

Fast-Track Fasting: Exploring Clinical Factors and Outcomes of Limited Perioperative Fasting for Enhanced Recovery in Pediatric Surgical Patients

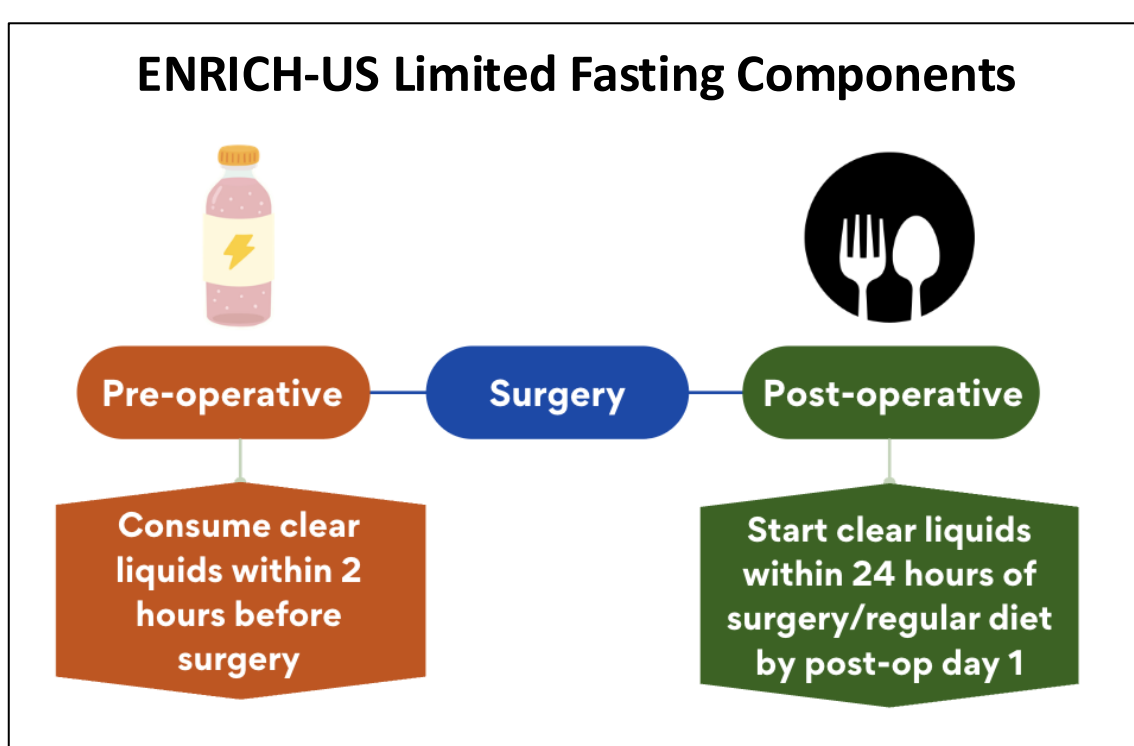
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Background

- Enhanced Recovery Protocols (ERPs) have demonstrated success in adult surgery, but evidence in pediatric surgery remains limited
- Limited perioperative fasting is a key ERP element with several clinical benefits:
 - Better hydration, lower insulin resistance, and shorter hospital stays
- ENRICH-US trial: 21-component ERP for elective pediatric GI surgery
- Significant variation in limited fasting practices across pediatric sites

Research Aim



Evaluate association between full limited perioperative fasting compliance and:

- Clinical outcomes
- Adherence to other ERP elements
- Surgery type
- Hospital site

Methods

- ENRICH-US study design: stepped-wedge, cluster-randomized trial
- Setting & period: 18 U.S. pediatric surgical centers from July 2020 – July 2024
- Eligibility criteria: children aged 10 to 18 undergoing elective GI surgery
- ERP implementation supported by Toolkit and Learning Collaborative curriculum, with multidisciplinary teams from each site promoting shared learning
- Conducted secondary analysis of ENRICH-US data

Patient-level characteristics

- Demographics
- Preoperative status (Home vs. inpatient)
- Hospital site

Procedure-level factors

- Surgical indication (e.g., inflammatory bowel disease)
- Surgery type (e.g., proctocolectomy, stricturoplasty)
- Operative approach (Open vs. minimally invasive)

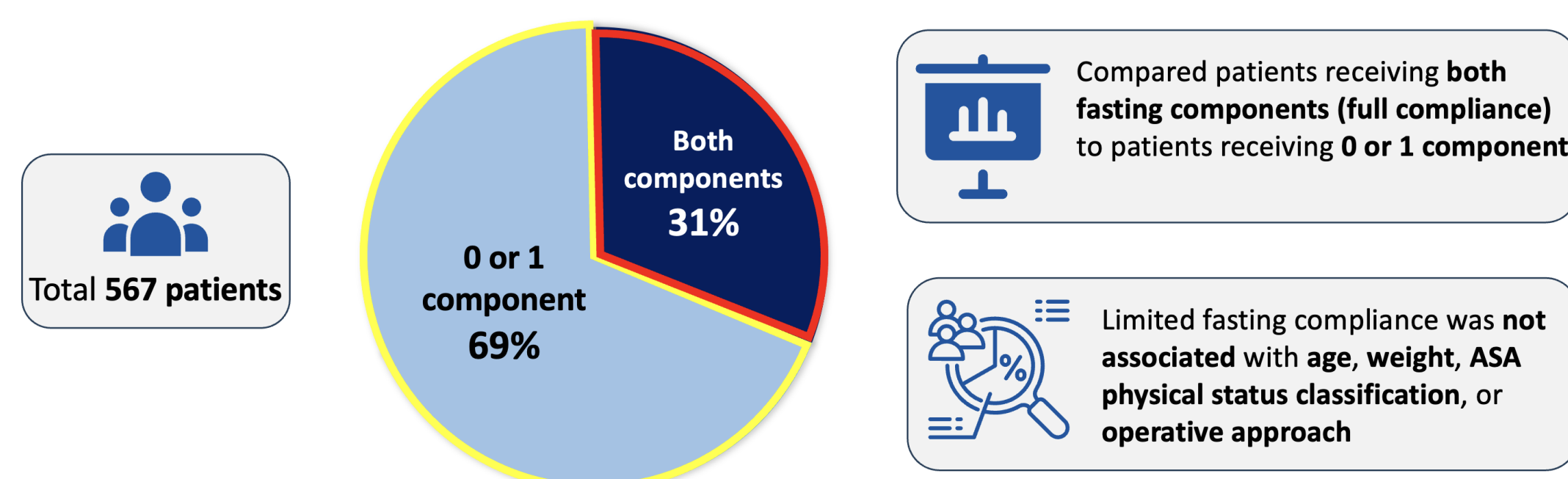
Outcomes

- Length of stay
- Surgical and infectious complications
- Adherence to other ERPs (e.g., NG/OG tube removal)

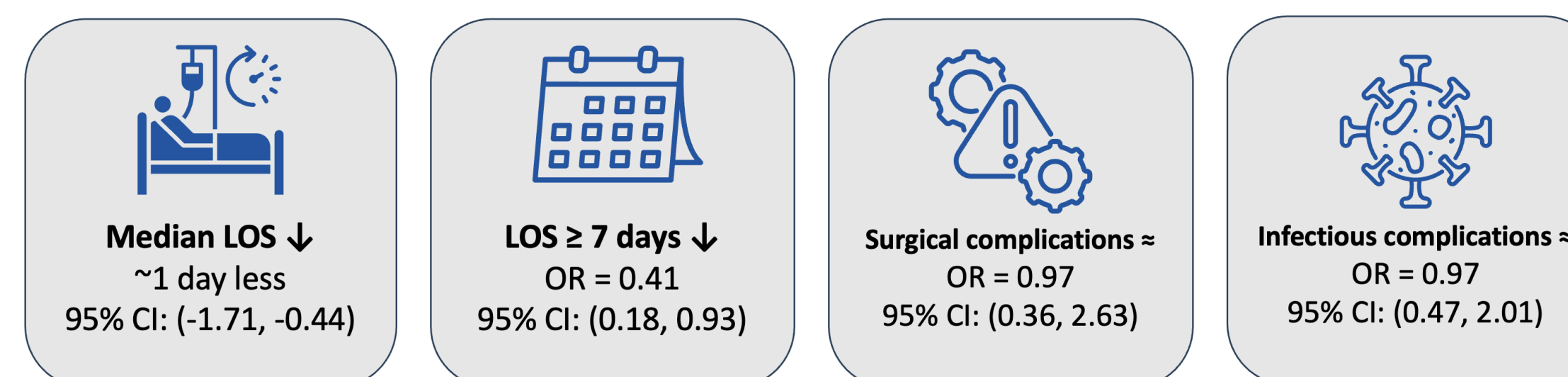
- Carried out an as-treated analysis using bivariate analyses, multivariable logistic, and quantile regression ($p < 0.05$)

Results – Demographics

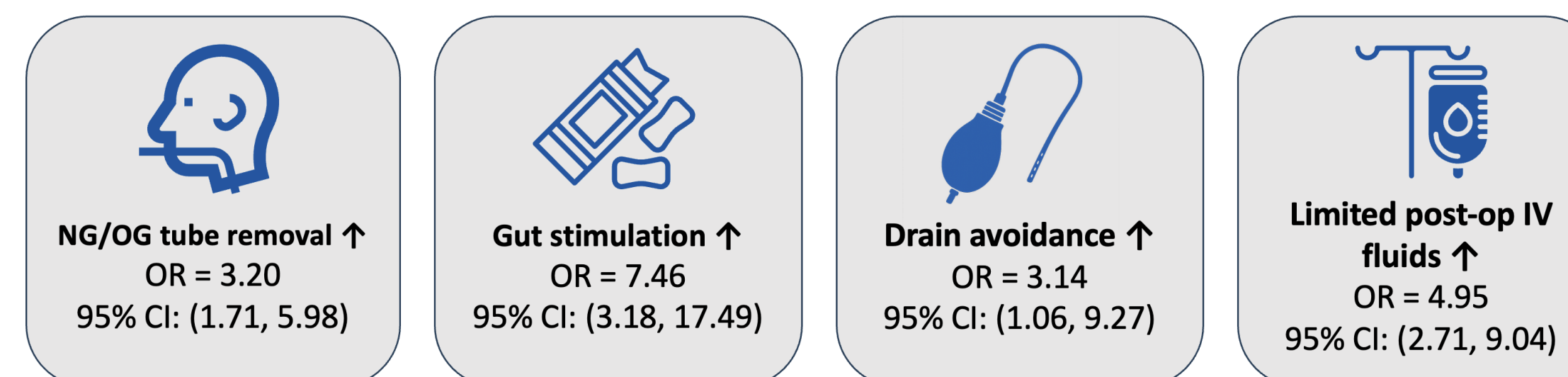
Patient Breakdown by Number of Limited Fasting Components Received



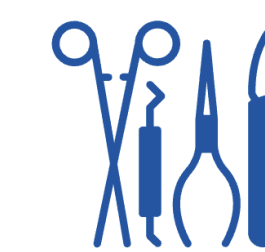
Results - Full Compliance Linked to Clinically Important Outcomes



Results - ERP Element Adherence Linked to Full Fasting Compliance



Results - Full Compliance was Similar Across Surgery Type, but Varied by Hospital Site

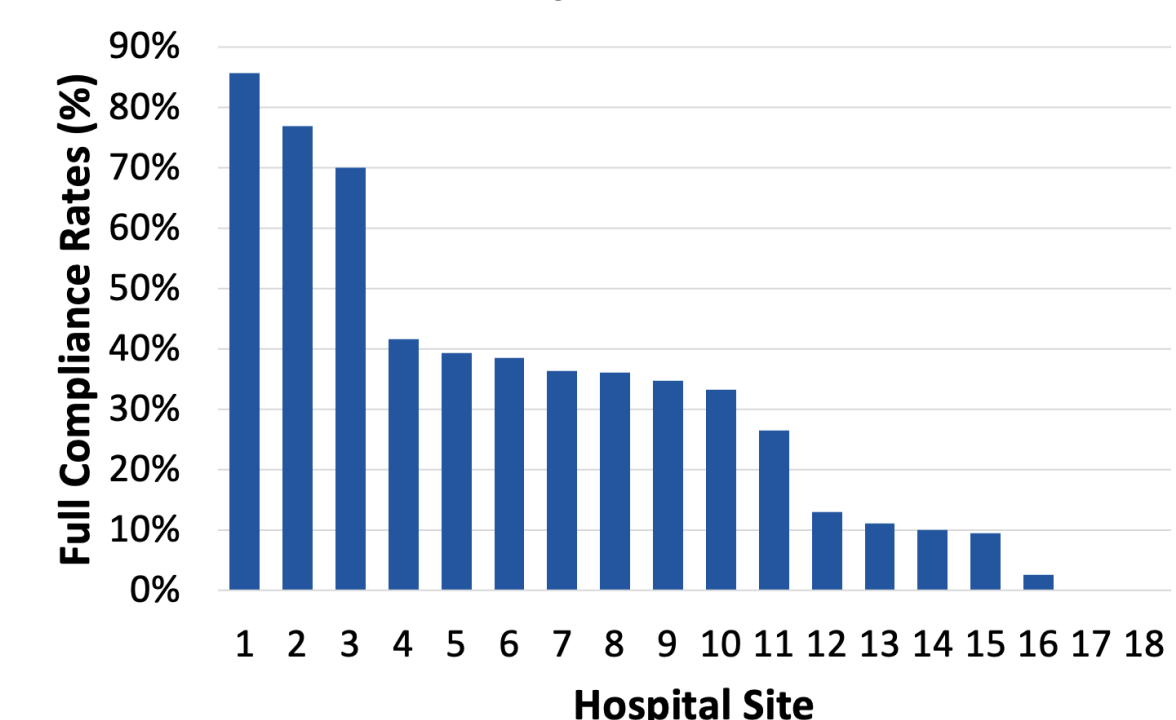


By surgery type: 20.2–37.3% ($p=0.07$)



By hospital site: 0–85.7% ($p < 0.001$)

Full Limited Fasting Compliance Rates by Hospital Site



Conclusions

- Limited fasting compliance was associated with shorter length of stay and no difference in complication rates.
- Adherence to limited fasting was associated with greater adherence to other elements, reflecting greater hospital-level commitment to enhanced recovery.
- Limited fasting rates were similar across surgeries performed, suggesting uptake was independent of complexity.
- Variation in limited fasting compliance by hospital calls for additional research into implementation barriers and facilitators.

References

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