

Introduction

- Delirium is an acute abrupt cognitive behavior change prevalent among hospitalized adult patients.
- Characterized by disturbances in attention and cognition with an acute onset leading to increased risk of falls by fourfold (He et al., 2022).
- There are three subtypes of delirium (Bozkul et al., 2021; Klein & Kvam, 2021).
 - Hypoactive delirium
 - Hyperactive delirium
 - Mixed delirium
- Delirium affects more than 2.6 million adult patients in the United States of America annually (Elder et al., 2023).
- The prevalence of delirium among hospitalized patients ranges 25% -77% (ANA, 2023).
- Delirium costs the United States healthcare industry's economy from \$ 38 billion to \$ 152 billion annually (ANA, 2023).

Problem Description

- A needs assessment revealed the prevalence of delirium cases within an observation unit is at 25%.
- The observation unit adopts a routine standard of care for delirium prevention.
- 30-40% of reported delirium cases are highly avoidable if delirium prevention bundle are implemented (Janssen et al., 2019).

Purpose

PICOT Question

How does the implementation of the delirium prevention bundle, compared to the current practice, impact delirium cases among adults admitted to the observation unit over six weeks?

- P - Adult population admitted through the observational unit.
- I - Delirium prevention bundle.
- C - Routine standard care.
- O - Reduced delirium incidence.
- T - Six weeks.

Specific Aims

- **Short-term goal:** the delirium prevention bundle will reduce n delirium incidence in the observation unit from 25% to 15% in six weeks.
- **Long-term goal:** the observation unit will achieve a delirium incidence rate of < 2%.

Rationale

PDSA Cycle Framework

Plan - Do - Study - Act



Literature Review

- A total of 23 studies acknowledging that implementing a delirium prevention bundle aids in preventing delirium were identified and reviewed.
- The literature review findings categorized into key themes;
 - Delirium Assessment and Screening (Alvarez et al., 2020; Blandford et al., 2019; Burton et al., 2021).
 - The adoption of clinically validated diagnostic instruments has proved to be effective in assessing and screening delirium.
 - Confusion Assessment Method (CAM) applied since it's a standard for screening delirium in an inpatient setting
 - Delirium Prevention Bundles (Choi et al., 2019; Young et al., 2021).
 - The POD prevention bundle comprised of four key elements: education, delirium screening, delirium prevention, and scheduled assessment.
 - Non-pharmacologic Delirium Prevention Interventions (Faeder et al., 2023; Gembrowski, 2019).
 - The non-pharmacologic interventions include reorientation, early mobilization, hydration, nutrition, sleep, hearing, and or vision adaptation
 - Pharmacologic Delirium Prevention Interventions (Faeder et al., 2023).
 - Pharmacological strategies such as antipsychotics, cholinesterase inhibitors, alpha-2 agonists, and melatonin receptor agonists have been proven to prevent the occurrence of delirium episodes.
 - Staff and Family Member Education on Delirium (Burton et al., 2021).
 - Enhanced knowledge through education and training to ensure earlier delirium detection and implementation of effective prevention mechanisms and incidence reduction.
 - Technology-based Interventions and Delirium Prevention (Alvarez et al., 2020).

Methods

Delirium prevention bundle intervention

- Educate the observation unit nursing staff about the delirium prevention bundle.
- Train the observational unit nursing staff on how to use the Confusion Assessment Method (CAM) tool for screening delirium.
- After successful training, the observation unit nursing staff will be responsible for screening each patient at the unit for delirium using the CAM tool upon admission and every 12 hours.
- All patients who will be identified to be at risk of delirium will be subject to the following interventions;
 - Adequate treatment therapy to suppress the underlying health condition triggering delirium.
 - Adequate hydration and nutritional intake which meets the recommended daily requirement.
 - Optimal oral hygiene.
 - Safe sleep guidelines.
 - Noise regulation.
 - Exposure to natural lighting.
 - Sensory support and being surrounded by relatives.
- Outcome measures

Ethical Considerations

- Received approvals from;
- Human Subjects Review Committee (HSRC) Wilmington University.
 - CITI training completion certificate.
 - Organizational approvals.
 - Patient confidentiality enhanced.

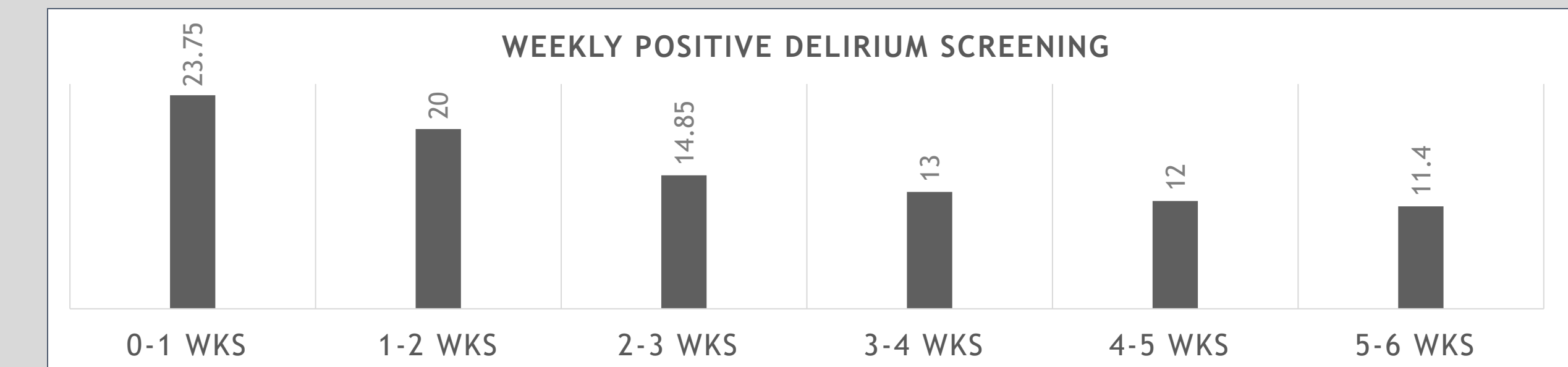
Results

Measures

- Pre-intervention chart review quantitative measure using a control group conducted from October 2023 to December 2023. Data assessed based on the current practice:-
 - Delirium incidence rate.
 - Length of hospital stay.
 - Compliance rate on CAM tool use.
- The implementation phase occurred at the observation unit from February 5, 2024, to March 18, 2024. All chart reviews assessed the delirium incidence rate, length of hospital stay, and compliance rate on CAM tool use based on the delirium prevention bundle.

Analysis

- Quantitative comparisons of data collected during the pre-intervention and implementation phases.
- Delirium incidence dropped from 24% (control group) to 12% (implementation group) (p<0.005).
- Length of hospital stay reduced from a mean of 24 days (control group) to a mean of 11 days (implementation group) (p<0.002).
- Compliance rate on CAM tool use rose from 70% to 89%.



Variable	Pre-Intervention n=102	Post-Intervention n=95	Total n= 197	p value
Positive Delirium Screening	(23.75) 25%	(11.4) 12%	197	p<0.005

Conclusion

- Implementing a delirium prevention bundle is the most successful approach to minimizing delirium incidence in the observation setting.
- Healthcare organizations should consider implementing quality improvement projects to continue reporting improvements in delirium prevention.

Sustainability

- Implement the delirium prevention bundle intervention into a policy.
- Extend the delirium bundle intervention into the hospital's other units.

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