despite a Choosing Wisely recommendation to restrict the use of CT scans in a target population and infrequent changes in management after obtaining a CT. These findings highlight the need for quality improvement strategies to decrease CT utilization in this patient population with suspected renal colic.

Keywords: renal colic, Choosing Wisely, computed tomography

LO87
Use of a clinical prediction rule would lead to more effective CTA utilization for urgent brain imaging of suspected TIA/mild stroke in the emergency department

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Introduction: Canadian stroke best practice guidelines recommend patients suspected of Acute Cerebrovascular Syndrome (ACVS) receive urgent brain imaging, preferably CTA. Yet, high requisition rates for non-ACVS patients overburdens limited radiological resources. We hypothesize that our clinical prediction rule (CPR) previously developed for diagnosis of ACVS in the emergency department (ED), and which incorporates Canadian guidelines, could improve CTA utilization. **Methods:** Our data consists of records for 1978 ED-referred patients to our TIA clinic in Victoria, BC from 2015-2016. Clinic referral forms captured all data needed for the CPR. For patients who received CTA, orders were placed in the ED or at the TIA clinic upon arrival. We use McNemar's test to compare the sensitivity (sens) and specificity (spec) of our CPR vs. the baseline CTA orders for identifying ACVS. **Results:** Our sample (49.5% male, 60.6% ACVS) has a mean age of 70.9 ± 13.6 yrs. Clinicians ordered 1190 CTAs (baseline) for these patients (60%). Where CTA was ordered, 65% of patients (n = 768) were diagnosed as ACVS. To evaluate our CPR, predicted probabilities of ACVS were computed using the ED referral data. Those patients with probabilities greater than the decision threshold and presenting with at least one focal neurological deficit clinically symptomatic of ACVS were flagged as *would have received a CTA*. Our CPR would have ordered 1208 CTAs (vs. 1190 baseline). Where CTA would have been ordered, 74% of patients (n = 893) had an ACVS diagnosis. This is a significantly improved performance over baseline (sens 74.5% vs. 64.1%, $p < 0.001$; spec 59.6% vs. 45.9%, $p < 0.001$). Specifically, the CPR would have ordered an additional 18 CTAs over the 2-yr period, while simultaneously increasing the number of imaged-ACVS patients by 125 with imaging 107 fewer non-ACVS patients. **Conclusion:** Using ED physician referral data, our CPR demonstrates significantly higher sensitivity and specificity for CTA imaging of ACVS patients than baseline CTA utilization. Moreover, our CPR would assist ED physicians to apply and practice the Canadian stroke best practice guidelines. ED physician use of our CPR would increase the number of ACVS patients receiving CTA imaging before ED discharge (rather than later at TIA clinics), and ultimately reduce the burden of false-positives on radiological departments.

Keywords: transient ischemic attack, computed tomography angiography, decision support

LO88
Bedside sonography performed by emergency physicians to detect acute appendicitis in the pediatric emergency department

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Introduction: Previous studies have suggested that emergency physicians (EP) highly experienced in point-of-care ultrasound (POCUS) have similar performance to formal ultrasound to identify appendicitis in children. The aim of this study was to evaluate the ability of EP with various levels of POCUS experience to detect appendicitis with POCUS among children visiting a pediatric ED. **Methods:** A prospective cohort study was conducted in an urban, tertiary care pediatric ED. Children aged 2 to 18 years old who presented to the ED with acute abdominal pain suggesting appendicitis were included. Patients were excluded if they had a history of appendectomy, hemodynamic instability requiring resuscitation, or were transferred with proven diagnosis of appendicitis. Participating EP had various levels of POCUS experience. Four of the 22 physicians were experienced in bowel sonography (EDU 2 level and higher) while the others were inexperienced in bowel sonography (EDU 1). All the participants received a 1-hour didactical and practical training session on appendix ultrasound. The treating physician performed all POCUS following initial physical exam, before further radiological evaluation. Final outcomes were determined by pathology and/or operative reports for surgical cases, and telephone follow-up at 3 weeks for those who did not have surgery. The primary analysis was a simple proportion for sensitivity and specificity for POCUS. Expecting a sensitivity of 80% based on previous studies, we calculated that a sample size of 50 cases would provide a 95%CI ranging from 66 to 90%. **Results:** We approached 140 patients, of which 121 accepted to participate and were recruited. After excluding 4 patients for missing POCUS data, 117 patients were included in the primary analysis, of which 51 (44%) had appendicitis. Twenty-two EP performed between 1 and 20 POCUS. The POCUS identified 27 out of 51 appendicitis for a sensitivity of 0.53 (95%CI 0.40-0.66). A negative POCUS was reported for 54 out of 66 patients without appendicitis (specificity of 0.82; 95% CI 0.71-0.89). **Conclusion:** This study shows limited sensitivity and specificity of POCUS when performed by EP with various level of experience for appendicitis in children. While showing lower sensitivity and specificity than previous studies, the inclusion of a large number of physicians solidifies the external validity of our conclusion.

Keywords: point-of-care ultrasound (POCUS), appendicitis, pediatrics

LO89
Factors associated with delay in trauma team activation and impact on patient outcomes

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Introduction: Trauma code activation is initiated by emergency physicians using physiologic and anatomic criteria, mechanism of injury and patient demographic factors in conjunction with data obtained from emergency medical service personnel. This enables rapid definitive treatment of trauma patients. Our objective was to identify factors associated with delayed trauma team activation. **Methods:** We conducted a health records review to supplement data from a regional trauma center database. We assessed consecutive cases from the trauma database from January 2008 to March 2014 including all cases in which a trauma code was activated by an emergency physician. We defined a delay in trauma code activation as a time greater than 30 minutes from time to arrival to trauma team activation. Data were collected in Microsoft Excel and analyzed in Statistical Analysis System (SAS). We conducted univariate analysis for factors potentially influencing trauma team activation and we subsequently used multiple logistic regression analysis models for delayed activation in relation to mortality, length of stay and time to operative management. **Results:** 1020 patients were screened from which 174 patients were excluded, as they were seen directly by the trauma team. 846 patients were included for