

in determining its construct validity is to evaluate the use of the UCAT in a multi-centered examination setting.

**Keywords:** assessment, innovations in EM education, ultrasound

#### LO86

##### Improving time to analgesia administration for musculoskeletal injuries in the emergency department.

V. Woolner, MN, MSc, R. Ahluwalia, BN, H. Lum, BN, K. Beane, J. De Leon, BN, MN, L. Chartier, MDCM, MPH, University Health Network, Toronto, ON

**Background:** Greater than 80% of patient visits to emergency departments (EDs) are for a pain-related concerns. Approximately 38,000 patients per year have such complaints in our academic hospital ED. 3,300 (8.6%) of those visits are for musculoskeletal (MSK) pain (i.e. back or extremity injury/pain), which are typically triaged as low-acuity presentations, leading to longer times to clinician assessment. Delays to adequate analgesia result in unnecessary suffering, worse patient care and satisfaction, and increased patient complaints. **Aim Statement:** We aimed to reduce the time-to-analgesia (TTA; time from patient triage to receipt of analgesia) for patients with MSK pain in our ED by 55% (to under 60 minutes) in 9 months' time (May 2018). **Measures & Design:** Our outcome measures were TTA (in minutes) and ED length of stay (LOS; in minutes). Process measures included nurses' use of medical directive and rate of analgesia administration. Balancing measures included patient adverse events and time spent triaging for nurses. We utilized weekly data capture for the Statistical Process Control (SPC) chart, and we used Mann-Whitney U test for our before-and-after evaluation. Utilizing the Model for Improvement, we performed wide stakeholder engagement and root cause analyses, and we created a Pareto chart. This led to our Plan-Do-Study-Act (PDSA) cycles: 1) nurse-initiated analgesia (NIA) at triage; 2) new triage documentation aid for medication administration; 3) quick reference medical directive badge tag for nurses; 4) weekly targeted feedback of the project's progress at clinical team huddle. **Evaluation/Results:** TTA decrease from 129 minutes (n = 153) to 100 minutes (22.5%; n = 87, p < 0.05). ED LOS decreased from 580 minutes (n = 361) to 519 minutes (10.5%; n = 187; p = 0.77). Special cause variation was identified on the ED LOS SPC chart with eight consecutive points below the midline, after PDSA 1. The number of patients who received any analgesia increased from 42% (n = 361) to 47% (n = 187; p = 0.13). The number of patients who received medications via medical directives increased from 22% (n = 150) to 44% (n = 87; p < 0.001). Balancing measures were unchanged. **Discussion/Impact:** The significant reduction in the TTA and increase in the use of medical directives in the before-and-after analyses were likely due to our front-line focused improvements and deliberate nursing engagement. With continued success and sustainable processes, we are planning to spread our project to other EDs and broaden our initiative to all pain-related concerns.

**Keywords:** analgesia, pain management, quality improvement and patient safety

#### LO87

##### Impact of an evidence-based clinical pathway for suspected renal colic in low-risk patients with previous nephrolithiasis on CT utilization and emergency department throughput

A. Wu, MD, J. Chenkin, MD, MEd, D. Shelton, MD, MSc, University of Toronto, Toronto, ON

**Background:** Choosing Wisely (CW) recommends patients under age 50 with uncomplicated, recurrent renal colic do not require CT scans. Despite this, CT use has risen dramatically in the past two decades, resulting in unnecessary radiation, cost and prolonged length of stay (LOS). Additionally, a common alternative – formal ultrasound (US) – is not always available. Returning for US can add 10 hours to LOS. We introduced a clinical management pathway (CMP) for low-risk patients with renal colic utilizing point-of-care ultrasound (POCUS) and evaluated its impact on emergency department (ED) CT rates and LOS. **Aim Statement:** By April 2019, we aim to reduce CT utilization by 50% and time from physician initial assessment (PIA) to discharge by 1 hour for patients under age 50 presenting to Sunnybrook ED with uncomplicated, recurrent renal colic. **Measures & Design:** The primary intervention was a CMP developed collaboratively with local urologists. The CMP uses POCUS to assess for hydronephrosis (HN) as a marker of nephrolithiasis. Patients with HN receive follow-up in urology clinic without confirmatory imaging. Patients without HN proceed to usual care. An Ishikawa diagram helped identify barriers to success. Subsequent PDSA cycles included the introduction of reference cards, POCUS workshops and online modules. Outcome measures were ED CT utilization and PIA to discharge times. Process measures were referrals to urology clinic and proportion of patients receiving XR, US and no imaging. Balancing measures were urology CT utilization, alternate diagnoses and return ED visits. Data was plotted on a run chart. **Evaluation/Results:** Data collection is ongoing and will conclude by April 2019. Interim data shows patients enrolled in the CMP have a reduction in mean PIA-to-discharge time of 173 minutes. Fidelity – specifically, the willingness of ED physicians to use POCUS compared to the ease of ordering CTs – is the biggest challenge to success. **Discussion/Impact:** This study addresses the feasibility of CW recommendations and utilizes POCUS as a tool for recurrent renal colic. Collaboration with Urology will provide insight into the CMP's sustainability and downstream impact. Reduction of unnecessary CTs will lead to improved patient safety and reduced costs. Decreased PIA-to-discharge times will reduce overcrowding, shorten wait times and improve access to imaging for other patients. Finally, this project may encourage use of POCUS for low-risk patients with renal colic.

**Keywords:** point-of-care ultrasound, quality improvement and patient safety, renal colic

#### LO88

##### Reducing urine culture testing in the emergency department

R. Sheps, MD, MSc, K. Kirk, BSN, V. Burkoski, MSc, D. Shelton, MD, MSc, University of Toronto, Toronto, ON

**Background:** The Choosing Wisely campaign aims to reduce unnecessary testing. Over testing for urinary tract infections and concomitant overtreatment of asymptomatic bacteriuria is a target of this campaign, aiming to decrease healthcare costs and the risks of side effects such as Clostridium difficile infection, adverse reactions, and antimicrobial resistance. During the study baseline (2017), 95 urine cultures (UC) were sent for every 1000 ED visits (9.5%). Of these, fewer than 20% were positive. **Aim Statement:** The aim of this improvement initiative was to reduce UC testing in the ED, by 50%, from a baseline average of nearly 100 cultures per 1000 ED patients visits, to 50 cultures per 1000 visits, by May 31st, 2018. **Measures & Design:** This was an interrupted time series study, analyzed using Statistical Process Control (SPC) methodology. Root