BOOSTING Care for Patients with Cognitive Impairment at HMH

Kathryn Agarwal, MD
Baylor College of Medicine, Section of Geriatrics
Projects at Methodist Hospital with BCM Geriatrics

- Medicare Quality Improvement Project
  “Delirium Detection and Prevention Across the Continuum”

  Dr. Taffet / Agarwal – Subject Matter Experts
  Fellows – Dr. Neal and Dr. Kazim

- Practice Change Leaders Award
  “Boosting Transitions of Care for Patients with Cognitive Impairment at Methodist Hospital “

  Dr. Agarwal – Principal Investigator
  Dr. Taffet & N Wilson, MSW – Guiding Mentors
THE METHODIST HOSPITAL RESEARCH INSTITUTE

Project Title: “Delirium detection and prevention across the continuum”
Geographic Reach: Texas
Funding Amount: $11,785,095
Estimated 3-Year Savings: $51,744,395

- **Target population:** acute care patients ≥ 70 years old

- Overall project goals are to:
  - Increase recognition of delirium
  - Increase safety measures for patients with delirium
  - Increase prevention and quality of care measures
  - Reduce use of high risk medications in the elderly
  - Improve transitions of care and avoid readmissions

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Delirium

An acute decline in cognitive function and attention, commonly occurs in the elderly as a complication of hospitalization.
Why is it important to assess for delirium?

- Mortality – in hospital and for next 2 years
- Dependence / Nursing Home Placement
- Hospital Complications
- Costs – Medicare $100 billion / year
- Length of stay by at least 30%
- Long-term Cognitive Impairment / Dementia
CMS Delirium Grant

- Nurse-driven screening & safety measures for patients with delirium
- Physician education and delirium order-sets
- Pharmacy initiatives to decrease high-risk medication use in the elderly
- Team Clarity Volunteers for cognitive re-orientation
  - Provide glasses and hearing amplifiers
  - Obtain personal health record information
  - Provide ICR (In Case of Emergency) Packs for patients
- Care Navigator follow-up post-discharge calls
- Team Clarity Aide visits with NP supervision for high risk patients

High Risk:
- Team CLARITY Home Visit
- All intermediate and low risk interventions

Intermediate Risk:
- Post-discharge care navigator call
- Volunteer Visits
- All Low risk interventions

Low Risk:
- Pharmacy monitoring, alerts, intervention
- Nursing Screens
Top Causes of Delirium

• Medications
  – Sedatives, Muscle Relaxants, Sedating Antihistamines, and Opioids

• Infection
  – Delirium frequently first sign of sepsis

• Hypoxia / Hypercarbia

• Abnormal electrolytes – Sodium, Calcium

• Untreated Pain
Outcomes

Houston Methodist Hospital
Diphenhydramine drug use trends

- Cumulative dose administered per pt visits age 70 or greater on implemented units
- Median

Approved 25mg max dose in order-sets

Vigilanz go-live
Cetirizine added to formulary

Milligrams (mg)

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2012 2013

Houston Methodist Hospital
Zolpidem drug use trends

- Cumulative dose administered per pt visits age 70 or greater on implemented units
- Median

Vigilanz go-live
Ramelteon added to formulary

Automatic dose reduction implemented (10mg to 5mg)

Milligrams (mg)

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2012 2013
Outcomes

- Decreased Falls
- Decreased Evidence of Delirium
- Decreased Costs
- No significant change in length of stay
- Reduced readmission rates within 30 days
Practice Change Leaders for Aging and Health
A national program to develop, support and expand the influence of organizational leaders who are committed to achieving transformative improvements in the care of older adults.

Supported by Atlantic Philanthropies and John A. Hartford Foundation

Nancy Wilson, MSW - Senior Leader
• Collaborative work Delirium Grant Team and Methodist Transitions of Care Programs (Care Navigator Nurses & BOOST)

• Practice Change Leader Award (Atlantic Philanthropies/Hartford Foundation)

• 1 year Award – 2014
  o BOOSTING Transitions of Care for Patients with Cognitive Impairment at HMH
  o Pilot to focus on patients age 70 or greater on a cardiac unit
The Problem

- Hospital Team has no process to understand baseline or current cognition
- Cognitive Impairment Identified as Risk Factor for Readmissions and Frequent Hospitalizations
- Studies on programs to reduce 30-day readmissions exclude cognitively impaired patients
- Studies show approximately 40% of hospitalized elders cognitively impaired
Case from the Pilot Unit – February 2014

• 71 yr old female with diabetes, hypertension, admitted with atrial fibrillation

• Alert and oriented, “self care, lives alone, no home care needs identified”

• RN provided education
• Given prescriptions & instructions
• Readmitted after 4 days

• RE: rapid heart rate and shortness of breath

Why did she get readmitted so quickly?
The Problem

- Unrecognized Cognitive Impairment
  - Did not start her new meds
  - Did not call her doctor

- “line too long at CVS”

- Sent home again – “no services needed”

MiniCog Score = 1 / 5
Recall one of three words
• **Unrecognized Cognitive Impairment**
  o We assume that all patients can manage their discharge plan
  o Nurses & physicians do same discharge process for all patients

• No process to understand baseline or current cognition

• Low involvement of interdisciplinary team, family, and community resources
Intervention

- Pts > 70 years of age on a cardiology unit
- Care Navigator Nurses visit in hospital
  - Introduce they will be calling
  - Perform Mini-Cog Screen
  - Normal scores get phone call
    - Patient gets a call 2-3 days after discharge
- Sensitive cutoff score ≤ 3 to find mild cog impairment
  - Score ≤ 2 consistent with dementia in outpatients
Mini-Cog Screen for Dementia

- 3 word recall and Clock-drawing task
- Older adults, multiple languages, ethnicities, & literacy levels tested
- Sensitivity 76-99%, Specificity 89-93%

Instructions

- Listen carefully, 3 unrelated words, repeat
- Give circle, draw a clock, patient to place numbers, & set time to “ten minutes after eleven”
- Ask pt to recall 3 previous words
Traditional Mini-Cog Scoring Algorithm

Mini Cog 1pt per word recalled

3-item recall = 0 Dementia
- Clock-Draw Abnormal 0 points

3-item recall = 1-2
- Clock-Draw Normal 2 points

3-item recall = 3 No Dementia

**MCI, executive dysfunction

Created by Soo Borson, MD
If Abnormal Mini-Cog – **Family First & Home Visit**

- **Referral:** Home Visit Delirium Grant Transition Program
  - Increased Assistance for Transition
  - Follow-up Mini-Cogs at home – Can Advise Evaluation for Cognitive Impairment

- Identified as “**Family First**”
- NOT to identify as dementia
- Identify Patients needing Assistance with Mgt/Education

**Intervention**
## Preliminary Data

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<th>F11 Mini-Cog Pilot Data</th>
<th>Quarter 1</th>
<th>Quarter 2</th>
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<tr>
<td></td>
<td>% Total</td>
<td>30day Readmit</td>
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<tr>
<td>Total Home</td>
<td>69</td>
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<td>Total High N/A</td>
<td>20</td>
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<td>Total Eligible</td>
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<td>Total Tested</td>
<td>56</td>
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<td>Total Refused</td>
<td>7</td>
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<td>Total Normal</td>
<td>20</td>
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<tr>
<td>Total Abnormal</td>
<td>29</td>
<td>42%</td>
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*Quarter 1 – All Patients Eligible for Testing

*Quarter 2 – Low & Intermediate Risk Referred for Testing, High Delirium Risk Referred Automatically to Family First and Home Visits

**Quarter 2: 8 abnormal low-int risk with home visits; 5 high risk w home visits,

**Quarter 2: 2 of 13 Home visits readmitted -15% rate
## F11 Mini-Cog Study

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<td>Unknown CI</td>
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*Any Cognitive Impairment Noted in Chart Review*
External Data

- March 2014 – American College of Cardiology Mtg
- 720 pts over age 65 admitted w CHF
  - Abnormal MiniCog Screen* 47% readmission rate
  - Normal MiniCog Screen* 22% readmission rate
- *all discharge locations, more severe cog impairment

- Cognitive Impairment documented in CHF in All Ages in other studies

Next Steps

- Continue pilot in 2014 to look at value of interventions
- “Family First” – broadly applicable

- Need to implement cognitive testing in places where follow-up process is integrated

- Consider plans to augment the Congestive Heart Failure (CHF) disease management service:
  - Screen for cognitive and functional impairments
  - Team to assist impaired patients & caregivers in management of CHF in hospital & home
SUMMARY

- Unrecognized Cognitive Impairment is Extremely Prevalent in our Hospitalized Elders
- Patients with Unrecognized Cognitive Impairment have higher rates of 30-day Readmissions
- More study needed to address how to provide best transitional care for this population

- By focusing on cognitive impairment, we can more effectively reduce readmissions and provide better patient-centered care.
• www.geriatricsatyourfingertips.org
• www.icudelirium.org
• Beers Criteria for Potentially Inappropriate Medications for Older Adults. American Geriatrics Society 2012.
• Inouye, S. Delirium in Elderly People. Lancet. August 2013
• kagarwal@bcm.edu
• **www.methodistcme.com**

• 3 Online Courses – 2 hrs CME, CNE

• Emails: 5-10 minutes every other day!

• MD, RN, PT, OT, ST, RD, NP, PA