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Introduction: The accurate interpretation of potential ST-segment elevations on electrocardiograms (ECGs) to diagnose acute myocardial infarction (MI) is a critical competency for emergency physicians (EPs) and cardiologists. There is conflicting evidence on the diagnostic accuracy of EPs and cardiologists interpreting potential STEMI ECGs. **Methods:** We conducted a web-based assessment of the diagnostic accuracy of potential STEMI ECGs of Canadian EPs and cardiologists. They were identified using the membership lists of the Canadian Association of Emergency Physicians and the academic departments of cardiology at Canadian medical schools. When provided with 20 ECGs of confirmed STEMI patients, EPs and cardiologists were asked to provide a binary Yes/No answer to the question, "In a patient with ischemic chest pain, does this ECG represent a STEMI?" EPs and cardiologists were blinded to the correct answers while completing the web-based assessment. Descriptive statistics were used to describe frequencies and counts. Analysis using Rasch Measurement Theory was used to explore the relationship between correct interpretation of ECGs and predictive variables such as age, years in practice or type of practice. **Results:** Two hundred and fifty EPs and 30 cardiologists (n = 280) responded to our survey (total response rate 25%). Average years in practice were 12.5 for EPs (SD 10.6; median 10) and 14.6 for cardiologists (SD 10.6; median 11); 52% of EPs and 93% of cardiologists practiced in an academic setting. Seven of the cardiologists were interventionalists, while 47.6% of EPs and 97% of cardiologists practiced at hospitals with 24-hour catheterization capability. The diagnostic accuracy of EPs for identifying STEMI ECGs was 75% (SD 15%); cardiologists' accuracy was 76% (SD 15.5%). The ability to correctly interpret the ECGs was independent of age, years in practice, or type of practice (community vs academic). **Conclusion:** EPs and cardiologists display similar diagnostic accuracy for interpreting STEMI ECGs, regardless of age, years in practice or type of practice. The findings of our study suggest the need for focused ECG education for both EPs and cardiologists.

Keywords: acute myocardial infarction, electrocardiogram (ECG), diagnostic accuracy

MP035

Point-of-care-ultrasound to diagnose appendicitis in a Canadian emergency department

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Introduction: Appendicitis is a common surgical condition that frequently requires patients to undergo diagnostic imaging. Abdominal computed tomography is the gold standard imaging technique for the diagnosis of appendicitis, but exposes patients to radiation. Ultrasound offers an alternate radiation-free imaging modality for appendicitis. However, the availability of ultrasound during off-hours is limited in many Emergency departments (EDs). Clinician performed point-of-care ultrasound (POCUS) is increasingly used by emergency physicians as a bedside tool to evaluate suspected appendicitis. The purpose of this study is to evaluate the test characteristics of emergency physician performed POCUS to diagnose appendicitis in a Canadian ED. **Methods:** A pragmatic, retrospective chart review was performed on all patients for whom a POCUS was performed to diagnose appendicitis at St. Joseph's Healthcare Hamilton in Ontario from December 1, 2010 to December 4, 2015. All POCUS scans were performed by physicians with Registered Diagnostic Medical Sonographer (RDMS) credentials

or resident physicians undergoing POCUS fellowship training. All scans were over-read by RDMS credentialed faculty and subject to a rigorous quality assurance (QA) process. POCUS findings and patient outcomes were reported. **Results:** A total of 90 patients were included in the study. 24 patients were diagnosed with appendicitis on POCUS. Ultimately, 18 were diagnosed with appendicitis through formal imaging, laparoscopy, and pathology. The sensitivity and specificity for POCUS to diagnose appendicitis was found to be 69.2% (95% CI, 48.1%-84.9%) and 90.6% (95% CI, 80.0%-96.1%) respectively. **Conclusion:** Bedside ultrasound is a reliable imaging modality for ruling in acute appendicitis. In cases where POCUS is negative or indeterminate for appendicitis, further imaging should be obtained as clinical suspicion warrants. The use of POCUS has the potential to reduce patient exposure to ionizing radiation and decrease the costs of obtaining CT scans, while hastening the process of achieving definitive management through earlier surgical consultation.

Keywords: appendicitis, point-of-care-ultrasound (PoCUS), diagnostic imaging

MP036

Trauma Resuscitation Using in-situ Simulation Team Training (TRUST): a novel approach to latent safety threat identification in trauma care

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Introduction: Resuscitation of a trauma patient requires a multi-disciplinary team to perform in a dynamic, high-stakes environment. Error is ubiquitous in trauma care, often related to latent safety threats (LSTs) - previously unrecognized threats that can materialize at any time. In-situ simulation (ISS) allows a team to practice in their authentic environment while providing an opportunistic milieu to explore critical events and uncover LSTs that impact patient safety. **Methods:** At a Canadian Level 1 trauma centre, regular, unannounced trauma ISSs were conducted and video-recorded. A retrospective chart review of adverse events or unexpected deaths informed ISS scenario design. Each session began with a trauma team activation. The on-duty trauma team arrived in the trauma bay and provided care as they would for a real patient. Semi-structured debriefing with participant-driven LST identification and ethnographic observation occurred in real time. A framework analysis using video review was conducted by human factors experts to identify and evaluate LSTs. Feasibility was measured by the impact on ED workflow, interruptions of clinical care and participant feedback. **Results:** Six multidisciplinary, high-fidelity, ISS sessions were conducted and 70 multidisciplinary staff and trainees participated in at least one session. Using a framework analysis, LSTs were identified and categorized into seven themes that relate to clinical tasks, equipment, team communication, and participant workflow. LSTs were quantified and prioritized using a hazard scoring matrix. ISS was effectively implemented during both low and high patient volume situations. No critical interruptions in patient care were identified during ISS sessions and overall participant feedback was positive. **Conclusion:** This novel, multidisciplinary ISS trauma training program integrated risk-informed simulation cases with human factors analysis to identify LSTs. ISS offers an opportunity for an iterative review process of high-risk situations beyond the traditional morbidity and mortality rounds; rather than waiting for an actual case to generate discussion and review, we prophylactically examined critical situations and processes. Findings form a framework for recommendations about improvements in