Implementation of a Delirium Screening Tool in a Pediatric Cardiothoracic Intensive Care Unit

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Introduction & Background

- Delirium is a prevalent condition among critically ill children characterized by disturbance in attention/awareness and changes in cognition.
- Pediatric patients in the cardiothoracic intensive care unit (CTICU) are exposed to several delirium risk factors.
- Delirium is a prevalent condition in pediatric critical care units.
- Increased morbidity and mortality, mechanical ventilation time, risk of self harm, falls, increased hospital length of stay, increased hospital costs.
- Key step in pediatric delirium management includes screening for a validated tool. Effective screening requires knowledge of pediatric delirium.
- Prior to this quality improvement initiative, there was no formal delirium screening practice at the project site.

Purpose & Aims

To implement a valid and reliable pediatric delirium screening tool utilized by clinicians in a pediatric CTICU in an effort to enhance staff knowledge and assessment of this condition.

1. CTICU nursing staff will exhibit enhanced knowledge of pediatric delirium, as evidenced by a 30% increase in knowledge evaluation scores.
2. CTICU nursing staff will achieve 80% compliance in delirium screening within 3 months of project roll-out.
3. CTICU nursing staff will achieve 80% compliance in presenting delirium scores during day shift rounds within 3 months of project roll-out.

Methods

- Setting: 24-bed pediatric CTICU
- Design: Pre- and post- quality improvement
- Sample: 56 nurses (pre), 45 nurses (post), 29 nurses (paired); All patients except premature infants or those with deep or unarousable sedation
- Delirium screening tool utilized by clinicians in a pediatric CTICU
- Purpose & Aims: Implement a valid and reliable pediatric delirium screening tool utilized by clinicians in a pediatric CTICU nursing staff will achieve 80% compliance in presenting delirium scores.

Intervention

Pediatric Delirium Education

- Validated for patients 0-21 years including developmentally delayed patients
- 84.1% sensitivity, 79.2% specificity, 0.94 Cohen’s kappa coefficients
- Nurses completes CAPD every shift at 0600/1800

Results

Nurse Sample Characteristics

- Highest Nursing Degree, n (%):
  - Bachelor of Science in Nursing 50 (89.3)
  - Master of Science in Nursing 5 (9.9)
- Nursing Experience Level, n (%):
  - < 2 years 8 (14.3)
  - 2-5 years 14 (25)
  - 5-10 years 13 (23.2)
  - >10 years 21 (37.5)
- Core vs Travel RN, n (%):
  - Core 55 (98.2)
  - Travel 1 (1.8)
  - CCRN Certification, n (%):
  - Certified 29 (51.8)
  - Not Certified 27 (48.2)

CAPD Percent Compliance

- Pre-Test Knowledge Summary Scores
  - Median Summary Scores:
    - Test Median: 77
    - Post Median: 83
  - Test Knowledge Summary Scores
    - 40
    - 50
    - 60
    - 70
    - 80
    - 90
- Post-Test Knowledge Summary Scores
  - Median Summary Scores:
    - Test Median: 72
    - Post Median: 77
  - Test Knowledge Summary Scores
    - 40
    - 50
    - 60
    - 70
    - 80
    - 90

Pre-Test vs. Post-Test Knowledge Summary Scores

- Aim 1: Statistically significant increase in pediatric delirium knowledge among nursing staff (82.35% to 88.23%, p = 0.025). Also clinically significant, as increased knowledge improves delirium management.
- Aim 2: Average compliance using nurse presentation of CAPD scores during interdisciplinary rounds was 80.2%. Compliance with Nurse Presentation of CAPD in Rounds

Sustainability

- Continued education and compliance audits
- Addition of CAPD into Clinical Practice Guidelines
- Creation of pediatric delirium management algorithm

Conclusion

- Project enhanced nursing’s knowledge of pediatric delirium and prompted delirium screening, a fundamental step in improving patient outcomes.
- Education and routine interdisciplinary discussion of delirium fosters integration of tool into unit culture.
- There is a need for a validated tool to better assess nursing’s pediatric delirium knowledge.
- Future efforts should aim to close screening compliance gap between day and night shift.

References