low = 11.1hr; p = 0.009), but median hospital LOS was not different (high = 109.5hr, low = 112.4hr; p = 0.44). Median TTB was significantly longer during high AB (high = 8.0hr, low = 5.9hr; p = 0.0004). There was no difference in RTED visits (high = 12.4%, low = 10.6%; p = 0.15) or 30-day mortality (high = 8.4%, low = 9.2%; p = 0.51). **Conclusion**: In conclusion, consultation time is not affected by AB. However, boarding admitted patients in the ED impairs our ability to meet funding-associated performance metrics. Reducing boarding time should be an ED and hospital-wide priority, as it negatively impacts funding and delays patient care.
Keywords: access block, consultation, crowding

LO81

Interrater agreement and time it takes to assign a Canadian Triage and Acuity Scale score pre and post implementation of eCTAS

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Introduction: In addition to its clinical utility, the Canadian Triage and Acuity Scale (CTAS) has become an administrative metric used by governments to estimate patient care requirements, emergency department (ED) funding and workload models. The electronic Canadian Triage and Acuity Scale (eCTAS) initiative aims to improve patient safety and quality of care by establishing an electronic triage decision support tool that standardizes that application of national triage guidelines across Ontario. The objective of this study was to evaluate triage times and score agreement in ED settings where eCTAS has been implemented. **Methods**: This was a prospective, observational study conducted in 7 hospital EDs, selected to represent a mix of triage processes (electronic vs. manual), documentation practices (electronic vs. paper), hospital types (rural, community and teaching) and patient volumes (annual ED census ranged from 38,000 to 136,000). An expert CTAS auditor observed on-duty triage nurses in the ED and assigned independent CTAS in real time. Research assistants not involved in the triage process independently recorded triage time. Interrater agreement was estimated using unweighted and quadratic-weighted kappa statistics with 95% confidence intervals (CIs). **Results**: 1491 (752 pre-eCTAS, 739 post-implementation) individual patient CTAS assessments were audited over 42 (21 pre-eCTAS, 21 post-implementation) seven-hour triage shifts. Exact modal agreement was achieved for 567 (75.4%) patients pre-eCTAS, compared to 685 (92.7%) patients triaged with eCTAS. Using the auditor's CTAS score as the reference standard, eCTAS significantly reduced the number of patients over-triaged (12.0% vs. 5.1%; Δ 6.9, 95% CI: 4.0, 9.7) and under-triaged (12.6% vs. 2.2%; Δ 10.4, 95% CI: 7.9, 13.2). Interrater agreement was higher with eCTAS (unweighted kappa 0.89 vs 0.63; quadratic-weighted kappa 0.91 vs. 0.71). Research assistants captured triage time for 3808 patients pre-eCTAS and 3489 post implementation of eCTAS. Median triage time was 312 seconds pre-eCTAS and 347 seconds with eCTAS (Δ 35 seconds, 95% CI: 29, 40 seconds). **Conclusion**: A standardized, electronic approach to performing CTAS assessments improves both clinical decision making and administrative data accuracy without substantially increasing triage time.
Keywords: electronic Canadian Triage and Acuity Scale (eCTAS), interrater agreement, triage

LO82

Does triage assignment correlate with outcome for ed patients presenting with chest pain?

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Introduction: CTAS triage acuity and CEDIS complaint categories are used to prioritize patients for rapid treatment and ED resource allocation. Our objective was to evaluate CTAS and CEDIS validity for risk stratification of ED patients with chest pain using data from two Canadian cities. **Methods**: This administrative database study included patients seen over a five-year period with a triage complaint of chest pain. Our composite primary outcome included 7-day mortality, cardiac arrest, acute coronary syndrome (ACS) diagnosis (STEMI, NSTEMI, unstable angina{UA}), admission to a critical care unit, or hospitalization with CHF, pulmonary embolism, dysrhythmia, aortic pathology, neurologic or respiratory diagnosis. We dichotomized triage assignments to cardiac vs. noncardiac chest pain and high (CTAS 1,2) vs. low (3,4,5) triage acuity. For our secondary outcome we reported the components of the primary composite outcome. **Results**: We studied 111,824 patients. The most common overall diagnoses were chest pain NYD (53.8%), ACS (8.9%), musculoskeletal (7.4%), and acute respiratory (5.5%) or GI (5.1%) conditions. Of all patients studied, 85,888 (76.8%) were placed in the "cardiac features" group, and 93,257 (83.4%) fell into high acuity CTAS 1-2. Patients triaged into the "cardiac features" group were more likely to have a composite outcome event (16.6% v. 6.7%; p < 0.001), to be admitted (21.8% v. 9.0%), to require critical care (6.0% v. 0.7%), to receive an ACS diagnosis (11.3% v. 0.9%), and to die within 7 days (0.5% v. 0.2%). Patients in high acuity triage levels were also more likely to have a composite outcome event (15.8% v. 3.3%; p < 0.001), to be admitted (25.4% v. 14.3%), to require critical care (8.2% v. 1.2%), to receive an ACS diagnosis (10.5% v. 0.9%), and to die within 7 days (0.5% v. 0.2%). **Conclusion**: This study shows that triage assignment is strongly correlated with important patient outcomes and that both the chief complaint and acuity level are powerful risk predictors. These findings may differ at other sites and hospitals should assess and evaluate their data.
Keywords: chest pain, outcomes, triage

LO83

Quick Refresher Sessions (QRS): improving chest compression training for medical students

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Innovation Concept: High-quality cardiopulmonary resuscitation saves lives; however, current certification standards can leave providers poorly prepared to perform effective chest compressions (CCs). We designed a training program based on the emerging model of skill maintenance through frequent short practice sessions. The ideal frequency of training is currently unknown. Our goal was to provide medical students with access to efficient and effective CC training and to determine an optimal training interval. **Methods**: Thirty-six second-year medical students were randomized to three groups that trained at different frequencies: once every two months (q2m) (n = 12), once every four months (q4m) (n = 13), and control (n = 11). Study duration was eight months with the intervention groups, q2m and q4m, participating in five and three sessions respectively. The control group was assessed at study start and end, receiving no training in

between. At each session, participants completed a one-minute pre-test of CC performance, viewed a one-minute training video, practiced CCs for two minutes with real-time feedback, and completed a one-minute post-test. Performance parameters measured were CC depth, rate, release, and hand positioning. A final "compression score" assessed integrated performance across these parameters and served as our primary outcome. Participants also reported pre- and post-training comfort with performing CCs which served as our secondary outcome. **Curriculum, Tool or Material**: Our "Quick Refresher Sessions" (QRS) were completed by participants independently without requiring an assessor or facilitator. A manikin with the ability to record and provide real-time quantitative feedback on CC quality was connected to a laptop running a customized interface. Participants typed in an individualized code and were guided through their six-minute sessions automatically. **Conclusion**: Immediately following the first training session, subjects had significant improvement in compression score (p < 0.001) and skill comfort (p < 0.001). At eight months, both intervention groups, q2m and q4m, achieved higher compression scores than control (p = 0.001 and p = 0.011) and showed greater increase in comfort level (p = 0.002 and p = 0.010). Performance between intervention groups at eight months was not statistically different. Overall, we conclude that independent QRS training every two or four months led to improved CC quality and provider comfort. Future directions include increasing sample size and tailoring training intervals to individual performance.

Keywords: automated real-time feedback, innovations in EM education, resuscitation medicine

LO84
Ready to run the show: development of a new instrument for assessing resident competence in the emergency department
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Innovation Concept: The outcome of emergency medicine training is to produce physicians who can competently run an emergency department (ED) shift. While many workplace-based ED assessments focus on discrete tasks of the discipline, others emphasize assessment of performance across the entire shift. However, the quality of assessments is generally poor and these tools often lack validity evidence. The use of entrustment scale anchors may help to address these psychometric issues. The aim of this study was to develop and gather validity evidence for a novel tool to assess a resident's ability to independently run an ED shift. **Methods**: Through a nominal group technique, local and national stakeholders identified dimensions of performance reflective of a competent ED physician. These dimensions were included in a new tool that was piloted in the Department of Emergency Medicine at the University of Ottawa during a 4-month period. Psychometric characteristics of the items were calculated, and a generalizability analysis used to determine the reliability of scores. An ANOVA was conducted to determine whether scores increased as a function of training level (junior = PGY1-2, intermediate = PGY3, senior = PGY4-5), and varied by ED treatment area. Safety for independent practice was analyzed with a dichotomous score. **Curriculum, Tool or Material**: The developed Ottawa Emergency Department Shift Observation Tool (O-EDShOT) includes 12-items rated on a 5-point entrustment scale with a global assessment item and 2 short-answer questions. Eight hundred and thirty-three assessment

were completed by 78 physicians for 45 residents. Mean scores differed significantly by training level (p < .001) with junior residents receiving lower ratings (3.48 ± 0.69) than intermediate residents who received lower ratings (3.98 ± 0.48) than senior residents (4.54 ± 0.42). Scores did not vary by ED treatment area (p > .05). Residents judged to be safe to independently run the shift had significantly higher mean scores than those judged not to be safe (4.74 ± 0.31 vs 3.75 ± 0.66; p < .001). Fourteen observations per resident, the typical number recorded during a 1-month rotation, were required to achieve a reliability of 0.80. **Conclusion**: The O-EDShOT successfully discriminated between junior, intermediate and senior-level residents regardless of ED treatment area. Multiple sources of evidence support the O-EDShOT producing valid scores for assessing a resident's ability to independently run an ED shift.

Keywords: entrustment, innovations in EM education, workplace-based assessment

LO85
Development of a competency based assessment tool for emergency department point of care ultrasound
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Innovation Concept: Assessment of residents' Point of Care Ultrasound (PoCUS) competency currently relies on heterogenous and unvalidated methods, such as the completion of a number of proctored studies. Although number of performed studies may be associated with ability, it is not necessarily a surrogate for competence. Our goal was to create a single Ultrasound Competency Assessment Tool (UCAT) using domain-anchored entrustment scoring. **Methods**: The UCAT was developed as an anchored global assessment score, building on a previously validated simulation-based assessment tool. It was designed to measure performance across the domains of Preparation, Image Acquisition, Image Optimization, and Clinical Integration, in addition to providing a final entrustment score (i.e., OSCORE). A modified Delphi method was used to establish national expert consensus on anchors for each domain. Three surveys were distributed to the CAEP Ultrasound Committee between July-November 2018. The first survey asked members to appraise and modify a list of anchor options created by the authors. Next, collated responses from the first survey were redistributed for a re-appraisal. Finally, anchors obtaining >65% approval from the second survey were condensed and redistributed for final consensus. **Curriculum, Tool or Material**: Twenty-two, 26, and 22 members responded to the surveys, respectively. Each anchor achieved >90% final agreement. The final anchors for the domains were: Preparation – positioning, initial settings, ensures clean transducer, probe selection, appropriate clinical indication; Image Acquisition – appropriate measurements, hand position, identifies landmarks, visualization of target, efficiency of probe motion, troubleshoots technical limitations; Image Optimization – centers area of interest, overall image quality, troubleshoots patient obstacles, optimizes settings; Clinical Integration – appropriate interpretation, understands limitations, utilizes information appropriately, performs multiple scans if needed, communicates findings, considers false positive and negative causes of findings. **Conclusion**: The UCAT is a novel assessment tool that has the potential to play a central role in the training and evaluation of residents. Our use of a modified Delphi method, involving key stakeholders in PoCUS education, ensures that the UCAT has a high degree of process and content validity. An important next step