

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

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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

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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

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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