Reducing Excessive Variability in Infant Sepsis Evaluation II (REVISE II): Our Hospital's Implementation of New Guidelines

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Background

In 2021, the AAP published guidelines intended to standardize the evaluation and management of febrile infants 8-60 days of age. Reducing Excessive Variability in Infant Sepsis Evaluation II (REVISE II) is a Value in Inpatient Pediatrics (VIP) Network national quality improvement collaborative across more than 120 participating hospitals working to implement these guidelines. The guidelines incorporate historical components, inflammatory markers (WBC, ANC, CRP, procalcitonin and height of fever), and age in order to identify infants at low risk for serious bacterial infection who may be managed with close follow-up and may not require additional interventions such as lumbar puncture, IV antibiotics, and/or hospital admission.

Objective

- Global Project Aim: Improve the evidence-based evaluation and management of infants 8-60 days of age presenting to the hospital with fever over a 12-month timeframe.
- Specific Aim: To increase the percentage of febrile infants aged 8-60 days receiving guideline concordant care to > 90%.

Methods and Interventions

We developed a clinical pathway outlining step-by-step management of febrile infants and paired this with education in order to help teams follow the recommendations in the clinical practice guideline and tracked our performance on 13 measures over time. Baseline data period are monthly cycles 1-12 and occurred in 2021. Post-intervention data are cycles 13-24 and occurred in 2022.

Results

We showed improvement in 3 out of 4 primary project measures.

- 29-60 days, negative IMs (inflammatory markers): 94% did not have LP (baseline 89%)
- 29-60 days, negative IMs and UA: 81% discharged from ED (baseline 67%)
- 29-60 days, negative IMs and UA: 73% no antibiotic use (decline from baseline 78%)
- 8-60 days, negative cultures: 61% discharged within 24-36 hours (baseline 36%)

Importantly, we did not see a change locally (or in the national collaborative) in balancing measures of delayed diagnoses of IBI, ED revisits, or readmission rates. We estimate that this project led to **27 fewer LPs, avoided 26 admissions, and saved 3784 hours of hospital admission time**.

Conclusions

This data demonstrates improvement in guideline concordant care following the successful implementation of a clinical pathway for the management of febrile infants, though there still remains room for further improvement.

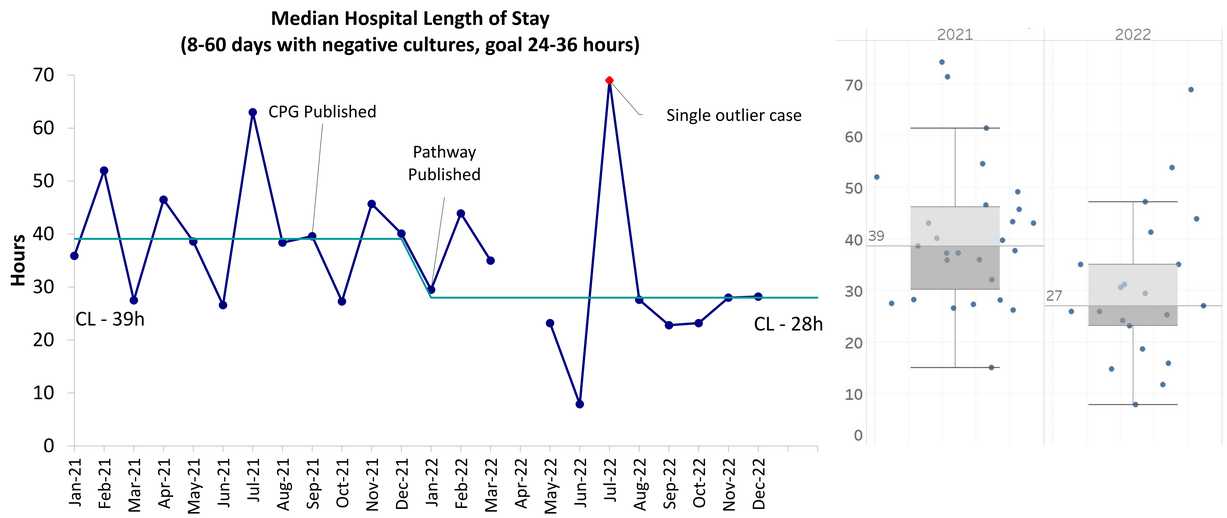

Figure 1: Run chart showing monthly median length of stay for hospitalized infants (8-60 days of age with negative cultures). Goal for discharge is in window between 24-36 hours after blood cultures drawn. Box plots show length of stay by patient. Both representations demonstrate shorter length of stay following pathway implementation.

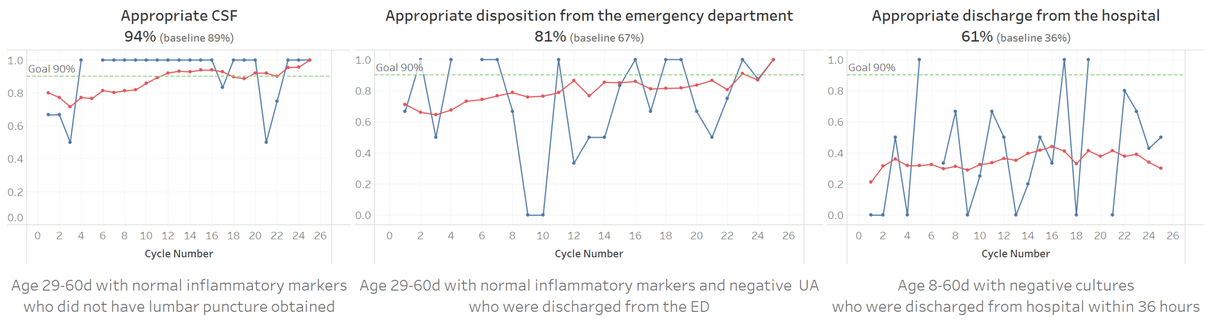

Figure 2: Primary measures which improved over time. Blue points represent Upstate GCH performance. Red points represent performance of entire national collaborative.

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