Frailty, Cognitive Decline and Delirium. Is there a Connection?

A Process Improvement Project to Improve Care of the Geriatric Trauma Patient
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Introduction

TRAUMA is the fifth leading cause of death in patients over the age of 65 and the physiologic changes that occur with aging impact morbidity and mortality . Delays in recognizing the unique needs of the older trauma patients may result in suboptimal care. Frailty screening is shown to be superior to age in predicting short term outcomes and cognitive impairment is a risk factor for the development of postoperative delirium. Delirium is a significant independent determinant of hospital length of stay, nursing home placement, functional and cognitive decline. Delirium affects 14% to 56% of all elderly patients The number of geriatric trauma patients admitted to Christiana hospital continues to increase and requires geriatric focused trauma care.

PICOT

Does the hospitalized geriatric trauma patient age 70 and over with a positive frailty and or cognitive screen have an increased incidence of delirium during hospitalization?
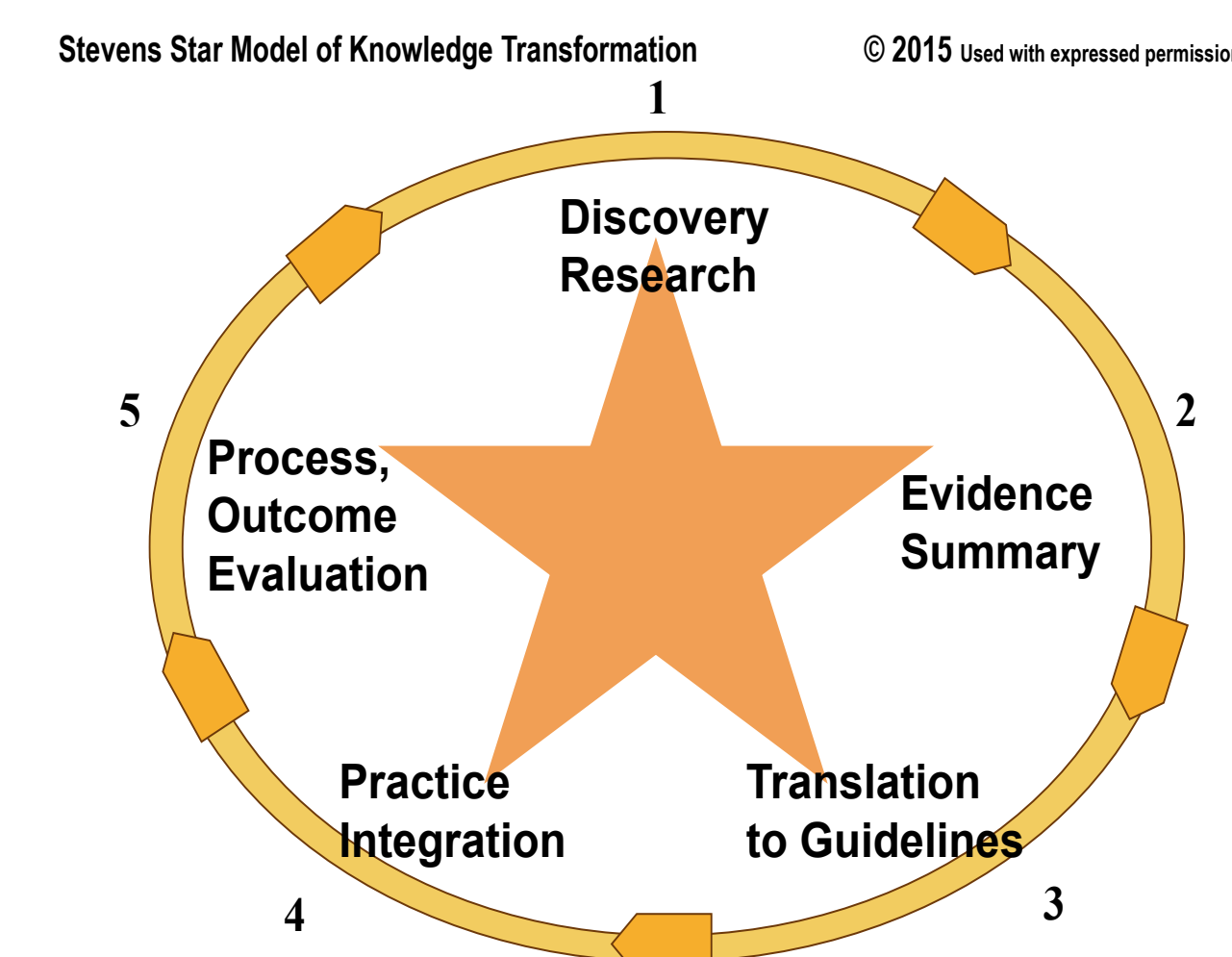
Background

Available Knowledge

- Screening for frailty and cognitive decline has become the standard for care the elderly patients.
- Research is lacking in the incidence of delirium in geriatric trauma patients with positive frailty and or cognitive screens.
- Delirium remains underdiagnosed in the geriatric population and the rates of identification have not improved over time .

Theoretical Framework

ACE Star Model (Stevens,, K, 2009)

Stevens Star Model of Knowledge Transformation © 2015 Used with expressed permission

- Primary Research
- Evidence Summary
- Translation
- Practice Integration
- Evaluation

Rational

- Providing evidenced based best practice care to geriatric trauma patients includes screening for frailty, cognitive decline and delirium during hospitalization.
- Prevention and or early identification of delirium will improve patient outcomes, decreasing length of stay, morbidity and morality.

Purpose/Specific Aims

- Determine if an association exists between a positive frailty and or cognitive screen and the incidence of delirium.
- Frailty and cognitive screens are performed using the validated FRAIL screen and AD8 screen on all patients age 70 and older admitted to the trauma service
- The Confusion Assessment Method Screen (CAM) is used to assist with the diagnoses of delirium as well as a clinical examination by a provider.
- Provide best practice geriatric focused care to the elderly trauma patients .

DELIRIUM

Context

- Screening for frailty, cognitive decline and delirium with the CAM screen in the standard of care for trauma patients age 70 and older.
- The FRAIL screen is a 5 questions screen addressing Fatigue, Resistance, Ambulation, Illness, and unintentional loss of weight . A score of 3 or more yes responses is positive screen.
- The Ascertian Dementia 8 –Item Informant Questionnaire (AD8 TM) has 8 questions pertaining to memory and cognitive function. A score of more than 2 yes responses is positive.
- The Confusion Assessment Method (CAM) is a screen which address changes in mental status and is used to diagnoses delirium.
- The CAM includes the onset of change, inattention, disorganized thinking and altered level of consciousness. The screen is reported as positive or negative.
- **Ethical Considerations** – IRB obtained, retrospective review, secure data collection

Intervention

- Frailty and cognitive screens were performed on patients age 70 and older starting January 2018.
- A diagnoses of frailty and or cognitive decline was added to the medical record if the FRAIL or AD8 screen was positive.
- CAM screen for delirium was performed by the primary nurse and discussed on daily trauma rounds and reported to the Trauma NP.

Measures

- A retrospective chart was performed and 137 records were reviewed from January 1,2018 thru August 31, 2108.
- 97 of the charts reviewed contained a documented FRAIL and AD8 TM screen
- 94 charts reviewed had a documented CAM screen and 3 did not.
- FRAIL , AD8 and CAM screen results were collected as positive or negative
- A diagnoses of delirium was collected if documented in the chart.
- Age, gender, mechanism of injury, length of stay and discharge disposition was collected.

Analysis

- Quantitative analysis/ Descriptive Statistics / Significance Level of $p = <0.05$ was used for this study
- Red CAP was used to organize data from the chart review
- Associations were described by 2x2 tables, giving the odds ratio with 95% confidence interval and Fishers 2 –sided test.
- A t-test compared the length of stay between patients with and without a diagnoses of delirium
- A kappa –based measure was used for CAM and diagnoses of delirium

Project results

- **Demographics of population**
- Mean Age 84 (70-100)
- Gender – 64% female/ 36% male
- Mechanism of Injury- Fall 84%, MVC 11%, Other 5%
- Discharge disposition – Acute Rehabilitation 11%, Skilled Nursing Facility 69%, Home 18%, Hospice 2%
- Length of stay – 8.5 days

Project Results

- 54 – patients had a positive FRAIL Screen.
- There was **NO** statistically significant association between frailty and a diagnoses of delirium (OR = 1.7 (0.3, 10.9), p=0.73).
- **54** – patients had a positive AD8 Screen. There was **NO** statistically significant association between cognitive decline and a diagnoses of delirium (OR = 3.0 (0.5, 31.4), p=0.29).
- 44 -patients had both a positive AD8 Screen. and FRAIL There was **NO** statistically significant association between having both a positive frailty and cognitive decline and a diagnoses of delirium (OR =4.5 (0.6, 208.9), p=0.16).
- 9 of 97 patients had a diagnoses of **DELIRIUM**.
- **3 of the 9** patients had a documented **negative CAM screen** the other **6** had a documented positive **CAM screen.**
- **The association between a positive CAM screen and a diagnoses of delirium was statistically significant kappa 0.49 (0.3,0.7) *p*<0.001**
- **The mean LOS for patients diagnosed with delirium was 15 days, versus 8 days for patients without delirium with a (*p*=0.02).**

Interpretation/Discussion

- Only 9 patients of 97 had a diagnoses of delirium
- Although not statistically significant 8 of the 9 patients diagnosed with delirium had a positive frailty and or cognitive screen.
- The length of stay for patients with delirium was 15 days verses 8 days and 1 patient was discharged to acute rehabilitation and 8 others were discharged to a skilled nursing facility, none were discharged home.
- The literature states the incidence of delirium is 14% to 56% in this population and only 9% of this sample was diagnosed with delirium.
- Is delirium not occurring or is delirium being seen as normal event in this elderly population?

Limitations/Implications

- Small sample size, not a random sample, dependent on a documented FRAIL and AD8 screen in the chart.
- Education of healthcare professionals on delirium
- Continued monitoring of patients for signs of delirium using CAM
- Continued studies on patients outcomes with positive frailty and cognitive decline and referral to outpatient services.

Conclusion

- The number of geriatric trauma patients will continue to increase over the next decade
- Evidenced based Geriatric focused trauma care is needed for the best patient outcomes for this population
- Palliative Care Consultation may assist with management of delirium

Contact

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