

statistically significant and clinically meaningful reduction in the LOS when compared to cardioversion using chemical management. Similarities in the proportions of success, adverse events and health outcomes between the groups would support the use of electrical shock as the first approach for cardioversion in clinical practice.

**Keywords:** atrial fibrillation, cardioversion, randomized controlled trial

#### LO101

##### **Predicting short-term risk of arrhythmia among patients with syncope: the Canadian Syncope Arrhythmia Risk Score**

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**Introduction:** Suspicion of arrhythmias among syncope patients is the leading cause of emergency department (ED) referrals and hospitalization. However, the risk factors for short-term arrhythmias are not well defined. We sought to develop a risk prediction tool to identify syncope patients at risk for 30-day arrhythmia or death after ED disposition.

**Methods:** This prospective cohort study involved 6 academic EDs that enrolled adult syncope patients. We collected standardized variables at index presentation from history, clinical examination, investigations including ECG, and patients' disposition. Adjudicated outcomes included death (due to arrhythmia or unknown cause), arrhythmia or procedural intervention to treat arrhythmias within 30-days after ED disposition. Multivariable logistic regression was used to derive the model; bootstrap sampling for internal validation and to estimate shrinkage and optimism. **Results:** 5,010 adult syncope patients (mean age 53.4 years, 54.8% females, and 9.5% hospitalized) were enrolled with 106 (3.6%) patients suffering arrhythmia or death within 30-days after ED disposition. Of 39 candidate predictors examined, eight were included in the final model: vasovagal predisposition, heart disease, any ED systolic blood pressure <90 or >180 mmHg, troponin (>99%ile), QRS duration >130msec, QTc interval >480msec and ED diagnosis of cardiac, or vasovagal syncope [Optimism corrected c-statistic: 0.91 (95%CI 0.87-0.93); Hosmer-Lemeshow  $p = 0.08$ ]. The Canadian Syncope Arrhythmia Risk Score had a risk ranging from 0.2% for a score of -2 to 74.5% for a score of 8. Sensitivity for threshold score  $\leq -1$  was 100% (95% CI 96.5-100) and specificity for a score of  $\geq 4$  was 97.0% (95% CI 96.5-97.5). **Conclusion:** The Canadian Syncope Arrhythmia Risk Score can improve acute management of ED patients with syncope by better identification of those at higher-risk for short-term arrhythmia or death. Once validated, the tool can be used to guide disposition decision and can also aid in selection of patients for out-of-hospital cardiac monitoring if discharged home.

**Keywords:** syncope, arrhythmia, risk stratification

#### LO102

##### **ALiEM AIR-Pro Series: identifying quality content from blogs and podcasts for the senior emergency medicine resident**

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**Introduction / Innovation Concept:** In 2008, the Accreditation Council for Graduate Medical Education endorsed a change such that EM residency programs can decrease their synchronous conference experiences by up to 20% in exchange for asynchronous learning - Individualized Interactive Instruction (III). Identifying quality online resources that would also fulfill III's reporting criteria (program director

monitoring, evaluation component, faculty oversight, program effectiveness) is challenging. Using crowdsourced expertise, the Approved Instructional Resources (AIR) series from Academic Life in Emergency Medicine (ALiEM) was created in 2014 to provide a credible method to identify quality educational blogs and podcasts. The identified resources, however, focused on basic content with limited utility for more senior residents. We thus created the AIR-Pro series in 2015, aimed to cover more advanced concepts. **Methods:** The AIR-Pro series is a continuously building curriculum covering a new subject area every 2 months. For each area, 6 EM Chief Residents identify 3-5 advanced clinical questions. Using FOAMsearch.net to search blogs and podcasts, relevant posts are scored by 8 reviewers from the AIR-Pro Board (faculty and chief residents at various institutions). The scoring instrument contains 5 measurement outcomes (7-point Likert scale): recency, accuracy, educational utility, evidence based, and references. The AIR-Pro Approved label is given to posts with a score of  $\geq 28$  (out of 35) points and these are featured in the blog posting. For scores of 26-27, an Honorable Mention label is given if Board members collectively felt that they were valuable. For each AIR-Pro subject area, a multiple choice quiz is written based on the featured posts. Educator dashboard access of the Google Drive quizzes is given to program directors for monitoring. If approved by their program director, EM residents receive official III credit upon completion of each quiz. **Curriculum, Tool, or Material:** As of Jan 1, 2016, there have been 2 modules published on ALiEM with 1,220 (Cardiovascular) and 1,059 (Trauma) pageviews worldwide. Although early in development, 21 different institutions are using the AIR-Pro Series with over 150 residents completed the cardiovascular and trauma quizzes. We anticipate more because the original AIR Series has over 73 programs using it for III credit. **Conclusion:** The AIR-Pro series is a novel, objective, crowdsourced approach towards identifying quality, educational, social media content for the advanced EM resident.

**Keywords:** innovations in EM education, social media, quality assessment

#### LO103

##### **Trauma Resuscitation Using in-situ Simulation Team Training (TRUST): using risk-informed simulation for team performance and human factors evaluation**

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**Introduction / Innovation Concept:** Trauma resuscitation requires a multidisciplinary team to perform at a high level within a dynamic, high-stakes environment. The unpredictable nature of trauma care increases the possibility for errors, often from underlying latent safety threats (LSTs). In-situ simulation (ISS) is a point-of-care training strategy that occurs within the patient care environment involving the actual healthcare team and provides a novel approach to team training and LST identification. Using ISS, critical events can be recreated providing an opportunity to explore and learn from past challenges. We developed and piloted a risk-informed, multidisciplinary ISS trauma training program to assess teamwork performance and identify LSTs within the trauma care environment. **Methods:** A comprehensive process was initiated to gain support from all stakeholders within the trauma program. Simulation cases were derived from a review of adverse events and unexpected deaths. Human factors experts aided with the integration of system- and process-related elements into the case design. ISS sessions involved all trauma team members. Debriefing after each session facilitated a team-based discussion and an opportunity

for reflective practice and video recording was used for teamwork evaluation and process mapping. **Curriculum, Tool, or Material:** We conducted monthly, unannounced, multidisciplinary, high-fidelity ISS scenarios at a Canadian Level 1 trauma centre. The trauma team was activated by the usual notification process and care provided in the same manner as an actual trauma patient. A semi-structured debriefing followed each session with a focus on team performance and LST identification. Teamwork was measured using a previously validated tool, the Clinical Teamwork Scale. Findings were used to inform discussion at multidisciplinary trauma rounds as part of an iterative process of evaluation and implementation. **Conclusion:** This multidisciplinary ISS trauma training program offers a novel approach to team performance evaluation and LST identification. Using risk-informed scenarios combined with human factors analysis we are able identify knowledge and technical skill proficiency gaps, LSTs and integrate formative team assessment. An iterative process beginning with ISS followed by multidisciplinary rounds provides a robust framework for system-based changes to improve team performance and overall patient care.

**Keywords:** simulation, trauma, patient safety

#### LO104

**A collaborative approach to developing and delivering a multi-modal quality improvement and patient safety curriculum for emergency medicine residents**

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**Introduction / Innovation Concept:** The 2015 CanMEDS framework requires all Canadian residency programs to increase their focus on Quality Improvement and Patient Safety (QIPS). A survey of the FRCPC Emergency Medicine Residency Program Directors in Canada (63% response rate, 8/13) found that 75% (6/8) of programs have QIPS curricula with 84% (5/6) in the form of didactic lectures and 67% (4/6) as resident participation in a local project. Lectures alone do not expose learners to the practicality of conducting a QIPS project, and local resident projects often do not expose learners to the complexities of organization-wide QI initiatives. Furthermore, QI initiatives require working in interdisciplinary teams. We therefore hypothesize that an effective QIPS curriculum will require multiple education methods delivered using a multi-disciplinary lens. **Methods:** A collaborative longitudinal QIPS curriculum for emergency medicine residents at the University of Toronto (UT) was developed using multiple educational methods by physicians and non-medical QI specialists. The curriculum addresses three levels of QIPS training: Knowledge (lectures in PGY1 and 2), practical skills at the local clinical microsystem level (QI project in PGY3), and practical skills at the organization level (problem solving using the case method in PGY5). **Curriculum, Tool, or Material:** The lectures are taught by physicians involved in local and organization-wide QI projects and by those in senior management. The PGY3 residents enrol in a co-learning curriculum developed by the Department of Medicine, where residents and faculty conduct a local QI project together. The PGY5 teaching cases were created with management consultants using material from a real hospital QIPS initiative. PGY5s are taught using the case method that places the learner in the role of the organization's manager who discusses the issues in class and proposes actions. Residents learn about the practicality of their recommendations by discussion with the management consultants, who disclose the case outcomes and review the lessons learned. **Conclusion:** A longitudinal QIPS curriculum for emergency medicine residents at UT was developed collaboratively. Multiple

teaching methods address all three levels of QIPS training. This curriculum represents a novel use of the case method to instruct QIPS project leadership and management outside of the business school setting. Discussions with management consultants provide a different perspective of the real-life challenges of conducting QIPS initiatives.

**Keywords:** innovations in EM education, quality improvement, case-based learning

## Moderated Posters Presentations

#### MP001

**Low acuity emergency department access: are other options available?**

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**Introduction:** Patients with low-acuity (CTAS level IV and V) complaints often use the emergency department (ED) to access care. This has often been attributed to lack of a primary care (PC) provider. However, simply being registered with a primary care practitioner may not prevent low acuity ED presentation. There is some evidence that a lack of timely access to primary care may contribute to low acuity ED presentations. The Wait Time Alliance, a group of Canadian physicians and their respective professional associations, has recently set a benchmark of same day access to family doctors. It is unclear if this benchmark has been achieved in all jurisdictions. **Methods:** We performed linked cross sectional surveys to quantify the number of people presenting to a tertiary hospital ED (with 56,000 annual visits) with non-urgent problems who felt unable to access PC. PC practices were also surveyed to assess access using the metric of time to third next available appointment. Sample size calculations were completed. Descriptive statistics were reported.

**Results:** In the patient survey, 381 of 580 patients consented to participate. Of those, 89 patients met eligibility criteria. 32 (35.9%) reported that the wait to see their PC provider was "too long". 45 (50.5%) patients did not contact their PC office prior to ED presentation. 46 of 72 PC physician surveys were returned; a response rate of 63.8%. The mean time to third next available appointment in the region was 7.7 (95% CI 4.9-10.5) days (median 5 days, range 0-50 days). **Conclusion:** Fifty percent of low acuity patients did not attempt to access their PC provider prior to ED presentation. The benchmark of same day access to primary care has not been achieved in many practices in this region. Initiatives to promote primary care access would benefit both patients and providers.

**Keywords:** primary care, advanced access, patient acuity

#### MP002

**Beyond rater cognition: the impact of supervisor continuity on the quality of documented work-based assessments**

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**Introduction:** Barriers to completing high quality work-based assessments (WBAs) include relational factors such as the episodic and fragmented interaction that often exists between clinical supervisors and trainees. In an effort to increase supervisor-trainee continuity, the Department of Emergency Medicine at the University of Ottawa created Clinical Teaching Teams (CTT) in which a resident and clinical