Delirium: Delirious Elders, Implementing Reduction Interventions Using Mobility

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Delirium affects 20-30% of older hospitalized patients [1]. Patients with delirium have double the mortality rate [3], which increases with delirium duration [4]. Delirium worsens long term cognitive functioning [9,10,11,12]. Hospital costs increase by $6,900,000,000 in Medicare expenditures [7]. A single delirium episode increases total yearly costs by ~$64,421 [2]. Research suggests the best treatment is non-pharmacologic delirium prevention bundle package, including early mobility, reorientation, cognitive/sensory stimulation, and hydration [5].

Non-pharmacologic multicomponent interventions [8], and those with most benefit include early mobility, reorientation, cognitive/sensory stimulation, and hydration [5].

A delirium prevention protocol was created addressing four main pillars. 
- Hydration: water placed within patient reach. 
- Sensory input: 
  - window blinds opened by 9:00 am 
  - hearing-aids and eye-glasses retrieved and utilized. 
  - Soothing music via delirium TV channel for non-communicative patients. 
- Reorientation: oriented to person/place/time 3 times daily. 
- Mobility: 20-min walk (mobilization event) 3 times daily 

Work and time constraints prohibited existing health professionals (CNA, RN, MD, PT, OT) from implementing the protocol. Thus a new job position (Delirium Mobility Aid) was created to implement this protocol for all patients age >65 admitted to Medical A (28-bed medical unit). This was proposed to Providence St. Vincent Medical Foundation who awarded a $170,000 institutional grant for 12 months. The project residents reviewed applications, interviewed, and hired 3 CNA’s to fill the position 12 hr/day, 7 days/week. Physical and Occupational Therapy trained the aids for 3 weeks in mobility, implemented the protocol. Thus a non-pharmacologic multicomponent prevention protocols, which include mobilization, implemented by specialized CNA’s, are a potentially viable treatment of delirium in elderly patients with prolonged hospitalization. This may increase rate of discharge to home, without worsening falls, LOS, or patient experience, and has a cost-savings benefit.

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INTRODUCTION

This quality improvement project involved hiring, training, and managing 3 Delirium Mobility Aids to implement a non-pharmacologic delirium prevention bundle package, including early mobility, on hospitalized patients age >65.

Background

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Delirium Burden per Hospital Day

% Patients Discharged Home Rather than Care Facility

Results

Preliminary data collected at month 9 of 12:
- No statistically significant change in total delirium burden. However there is a trend toward decreased delirium in prolonged hospitalization (measured after day 4). For these patients with LOS > 6 days, there was a 4% reduction in late-stage delirium compared to 2016 and 10% from 2017. 
  - 7.5-13% more patients were completely delirium free after day 4 
  - Length of Stay (LOS): no significant change (5.5 days) 
  - Patients admitted from home experienced a 4% increase in discharge to home (rather than care facility) approaching near significance (p-value 0.06). 
  - There was a trend toward reduction in hospital falls: 2017-33, 2018-29, 2019 (present)-19, projected to reach 25 by year’s end. 
  - Press-Ganey patient satisfaction scores remained stable.

Project Reach and Cost Analysis

- 40 people have discharged home instead of SNF 
- Average LOS at SNF is 7-10 days, and cost $450/day 
- SNF costs alone have saved $126,000-$180,000 
- Which exceeds project running costs of $2,500 per patient 
- This does include cost savings of the hospitalization ($2,500 per delirious patient) or total cost savings of the following year ($64,421 per delirium episode)

Conclusion

Non-pharmacologic multicomponent prevention protocols, which include mobilization, implemented by specialized CNA's, are potentially viable treatment of delirium in elderly patients with prolonged hospitalization. This may increase rate of discharge to home, without worsening falls, LOS, or patient experience, and has a cost-savings benefit.

References