MEDICAL FLOOR CAM IMPLEMENTATION AND ASSESSMENT OF RISK FACTORS

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INTRODUCTION

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**PROBLEM STATEMENT - DELIRIUM**

- Delirium
  - an alteration in attention that develops quickly
  - represents a change in baseline cognitive status
  - fluctuates in severity throughout the day
  - not attributed to another pre-existing neurocognitive disorder (Inouye, S. K., et al. 1990)

- Affects 45 – 50% of older hospitalized patients
  (Carr, 2013; Inouye, et al., 2013)
  - Less than 1% recognition in the study hospital

- Causes significant downstream complications
THE RESEARCH

• Nursing Assessment Alone
  • Multiple studies noted under-recognition of delirium
  • Lack of studies specific to identification and management on medical/surgical units (Agar et al., 2011, Flagg et al., 2010, Mitstarz, et al., 2011, Rice, et al., 2011)

• Delirium Assessment Tools
  • Confusion Assessment Method most common in MS population

• Risk Assessment Literature
  • Each and every study describes multiple different risk factors
THE PURPOSE AND DESIGN

• The purpose of this quality improvement project was to:
  • Provide delirium education to the nursing staff
  • Implement the use of the CAM
  • Determine if five precipitating factors for delirium were present (Inouye and Charpentier, 1996)
    • Use of physical restraints
    • Malnutrition
    • Greater than 3 medications added in a 24 hour period
    • Use of a bladder catheter
    • An iatrogenic event
THE INTERVENTION

• 90 minute multifaceted educational intervention
  • Pre-test and post-test
  • Delirium subtypes
  • Risk factors
  • Use of the CAM
  • Video Demonstrations
  • Case scenarios
  • Live practice of CAM use with standardized patients
  • Data Collection
  • Debrief
FINDINGS

• 24/29 ATTENDED EDUCATIONAL INSERVICES
  • Majority female, working more than 25 hours/week, 30 – 39 years old, < 14 years experience, bachelor’s degree, and half held specialty nursing certifications
  • Completed pre and post test knowledge test
    • $6.83 \pm 1.7$ vs $10.33 \pm 1.09$; $t(23) = -8.06, p = 0.000$

• ADMINISTERED CAMS
  • 1057 CAMS to 208 patients (100% of eligible patients)
  • Average of 4.96 CAMs per patient (range 1 – 20)
  • 52 (25%) patients had or developed delirium or subsyndromal delirium (8)
  • Statistical analysis predicted 26.6% would develop delirium
  • Found delirium 100% of the time (inter-relator reliability vs 27 – 30% in the literature)
FINDINGS
DEMOGRAPHIC AND RISK ASSESSMENT DATA

- 208 patients
- 63.8 years (±18.45; 17 – 98) of age
- 95 were admitted on day shift
- 113 were women
- 120 lived alone
- 72 were smokers
- 139 were non-drinkers
- 49 were on benzodiazepines
- 12 admitted to amphetamine use
- 418 unique admission diagnoses
  - 28% neuro
  - 12% respiratory
  - 11% GI/hematology/fluid and electrolytes
- No patient received an admission diagnosis of delirium
FINDINGS – RISK FACTORS

• Correlations with Predictors
  • Urinary catheters – 21 patients
    • Statistically significant correlation (r = -0.175; \( p < 0.05 \)) with delirium
  • Iatrogenic events – 13 patients
    • Statistically significant correlation (r = -0.218; \( p < 0.002 \)) with delirium
    • Post-surgery cranial bleeding, transferred to ICU, seizure, death, stroke, hallucinations, unable to urinate, and GI bleed
    • Restraints, 3 or more meds, and malnutrition were not correlated with delirium

• Additional Association
  • Benzodiazepine use did have a statistically significant association with the development of delirium (\( X^2 = 8.55, p < 0.003 \))
IMPLICATIONS

- Delirium is under-recognized
  - 25% vs < 1%

- With multifaceted education training, the CAM can be integrated into practice to successfully identify delirium
  - Staff nurses found delirium 100% of the time vs 27 – 30% in the literature
  - Clearly education is important

- Some risk factors can be identified by delirium should not be based solely on risk factors
  - Knowing risk factors is not enough
  - Delirium can occur at any age

- Implement administration of the CAM hospital-wide
SUMMARY

- Potential future health acquired condition
- Study current patient population and identify risk factors
- Implement delirium training
- Implement use of the CAM to identify patients with delirium
- Institute interventions to reduce the impact of delirium on the patient, the staff, and the hospital
REFERENCES


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THANK YOU QUESTIONS?

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