

should be included in QI projects in order to safely test and improve processes of care before they impact real patients.

Keywords: in situ simulation, mass transfusion protocol, quality improvement and patient safety

LO91

Urinary tract infections in the paediatric emergency department: A quality improvement initiative to promote diagnostic and antimicrobial stewardship

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Background: Urinary tract infection (UTI) is a common diagnosis in children presenting to the Emergency Department (ED) and often leads to empiric antibiotic treatment prior to culture results. A recent study at our centre found that 47% of children diagnosed with a UTI and discharged on antibiotics had a negative urine culture. None of these patients were notified of the negative result or to discontinue antimicrobial treatment. **Aim Statement:** The aim of this study was to improve UTI diagnostic accuracy by 50% while promoting antimicrobial stewardship through timely antibiotic discontinuation and standardized antimicrobial treatment for uncomplicated UTIs over the next 12 months. **Measures & Design:** Three interventions were developed using plan-do-study-act (PDSA) cycles. In collaboration with the hospital's Choosing Wisely campaign and antimicrobial stewardship program, an evidence-based empiric UTI diagnostic algorithm was created to aid with diagnostic decision-making and reduce practice variation. A daily call-back system was also implemented for urine cultures where patients who had a negative urine culture were contacted to stop antibiotics. Lastly, a practice alert was integrated in the EMR as a reminder of appropriate antimicrobial prescription duration. The main outcome measures were the percentage of inappropriately diagnosed UTIs and percentage with timely antimicrobial discontinuation. Process measures included antibiotic days saved, treatment duration, and physician adherence to the algorithm. As a balancing measure, positive urine cultures were reviewed to assess accuracy of the algorithm to detect UTIs and potential harm from delayed UTI diagnoses. **Evaluation/Results:** Early results from the 530 children included in the analysis demonstrated a 14% reduction in inappropriate UTI diagnoses. With the initiation of the call-back system, the antibiotic days saved increased from 0 to 495 days. Call-backs for negative cultures increased from 0% to 68% of the time. Of those positive cultures with a missed UTI diagnosis, only 5 patients in 5 months had a return visit within 72 hours and none required admission. **Discussion/Impact:** Appropriate diagnosis and treatment of UTIs in our ED has improved with the implementation of a diagnostic algorithm. A larger impact is anticipated once the algorithm is embedded in the EMR as a form of decision support, but these changes take time to implement. Although labour intensive, the call-back system has greatly impacted the antimicrobial days saved and reduced risk for harm in this population.

Keywords: antimicrobial stewardship, emergency medicine, quality improvement and patient safety

LO92

Improving patient communication in an emergency department's rapid assessment zone

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Background: Emergency Department (ED) communication between patients and clinicians is fraught with challenges. A local survey of 65 ED patients revealed low patient satisfaction with ED communication and resultant patient anxiety. **Aim Statement:** To increase patient satisfaction with ED communication and to decrease patient anxiety related to lack of ED visit information (primary aims), and to decrease clinician-perceived patient interruptions (secondary aim), each by one point on a 5-point Likert scale over a six-month period. **Measures & Design:** We performed wide stakeholder engagement, surveyed patients and clinicians, and conducted a patient focus group. An inductive analysis followed by a yield-feasibility-effort grid led to three interventions, introduced through sequential and additive Plan-Do-Study-Act (PDSA) cycles. PDSA 1: clinician communication tool (Acknowledge-Empathize-Inform [AEI] tool), based on survey themes and a literature review, and introduced through a multi-modal education approach. PDSA 2: patient information pamphlets developed with stakeholder input. PDSA 3: new waiting room TV screen with various informational ED-specific videos. Measures were conducted through anonymous surveys: Primary aims towards the end of the patient ED stay, and the secondary aim at the end of the clinician shift. We used Statistical Process Control (SPC) charts with usual special cause variation rules. Two-tailed Mann-Whitney tests were used to assess for statistical significance between means (significance: $p < 0.05$). **Evaluation/Results:** Over five months, 232 patient and 104 clinician surveys were collected. Wait times, ED processes, timing of typical steps, and directions were reported as the most important communication gaps, they and were included in the interventions. Patient satisfaction improved from 3.28 (5 being best, all means; $n = 65$) to 4.15 ($n = 59$, $p < 0.0001$). Patient anxiety improved from 2.96 (1 being best; $n = 65$) to 2.31 ($n = 59$, $p < 0.01$). Clinician-perceived interruptions went from 4.33 (1 being best; $n = 30$) to 4.18 ($n = 11$, $p = 0.98$). SPC charts using Likert scales did not show special cause variation. **Discussion/Impact:** A sequential, additive approach undertaken with pragmatic and low-cost interventions based on both clinician and patient input led to increased patient satisfaction with communication and decreased patient anxiety due to lack of ED visit information after PDSA cycles. These approaches could easily be replicated in other EDs to improve the patient experience.

Keywords: communication, emergency department, quality improvement and patient safety

LO93

Implementation of sepsis order sets to decrease the time to antibiotics in the emergency department: a quality improvement initiative

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Background: Sepsis is a life-threatening syndrome, and delays to appropriate antibiotic therapy increases mortality. Order sets have shown decrease in time to antibiotics in pneumonia, and in sepsis, the implementation of order sets resulted in more intravenous fluids, appropriate initial antibiotics and lower mortality. **Aim Statement:** The goal was to create an order set for an approach to septic patients, to improve sepsis management. We sought to improve time from triage to first antibiotics, by 15 minutes, for Emergency Department (ED) patients with sepsis in three months after implementation compared to three months before. **Measures & Design:** We used a literature review, as well as comparison to existing order sets at other EDs to design our initial order set. We underwent multiple revisions based on

stakeholder feedback. We educated physician and nursing teams about the order sets, although use was ultimately at physician discretion. We implemented the order set on April 9, 2017. After three months, an electronic retrospective chart review identified patients with a final sepsis diagnosis admitted to the critical care unit. For each patient, we captured triage time using the electronic record, and time to antibiotics from when the antibiotic was taken out of the medication cart. Finally, utilization of order sets was checked via manual chart audit. **Evaluation/Results:** A run chart did not demonstrate any shifts or trends suggesting a change after implementation. Median time to antibiotics in minutes, 3 months prior ($n = 45$) and post ($n = 55$) intervention, increased from 245 to 340 minutes, although the range was very large. Chart audits demonstrated clinicians were not using the order sets. There was 10% usage for 2 of the months and 0% usage the other month, post-intervention. **Discussion/Impact:** There was insufficient uptake of the Sepsis Order Set by the Sunnybrook ED to result in any impact on time to antibiotics. Order sets require more than just implementation to be effective. Difficulties in implementation were due to the document not being readily available to physicians. To mediate, we have organized nursing staff to attach the order set onto charts based on triage assessment and will re-assess with another PDSA cycle after this intervention.

Keywords: order sets, quality improvement and patient safety, sepsis

Moderated Poster Presentations

MP01

Retention and treatment outcomes for patients with substance use disorders treated in a rapid access to addiction medicine clinic

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Introduction: Substance use is prevalent in Canada yet treatment for alcohol use disorder (AUD) and opioid use disorder (OUD) is often inaccessible. Consequently, alcohol and opioid-related diagnoses such as intoxication, withdrawal, and overdose are a major reason for frequent emergency department (ED) visits. The Rapid Access to Addiction Medicine (RAAM) Clinic opened at the University Health Network (UHN) in January 2018 as part of a larger network of clinics in Toronto, and provides rapid, low barrier access to medical treatment for substance use disorder (SUD). Patients attended via self-referral, peer-referral, or referral by the ED, primary care, internal medicine or withdrawal management services. This study describes the demographic profile and short-term outcomes for patients attending a new RAAM clinic in its first 26 weeks of operation, including substance use and treatment retention for AUD and OUD. **Methods:** We reviewed the electronic medical record at the clinic over its first 26 weeks of operation. We assessed SUD diagnoses, referral source, prescribed medications, self-reported outcomes and retention rates. We calculated descriptive statistics using proportions for categorical variables and means with standard error for continuous variables. A student's t-test was used for all statistical analyses using Microsoft Excel. We reviewed the electronic medical record at the clinic over its first 26 weeks of operation. We assessed SUD diagnoses, referral source, prescribed medications, self-reported outcomes and retention rates. We calculated descriptive statistics using proportions for categorical variables and means with standard error for continuous variables. A student's t-test was used for all statistical analyses using Microsoft Excel. **Results:** The clinic saw 64 unique patients: 66% had an AUD, 39%

had an OUD and 20% had a stimulant use disorder. 55% of patients were referred from outpatient care providers, 30% from the emergency department and 11% from withdrawal management services. 42% remained ongoing patients, 23% were discharged to other care and 34% were lost to follow-up. Gabapentin (38%), naltrexone (33%), and acamprosate (20%) were most frequently prescribed for AUD. Patients with AUD reported a significant decrease ($p < 0.05$) in alcohol consumption at their most recent visit compared to their initial visit. Most patients (78%) with OUD were prescribed buprenorphine, and most (89%) patients with OUD on buprenorphine had a negative urine screen at their most recent visit. **Conclusion:** A new RAAM outpatient clinic demonstrates the early success of a low-barrier addictions model in addressing unmet needs in substance use treatment. We see a reduction in both alcohol consumption and opioid use, and increased access to evidence-based pharmacotherapy for SUDs.

Keywords: addiction, low-barrier, outpatient

MP02

Diagnostic, medical, and surgical interventions that reduce emergency hospital admissions: a systematic review of systematic reviews of 215 randomized controlled trials

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Introduction: Emergency hospital admissions are a growing concern for patients and health systems, globally. The objective of this study was to systematically review the evidence for diagnostic, medical, and surgical interventions that reduce emergency hospital admissions. **Methods:** We conducted a systematic review of systematic reviews by searching MEDLINE, PubMed, the Cochrane Database of Systematic Reviews, Google Scholar, and grey literature. Systematic reviews of any diagnostic, surgical, or medical interventions examining the effect on emergency hospital admissions among adults were included. The quality of reviews was assessed using AMSTAR and the quality of evidence was assessed using GRADE. The subsequent analysis was restricted to interventions with moderate or high-quality evidence only. **Results:** 13 051 titles and abstracts and 1 791 full-text articles were screened from which 42 systematic reviews were included. The reviews included an underlying evidence base of 215 randomized controlled trials with 135 282 patients. Of 20 unique diagnostic, medical, and surgical interventions identified, four had moderate ($n = 4$) or high ($n = 0$) quality evidence for significant reductions in hospital admissions in five patient populations. These were: cardiac resynchronization therapy for heart failure and atrial fibrillation, percutaneous aspiration for pneumothorax, early/routine coronary angiography for acute coronary syndrome (alone or comorbid with chronic kidney disease), and natriuretic peptide guided therapy for heart failure. **Conclusion:** We identified four interventions across five populations that when optimized, may lead to reductions in emergency hospital admissions. These findings can therefore help guide the development of quality indicators, standards, or practice guidelines.

Keywords: emergency hospital admissions, systematic review

MP03

Strategies to minimize impact of electronic health record implementation on emergency department flow

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