

**LO10****Faculty sim: a simulation-based continuing professional development curriculum for academic emergency physicians**

G. N. Mastoras, MD, W. J. Cheung, MD, MMed, A. Krywenky, MD, S. Addleman, MD, B. Weitzman, MD, J. R. Frank, MD, MA(Ed), University of Ottawa, Department of Emergency Medicine, Ottawa, ON

**Introduction:** Maintaining and enhancing competence in the breadth of Emergency Medicine (EM) is an ongoing challenge for all clinicians. In particular, resuscitative care in EM involves high-stakes clinical encounters that demand strong procedural skills, effective leadership, and up-to-date knowledge. However, Canadian emergency physicians are not required to complete any specific ongoing training for these encounters beyond general CPD requirements of professional colleges. Simulation-based medical education (SBME) is an effective modality for enhancing technical (e.g. procedural) and non-technical (i.e. Crisis Resource Management) skills in crisis situations, and has been embedded in undergraduate and postgraduate medical curricula worldwide. We present a novel comprehensive curriculum of simulation-based CPD designed specifically for academic emergency physicians (AEPs) at our centre. **Methods:** The curriculum development involved a departmental needs assessment survey, focus groups with AEPs, data from safety metrics and critical incidents, and consultations with senior departmental leadership. Institutional support was provided in the form of a \$25,000 grant to fund a physician Program Lead, monthly session instructors, and simulation centre operating costs. Based on the results of the needs assessment, a two-year curriculum was mapped out and tailored to the available resources. **Results:** CPD simulation commenced in January 2017 and occurs monthly for three hours, immediately following departmental Grand Rounds to provide convenient scheduling. Our needs assessment identified two key types of educational needs: (1) Crisis Resource Management skills and (2) frequent practice of high-stakes critical care procedures (e.g. central lines). The first six months of implementation was dedicated to low-fidelity skills labs to facilitate the transition to SBME. After this, the program transitioned to a hybrid model involving two high-fidelity simulated resuscitations and one skills lab per session. **Conclusion:** We have introduced a comprehensive curriculum of ongoing simulation-based CPD in our department based on the educational needs of our AEPs. Key to our successful implementation has been support from educational and administrative leadership within our department. Ongoing challenges include securing adequate protected time from clinical duties for program facilitators and participants. Future work will include establishing permanent funding, CPD accreditation, and a formal program evaluation.

**Keywords:** innovations in emergency medicine education, simulation, continuing professional development

**LO11****Improving patient access, care and transportation by paramedics (IMPACT): a novel curriculum toward redefining paramedic services in Ontario**

A. Khaled Taher, MD, J. Lockwood, MD, C. Spearen, BScN, J. Kachur, BScN, G. Pino, PhD, N. Kedzierski, BSc, W. Tavares, PhD, University of Toronto, Toronto, ON

**Introduction:** A proportion of Emergency Department (ED) visits may be treated in out-of-hospital settings. The objective of this curriculum was to expand paramedic competencies to safely risk stratify patients and divert low risk, low acuity patients from EDs with and without

physician oversight. **Methods:** We followed Kerns 6-step Curriculum Development Framework. (a) We identified a problem, and (b) completed a needs assessment by retrospectively reviewing the clinical pathways of 3000 patients were cared for and transported by paramedics and received care at an EDs. We used this data to identify competencies (e.g., diagnostics, interventions, reasoning needs) and targeted patient types that would result in the most significant advancements to paramedic services. These were translated to (c) goals and objectives.

**Results:** Our (d) educational strategies involved a 14-week intensive patient-type and case-based curriculum. (e) Implementation involved 3 days/wk of clinical rotations supplemented with 2 days/wk of a mixed curriculum (i.e., fixed instruction using blended didactic small and large group sessions; flexible/individualized curriculum based on identified needs; formative assessments; self and peer-directed learning; simulations). (f) Assessment involved knowledge and application tests, clinical placement and simulation assessments; case development, assignments, and OSCE. Evaluation outcomes included student performance scores across 7-dimensions, clinical placement and student feedback. Thirteen Advanced Care Paramedics from York Region Paramedic Services completed the program. Challenges included provincial stakeholder consensus, and formally addressing clinical suspicion in a protocol based field within a limited time frame. **Conclusion:** A curriculum for expanded paramedic practice to risk stratify and divert targeted low risk patients from EDs resulted in new paramedic competencies and scope of practice. It received high evaluations from clinical staff and students. Successful candidates will undergo a 1-year study for validation and safety.

**Keywords:** innovations in emergency medicine education, emergency medical services, curriculum

**LO12****Implementation of an editorial internship at the Canadian Journal of Emergency Medicine to foster education and participation in academic emergency medicine**

D. K. Ting, MD, R. B. Abu Laban, MD, MHSc, L. Morrison, MD, MSc, J. Ducharme, MD, CM, E. S. Lang, MD, CM, University of British Columbia, Kelowna, BC

**Introduction:** Medical journals are an essential venue for knowledge translation. Skilled reviewers and editors are required to ensure quality standards in research publications and yet postgraduate programs rarely include this training in their curricula. Imparting appropriate skills and developing capacity in journalship has thus proved challenging. The Canadian Journal of Emergency Medicine (CJEM) is the national journal for Emergency Medicine (EM) in Canada. The CJEM editorial board recently decided to provide longitudinal mentorship for junior academic faculty members and trainees through an editorial internship. The internship had three goals for participants: (1) introduce and develop the responsibilities and skills of a good editor; (2) enhance a career in academic EM; and, (3) galvanize future participation as a reviewer or editor in scientific publications. **Methods:** The senior editorial board of CJEM and the inaugural intern developed a one-year Editorial Internship that was launched in June 2017. The curricular framework was designed by current and prior CJEM senior editors from four Canadian universities, and was informed by similar programs in the United States. The curriculum was refined iteratively based on feedback and discussion between the senior editors and intern. The internship was designed for a single individual in the Canadian EM community, including residents, pediatric fellows and practicing emergency physicians. **Results:** To develop the responsibilities and skills of being a good editor, the intern performed six mentored reviews of manuscripts either under current review at CJEM or previous submissions identified as

difficult peer review decisions. In addition, the intern learned about CJEM values and norms by participating in monthly videoconference meetings and quarterly editorial board meetings. To enhance an academic career, the intern was assigned two writing projects under the guidance of senior editors for publication in CJEM, and completed an online critical appraisal course. **Conclusion:** The inaugural editorial intern gained experience as an editor and produced scholarly work. We feel the internship met its first two goals, and CJEM has committed to continue the internship annually. The ultimate determination of whether the internship achieved its third goal will only be known after longitudinal tracking of participants career involvement in academic publishing and editing.

**Keywords:** innovations in emergency medicine education, knowledge translation, medical writing

### LO13

#### **Eye care in the emergency department: what proportion of patients presenting to the emergency department with isolated eye related complaints could alternatively be seen by an optometrist?**

K. Phillips, MD, L. Thorpe, OD, G. Innes, MD, MSc, University of Calgary, Calgary, AB

**Introduction:** Approximately 2-3 percent of emergency department (ED) visits are due to eye-related complaints, adding to the ED workload. Many of these could be seen instead by an optometrist who specializes in the examination, diagnosis and treatment of eye-related disorders. We sought to determine the proportion of ED patients with isolated eye-related complaints that could be managed by an optometrist. **Methods:** We performed an administrative database study and descriptive analysis of all patients presenting to Calgary EDs with eye-related complaints during a one-year period. We determined optometry eligibility by reviewing discharge diagnoses and assessing whether that condition was within the Alberta Association of Optometry (AAO) defined scope of practice. Patients were considered ineligible if their condition was related to bites, stings, thermal burns, assault, MVA or operative complications; if they required hospitalization or referral to a non-eye specialist (e.g. neurology); if they had associated headache, dizziness, syncope, hypertension, neurologic abnormality (e.g. diplopia); if they had facial cellulitis, orbital infections, adverse drug effects, or if they underwent observation in the ED because of concerns about a cardiac or neurological condition. **Results:** In 2015, 7686 patients were seen in Calgary's 5 EDs with eye related complaints. Of these, 76.2% were optometry-eligible and 75% of optometry-eligible patients arrived during day or evening hours (0800-2100). The most common presenting complaints were visual disturbance (24.8%), redness (22.1%), and pain or photophobia (16.4%). Optometry-eligible patients waited an average of 110 min and had an ED LOS of 149 min. **Conclusion:** Approximately 3 in every 4 patients seen in the ED for eye related complaints could alternatively be seen by an optometrist. Further research is required to establish the feasibility of diversion to an optometrist from the ED for eye-related complaints.

**Keywords:** quality improvement and patient safety, eye care, emergency department

### LO14

#### **In emergency department, do serum biomarkers are useful to screen independent frail seniors exposed to functional or mobility impairments after a minor injury?**

M. Emond, MD, MSc, M. Blouin, PhD, M. Sirois, PhD, M. Aubertin-Leheudre, PhD, L. Griffith, PhD, L. Nadeau, MD, R. Daoust, MD, MSc, J. Lee, MD, MSc, Université Laval, Department of Emergency Medicine, Laval, QC

**Introduction:** Frailty is a geriatric syndrome conferring a high risk of declining functional capacities. Some serum biomarkers were associated with frailty, but no study has investigated this possible association among community-dwelling seniors with minor injuries in the emergency department (ED). The aim was to determine if ED serum biomarker assay combined with frailty status improve the prediction of 3-months functional or mobility impairments in this population, beyond frailty status alone. **Methods:** This prospective sub-study of the CETI cohort includes 190 participants (age 65 years, ED consultation within 2 weeks of a minor injury, independent in daily activities 4 weeks prior to injury, and discharged home from EDs). Biomarkers were obtained from blood samples at baseline (ED visit). Normal vs. at risk physiological states were defined according to clinical threshold values. Also, the patients were screened for frailty at baseline) while their functional (OARS scale) and mobility characteristics were assessed at the ED visit and 3 months later. Patients were classified as robust or pre-frail/frail according of the CHSA-CFS and SOF scales. Simple generalized linear models with a binomial distribution and a log link function were used to explore the differences in functional and mobility outcomes at three months across sub-groups (RR). **Results:** When compared to robust ones, ED pre-frail/frail patients were less functional in their instrumental activities of day living ( $p=0.004$ ), slower walkers ( $p=0.02$ ), more frequent users of walking aids ( $p=0.03$ ), more fearful of falling ( $p=0.006$ ), went outside their home less often weekly ( $p=0.004$ ) and had higher abnormal creatinine levels ( $p=0.02$ ). We observed an overall 3-month functional decline in around 10% of patients combined with worsened mobility characteristics. We found that vitamin D [RR: 0.51 (0.07-3.9)], glucose (RR: 0.27 [(0.03-2.16)]) and creatinine (RR: [1.10 [(0.40-2.97)]) modulate the prediction of 3-months mobility impairments. However, ED frailty status with CHSA-CFS and SOF scales clearly remained the stronger predictor of mobility impairments [vitamin DRR: 2.93 (1.12-7.65); glucoseRR: 2.36 (0.85-6.55); creatinine: RR2.06 (1.21-3.53)]. **Conclusion:** Since they do not improve the prediction of 3-months functional or mobility impairments associated with frailty status, ED biomarker assays are not useful in adequately screening for frailty among independent seniors with minor injuries.

**Keywords:** emergency department, geriatrics, frailty

### LO15

#### **Treatment of asymptomatic bacteriuria in elderly patients with delirium: a systematic review**

A. Suleman, BHSc, J. Krakovsky, P. Joo, MD, University of Ottawa, Ottawa, ON

**Introduction:** It is typical to look for UTI in delirious elderly patients, despite a high prevalence of asymptomatic bacteriuria (ASB) in this population. A common presentation of infection is delirium, which often has a non-specific and multifactorial etiology. Therefore, when bacteriuria is present with delirium in the absence of urinary symptoms, physicians prescribe antibiotics for the suspected UTI-induced delirium. We set to determine whether antibiotic treatment in the elderly presenting with delirium in the presence of ASB resulted in resolution of delirium. **Methods:** Literature searches were performed in MEDLINE, EMBASE, CINAHL and Cochrane Library. Abstracts were independently reviewed by two authors for decision to include for full-text review. Inclusion criteria included female gender, >65 years of age, presenting in an acute care setting with delirium and ASB. The primary outcome was resolution of delirium. The secondary outcomes were mortality, frequency of side effects from antibiotics, length of hospital stay and readmission for delirium. **Results:** 930 abstracts published from 1946-2017 were screened, and 42 were included for full text