HQIC Community of Practice Call

Delirium in Hospitalized Older Adults: Prevention and Recognition

March 10, 2022
Introduction

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Welcome!

Who’s in the Room?
Agenda

• Introduction

• Today’s Topic
  o Delirium in Hospitalized Older Adults: *Prevention and Recognition*
    
    Presentation by Christine LaRocca, Medical Director, Telligen

  Objectives:
  ▪ Define delirium
  ▪ Name the symptoms, causes, and serious consequences of delirium
  ▪ Differentiate delirium from dementia
  ▪ Recognize the importance of screening for delirium and describe three validated bedside screening tools
  ▪ Identify successful strategies to prevent delirium in hospitalized older adults

• Open Discussion/Q&A

• Closing Remarks
As You Listen, Ponder...

• What excites you the most about the information provided? What information can you leverage to help expand opportunities in your communities?
• What actions will you take as a result of the call?
• Where can you begin with your facility to continue to ensure safety, and a true patient-centered approach as you engage collaboratively with others?
• Which activities do you have underway that will allow for you to expand and push forward to build on action in the next 30 days? 90 days?
Meet Your Speaker

Christine LaRocca
Medical Director
Telligen
Delirium in Hospitalized Older Adults: Prevention and Recognition

Christine LaRocca
Medical Director, Telligen
March 10, 2022
Telligen Supports Quality Improvement (QI)

• Telligen is a population health solutions company
  • Our Mission: Transform Lives and Economies by Improving Health
• We partner with U.S. government agencies, state Medicaid agencies and health plans to improve health outcomes
• Telligen was selected by the Centers for Medicare & Medicaid Services (CMS) to serve as
  • The Quality Innovation Network-Quality Improvement Organization (QIN-QIO) for Colorado, Illinois, Iowa and Oklahoma
  • A Hospital Quality Improvement Contractor (HQIC) as of Sept. 2020
Telligen QI Connect™
Partnering to improve health outcomes through relationships and data

We are proud to partner with:
- Alaska State Hospital & Nursing Home Association
- Idaho Hospital Association
- Nebraska Hospital Association
- Oklahoma Hospital Association
- Wyoming Hospital Association
- Mountain-Pacific Quality Health
HQIC Goals: Delirium Prevention Contributes to Success

• Provide customized, no-cost QI assistance and support to targeted hospitals to achieve the following three goals:
  • **Improve Behavioral Health Outcomes, with a Focus on Decreased Opioid Misuse**
  • **Increase Patient Safety**
    • Focus areas include adverse drug events, pressure injuries, readmissions, infections -- central line-associated blood stream infections (CLABSI), catheter-associated urinary tract infections (CAUTI), *Clostridioides difficile* (*C. diff*), other drug-resistant organisms, sepsis
  • **Improve the Quality of Care Transitions**
  • Support hospitals during the COVID-19 pandemic and other public health emergencies, epidemics and crises
  • Improve health equity and decrease healthcare disparities
HQIC Harm Areas and Relevance to Delirium

Delirium

- Covid-19
- Falls with Injury
- Pressure Injuries
- Infection & Sepsis
- Opioids
- Adverse Drug Events
- Readmissions
- Poor Care Transitions
- Falls with Injury
- Covid-19
Today’s Learning Objectives

At the conclusion of this presentation, participants will be able to:

• Define delirium
• Name the symptoms, causes and serious consequences of delirium
• Differentiate delirium from dementia
• Recognize the importance of screening for delirium and describe three validated bedside screening tools
• Identify successful strategies to prevent delirium in hospitalized older adults
Delirium: Let’s Start and End With a Patient Story

Upon Admission:
- Community-acquired pneumonia
  - Newly requiring oxygen
- Alert and oriented x 4

Day 2:
- Sleeping more / mumbling
- Not eating
- Oriented only to person

• 76-year-old
• Independent in activities of daily living
• Mild Alzheimer’s dementia
• Lives with daughter
• Loves to knit

Learning Objective #1

Define delirium; name the symptoms, causes and serious consequences of delirium; and differentiate delirium from dementia
Why Focus on Delirium? Alignment with HQIC Goals

• Delirium
  • **Common**: Affects as many as 50% of hospitalized patients (pt) ≥ 65
  • **Often Unrecognized**: Rate of undetected delirium as high as 60%
  • **Serious**: Often fatal, increases morbidity, functional decline, pt/family distress
  • **Consequential**: Associated with increased length of stay, hospital readmission, emergency department (ED) visits and institutionalization
  • **Important**: An important component of national patient safety agendas
  • **Costly**: Results in over $164 billion per year in total healthcare costs
  • **Preventable**: In 30-40% of cases

Delirium: A Medical Emergency

What is Delirium?

• A syndrome characterized by an acute disturbance in attention and cognition with a fluctuating course of symptoms

Delirium is often the only sign of a serious underlying medical condition (e.g. sepsis)

• “If you’re told somebody has altered mental status or agitation, assume it is delirium until proven otherwise.”

Rosanne M. Leipzig, MD, PhD

Diagnostic and Statistical Manual of Mental Disorders, 5th ed. (DSM-5) Criteria for Delirium

1. Disturbance in attention and awareness
2. The disturbance develops abruptly (usually hours to days), is a change from baseline attention and awareness, and fluctuates in severity over the day
3. There’s at least one additional disturbance in cognition (e.g., memory deficit, disorientation, language, visuospatial ability or perception)
4. Criteria 1 and 2 are not better explained by other preexisting, established or evolving neurocognitive disorders (e.g., Alzheimer’s) and do not occur in the context of a severely reduced level of arousal or coma
5. Evidence from the history, exam or labs that the disturbance is caused by an underlying medical condition, substance intoxication or withdrawal, medication or toxin exposure, or because of multiple etiologies

Delirium is the Preferred Term

• Dozens of terms are used to refer to delirium, including acute confusional state, acute brain dysfunction, acute brain failure and altered mental status.

• However, experts recommend use of the preferred term delirium when the DSM-5 of the American Psychiatric Association definition and criteria are met.

• A recent study found the specific term “delirium” was documented in the discharge summary in only 64% of all pts with delirium.

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Signs and Symptoms

- **Reduced awareness and attention**
  - Reduced ability to direct, focus, sustain and shift attention
    - “Can’t stay focused on the task at hand”
  - Easily distracted; trouble maintaining a conversation
  - Reduced orientation to the environment

- **Cognitive impairment may manifest as**
  - Poor memory of recent events
  - Disorientation to person, place, time
  - Disorganized thought; incoherent, rambling speech
  - Difficulty reading or writing
Signs and Symptoms (cont.)

- Altered consciousness and behavior changes may include
  - Hallucinations, illusions
  - Hyperactivity: Restlessness, agitation, combative behavior
  - Hypoactivity: Being withdrawn, slowed movements, lethargic
  - Altered or reversed sleep-wake cycle

- Emotional disturbances such as
  - Anxiety, fear, paranoid delusions
  - Irritability, anger
  - Rapid erratic mood shifts
  - Apathy
Three Types of Delirium

- **Hyperactive delirium** (only about 25% of cases)
  - Characterized by restlessness and agitation, increased vigilance, rapid mood changes and sometimes hallucinations

- **Hypoactive delirium**
  - May include inactivity, sluggishness, lethargy, abnormal drowsiness, seeming dazed. Often unrecognized or misattributed to fatigue or depression. Higher rates of complications and mortality

- **Mixed delirium**
  - Patients fluctuate between hyperactive and hypoactive signs and symptoms
Predisposing and Precipitating Risk Factors

- **Predisposing risk factors**: Age >75, dementia, cognitive impairment, functional disabilities, impaired vision and/or hearing, alcohol and/or substance use disorder, depression, severe illness, having multiple comorbidities

- **Precipitating factors vary by population**: Drugs (polypharmacy, psychoactives, sedative-hypnotics, anticholinergics), physical restraints, lab abnormalities, surgery, bladder catheter, infection, high pain levels

- **The higher the number of existing predisposing factors, the fewer precipitating factors needed for delirium to develop**
Differentiating Between Delirium and Dementia

• **Delirium and Dementia are distinct syndromes that commonly coexist:**
  • Dementia is the leading risk factor for developing delirium
  • Delirium is independently associated with incident (new) dementia

• **There’s substantial overlap:**
  • It is challenging yet essential to distinguish between the two given delirium may signify a medical emergency

• **Establishing the patient’s baseline mental status is essential:**
  • Interview family, caregivers, friends, co-workers; contact and/or review records of outpatient providers who know the patient
Features of Delirium and Dementia: In General....

**Delirium:** Acute, abrupt change in mental status
- Onset: Hours to days
- Consciousness/awareness of the environment: Altered. Fluctuates over the course of the day.
- Attention: Trouble focusing, difficulty concentrating. Inattention is common and a hallmark.

**Dementia:** Chronic, gradual, progressive cognitive decline
- Onset: Months to years
- Consciousness/awareness of the environment: Generally intact
- Attention: Often normal, unless in later stages

Causes of Delirium

Drugs (may be intoxication, adverse effect or withdrawal)

Electrolyte abnormalities (causes include dehydration)

Low oxygen

Infection

Reduced sensory input (e.g., vision, hearing)

Intracranial events (e.g., stroke, subdural)

Urinary retention and fecal impaction

Myocardial or metabolic problems

Often the cause is a combination of several of the above


Murphy KM https://www.uth.edu/dotAsset/e314073e-a311-46ec-a4d9-21f7a169f00e.pptx
Delirium: Serious Complications and Consequences

• 2-fold increased **mortality**
• Long-term cognitive impairment
• **Emotional distress**
• Aspiration pneumonia
• **Pressure injury**
• Weakness, decreased mobility, long-term functional impairment

• **Falls** with fractures and other injuries
• Malnutrition, fluid and electrolyte abnormalities
• Prolonged **hospital length of stay**
• **Unsuccessful care transitions**
• **Readmissions**
• The need for long-term nursing home care

Learning Objective #2

Recognize the importance of screening for delirium and describe three validated bedside screening tools
Improve Delirium Recognition

• Delirium is often unrecognized
  • Rate of undetected delirium as high as 60%

• “The cornerstone of diagnosis is determining the patient’s baseline mental status, and the acuity of any changes....”
  • “Neglecting the baseline mental status assessment is a leading reason for a missed diagnosis, since the acute change might otherwise be missed.” Oh et al.

• Requires obtaining the history from a knowledgeable informant

• Systematic screening can improve detection
  • The goal of delirium screening should be to integrate the process into routine daily care
Inpatient Screening Tools

- >21 different delirium screening tools exist for hospitalized non-ICU pts
- The Confusion Assessment Method (CAM) is the most widely used instrument for identification of delirium. Validated, has high sensitivity and specificity
  - Many derivations/adaptations for different pt populations
- Two briefer screening tools with high sensitivity and specificity
  - The 3D-CAM
  - The 4AT
- All 3 tools are available in multiple languages
- Caveats: No test is perfect. Delirium remains a clinical diagnosis. Therefore, astute observation and a high index of suspicion are essential.
The Confusion Assessment Method (CAM)

- The Confusion Assessment Method (CAM) provides a simple diagnostic algorithm based on the 4 core features of delirium
  - Training to administer and score the tool is necessary to obtain valid results
    - Comprehensive, step-by-step training and scoring manuals are available
  - Takes at least 5 minutes to complete
  - Formal cognitive assessment required
- Positive result (delirium present) requires features 1 and 2 and either 3 or 4:
  - Acute change in mental status with a fluctuating course (Feature 1)
  - Inattention (Feature 2)
  - Disorganized thinking (Feature 3)
  - Altered level of consciousness (Feature 4)

AGS CoCare®: HELP https://help.agscocare.org/
The Importance of Brief Cognitive Screening

• The CAM was designed to be scored based on observations made during brief, formal cognitive assessment (not simply from observations made during routine clinical care)

• Examples of instruments used to conduct brief cognitive screening
  • The Short Portable Mental Status Questionnaire (SPMSQ)
  • Mini-Cog©

Mini-Cog© https://mini-cog.com/
The 3-Minute Diagnostic (3D-CAM)

• A three-minute diagnostic assessment for CAM-defined delirium
• Training needed for optimal use
• Consists of 20 items in total
  • Ten are administered directly to patients
    • Seven items assessing orientation and attention
    • Three are patient symptom probes
  • Ten items are observation items assessing all four CAM diagnostic features
    • Completed by the assessor at the conclusion of the interview
The 4 ‘A’s Test (4AT)

• Consists of four items:
  1) an item assessing level of Alertness,
  2) a test of orientation (the Abbreviated Mental Test–4, comprising 4 orientation questions),
  3) a test of Attention (Months Backward test), and
  4) an item ascertaining Acute change or fluctuating course

• Takes <2 minutes to complete; includes cognitive testing; free to download

• No special training needed
  • Of note: A recent study suggests formal training may be indicated, with a focus on how to score items 1 and 4
Learning Objective #3

Identify successful strategies to prevent delirium in hospitalized older adults
Prevention is Key

• “A robust evidence base makes it clear that delirium prevention is the most powerful and valuable intervention available to reduce the downstream consequences of delirium on patients and hospitals.”
  Rieck et al.

• 2016 Cochrane Review, Interventions for Preventing Delirium in Hospitalized Non-ICU Patients:
  • “We found strong evidence that multi-component interventions can prevent delirium in both medical and surgical settings and less robust evidence that they reduce the severity of delirium.”

The AGS CoCare®: HELP Program

- “AGS CoCare: HELP™ formerly known as The Hospital Elder Life Program, originally created by Dr. Sharon Inouye, is a well studied, effective and innovative model of hospital care designed to prevent both delirium and functional decline.”
  - Significantly reduces delirium incidence (by 30-40%!) and in-hospital falls
  - Provides cost-savings. Studies demonstrate substantially reduced costs for both acute and long-term care services
  - Several HELP publications are available for free, others require a fee or subscription
  - The program promotes Age Friendly Care
The Age Friendly Health Systems 4Ms Framework

**What Matters**
Know and align care with each older adult’s specific health outcome goals and care preferences including, but not limited to, end-of-life care, and across settings of care.

**Medication**
If medication is necessary, use Age-Friendly medication that does not interfere with What Matters to the older adult, Mobility, or Mentation across settings of care.

**Mentation**
Prevent, identify, treat, and manage dementia, depression, and delirium across settings of care.

**Mobility**
Ensure that older adults move safely every day in order to maintain function and do What Matters.

For related work, this graphic may be used in its entirety without requesting permission. Graphic files and guidance at ihi.org/AgeFriendly

http://www.ihi.org/Engage/Initiatives/Age-Friendly-Health-Systems/Pages/default.aspx
https://www.aha.org/center/age-friendly-health-systems
The Impact of the 4Ms - Delirium

When A Hospital:

• Prevents Delirium
• Screens for Delirium
• Takes Action

There is a Positive Impact:

• Decrease in Delirium Attributed Days
• Decrease Length of Stay
• Decrease Cost
• Improved Patient Experience

## Approaches for Delirium Prevention & Treatment Support

### Nonpharmacologic Approaches for Delirium Prevention and Support Using the 4Ms of Age-Friendly Care*

| Orientation and cognitive stimulation activities | • Provide lighting, signs, calendars, clocks  
| • Reorient the patient to time, place, person  
| • Use validation if they have dementia and consider use of an “All About Me Board”  
| • Introduce cognitively stimulating activities (e.g., reminiscing, familiar phrases)  
| • Assess and document “What Matters”  
| • Facilitate regular visits from family, friends  
| • Consider a video from familiar friends or family |
| Fluid repletion and nutrition | • Encourage patients to drink; consider parenteral fluids if necessary and have an easy-to-hold drink container with markings so older adults can see their intake  
| • Seek advice regarding fluid balance in patients with comorbidities (heart failure, renal disease) |
| Medications | • Avoid inappropriate and central-nervous system medications that may cause or worsen delirium (see AGS Beers Criteria©)  
| • Review the type and number of medications  
| • Consider deprescribing (taper) if needed and offer non-drug or safer alternatives |

Age-Friendly Care, PA is a collaboration between the Penn State Ross and Carol Nese College of Nursing and the Primary Health Network. www.agefriendlycare.psu.edu
Approaches for Delirium Prevention & Treatment Support (cont.)

Nonpharmacologic Approaches for Delirium Prevention and Support Using the 4Ms of Age-Friendly Care*

| Early mobilization                          | • Encourage early mobilization (every older adult/every day) |
|                                           | • Keep walking aids (canes, walkers) nearby at all times     |
|                                           | • Ensure all older adults have a daily mobility goal         |

| Vision and hearing/ sensory enhancement    | • Resolve reversible cause of the impairment                 |
|                                           | • Ensure working hearing and visual aids are available and used by patients who need them |

| Sleep enhancement                         | • Avoid medical or nursing procedures and vital signs during sleep, if possible |
|                                           | • Schedule medications to avoid disturbing sleep              |
|                                           | • Reduce noise at night                                      |
|                                           | • Teach about good sleep hygiene during the stay, such as staying active, avoiding alcohol, and avoiding caffeine after 11 a.m. |


Age-Friendly Care, PA is a collaboration between the Penn State Ross and Carol Nese College of Nursing and the Primary Health Network. www.agefriendlycare.psu.edu
## Approaches for Delirium Prevention & Treatment Support (cont.)

### Nonpharmacologic Approaches for Delirium Prevention and Support Using the 4Ms of Age-Friendly Care*

| Infection prevention | • Look for and treat infections  
|• Avoid unnecessary catheterization or tubes  
|• Implement infection-control procedures |
| Pain management  | • Assess for pain, especially in patients with communication difficulties or dementia  
|• Begin and monitor pain management in patients with known or suspected pain |
| Hypoxia protocol | • Assess for hypoxia and oxygen saturation |
| Web resources for tools and prevention | • Idelirium.org  
|• americandeliriumsociety.org  
|• ihi.org  
|• deliriumnetwork.org  
|• deprescribing.org  
|• icudelirium.org  
|• World Delirium Day - 2nd Wednesday in March |

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www.agefriendlycare.psu.edu
Nonpharmacologic Team-based Delirium Prevention Interventions

- Medication review, deprescribe, avoid/reduce high-risk and psychoactive medications
- Promote sleep hygiene
- Early, frequent mobilization
- Ensure hearing aids/eyeglasses are available
- Pain management
- Cognitive stimulation activities
- Noise reduction
- Orient to time, place, events
- Maintain hydration and nutrition

- Monitor bowel and bladder function
- Remove unnecessary tethers (lines, tubes)
- Proactive geriatrics consultation for high-risk pts/surgical co-management

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Hsieh et al. JAMA Intern Med. 2015 April 1; 175(4): 512–520.
http://www.ihi.org/Engage/Initiatives/Age-Friendly-Health-Systems/Documents/AgeFriendly_4MsBySetting_FullGraphic.pdf
Pharmacologic Prevention Not Effective and Not Recommended

• “Given the evidence, pharmacologic prevention and treatment are not recommended at this time.”

• “We recommend reserving the use of antipsychotics and other sedating medications for treatment of severe agitation that poses risk to safety.” Hsheih et al.

• 2016 Cochrane Review: “We found no clear evidence that a range of medications or other anaesthetic techniques or procedures are effective in preventing delirium.”


Delirium During the COVID-19 Public Health Emergency (PHE)

- In a 2020 ED study of older patients with COVID-19, of the 226 patients (28% of total) with delirium at presentation, 16% had delirium as their primary symptom and 37% had no typical COVID-19 symptoms (e.g., fever, cough, shortness of breath).

- COVID-19’s impact on the hospital environment exacerbates delirium risk
  - No family/visitors to help detect changes from baseline and to prevent social isolation
  - Personal Protective Equipment (PPE) limits communication especially for sensory impaired; contributes to disorientation
  - Short staffing, full hospitals, and staff efforts to minimize exposure may make it harder to implement nonpharmacologic interventions and to recognize fluctuating symptoms and hypoactive delirium
  - Use of psychoactive medications to minimize anxiety, prevent wandering

Kennedy et al. JAMA Netw Open. 2020;3 (11):e20295
Prevention Interventions During the COVID-19 PHE

• Nonpharmacologic delirium prevention strategies remain the mainstay
  • It is recommended that all older patients with suspected/known COVID-19 infection be screened for delirium

• A recent article by Dr. Inouye describes the Hospital Elder Life Program’s creative approaches for providing prevention interventions, including
  • Communication boards in room
  • Orientation sheet delivered daily
  • Activity boxes delivered to patients’ rooms
  • Remote visits and therapeutic activities (crosswords, games) with family or trained volunteers
  • The provision of remote encouragement and socialization during meals

Age-Friendly Case Vignette – Delirium

• Delirium screening
• Reorientation
• Early mobilization
• Ensure eyeglasses are available
• Delirium resolves but functional impairment at discharge

Contact Your HQIC for Customized QI Technical Assistance

Utilizing the Model for Improvement, we support our HQIC-enrolled hospitals with:

• Conducting a Root Cause Analysis
• Interpreting Data
• Establishing a Team: Who are your champions?
• Writing an Aim Statement
• Choosing Measures
• Selecting, Testing and Implementing Changes
  • Running iterative Plan-Do-Study-Act (PDSA) cycles for small tests of change
• Sustaining and Celebrating the Gains

http://www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprovementHowtoImprove.aspx
http://www.apiweb.org/
Leaving in Action

• **Assess the current state at your organization**
  • What delirium prevention interventions are utilized?
  • What screening tools are being used?
  • Who is being screened for delirium?
  • Does your data indicate high incidence of delirium?

• **Select, test and implement changes that ensure**
  • Delirium prevention interventions are implemented for all older adults
  • Your organization has a delirium screening tool that fits the patient population and setting, and staff are trained to use it accurately
  • A plan of care is established for all patients diagnosed with delirium

• **Establish quantitative measures to monitor improvement and success**
Take Aways

• Delirium is a syndrome characterized by an acute disturbance in attention and cognition with a fluctuating course of symptoms
  • It is common; frequently preventable; associated with serious complications, morbidity and death; and costly to society

• Delirium is often unrecognized unless actively screened
  • Many validated tools exist to improve the identification of delirium

• Prevention is key
  • Multi-component, non-pharmacologic interventions can prevent delirium in both medical and surgical settings
Thank You!

• Contact information:
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• Reminder: World Delirium Awareness Day is March 16, 2022
  • https://deliriumnetwork.org/event/world-delirium-awareness-day-2022/?instance_id=82
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References


References


References


Murphy KM. Delirium in Older Adults. [https://www.uth.edu/dotAsset/e314073e-a311-46ec-a4d9-21f7a169f00e.pptx](https://www.uth.edu/dotAsset/e314073e-a311-46ec-a4d9-21f7a169f00e.pptx)


Questions?
Discussion

- What excites you the most about the information provided? What information can you leverage to help expand opportunities in your communities?
- What actions will you take as a result of the call?
- Where can you begin with your facility to continue to ensure safety, and a true patient-centered approach as you engage collaboratively with others?
- Which activities do you have underway that will allow for you to expand and push forward to build on action in the next 30 days? 90 days?
Final Thoughts
Join Us for the Next Community of Practice Call!

Join us for the next Community of Practice Call on April 14, 2022 from 1:00 – 2:00 PM ET

We invite you to register at the following link:
https://zoom.us/webinar/register/WN_ASl_l3p_TEyx_VY YYFFeA

You will receive a confirmation email with login details.
Thank You!

Your opinion is valuable to us. Please take 4 minutes to complete the post event assessment here: \textit{post event assessment \_3.10.22}

We will use the information you provide to improve future events.