what they liked and disliked, and how willing they would be to access future procedural videos if we were to make them. We also had respondents provide suggestions for topics of future videos. We then sent the videos and accompanying survey to a group of McMaster University medical students, residents, and attending physicians in family medicine and emergency medicine. Upon reviewed the results it seemed that there was a large difference in perceived utility of the videos between attending physicians and trainees, and so we proceeded with subgroup analysis of trainees and staff. **Curriculum, Tool, or Material:** Orthopedic procedural videos as described above. **Conclusion:** Using a 5-point Likert scale, we found that overall trainees (4.3, SD 0.76 CI 0.41) found the videos more useful and interesting than did attending physicians (3.4, SD 0.68 CI 0.37), with respondents commenting that they were very clear and easy to follow for junior trainees. Most respondents also indicated that they would access future videos we made (4.2 SD 0.74 CI 0.39 for trainees, 3.2 SD 0.65 SI 0.34) for attendings). Future directions include making the videos more concise and adding more visual summaries to improve viewership, and targeting videos for specific learner level. We are hoping to implement these videos into future curriculum development for our learners and, if successful, other Emergency Medicine residency programs across Canada.

Keywords: innovations in EM education, procedural skills

P135

Administrative codes for heat illness: a validation study in Ontario, Canada

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Introduction: Extreme heat events due to climate change are becoming increasingly frequent and severe, and may have an impact on human health. Administrative database studies using International Classification of Diseases 10th revision codes (ICD-10) are powerful tools to measure the burden of acute heat illness (AHI) in Canada. We aimed to assess the validity of the coding algorithm for emergency department (ED) encounters for AHI in our region. **Methods:** Two independent reviewers retrospectively abstracted data from 507 medical records of patients presenting at two EDs in Ontario between May-September 2015-2018. The Gold Standard definition of an AHI is chart-documented heat exposure with a heat related complaint, such as syncope while working outdoors on a hot day. To determine ICD coding algorithm positive predictive value (PPV), records that were previously coded as ICD-10 heat illnesses were compared to the Gold Standard for AHI. To determine sensitivity (Sn), specificity (Sp) and negative predictive values (NPV), the Gold Standard was compared to randomly selected records. A total of 326,702 ED visits were included in study period with 208 having an ICD-10 code related to heat illness. Sample size calculation demonstrated a need to manually review 62 previously coded heat illnesses and 931 random cases, of which 50 and 474 have been reviewed, respectively. In both abstractions, 20% of cases underwent a blinded duplicate review. **Results:** In our review of 474 random records, 2 cases were identified as AHI but without an appropriate ICD-10 code, 445 were not AHIs, and no cases had been identified as having an AHI ICD-10 inappropriately applied. In our review of 50 previously coded heat illnesses, 34 were

found to be appropriately coded and 16 inappropriately coded, as AHI ICD-10. Average patient age and gender of heat illness vs non-heat illness ED presentations were 32 and 48 years of age and 49% and 64% male, respectively. The leading complaint in AHI was heat stroke/exhaustion (39%), followed by headaches (15%), dizziness (9%), shortness of breath (9%) and syncope/presyncope (6%). 76% of all heat illness presentations presented following a period of physical exertion. **Conclusion:** Final calculation of Sn, Sp, PPV, NPV for the algorithm will occur upon completion of the review. Preliminary results suggest that ICD-10 coding for AHI may be applied correctly in the ED. This study will help to determine if administrative data can accurately be used to measure the burden of heat illness in Canada.

Keywords: coding, heat, validation

P136

What happens to bypassed trauma patients meeting Field Trauma Triage standards?

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Introduction: Prehospital field trauma triage (FTT) standards were reviewed and revised in 2014 based on the recommendations of the Centers for Disease Control and Prevention. The FTT standard allows a hospital bypass and direct transport, within 30 min, to a lead trauma hospital (LTH). Our objectives were to assess the impact of the newly introduced prehospital FTT standard and to describe the emergency department (ED) management and outcomes of patients that had bypassed closer hospitals. **Methods:** We conducted a 12-month multi-centred health record review of paramedic and ED records following the implementation of the 4 step FTT standard (step 1: vital signs and level of consciousness (physiologic), step 2: anatomical injury, step 3: mechanism and step 4: special considerations) in nine paramedic services across Eastern Ontario. We included adult trauma patients transported as urgent that met FTT standard, regardless of transport time. We developed and piloted a data collection tool and obtained consensus on all definitions. The primary outcome was the rate of appropriate triage to a LTH which was defined as: ISS \geq 12, admitted to intensive care unit (ICU), non-orthopedic surgery, or death. We have reported descriptive statistics. **Results:** 570 patients were included: mean age 48.8, male 68.9%, falls 29.6%, motor vehicle collisions 20.2%, stab wounds 10.5%, transported to a LTH 76.5% (n = 436). 72.2% (n = 315) of patients transported to a LTH had bypassed a closer hospital and 126/306 (41.2%) of those were determined to be an appropriate triage to LTH (9 patients had missing outcomes). ED management included: CT head/cervical spine 69.9%, ultrasound 53.6%, xray 51.6%, intubation 15.0%, sedation 11.1%, tranexamic acid 9.8%, blood transfusion 8.2%, fracture reduction 6.9%, tube thoracostomy 5.9%. Outcomes included: ISS \geq 12 32.7%, admitted to ICU 15.0%, non-orthopedic surgery 11.1%, death 8.8%. Others included: admission to hospital 57.5%, mean LOS 12.8 days, orthopedic surgery 16.3% and discharged from ED 37.3%. **Conclusion:** Despite a high number of admissions, the majority of trauma patients bypassed to a LTH were considered over-triaged, with a low number of ED procedures and non-orthopedic surgeries. Continued work is needed to appropriately identify patients requiring transport to a LTH.

Keywords: bypass, paramedic, trauma