= -0.51, p < 0.001). This observed association persisted in a linear mixed model (-0.48 [95% confidence interval {CI}-0.61 to -0.36], p < 0.001). The sex of the volunteers also influenced the inter-oximeter agreement (Women:-5.77 [95%CI -8.43 to -3.11], p < 0.001), as well as the forearm sites (Left forearm: −7.16 [95%CI -9.85 to −4.47], p < 0.001; right forearm: −7.01 [95%CI -9.61 to −4.40], p < 0.001). **Conclusion**: The quantity of subcutaneous fat, as well as the sex of the volunteers and the measurement sites, impacted the inter-device agreement of two commonly used oximeters. Given these findings, monitoring using tissue oximetry should be interpreted with great care when there is a significant quantity of subcutaneous fat.

Keywords: inter-device agreement, near-infrared spectroscopy, tissular oximetry

MP14
Use of conventional cardiac troponin assay for diagnosis of non-ST-elevation myocardial infarction: 'The Ottawa Troponin Pathway'

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Introduction: Guidelines recommend serial conventional cardiac troponin (cTn) measurements 6-9 hours apart for non-ST-elevation myocardial infarction (NSTEMI) diagnosis. We sought to develop a pathway based on absolute/relative changes between two serial conventional cardiac troponin I (cTnI) values 3-hours apart for 15-day MACE identification. **Methods**: This was a prospective cohort study conducted in the two large ED's at the Ottawa Hospital. Adults with NSTEMI symptoms were enrolled over 32 months. Patients with STEMI, hospitalized for unstable angina, or with only one cTnI were excluded. We collected baseline characteristics, Siemens Vista cTnI at 0 and 3-hours after ED presentation, disposition, and ED length of stay (LOS). Adjudicated primary outcome was 15-day MACE (AMI, revascularization, or death due to cardiac ischemia/unknown cause). We analysed cTnI values by 99th percentile cut-off multiples (45, 100 and 250ng/L). **Results**: 1,683 patients (mean age 64.7 years; 55.3% female; median ED LOS 7 hours; 88 patients with 15-day MACE) were included. 1,346 (80.0%) patients with both cTnI ≤45ng/L; and 58 (3.4%) of the 213 patients with one value≥100ng/L but both <250ng/L or ≤20% change did not suffer MACE. Among 124 patients (7.4%) with one value >45ng/L but both <100ng/L based on 3 or 6-hour cTnI, one patient with Δ<10ng/L and 6 of 19 patients with Δ≥20ng/L were diagnosed with NSTEMI (patients with Δ10-19ng/L between first and second cTnI had third one at 6-hours). Based on the results, we developed the Ottawa Troponin Pathway (OTP) with a 98.9% sensitivity (95%CI 96.7-100%) and 94.6% specificity (95%CI 93.4-95.7%). **Conclusion**: The OTP, using two conventional cTnI measurements performed 3-hours apart, should lead to better identification of NSTEMI particularly those with values >99th percentile cut-off, standardize management and reduce the ED LOS.

Keywords: chest pain, non-ST elevated myocardial infarction (NSTEMI), troponin

MP15
Blood transfusion in upper gastrointestinal bleeding: evaluating physician practices in the emergency department

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Introduction: Acute upper gastrointestinal bleeding (UGIB) is a common presentation to emergency departments (ED). Of these patients, 35-45% receive a blood transfusion. Guidelines for blood transfusion in UGIB have been well established, and recommend a hemoglobin (Hb) level below 70 g/L as the transfusion target in a stable patient. There is no consensus on a transfusion threshold for unstable UGIB. There is limited data regarding physician practices in the ED. The aim of our study is to determine the appropriateness, by expert consensus, of blood transfusions in UGIB in a tertiary care hospital ED. **Methods**: We retrospectively reviewed patients presenting with UGIB to the University of Alberta Hospital ED in 2016. These patients were then screened for blood transfusions. Data were obtained from the patient records. Chart derived data were verified with records obtained from the blood bank. For each patient, the history, vitals, Glasgow Blatchford Score (GBS), relevant labs, and record of blood transfusions were collected and organized into a case summary. Each patient summary was presented individually to a panel of three expert clinicians (2 Gastroenterology, 1 Emergency Medicine), who then decided on the appropriateness of each blood transfusion by consensus. **Results**: Blood transfusions (data available 395/400) were given to 51% (202/395) of patients presenting with UGIB. Of these, 86% (174/202) were judged to be appropriate. Of the 395 patients, 34% (135/395) had a Hb of <70 g/L. Of these, 93% (126/135) were transfused, and all of these were considered appropriate. 18% (70/395) had a Hb between 71-80. 74% (52/70) of these patients were given blood, and 79% (41/52) were considered appropriate. 13% (50/395) of the patients had a Hb between 81-90, with 28% (14/50) receiving a transfusion. Of these, 36% (5/14) were deemed to be appropriate. 35% (140/395) of patients had a Hb of >90. 7% (10/140) of these received blood. 20% (2/10) were considered appropriate. **Conclusion**: The panel of expert clinicians judged 86% of the blood transfusions to be appropriate. All transfusions under the recommended guideline of 70 g/L were considered appropriate. In addition, the majority of transfusions above a Hb of 70 g/L were considered appropriate, but 37% were not. Further studies evaluating the feasibility of current guideline recommendations in an ED setting are required. Educational interventions should be created to reduce inappropriate blood transfusions above a Hb 70 g/L.

Keywords: blood transfusion, upper gastrointestinal bleeding

MP16
Which PoCUS skills are retained over time for medical students?

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Introduction: Point-of-care ultrasonography (PoCUS) is being incorporated into Canadian undergraduate medical school curricula. The purpose of this study was to evaluate novel PoCUS education sessions to determine what aspects of the sessions benefitted from hands-on training and which PoCUS skills were retained over time. **Methods**: Second year medical students voluntarily received three different PoCUS training sessions, each lasting three hours. Prior to the sessions, participants prepared independently with pre-circulated online learning materials. After a 15-minute lecture, experienced PoCUS providers led small group (1 instructor: 5 students), live

scanning sessions. Evaluations were conducted before and after each session using expert validated multiple choice questions testing general and procedural knowledge, image recognition and interpretation. Volunteer students were evaluated via direct observation of live scanning using an objective structured assessment of technical skills (OSAT) based on the O-score and then re-evaluated at 2 months post-training to assess PoCUS skills retention. **Results**: 40 second year medical students participated in extended Focused Assessment with Sonography for Trauma (eFAST), cardiac, and gallbladder PoCUS sessions. The live-training sessions significantly improved student PoCUS knowledge beyond what they learned independently for eFAST (p < 0.001), cardiac (p < 0.001), and gallbladder (p = 0.02). The largest improvement was noted in procedural knowledge test scores improving from 44.0% to 84.0% (n = 38). 16 students were evaluated after each session with a mean O-score of 2.37. 8 students returned two months later to be re-evaluated demonstrating a change in O-scores for eFAST (2.00 to 2.38, p = 0.15), cardiac (2.28 to 2.00, p = 0.32), and gallbladder (2.91 to 1.88, p < 0.001). **Conclusion**: Procedural PoCUS knowledge benefited the most with hands-on training. eFAST and cardiac PoCUS competency was maintained over time while gallbladder PoCUS competency degraded suggesting that targeted PoCUS skills training may be possible. Further study is required to determine the best use of PoCUS resources in undergraduate medical education.

Keywords: competency based assessment, innovations in EM education, point of care ultrasonography

MP17
Education innovation: A tool to teach consultation skills using rapid cycle deliberate practice

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Innovation Concept: Consultation skills (the collaborator role) are key for safe and effective Emergency Medicine practice. The tool described uses educational techniques familiar to Emergency Physicians and residents (rapid cycle deliberate practice and focused debriefing) to incorporate teaching of this skill into on-shift clinical teaching of Emergency Medicine residents. **Methods**: We searched the literature for consultation teaching methods. We developed a tool to teach consultation as part of on-shift clinical teaching using pedagogical concepts familiar to Emergency Medicine residents, rapid cycle deliberate practice and focused debriefing. The developed tool has three phases; 1) Introduction to a framework for good consultation skills, 2) Managing push-back and understanding competing frames of reference and 3) Direct observation and feedback on the actual consultation. The tool is designed to be used during a clinical shift. Over a series of consecutive cycles the resident refines a consultation and is eventually directly observed during the actual interaction with a consultant. **Curriculum, Tool or Material**: For each of the three phases the tool provides a framework for the preceptor to use to guide the presentation and discussion. During phases 1 and 2 the resident will present the consultation a number of times and the preceptor will provide focused debriefing allowing the presentation to be refined and optimized. During phase 3 the preceptor provides direct observation of the actual consultation followed by focused debriefing. Phase 1: Focuses on understanding the learners current skill level and presents a framework for a high quality consultation. Phase 2: Introduces the concept of competing frames of reference and push-back and patient centred strategies for managing this situation. Phase 3: The actual consultation interaction between resident and consultant is observed and debriefed. **Conclusion**: Consultation skills are important in the day to day practice of Emergency Medicine but rarely the subject of specific teaching. The tool presented can be used during clinical shifts to teach consultation skills using pedagogy familiar to both Emergency Physicians adEM residents.

Keywords: consultation skills, deliberate practice, innovations in EM education

MP18
Addressing unrealistic expectations: a novel transition to discipline curriculum in emergency medicine

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Innovation Concept: Emergency medicine (EM) programs have restructured their training using a Competence by Design model. This model emphasizes entrustable professional activities (EPAs) that residents must fulfill before advancing in their training. The first EPA (EPA 1) for the transition to discipline (TTD) stage involves managing the unstable patient. Data from the University of Toronto (U of T) program suggests residents lack enough exposure to these patient presentations during TTD – creating a disconnect between anticipated clinical exposure and the expectation for residents to achieve competence in EPA 1. **Methods**: To overcome this gap, U of T EM faculty specifically targeted EPA 1 while designing the TTD curriculum. Kern's six-step approach to curriculum development in medical education was used. This six-step approach involves: problem identification, needs assessment, goals and objectives, education strategies, implementation and evaluation. To maximize feasibility of the new curriculum, existing sessions were mapped against EPAs and required training activities to identify synchrony where possible. Residents were scheduled on EM rotations with weekly academic days that included this novel curriculum. **Curriculum, Tool or Material**: Didactic lectures, procedural workshops and simulation were closely integrated in TTD to address EPA 1. Lectures introduced approaches to cardinal presentations. An interactive workshop introduced ACLS and PALS algorithms and defibrillator use. Three simulation sessions focused on ACLS, shock, airway, trauma and the altered patient. A final simulation session allowed spaced-repetition and integration of these topics. After the completion of TTD, residents participated in a six-scenario simulation OSCE directly assessing EPA 1. **Conclusion**: The curriculum was evaluated using a multifaceted approach including surveys, self-assessments, faculty feedback and OSCE performance. Overall, the curriculum achieved its goal in addressing EPA 1. It was well-received by faculty and residents. Residents rated the sessions highly, and self-reported improved confidence in assessing unstable patients and adhering to ACLS algorithms. The simulation OSCE demonstrated expected competency by residents in EPA 1. One limitation identified was the lack of a pediatric simulation session which has now been incorporated into the curriculum. Moving forward, this innovative curriculum will undergo continuous cycles of evaluation and improvement with a goal of applying a similar design to other stages of CBD.

Keywords: Competence by Design, innovations in EM education, simulation