objective was to validate the sensitivity of this clinical decision aid. **Methods:** Our validation cohort was recruited from a retrospective review of all cases of AAS diagnosed at three tertiary care emergency departments and one cardiac referral center from 2002-2019. Inclusion criteria: >18 years old, non-traumatic, symptoms <14 days and AAS confirmed on computed tomography, transesophageal echocardiography, intraoperatively or postmortem. The clinical decision aid assigns an overall score of 0-7 based on high risk pain features, risk factors, physical examination and clinical suspicion. Sensitivity with 95% confidence intervals are reported. Based on a national survey, a miss rate of <1% was predefined for the validation threshold. **Results:** Data was collected from 2002-2019 yielding 222 cases of AAS (mean age of 65 (SD 14.1) and 66.7% male). Kappa for data abstraction was 0.9. Of the 222 cases of AAS (type A = 125, type B = 95, IMH = 2), 35 (15.7%) were missed on initial assessment. Patients were risk stratified into low (score = 0, 2 (0.9%)) moderate (score = 1, 42 (18.9%)) and high risk (score ≥2,178 (80.2%)) groups. A score ≥1 had a sensitivity of 99.1% (95% CI 96.8-99.9%) in the detection of AAS. The clinical decision aid missed 0.9% (95% CI 0.3-3%) of cases. **Conclusion:** The Canadian clinical practice guideline's AAS clinical decision aid is a highly sensitive tool that uses readily available clinical information. Although the miss rate was <1%, the 95% confidence intervals crossed the predefined threshold. Further validation is needed in a larger population to ensure the miss rate is below an acceptable level.

Keywords: acute aortic syndrome, aortic dissection, vascular

MP06

Using electrocardiogram-to-activation time to assess emergency physicians' diagnostic delay of acute coronary occlusion

J. McLaren, MD, L. Chartier, MDCM, MPH, University of Toronto, Toronto, ON

Introduction: Electrocardiogram (ECG) diagnosis of acute coronary occlusion has been broadening in recent years, from classic ST-Elevation Myocardial Infarction (STEMI) criteria to STEMI-equivalents and rules for subtle occlusions. However, there is no quality metric focused on emergency physicians' decision-making. We hypothesized that the time from initial emergency department (ED) ECG to activation of Code STEMI could quantify diagnostic delay associated with automated interpretation, classic STEMI criteria, and other signs of occlusion. **Methods:** This multicentre retrospective study reviewed all ED Code STEMI patients with confirmed culprit lesions from two urban academic EDs over a three-year period (Jan 2016 to Dec 2018). We reviewed charts to calculate ECG-to-Activation (ETA) time, measured from the time stamp on the initial ED ECG to the time a Code STEMI was activated (based on the hospital call centre log). We examined ECGs to determine: 1) if automated computer interpretation labelled "STEMI" or not; and 2) whether they met classic STEMI criteria, STEMI-equivalent patterns, or rules for subtle occlusion, based on a priori criteria from published guidelines or studies. All ECGs were reviewed by the lead author (JTTM) and those not obviously meeting classic STEMI criteria were independently reviewed by the other author. **Results:** There were 180 Code STEMIs from the ED with culprit lesions, including 177 with complete information. Average ETA time was 46.5 minutes (95% Confidence Interval [CI] 36.3-56.7min). Automated interpretation labelled 55.4% of initial ECGs as "STEMI" (ETA 13.9 min, 95%CI 9.8-18.0min), and 44.6% not as "STEMI" (ETA 86.9min, 95%CI 67.9-105.9min). Initial ECGs included 62.1% with classic STEMI criteria (ETA 17.3min, 95%CI 12.8-21.8min), 11.3% with STEMI-equivalents (ETA 49.5min, 95%CI 29.5-69.5min), 18.1% with subtle occlusions (ETA 118.3min, 95%CI 81.5-155.1min) and 8.5% with no initial sign of occlusion (ETA 102.9min, 95%CI 53.9-151.9min). Inter-rater reliability was very good (Cohen's kappa 0.84). **Conclusion:** Over 90% of Code STEMI patients with culprit lesions had initial ECGs diagnostic of acute coronary occlusion, but automated interpretation and classic STEMI criteria only identified 55.4% and 62.1%, respectively. STEMI-equivalents and subtle occlusions were associated with significant diagnostic delays. ETA time can serve as a quality metric for emergency physicians and may help guide ED quality improvement initiatives.

Keywords: acute coronary occlusion, electrocardiogram, ST elevation myocardial infarction

MP07

Identification of barriers and facilitators for implementation of the Canadian Syncope Risk Score

N. Hudek, PhD, B. Rowe, MD, MSc, J. Brehaut, PhD, B. Ghaedi, MSc, P. Nguyen, BSc, J. Presseau, PhD, A. McRae, MD, PhD, J. Yan, MD, MSc, R. Ohle, MD, C. Fabian, MD, N. Le Sage, MD, PhD, E. Mercier, MD, MSc, M. Hegdekar, MD, P. Archambault, MD, M. Sivilotti, MD, MSc, V. Thiruganasambandamoorthy, MSc, Ottawa Hospital Research Institute, Ottawa, ON

Introduction: Wide variability exists in emergency department (ED) syncope management. The Canadian Syncope Risk Score (CSRS) was derived and validated to predict the probability of 30-day serious outcomes after ED disposition. The objective was to identify barriers and facilitators among physicians for CSRS use to stratify risk and guide disposition decisions **Methods:** We conducted semi-structured interviews with physicians involved in ED syncope care at 8 Canadian sites. We used purposive sampling, contacting ED physicians, cardiologists, internists, and hospitalists until theme saturation was reached. Interview questions were designed to understand whether the CSRS recommendations are consistent with current practice, barriers and facilitators for application into practice, and intention for future CSRS use. Interviews were conducted via telephone or videoconference. Two independent raters coded interviews using an inductive approach to identify themes, with discrepancies resolved through consensus. Our methods were consistent with the Knowledge to Action Framework, which highlights the need to assess barriers and facilitators for knowledge use and for adapting new interventions into local contexts. **Results:** We interviewed 14 ED physicians, 7 cardiologists, and 10 hospitalists/internists across 8 sites. All physicians reported the use of electrocardiograms for patients with syncope, a key component in the CSRS criteria. Almost all physicians reported that the low risk recommendation (discharge without specific follow-up) was consistent with current practice, while less consistency was seen for moderate (15 days outpatient monitoring) and high risk recommendations (outpatient monitoring and/or admission). Key barriers to following the CSRS included a lack of access to outpatient monitoring and uncertainty over timely follow-up care. Other barriers included patient/family concerns, social factors, and necessary bloodwork. Facilitators included assisting with patient education, reassurance of their clinical gestalt, and optimal patient factors (e.g. reliability to return, support at home, few comorbidities). **Conclusion:** Physicians are receptive to using the CSRS tool for risk stratification and decision support. Implementation should address identified barriers, and adaptation

https://doi.org/10.1017/cem.2020.155 Published online by Cambridge University Press

to local settings may involve modifying the recommended clinical actions based on local resources and feasibility.
Keywords: knowledge translation, risk-stratification, syncope

MP08

Using administrative data to explore emergency department management of patients presenting with acute atrial fibrillation/flutter: Is Shock-First a more effective strategy than Drug-Shock?

B. Rowe, MD, B. Bohlouli, MD, C. Villa-Roel, MD, University of Alberta, Edmonton, AB

Introduction: Atrial fibrillation and flutter (AFF) are the most common arrhythmias managed in the emergency department (ED). Equipoise in cardioversion strategies for patients with recent onset AFF contributes to observed practice variation. Using administrative data, the objective of this study was to explore the pattern of practice and the comparative effectiveness (outcomes and costs) between Shock-First and Drug-Shock approaches in AFF. **Methods:** Adult patients >17 years of age with AFF from one academic Canadian hospital ED were eligible. Using administrative data linkage among the National Ambulatory Care Record System, provincial practitioner claims data repository and a local hospital pharmacy database, patients who received treatment with procainamide and/or electrical cardioversion for AFF were identified. Outcomes including disposition, length of stay, revisit within 72 hours and 30-days, and ED costs were analyzed over a seven-year period. Categorical variables are reported as percentages. Continuous variables are reported as median and interquartile range (IQR). Univariate and multivariate logistic regression analyses were completed and reported as odds ratios (OR) and 95% confidence intervals (CI). **Results:** Overall, 5,372 patients were identified with AFF; the median age was 70 years and 55% were male. The majority of patients had chronic or secondary AFF; however, in 1687 (31%) cardioversion options were employed for presumed were recent onset AFF. A Shock-First strategy was most common (1379 {82%}); 308 (18%) received a Drug-Shock approach. Discharge time was 33 minutes (95% CI: 4–63) longer in the Drug-Shock approach compared to the Shock-First approach. Hospital admissions were higher (OR = 2.33; 95% CI: 1.68, 3.24) and revisits within 30-days were lower (OR = 0.74; 95% CI: 0.54, 0.95) in the Drug-Shock group. The Shock-First strategy demonstrated marginally higher costs (median = $106 CND; 95% CI: $68.89, $144.40) in adjusted analyses. **Conclusion:** In patients with acute AFF, when cardioversion was attempted, a Shock-First strategy was employed 80% of the time and resulted in shorter ED length of stay and lower hospitalization; however, higher costs and ED revisits within 30-days were observed. Many factors, including physician and/or patient preferences, influence ED decision-making in patients with AFF and understanding the factors influencing these decisions requires further attention.
Keywords: atrial fibrillation, cardioversion, decision-making

MP09

Predictors of return acute asthma visits among patients receiving guideline recommended discharge management in the emergency department

C. Dhaliwal, MD, T. Haji, MD, G. Leung, BSc, T. Madhura, MD, S. Giangioppo, MD, D. Radhakrishnan, MD, Western University, London, ON

Introduction: Despite improvements in the recognition of asthma among the pediatric population and the use of preventative therapies, rates of emergency department (ED) visits and hospitalizations remain high, leading one to question how these acute health care visits for asthma can be further avoided. In this study, we aimed to identify predictors of future repeat acute care visits among children and adolescents who had already received 'best practice' discharge treatments and instructions during their first asthma ED visit. **Methods:** We performed a retrospective single center cohort study of all children ages 1-17 years presenting to the ED at the Children's Hospital of Eastern Ontario in Ottawa, Canada for an acute asthma exacerbation during a 1-year time frame between September 1, 2014 – August 31, 2015. Only children with no prior ED asthma visit and documentation of receipt of a prescription for inhaled corticosteroids and/or a written asthma action plan were included. Multivariable logistic regression was performed to identify predictors of repeat future asthma ED visit or hospitalization in the year following the first ED visit. **Results:** We identified 909 children with an eligible ED visit during the study period, of whom 24% had a repeat asthma ED visit or hospitalization within the subsequent 1 year. Predictors of repeat acute asthma visits included having a nut allergy (OR 1.76, 95% CI: 1.15, 2.70), higher severity symptoms at triage (OR 2.04, 95% CI: 1.23, 3.39), a primary care physician (OR 2.23, 95% CI: 1.26, 3.93), or a prior history of asthma (OR 1.53, 95% CI: 1.03, 2.28). **Conclusion:** In children and adolescents with repeat asthma ED visits and hospitalizations despite having received 'best practice' asthma discharge management at their first ED visit, factors such as having an allergy to nuts, higher severity symptoms at presentation, a prior history of asthma, and having a primary care provider may be used to identify these more high-risk children and adolescents. Such parameters can be used practically to target and apply more intensive preventative interventions to those most in need at the first ED visit, in order to prevent future return visits.
Keywords: asthma, childhood, emergency department

MP10

Does arrival pain severity predict stone characteristics or short-term outcomes in emergency department patients with acute renal colic?

G. Splinter, BSc, K. Gourlay, BSc, J. Hayward, MD, MPH, G. Innes, MD, MSc, University of Alberta, Edmonton, AB

Introduction: Renal colic is among the most painful conditions that patients experience. The main outcome determinants for patients with renal colic are stone size, location and hydronephrosis; however, little is known about the association of pain with these parameters. Our objective was to determine whether more severe pain is associated with larger stones, more proximal stones or more severe hydronephrosis, findings that might suggest the need for advanced imaging, hospitalization or early intervention. **Methods:** We used administrative data and structured chart review to study all adult emergency department (ED) patients in two cities with a renal colic diagnosis over one-year. Patients with missing imaging results or pain scores were excluded. Triage nurses recorded numeric rating scale (NRS) pain scores on arrival. We stratified patients into mild (NRS <4), moderate (NRS 4-7) and severe (NRS 8-10) pain groups, as per CTAS guidelines. Stone size (mm) and location (proximal, middle, distal ureter, or renal) were abstracted from imaging reports, while index admissions were determined from hospital discharge abstracts. We used multivariable linear regression to determine the association of arrival pain with stone characteristics and hydronephrosis severity (primary outcome), and we used multivariable logistic regression to

https://doi.org/10.1017/cem.2020.155 Published online by Cambridge University Press