Targeted Education to Improve Delirium Screening Among Neuroscience Patients

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Quality Improvement Project Question:

Does participation in formal instruction on use of the delirium screening instrument, CAM-ICU, during a six-week time period, by nurses in a neuroscience ICU improve documentation accuracy rates and increase delirium detection when compared to the current informal approach of nurses being taught by preceptors during the orientation period?

Background of the Issue:

- **Delirium** results in longer hospital and intensive care unit lengths of stay; increased morbidity, mortality, and healthcare costs; and is associated with long-term cognitive deficits and neuropsychological disorders.
- Considering healthcare system burdens and poor patient outcomes related to delirium, there has been emphasis on **early recognition** of patients experiencing delirium.
- The literature supports the importance of **screening** for delirium at the bedside and identifies tools used to meet this end.
- Most studies excluded use of the tools in neuroscience settings because of the complexity assessing delirium in **neuro-compromised patients**.
- Neuroscience patients bring unique challenges because many of them present with alterations in mental status and their exams fluctuate inherently as a result of their underlying brain pathology.
- **The Confusion Assessment Method for the intensive care unit (CAM-ICU)** is a validated screening tool for delirium in neuroscience patients, yet there is still a gap in the literature regarding application of the CAM-ICU for neuroscience patients.
- The purpose of this project was to increase neuroscience nurses' ability to accurately document delirium assessments using the CAM-ICU by minimizing the use of "unable to assess", thereby increasing detection of delirious patients in a neuroscience intensive care unit.

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Review of the Literature:

Key words: CAM-ICU, RASS, delirium, delirium screening, neuroscience, baseline mental status, and quality improvement

Two landmark studies for this project:

Mitasova et al., (2012): Validation of CAM-ICU in post-stroke patients (N = 129)

- Key point: Post-stroke patients → Neuroscience population. In addition to delirium, may tip clinicians off to underlying pathology that is concerning.

DiLibero et al., (2018): Delirium assessment accuracy by RN's in neurosciences reaches 90% using CAM-ICU

- Key points: Neuroscience patient population is challenging to assess. Risks are greater if we miss patients, cast a wider net / increase sensitivity.

Activity Detail and Data:

Timeframe: September to December 2018

- Institutional Review Board (IRB-HSR) reviewed, deemed QI initiative. Nurses' consent to participate was assumed by attendance at educational sessions
- Neuroscience Intensive Care Unit RNs were invited to participate in a 30-minute didactic training session
- Real time coaching with RNs who attended the didactic training sessions if their delirium screening assessments were documented inaccurately ***or*** if they consulted the investigator independently
- Electronic Health Record (EHR) audits were conducted before and after educational interventions to determine unit-based documentation accuracy rates

Table 1

Paired Samples t-test Results of Pre- and Post- Documentation Accuracy Rates at the Unit Level (n = 18)

Documentation Accuracy Rates	M *(SD)* Pre	M *(SD)* Post	$t(17)$	p	95% CI
Unit Level	0.44 *(0.22)*	0.83 *(0.22)*	-7.30	< .001***	[- .48 , - .27]

Note. CI = confidence interval. Unit level documentation accuracy rate improvement from minimum of five audits per each of 18 registered nurses retained in the study for paired samples comparison pre and post-intervention. Based on total electronic health record audits pre-intervention n = 124 and post-intervention n = 124. ***Statistically significant.

Summary:

- Nurses can accurately document presence/ absence of delirium assessments using the CAM-ICU
- Formal training tailored to neuroscience nurses increases the identification of delirium
- Defining baseline assessment criteria is critical in this specialty population
- Enhances nursing's contribution to the healthcare team
- Impacts the medical team's collaboration
- Identified the need for the development or adoption of protocols that may guide mitigation/treatment of delirium

Specific Recommendations for Nursing Practice:

- Add outcome of delirium screening assessments to daily interdisciplinary rounding checklist
- Create badge cards with CAM-ICU criteria
- Include CAM-ICU training in neuro-core course for new hires
- Continue audits of electronic health records every six months to sustain upward trend
- Form interdisciplinary collaborative team to develop treatment and/or prevention protocols

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*More references available upon request