Care of an Older Patient at Risk for Delirium

2024 National Acute Care for Elders Conference

Esther Oh, M.D., Ph.D.

Associate Professor
Division of Geriatrics and Gerontology, Department of Medicine
Psychiatry and Behavioral Sciences and Pathology
Johns Hopkins University School of Medicine

JOHNS HOPKINS
MEDICINE

Disclosures

- NIA/NIH
- Sarah Miller Coulson Human Aging Scholar

Overview

- Why care?
- Who is at risk?
- What should we do to prevent delirium ?
- How do we know when someone develops delirium?
- When do we intervene?

Why Delirium Matters

I did not dare go to sleep. When they told me go to sleep and rest, I was afraid that if I fell asleep, I would never wake up again.

When I closed my eyes and tried to sleep, I saw a lot of things flying through the air: colors, old men and women, and all sort of things

It felt like I was living in a bubble; I couldn't move my arms or legs. And, ah, people all around me but no one answering me … I would be calling out to people, but no one would even look up.

My worst nightmare was the light at the end of the tunnel: 'stop breathing and you will get there'

Boehm LM et al., Int J Nurs Stud (2021)

Why Delirium Matters

I can remember the nurse … rubbing her hand over my head … and she was smoothing my hair down, her words were so kind. Even when I was in that state, I could feel someone taking care of me.

I felt that they [family] were there, they seemed far away, but I could hear that they were there

Boehm LM et al., Int J Nurs Stud (2021)

Patient Safety Issues Associated with Delirium

- Mobility – Falls, deep vein thrombosis (DVT), pulmonary embolism (PE)
- Aspiration
- Wounds (pressure wounds, wounds from restraints)
- Diagnostic errors/delay
- Medication error
- Slow to recognize pain
- Procedural complications due to not cooperating

Delirium Predicts Dementia

- Delirium and Cognitive Impact in Dementia (DECIDE)
  - Cognitive Function and Ageing Study II (CFAS-II)
    - Baseline cognitive assessments
    - Hospitalized in one of the two designated hospitals
  - Assessed number of delirium episodes, delirium severity and duration
  - Assessed for change in MMSE scores and incident dementia 12 months later

Freeman Hospital

Royal Victoria Infirmary

Richardson et al., Age Ageing (2021)

DECIDE Results

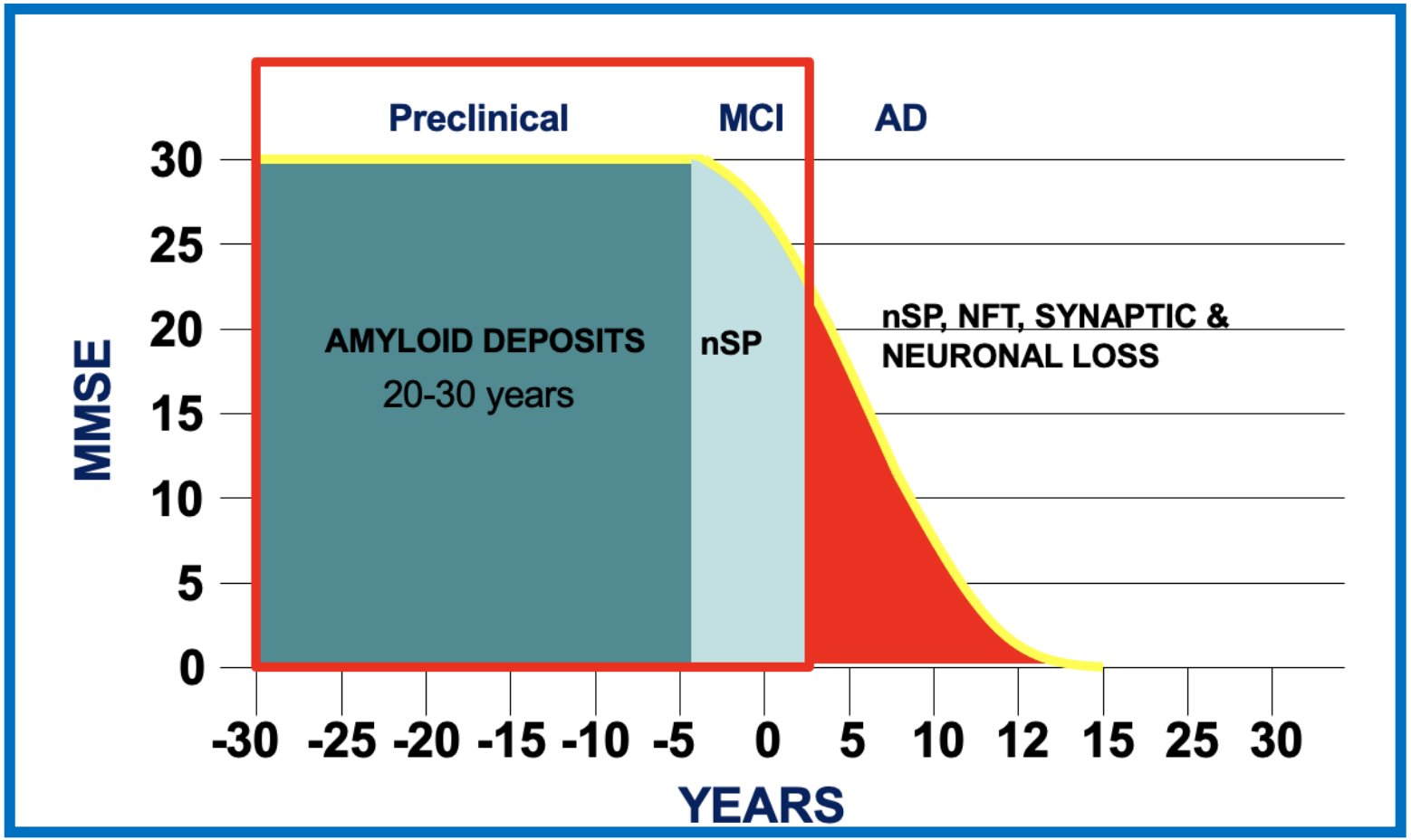
- An episode of delirium was associated with markedly increased risk of incident dementia (OR 8.8, 95% CI 1.9-41.4) (adjusted for age, sex, education, comorbidities, time between interviews, frailty)

- Greater number of delirium episodes, duration and severity was associated with worse cognitive outcomes
  - >1 episode (greater risk of dementia OR 13.9)
  - >5 days vs. 1-5 days of delirium (lower MMSE at 12 months -5.1 points vs. -1.7 points)
  - Similar findings for delirium severity (greater incident dementia and lower MMSE)

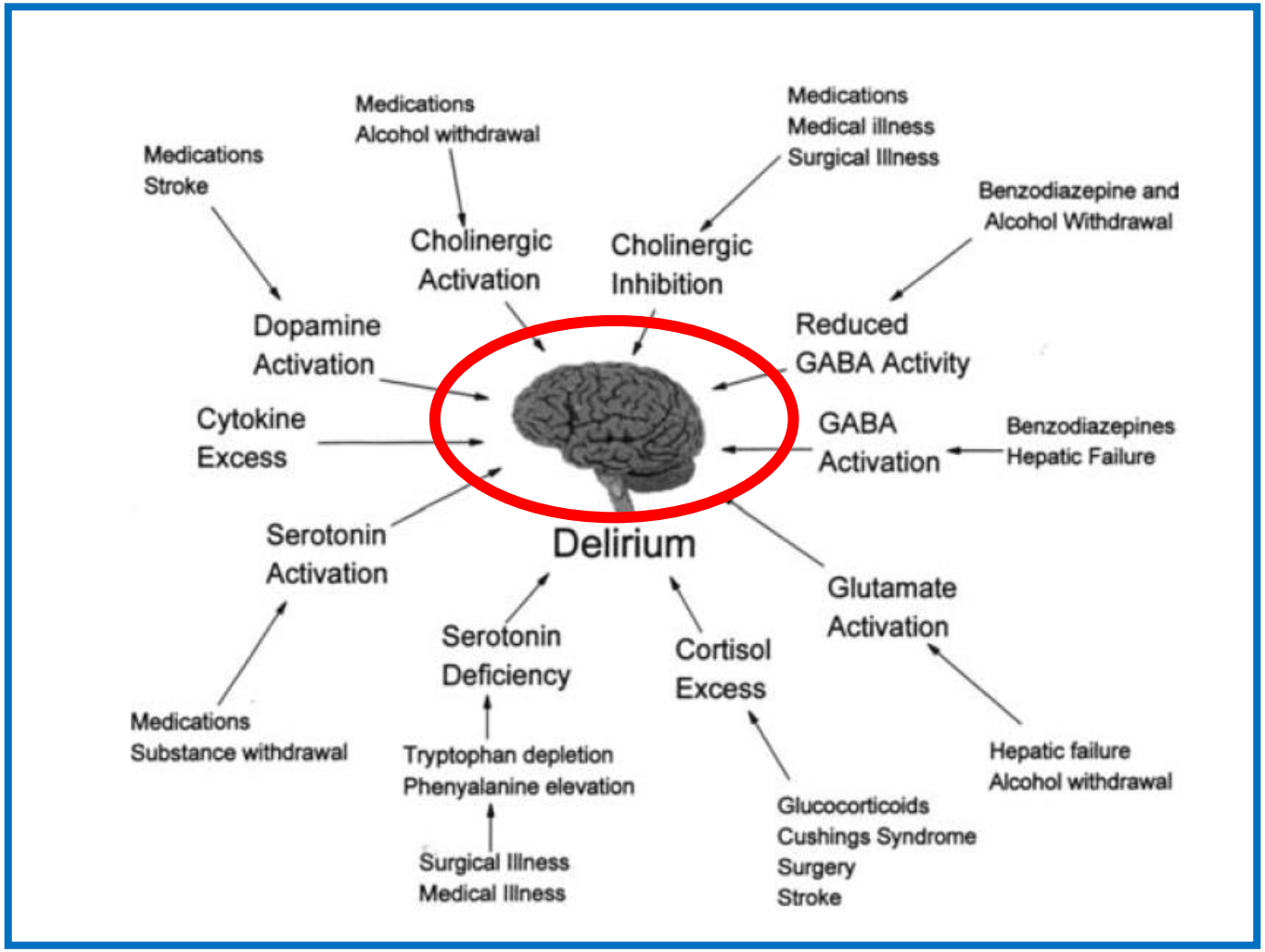
Richardson et al., Age Ageing (2021)

Who is At Risk?

Who is At Risk?



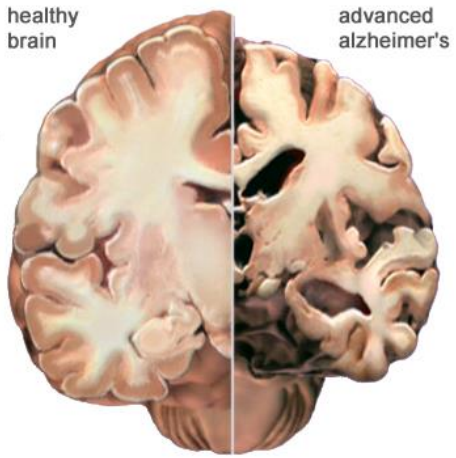
Multiple Factors Lead to Brain Insult



Flacker, J.M. and Lipsitz L. A., J Gerontol A Biol Sci Med Sci. (1999)

Who is At Risk?

"Brain Disease and/or Multiple Systemic Diseases"



Predisposing Factors/ Vulnerability

Precipitating (Predisposing) Factors/Insults

Low Vulnerability

Less Noxious Insult

"Healthy Brain with Minimal Systemic Disease"

Inouye 1996
www.alz.org

Multicomponent Non-pharmacological Delirium Prevention Methods

- 44% reduction in delirium incidence
- 64% reduction in falls

Delirium Prevention
Orientation & Activities
Fluid repletion
Early mobilization
Feeding assistance
Vision and hearing
Sleep enhancement
Infection prevention
Pain management
Hypoxia protocol
Reduce psychoactive medications

Hshieh et al., JAMA Intern Med, 2015)
https://www.healthcentral.com

Multicomponent Non-pharmacological Delirium Prevention Methods: HELP

- Assessment
  - Baseline and continued assessment
- Interventions
  - Medical work-up
  - Collaboration with family/caregivers,
  - Nursing education
  - Medication review
- Adherence

What May Mimic Delirium?

Table 1. Clinical Features of Diseases That Mimic Delirium

	Condition[a]			
Feature	Delirium	Dementia	Depression	Psychosis
Acute change in mental status	+	–	–	±
Inattention	+	±	±	±
Altered consciousness	+	–	–	–
Disorganized thinking	+	±	–	+
Altered psychomotor activity	+	±	+	+
Chronic duration	±	+	+	±

Oh ES et al., JAMA (2017)

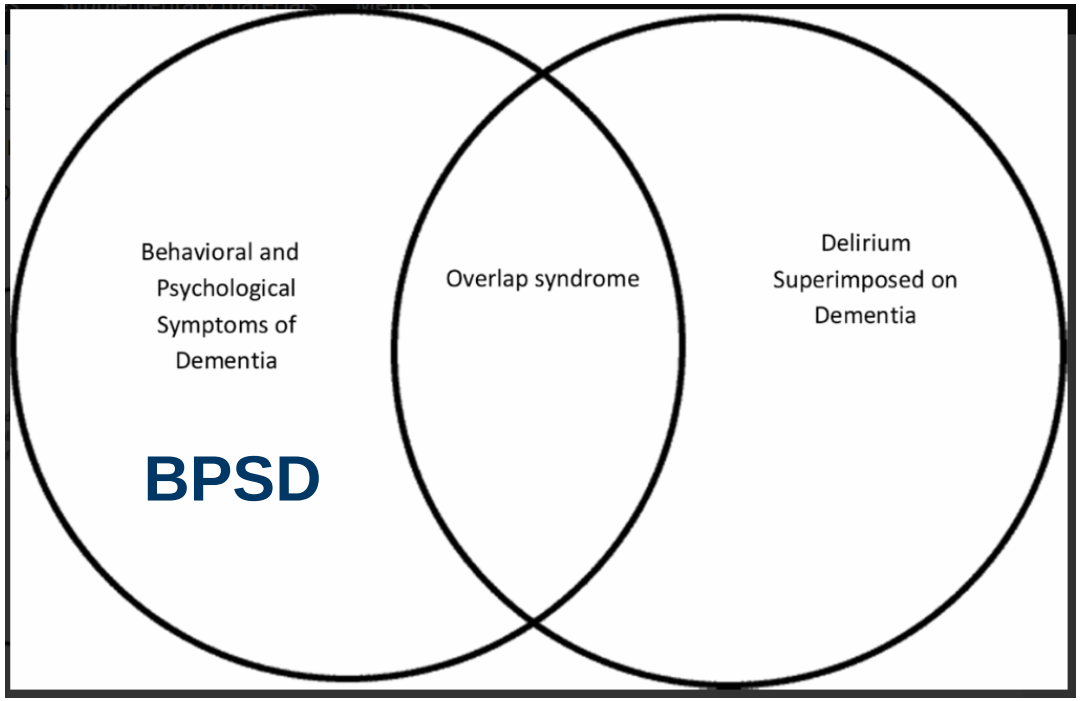
Delirium Superimposed on Dementia (DSD)

Delirium  Dementia

- Each condition is a strong risk factor for the other
- Rates of DSD in older hospitalized patients 22-31%

Nitchingham and Caplan 2021

Difficulty of Recognizing DSD in Advanced Dementia



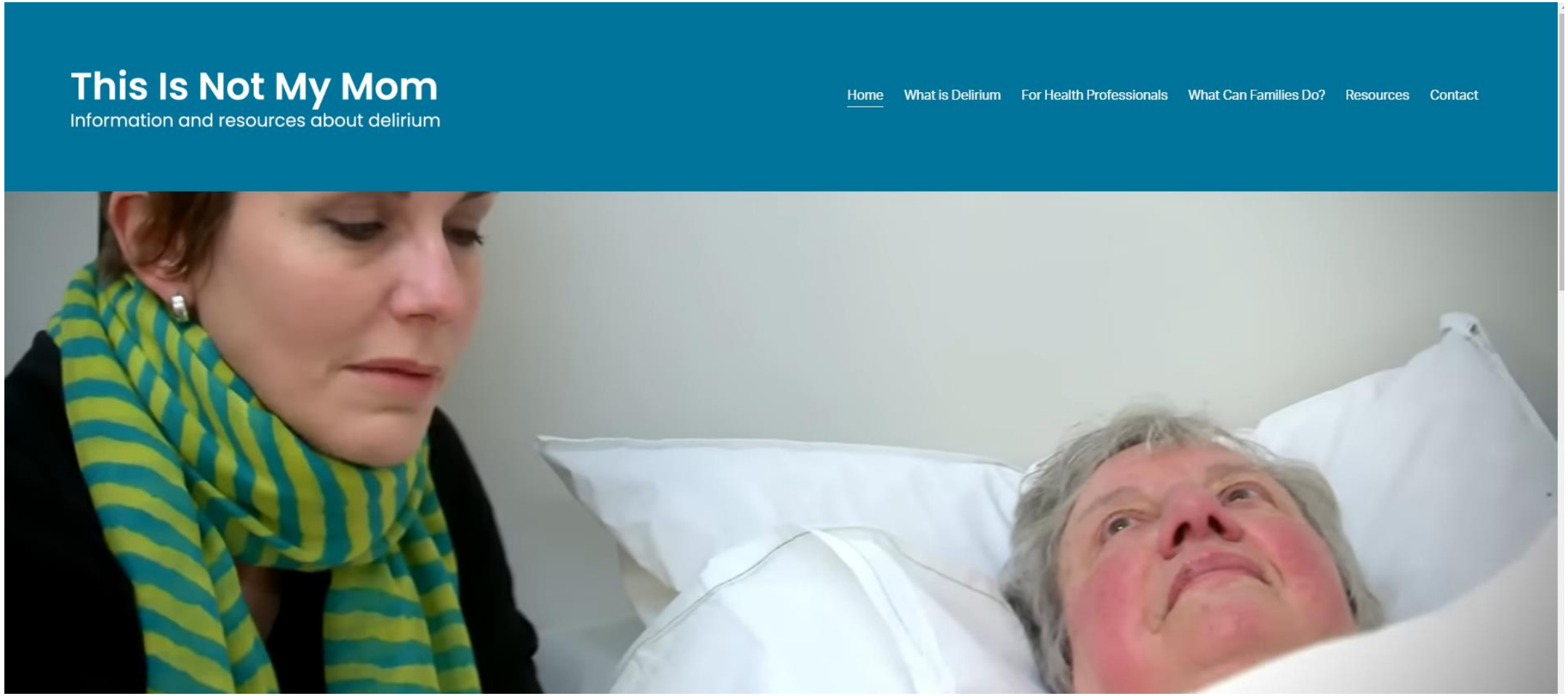
Challenges in diagnosis

*BPSD: hallucinations, delusions, aggression, sleep disturbance, etc.

*High prevalence of unrecognized dementia

Richardson et al., Int. Psychogeriatr 2016

How Do We Know If There is a Change?



https://www.thisisnotmymom.ca/

Different Types of Delirium

Hyperactive delirium

Predominantly restless and agitated

- Increased motor activity
- Loss of control of activity
- Restlessness
- Wandering

Mixed motor type

Evidence of both subtypes in the previous 24 hours

Hypoactive delirium

Commonly mistaken for depression or dementia

Predominantly drowsy and inactive

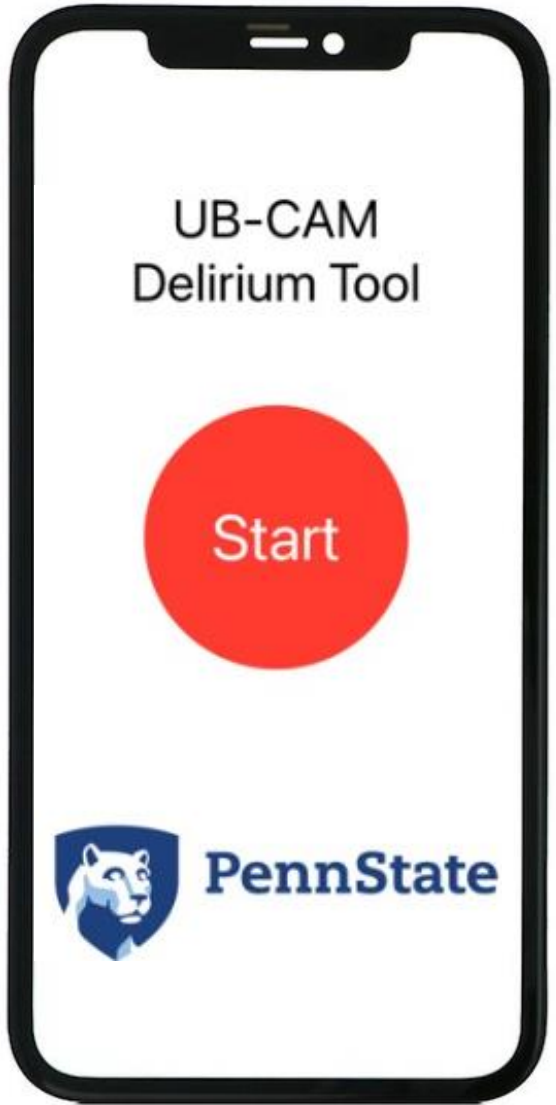
- Decreased activity
- Decreased action speed
- Decreased speed of speech
- Decreased amount of speech
- Reduced awareness of surroundings
- Listlessness
- Withdrawal

Hosker and Ward BMJ (2017)

Delirium Screening

- Confusion Assessment Method (CAM)
- 3 Minute Confusion Assessment Method (3DCAM)
- Ultra-Brief CAM
  - *Months of the Year Backwards*, and *What is the Day of the Week*?
  - All tools are freely available at https://help.agscocare.org/table-of-contents/delirium-instruments/H00101
- 4AT
  - Freely available at https://www.the4at.com

How Do We Assess for Delirium?



POSITION	Try to sit at eye level
SENSORY	Be sure sensory aides (glasses, hearing) are in place
WORDING	Please read the script exactly as written

1: Please tell me the day of the week

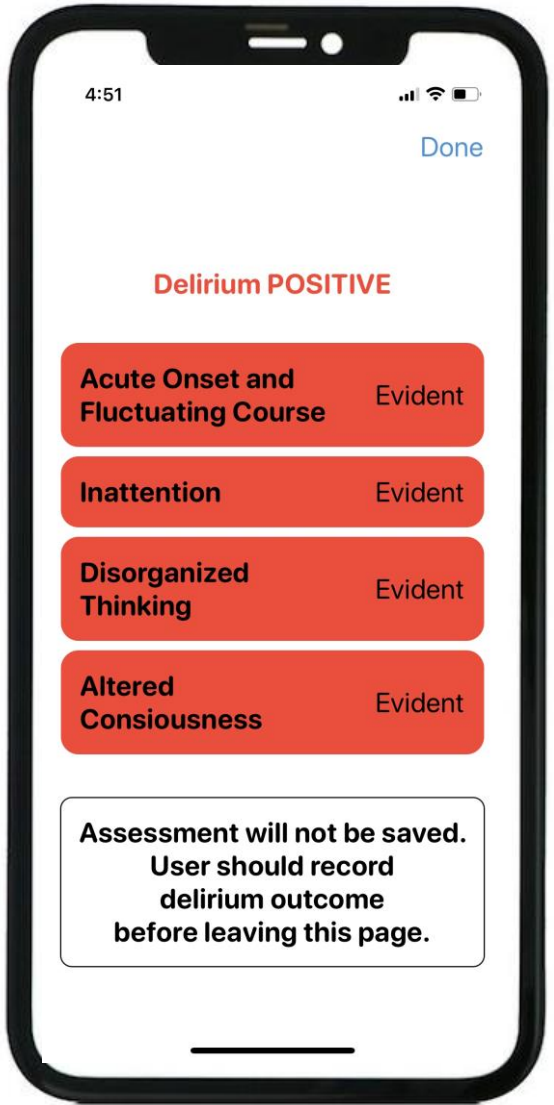
The participant can check anywhere (e.g., white board, newspaper, etc.), but cannot ask anyone else in the room.

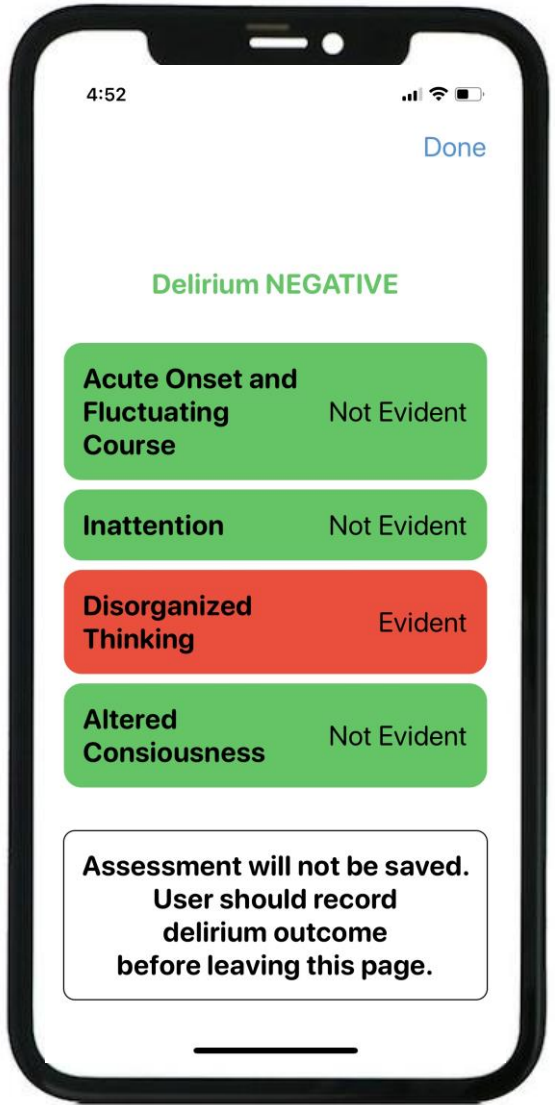
2: Please tell me the months of the year backward, say December as your first month

MISSED MONTH	If participant finished reciting months but missed one or more, it is incorrect and no prompting is allowed.
STUCK	Prompt only with: *"what month comes before _____ (last month they said)?"* Prompt up to two times; if after 2 prompts participant is frustrated, confused, or taking a long time, mark it incorrect and offer them an exit such as, *"that's a tough one, you're doing well… let's try the next question."*
WRONG TYPE OF ANSWER	If the participant begins at November, starts forward, or begins spelling, assume they don't understand the question and re-read the instructions **once**. If the participant is incorrect again, mark it as incorrect but let them finish.

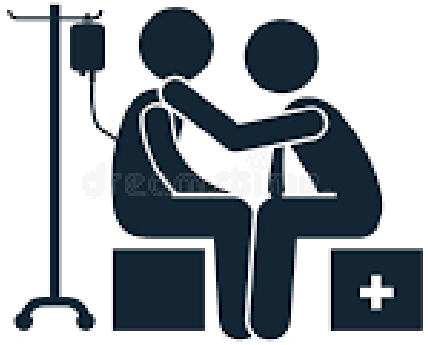
If incorrect on either question, use an additional screening tool to further assess, such as the CAM or 3D-CAM https://www.hospitalelderlifeprogram.org/request-access/delirium-instruments/

How Do We Assess for Delirium?





Delirium Prevention



Screening
(Targeted)

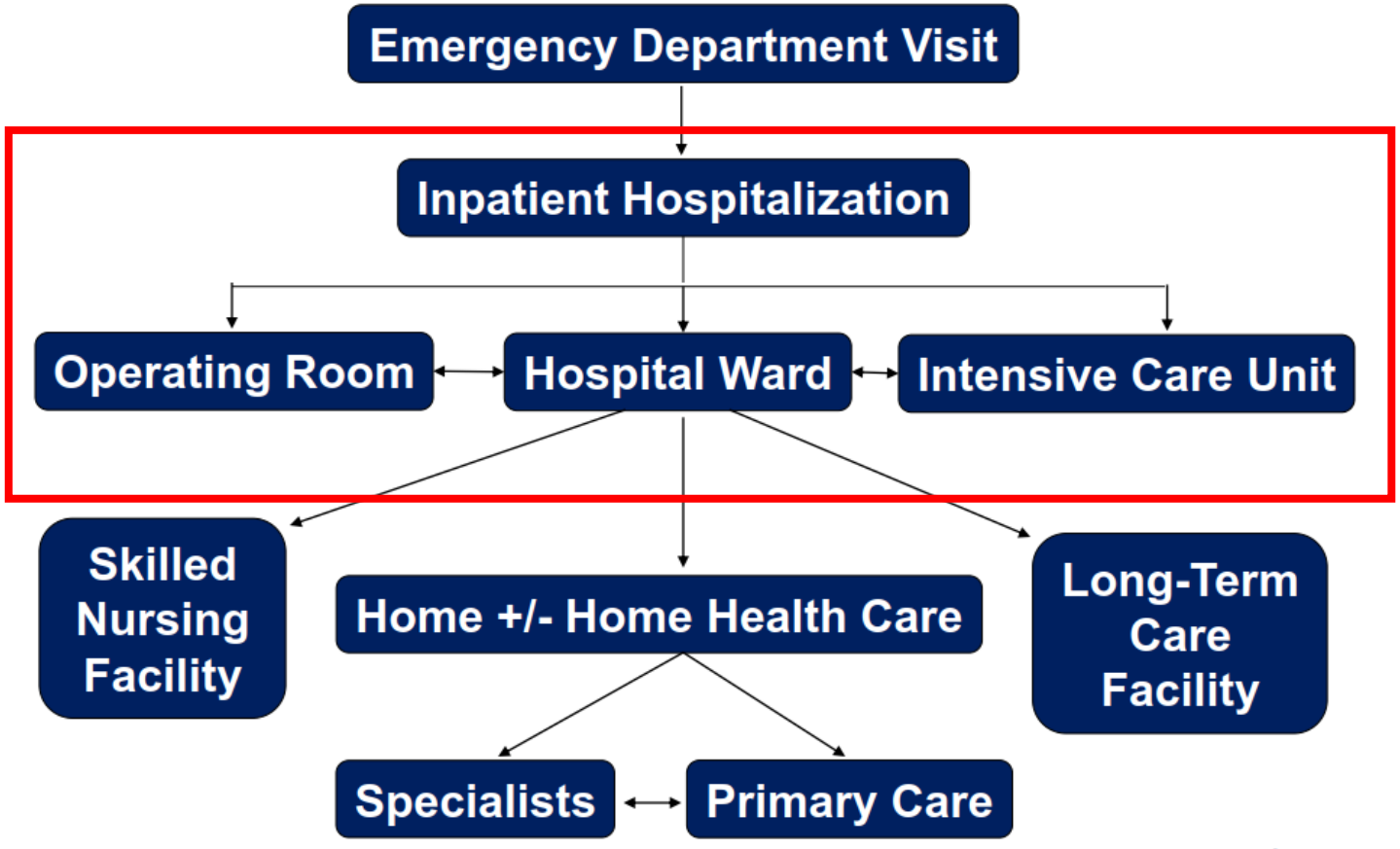
Intervention
(**Before**, During, After)

Follow-up
(Monitoring)

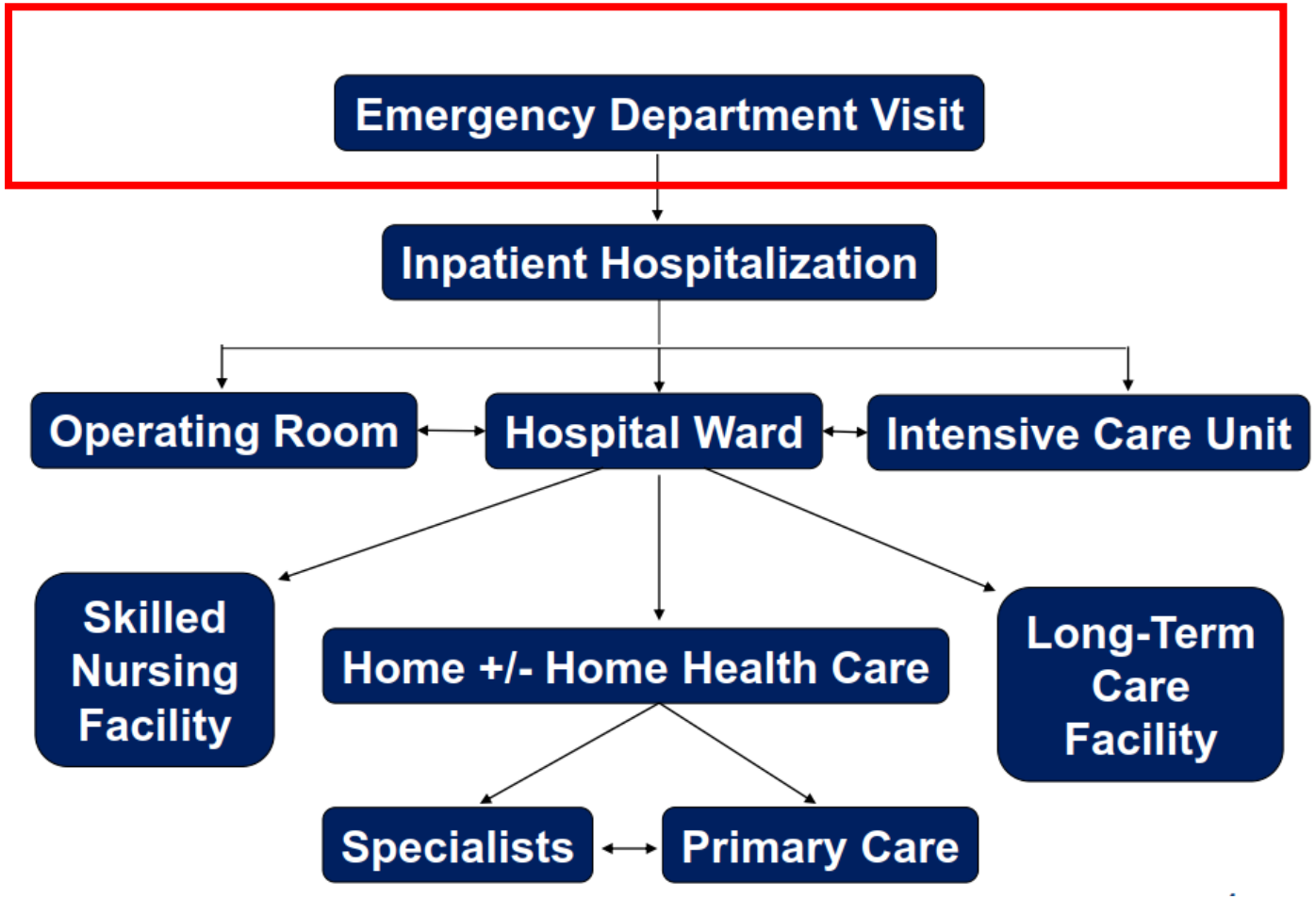
Estimated 30 - 40% of delirium is preventable

J Am Geriatr Soc, 2015

Delirium as a Risk Factor for Dementia



Delirium as a Risk Factor for Dementia



Delirium Management in Emergency Department

From: Managing Delirium in the Emergency Department: An Updated Narrative Review

Ehrlich A et al., Curr Geriatr Rep 2024

Treatment of Delirium

- Treat the underlying etiology of delirium
  - H & P
  - Infection, metabolic abnormalities
  - Medications
- Prevent complications
  - Prevent aspiration
  - Volume status
  - Nutritional support
  - Prevent pressure sores
  - Mobilize to prevent DVT, PE, UTI

Oh et al., JAMA (2017)

Treatment of Delirium

- Non-pharmacologic strategies
- Pharmacologic strategies
  - Antipsychotics
  - Melatonin, ramelteon

Oh et al., JAMA (2017)

Summary

- Why delirium matters
  - Patient distress
  - Association with poor clinical outcomes
  - Evidence that delirium is associated with long-term cognitive impairment

Summary

- Why delirium matters
  - Patient distress
  - Association with poor clinical outcomes
  - Evidence that delirium is associated with long-term cognitive impairment
- Who is at risk?
  - Older adults

Summary

- Why delirium matters
  - Patient distress
  - Association with poor clinical outcomes
  - Evidence that delirium is associated with long-term cognitive impairment
- Who is at risk?
  - Older adults
- What should we do to prevent delirium?
  - Non-pharmacological, multicomponent delirium prevention

Summary

- Why delirium matters
  - Patient distress
  - Association with poor clinical outcomes
  - Evidence that delirium is associated with long-term cognitive impairment
- Who is at risk?
  - Older adults
- What should we do to prevent delirium?
  - Non-pharmacological, multicomponent delirium prevention
- How do we know when someone develops delirium?

Summary

- Why delirium matters
  - Patient distress
  - Association with poor clinical outcomes
  - Evidence that delirium is associated with long-term cognitive impairment
- Who is at risk?
  - Older adults
- What should we do to prevent delirium?
  - Non-pharmacological, multicomponent delirium prevention
- How do we know when someone develops delirium?
- When do we intervene?
  - When patients first arrive in ED