

Improving ED Efficiency with a Nurse-Driven Ondansetron Protocol for Pediatric Gastritis

Jason Burgess, MSN, RNC-NIC, Kelly Carbone, DNP, APN, PPCNP-BC, Kristin Fiore, BSN, RN, CPN, Jody Durbin, BSN, RN, CPN



INTRODUCTION

Background: Pediatric patients presenting to the emergency department (ED) with vomiting due to suspected gastritis often experience prolonged length of stay (LOS) and increased use of intravenous fluids (IVF). Early administration of ondansetron has been shown to reduce vomiting and support oral rehydration, yet its use remains inconsistent.

Problem: Despite guidelines recommending oral rehydration therapy (ORT) for mild to moderate dehydration, many EDs continue to rely heavily on IVF and unnecessary lab testing. Nurse-initiated ondansetron at triage is not routinely practiced, contributing to delays in optimal care.

Purpose: To evaluate whether a nurse-driven protocol for early ondansetron administration can decrease ED LOS and pediatric admission rates in children with suspected gastritis.

Studies and Trends

- Multiple clinical guidelines, including those from the CDC and the American Academy of Pediatrics, recommend ORT over IVF for mild to moderate dehydration in children
- Randomized controlled trials show oral ondansetron significantly reduces vomiting, facilitates successful oral rehydration.

Framework:

- Iowa Model of EvidenceBased Practice

Learning Objectives

- **Describe** the impact of a nurse-driven ondansetron protocol on:
 - Emergency department length of stay
 - Pediatric admission rates for suspected gastritis
- **Identify** inclusion and exclusion criteria necessary for safe, early ondansetron administration in pediatric emergency settings.

METHODS

Setting and Participants:

This study was conducted at two hospital-based pediatric emergency departments: Virtua Voorhees and Virtua Mount Holly. The population included pediatric patients over 6 months of age and weighing at least 8 kilograms who presented with symptoms of nausea and vomiting.

Study Design: A retrospective cohort design was used to compare two groups:

Pre-protocol group: Received ondansetron only when initiated by a provider.

Post-protocol group: Received ondansetron through a nurse-driven protocol, initiated at triage based on standardized criteria.

Intervention:

The nurse-driven protocol allowed triage nurses to assess patients and administer ondansetron when appropriate, based on inclusion and exclusion criteria.

Inclusion Criteria

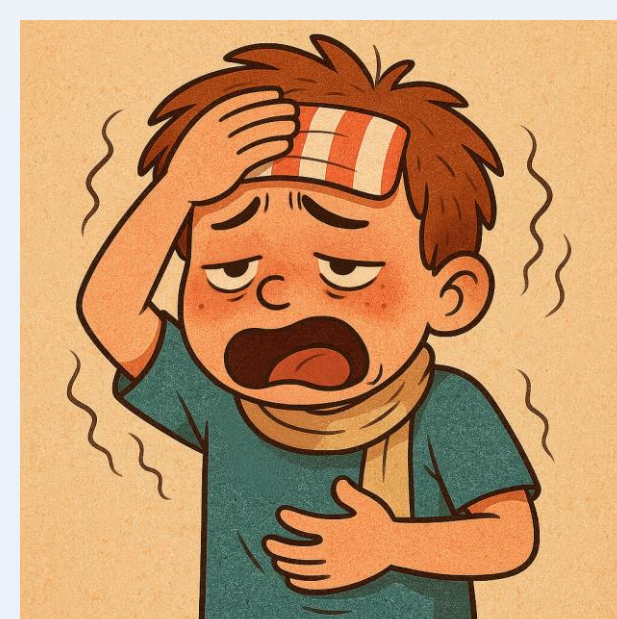
- Age greater than 6 months
- Weight of at least 8 kilograms
- Presentation with nausea and vomiting

Exclusion Criteria

- Bilious emesis
- Bloody diarrhea
- Known contraindications to ondansetron

Data Collection & Key Outcomes

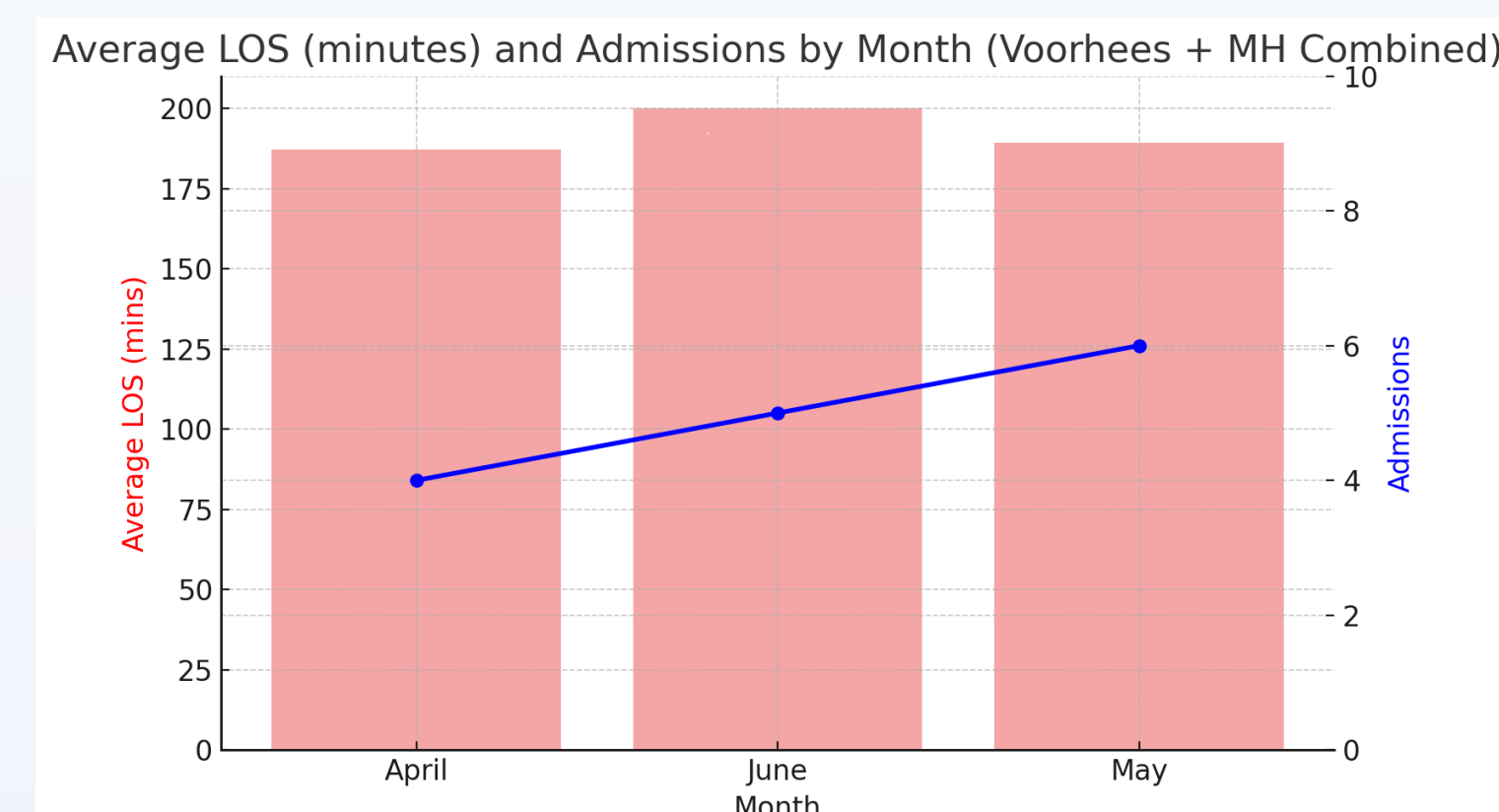
Data collected included emergency department length of stay (LOS), hospital admission rates,



RESULTS

Key Findings:

A retrospective review of pediatric emergency department visits for suspected gastritis was conducted across two sites—Virtua Voorhees and Virtua Mt. Holly—from **April to June**. A total of **121 patient encounters** were analyzed during the pre-protocol phase, focusing on **length of stay (LOS)** and **admission rates**.



While the data shows modest month-to-month variation, it establishes a valuable **baseline** for evaluating the impact of the **nurse-driven ondansetron protocol**. The observed decrease in LOS, though slight, may indicate system readiness for efficiency gains. Admission rates remained low and variable, underscoring the potential for early intervention protocols to further reduce unnecessary admissions and enhance ED throughput.

Next Steps for Data Monitoring:

- Monitor post-protocol LOS and admission trends monthly to confirm improvement.
- Consider tracking additional variables like:
 - Time from triage to ondansetron administration
 - IV fluid usage
 - Patient revisit rates at 72 hours

CONCLUSIONS

Interpretation:

The implementation of a nurse-driven ondansetron protocol shows promise as an effective strategy to improve pediatric emergency department efficiency. By **empowering** triage nurses to initiate early antiemetic therapy using standardized criteria, this approach may:

- **Reduce** emergency department length of stay
- **Lower** hospital admission rates
- **Minimize** the need for intravenous fluids
- Maintain **patient safety** and **reduce** treatment delays

Limitations:

- Only pre-protocol data has been collected to date, limiting the ability to fully evaluate the impact of the nurse-driven ondansetron protocol.
- Without post-intervention data, comparisons in outcomes such as ED length of stay, and admission rates, remain only pre-protocol data.

Future Directions

- Complete post-protocol data collection and analysis to assess the protocol's effectiveness and safety.
- Explore nurse adherence to protocol criteria and potential training needs to ensure consistent implementation.

REFERENCES

- Hendrickson, M. A., Zaremba, J., Wey, A. R., Gaillard, P. R., & Kharbanda, A. B. (2018). The use of a triage-based protocol for oral rehydration in a pediatric emergency department. *Pediatric Emergency Care*, 34(4), 227–232. <https://doi.org/10.1097/pec.0000000000001070>
- Gray, J. M., Maewal, J. D., Lunos, S. A., Furnival, R. A., & Hendrickson, M. A. (2020). Ondansetron prescription for home use in a pediatric emergency department. *Pediatric Emergency Care*, 36(3), e120–e124. <https://doi.org/10.1097/pec.0000000000001343>