

# Analgesia & Sedation Protocol for Mechanically Ventilated Patients

A Quality Improvement Project in the ICU

## Author(s)

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## Background

- Inappropriate use of continuous sedation leads to prolonged mechanical ventilation (MV) > 3 days, which increases the risk of failed extubation, ventilator-associated events, increased length of stay, and mortality.
- Professional organizations recommend standardizing protocols, prioritizing pain management before sedation to improve outcomes.

### Local Problem:

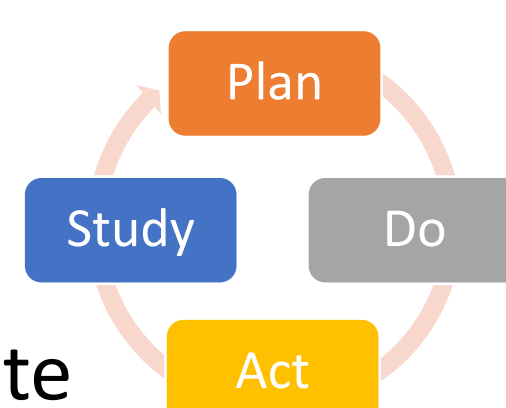
- 30-bed Intensive Care Unit at a Community Hospital, average MV days of > 3
- Sedation practices lacked standardization, with multiple infusions used concurrently, pain management not prioritized as first-line therapy, and decisions driven by individual nursing experience and provider preference

## Purpose

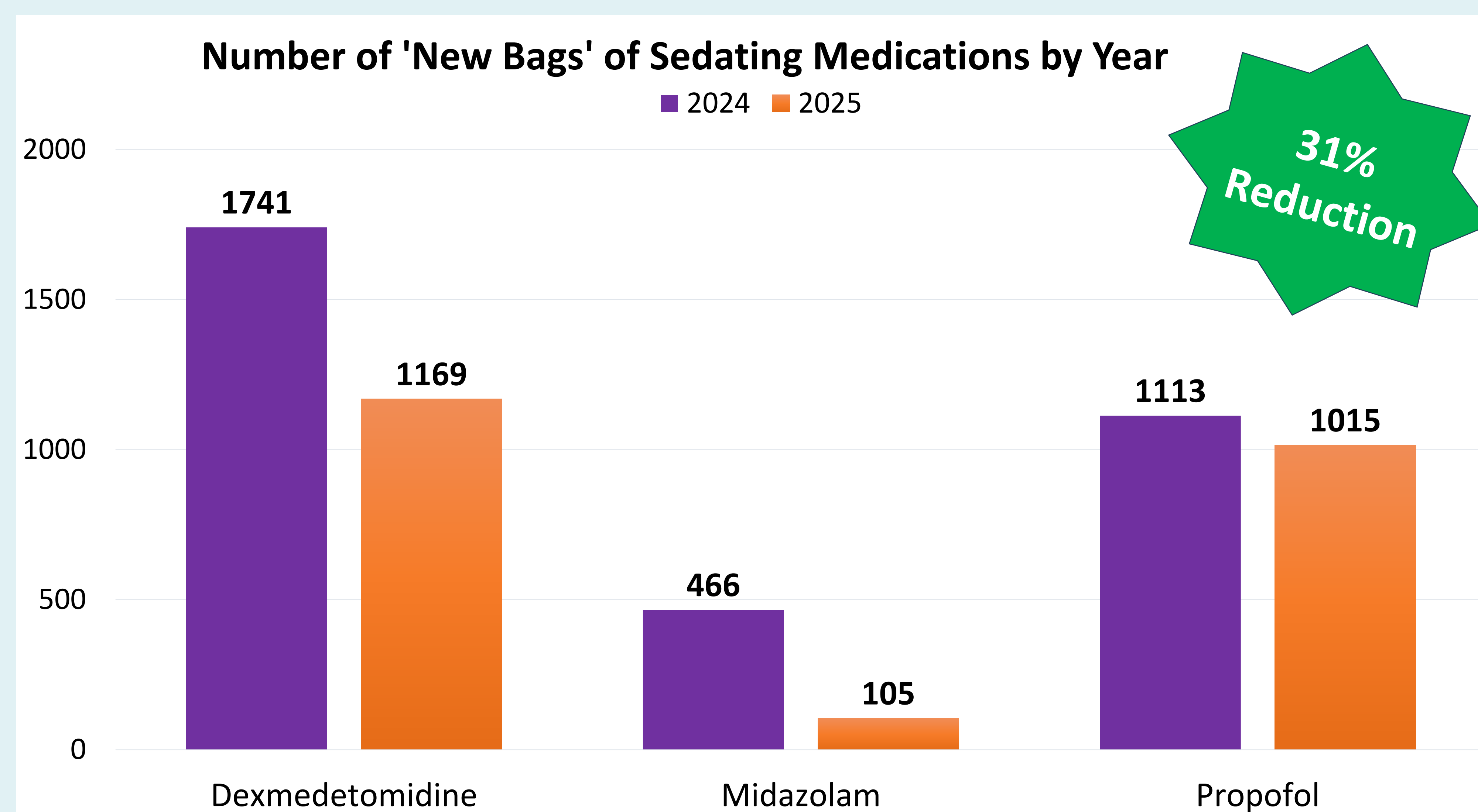
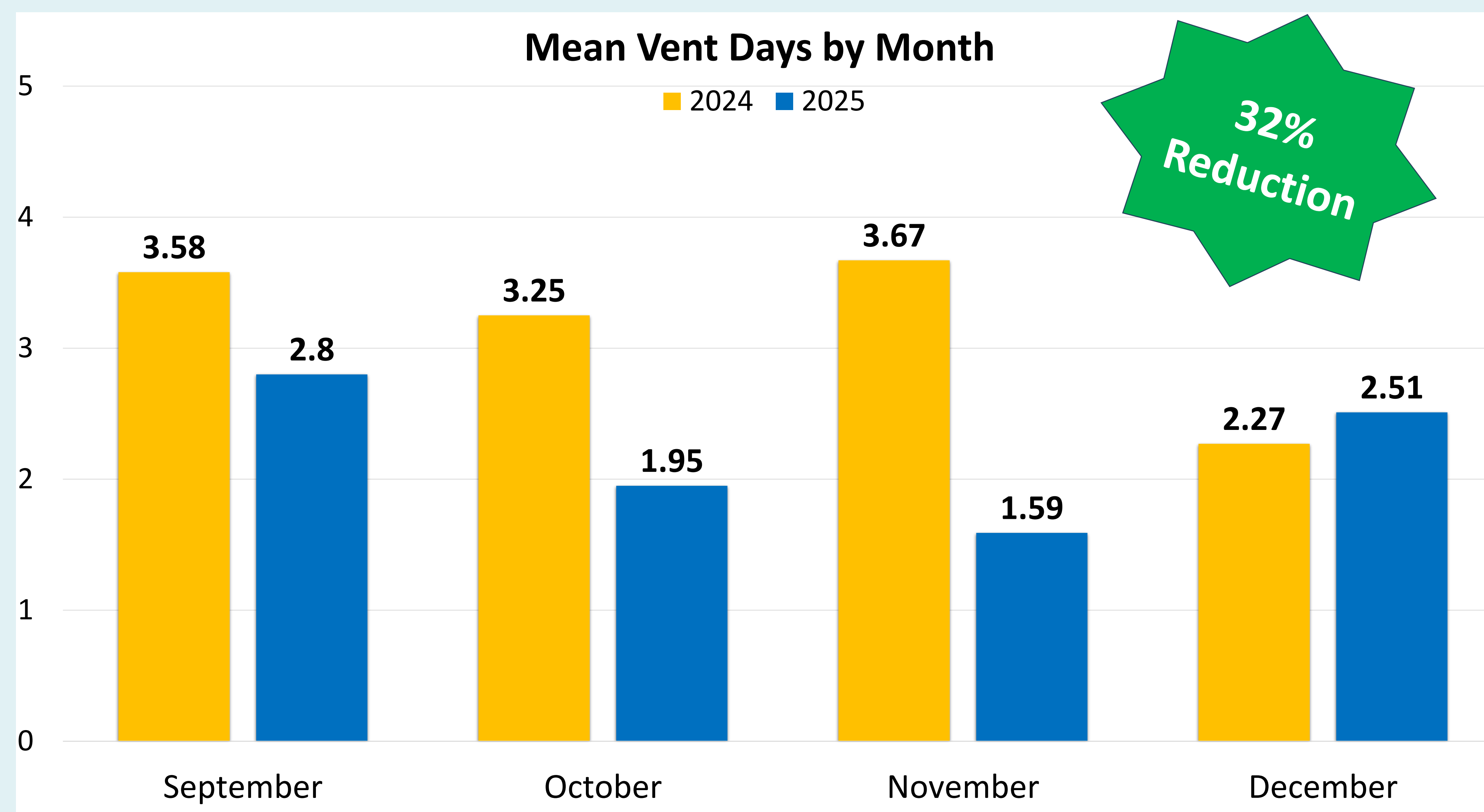
- To reduce ventilator days by two days & 10% reduction in number of continuous sedation infusions used by implementing an analgesia-first sedation protocol for adult patients admitted to the ICU who require MV

## Methods

- Using Lean Four-Step-Problem-Solving Process & the Plan-Do-Study-Act Cycle a multidisciplinary team gathered to create an Analgesia-First Protocol for MV patients.
- Education:** Pulmonary Critical Care providers' education at monthly meetings, plus 1:1 discussions. Nursing education occurred in August & September 2025 via computer-based training (CBT) model and 1:1 in-person education review.
- Data:** # of intubated patients, # times protocol ordered, % providers saved protocol orders to preferences, % nurses received 1:1 education, % nurses saved protocol orders to preferences, % nurses CBT completed from BI Launch System Reports, Charge RN Tracking Sheets, Resource RN Education Tracking Sheets, Chart audits completed and de-identification by Clinical Practice Specialist.
- Data Analyses:** Pre-post intervention comparison. Pre-intervention data September-December 2024 Post data September-December 2025.
- Protocol Adapted:** The Johns Hopkins Sedation Protocol for Activity & Mobility Promotion in the ICU was modified to align with organizational practices and current guideline recommendations.



# Implementing an Analgesia-First Sedation Management Protocol helped Reduce Ventilator Days and total Number of Continuous Infusions



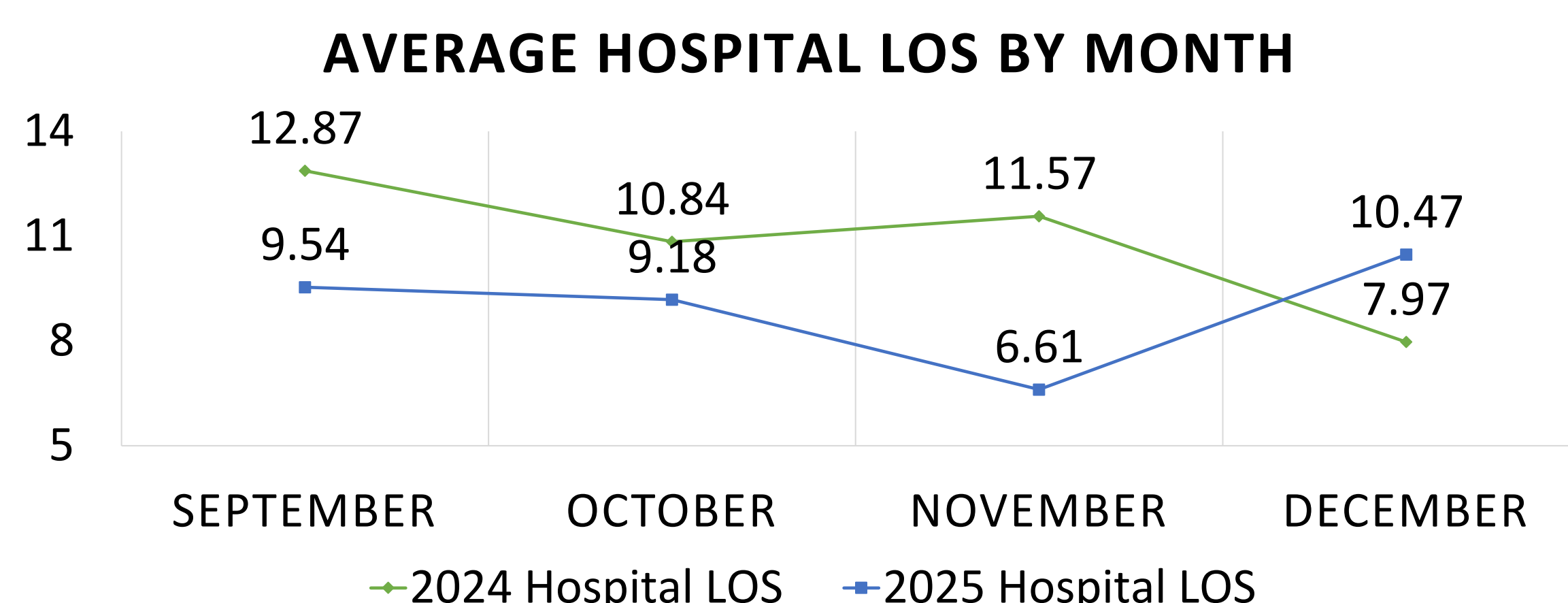
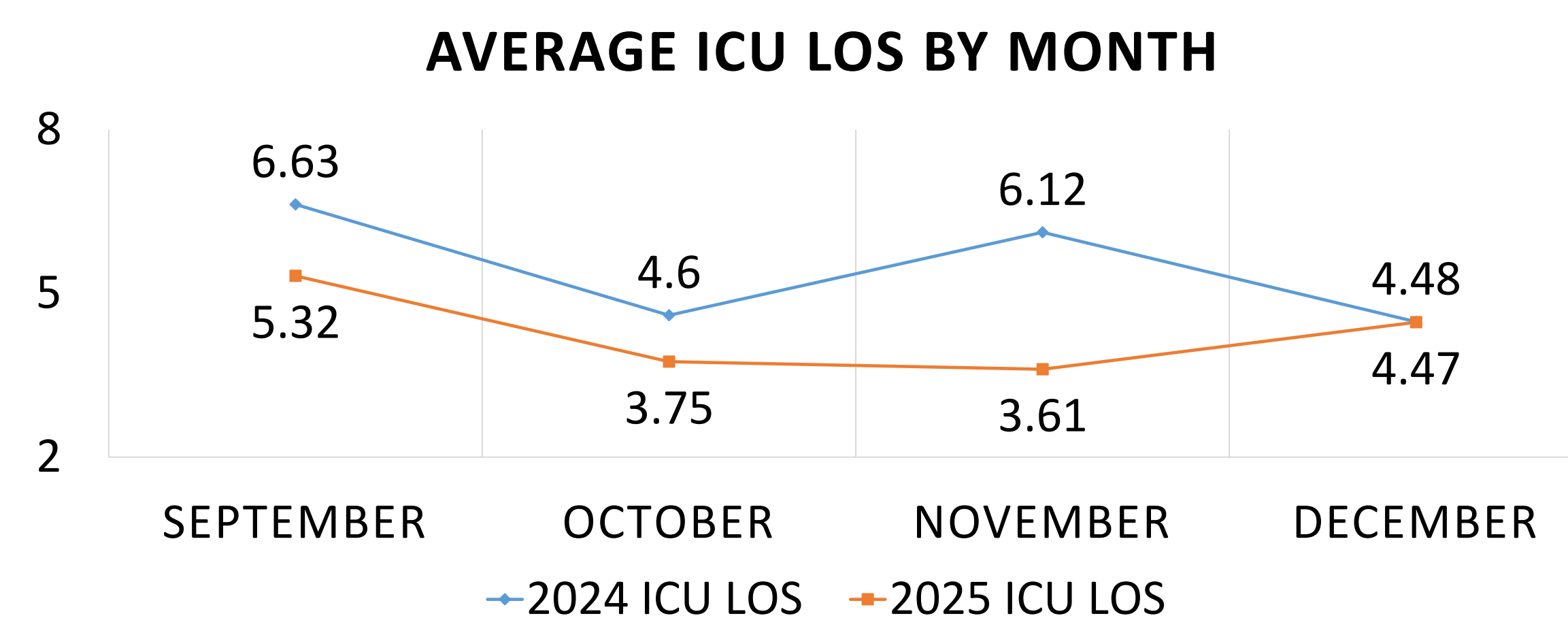
## Results

# times of protocol ordered: 9

196 intubated patients for both 2024 & 2025

Average Vent Day 2024 3.27; 2025 2.2. Reduced by 1.1 days.

**24.06%** decrease ICU LOS and **19.06%** decrease Hospital LOS



### Infusion Data # of "New Bags" charged:

- 32.86%** decrease of dexmedetomidine
- 77.47%** decrease of midazolam
- 8.80% decrease of propofol

### Education & Adoption

- 50% of Providers saved protocol orders
- 55% of ICU RNs received 1:1 education
- 15% of RNs saved protocol to preferences
- 97.7% completed HealthStream CBT

## Conclusions

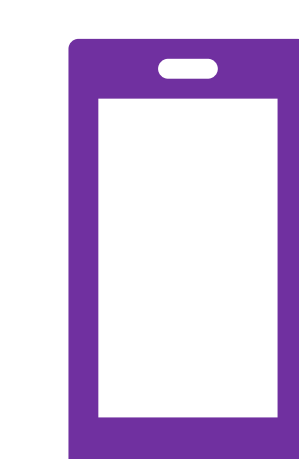
- Implementing an Analgesia-First Sedation Management Protocol for adult patients requiring MV can reduce ventilator days and provides standardization to improve outcomes

## Implications for Clinical Practice

- Future program evaluations and quality improvement projects are needed to evaluate protocol adherence, nursing workload, assess resources needed to provide evidence-based high-quality care for mechanically ventilated patients, impact of protocol on other clinical outcomes, and identify barriers to protocol utilization.

## Acknowledgements

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