these resources were designed to target knowledge gaps. Novel methods are required to identify learning needs to allow the targeted development of learner-centered curricula. **Methods:** A multidisciplinary team attempted to determine the feasibility of conducting a Massive Online Needs Assessment (MONA) to assess the perceived and unperceived educational needs in thrombosis and bleeding. An open, online survey was launched via Google Forms and disseminated using the online educational resource CanadiEM.org and social media platforms Twitter and Facebook with the goal of reaching participants of the Free Open Access Medical education (FOAM) community. **Curriculum, Tool, or Material:** The survey was designed to identify knowledge gaps and contained demographic, free text, and multiple choice questions. It took individuals approximately 30 minutes to complete and was incentivized with entry into a draw for one of four $250 Amazon Gift cards. Feasibility was defined *a priori* as 150 responses from at least 4 specialties in 4 or more countries. This sample was deemed the minimum number required to identify knowledge gaps (defined as <50% correct answers). The survey was open from September 20 to December 10, 2016. We received 198 complete responses from 20 countries. Respondents included staff physicians (n = 109), residents (n = 46), medical students (n = 29), nurses (n = 8), paramedics (n = 4), a pharmacist (n = 1) and a physician assistant (n = 1). The survey entry page hosted on CanadiEM.org received page views from 866 unique IP addresses. As such, a conservative approximation of the completion rate per unique viewer was 22% (198/866). **Conclusion:** It is feasible to use a MONA to collect data on the perceived and unperceived needs of an online community. Such needs assessments could be used to make online resources more learner-centered.

Keywords: free open access medical education, massive online needs assessment, curriculum development

LO31

Identification of high risk factors associated with 30 day serious adverse events among syncope patients transported to the emergency department by emergency medical services

L. Yau, BMSc, M.A. Mukarram, MBBS, MPH, S. Kim, BScH, K. Arcot, MSc, K. Thavorn, MPharm, PhD, M. Taljaard, PhD, M. Sivilotti, MSc, MD, B.H. Rowe, MD, MSc, V. Thiruganasambandamoorthy, MD, MSc, University of Ottawa Faculty of Medicine, Ottawa, ON

Introduction: The majority of syncope patients transported to the emergency department (ED) by emergency medical services (EMS) are low-risk with very few suffering serious adverse events (SAE) within 30-days and over 50% are diagnosed with vasovagal syncope. These patients can potentially be diverted by EMS to alternate pathways of care (primary care or syncope clinic) if appropriately identified. We sought to identify high-risk factors associated with SAE within 30-days of ED disposition as a step towards developing an EMS clinical decision tool. **Methods:** We prospectively enrolled adult syncope patients who were transported to 5 academic EDs by EMS. We collected standardized variables at EMS presentation from history, clinical examination and investigations including ECG and ED disposition. We also collected concerning symptoms identified and EMS interventions. Adjudicated SAE included death, myocardial infarction, arrhythmia, structural heart disease, pulmonary embolism, hemorrhage and procedural interventions. Multivariable logistic regression was used for analysis. **Results:** 990 adult syncope patients (mean age 58.9 years, 54.9% females and 16.8% hospitalized) were enrolled with 137 (14.6%) patients suffering SAE within 30-days of ED disposition. Of 42 candidate predictors, we identified 5 predictors that were significantly associated with SAE on multivariable analysis: ECG abnormalities [OR = 1.77; 95%CI 1.36-2.48] (non-sinus rhythm, high degree atrioventricular block, left bundle branch block, ST-T wave changes or Q waves), cardiac history [OR = 2.87; 95%CI 1.86-4.41] (valvular or coronary heart disease, cardiomyopathy, congestive heart failure, arrhythmias or device insertions), EMS interventions or concerning symptoms [OR = 4.88; 95%CI 3.13- 7.62], age >50 years [OR = 3.18; 95%CI 1.68-6.02], any abnormal vital signs [OR = 1.58; 95%CI 1.03-2.42] (any EMS systolic blood pressure >180 or <100 mmHg, heart rate <50 or >100/minute, respiratory rate >25/minute, oxygen saturation <91%). [C-statistic: 0.81; Hosmer Lemeshow p = 0.30]. **Conclusion:** We identified high-risk factors that are associated with 30-day SAE among syncope patients transported to the ED by EMS. This will aid in the development of a clinical decision tool to identify low-risk patients for diversion to alternate pathways of care.

Keywords: emergency medical services, syncope, risk factors

LO32

Are EMS offload delay patients at increased risk of adverse outcomes?

D. Stewart, D. Wang, MSc, E. Lang, MD, G. Innes, MD, University of Calgary, Calgary, AB

Introduction: ED and hospital overcrowding cause offload delays that remove EMS crews from service and compromise care delivery to patients. Prolonged ED boarding times are associated with increased hospital LOS and patient mortality, but the impact of offload delays has not been studied. Our objective was to determine whether offload delays are associated with adverse system and patient outcomes. **Methods:** From July 2013 to June 2016, administrative data was collated from four Calgary adult EDs. All CTAS 2 and 3 EMS arrivals were studied. Those assigned an ED care space within 15 minutes were considered controls while those with delays of ≥60-minutes were considered 'delayed'. Multivariable logistic regression was used to determine propensity scores, which were used to match delayed patients to nearest neighbor controls. Matching variables for propensity modeling included age, sex, CTAS level, ED site, arrival day and time, living situation (homecare/facility vs. independent), complaint category (medical, cardiovascular, mental health/neuro, GI, trauma/MS, other) and previous ED use (visits within 1 year). The primary outcome was 7-day mortality. Secondary outcomes included hospital LOS and 30-day mortality. **Results:** A total of 111,743 patients were studied: 70711 controls and 41032 delayed (median time to stretcher of 8 vs. 109 minutes). There was significant baseline covariate imbalance: Delayed patients were more likely to be female, older, have lower CTAS acuity, arrive on weekdays and evenings, to have general medical complaints, and to arrive at the slowest offload site. In the unmatched analysis, delayed patients had lower 7-day mortality (2.1% vs. 2.6%), similar 30-day mortality (3.5% vs. 3.6%), and longer hospital LOS (10.3 vs. 9.8 days). In the propensity-matched analysis (41016 patients per group), covariate balance was substantially improved and outcomes differed slightly. Seven and 30-day mortality were essentially unchanged, but between group differences for hospital LOS disappeared (10.3 vs. 10.2 days). **Conclusion:** Propensity analysis suggests that EMS patients exposed to offload delays have similar 30-day mortality and slightly lower 7-day mortality than patients who receive timely ED access. While offload delays lead to substandard hallway care, patient dissatisfaction, and remove EMS crews from service, the levels of offload delay studied here were not associated with higher mortality or prolonged hospital LOS.

Keywords: offload delay, overcrowding, adverse outcomes