

Project HIFLO: A Local Quality Initiative to Reduce High-Flow Nasal Cannula Use in Bronchiolitis

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BACKGROUND

- High flow nasal cannula (HF) is a respiratory support modality used to treat bronchiolitis
- Recent randomized control trials demonstrate no improvement in clinical course, length of hospital stay (LOS), or rate of intensive care unit (ICU) admission compared to low-flow nasal cannula (LF) in mild-moderate bronchiolitis
- American Academic of Pediatrics Value in Inpatient Pediatrics (VIP) Network Quality Improvement (QI) Collaborative conducted a national project to decrease use of HF

PURPOSE

Global aim: Reduce the proportion of infants with bronchiolitis treated with HF and shift its use to a rescue therapy rather than standard management.
Primary aim is to reduce the proportion of infants with bronchiolitis treated with HF by 30%

METHODS

- Multi-disciplinary team conducted a baseline retrospective chart review**
- 30 days - 23 months with diagnosis of bronchiolitis
 - Exclusion criteria:
 - <32 weeks; chronic lung, cardiac, or neuromuscular disease; transfers from other hospitals; patients on positive pressure ventilation; home oxygen use
 - 2019-2020 used as comparison year due to the atypical 2020-2021 respiratory viral season

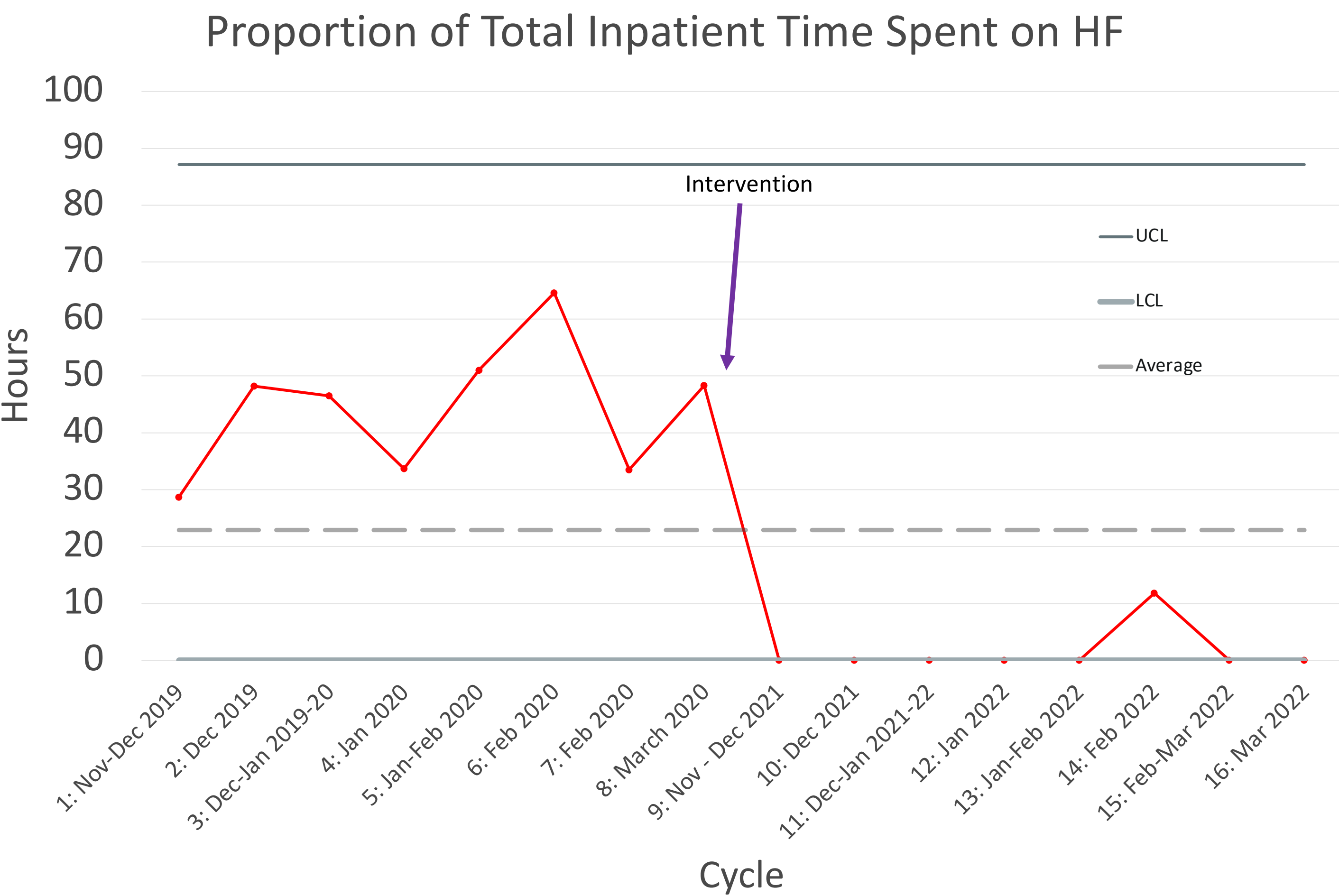
Intervention: Prior to starting HF → 15-30 minute High-flow Initiation Pause (HIP) to assess necessity of HF after maximizing suctioning, antipyretics, hydration, and LF use

Primary outcome: percentage of patients treated with HF after instituting the HIP analyzed using p-charts

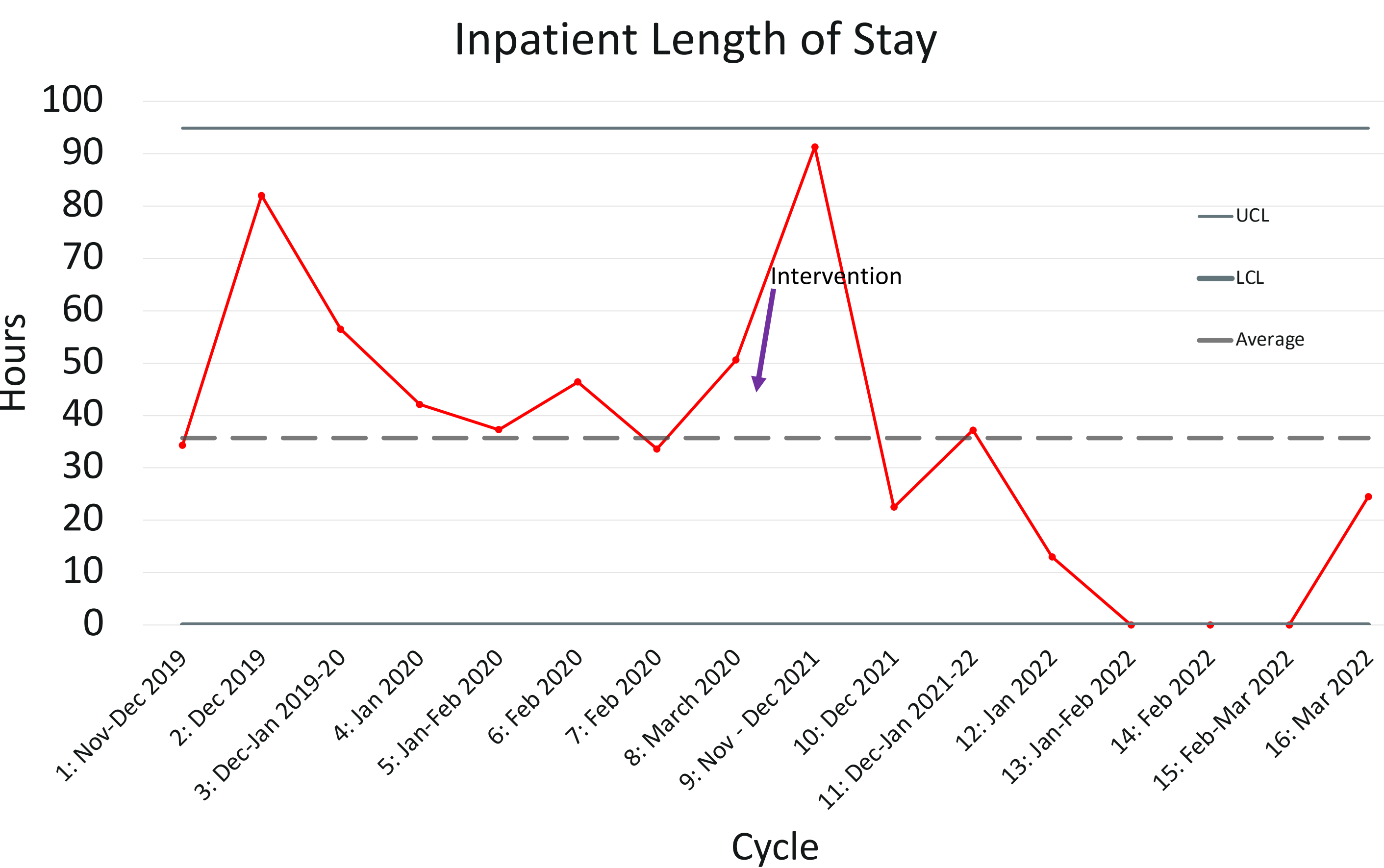
Balancing measures: ED and inpatient LOS analyzed using p-charts

RESULTS

- **HF initiation averaged 56% (median 54%, 95% CI 49-62%) in the pre-intervention group, and 9% post-intervention (median 0%, 95% CI 0-30%)**
- 52 patients included in the pre-intervention period and 11 post-intervention



- The proportion of total inpatient hours spent on HF pre-intervention was 44% (median 47%, 95% CI 41-47%) and 1% post-intervention (median 0%, 95% CI 0-4%)



- ED LOS did not change significantly over the project (Average 4.6 hours, median 5 hours, 95% CI 4.2-5.0)

CONCLUSIONS

- **Our local QI initiative successfully reduced the use of HF in our hospital by 47%**
- Documentation of the HIP was not completed consistently, however HF use still decreased
- ED LOS did not significantly change due to the decrease in HF use, however inpatient LOS did decrease
- Patient volumes were unusually low due to the continued COVID-19 pandemic
→ Fewer patients requiring HF overall

NEXT STEPS

- Identifying an alternate measure to document the HIP
- Given the unusually low volume of patient volumes in 2021-2022, the project will likely be extended into the 2022-2023 respiratory season for further data collection

ACKNOWLEDGMENTS

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This project was conducted through participation in the Value in Inpatient Pediatrics Network quality improvement collaborative HI-FLO: High flow Interventions to Facilitate Less Overuse

