



**ST. JOHN'S  
UNIVERSITY**

College of Pharmacy  
and Health Sciences

## See Clearly through 3Ds – Depression, Dementia and Delirium in Older Adults

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**NYSCHP Annual Assembly**  
**4/10/2026 (Friday)**  
**11:30 am – 12:30 pm**

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## Learning Objectives

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- After completing this continuing education program, the audience should be able to:
  - Identify key areas of the Age Friendly Health systems (AFHS) 5Ms framework which promote the well-being of older adults.
  - Apply the AFHS 5Ms framework to optimize medication assessment and clinical outcomes.
  - Differentiate clinical features associated with depression, dementia and delirium.
  - Given a patient case, evaluate therapy issues and provide age-friendly care for mental health concerns in an older adult.

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## Age Friendly Health Systems (AFHS)

- Collaborative initiative of
  - John A. Harford Foundation
  - Institute for Healthcare Improvement
  - in partnership with the American Hospital Association and Catholic Health Association of the United States
- AFHS Aim to:
  - follow an essential set of evidence-based practices
  - cause no harm
  - align with “What Matters” to older adult and their family or caregivers



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## Age Friendly Health Systems (AFHS)

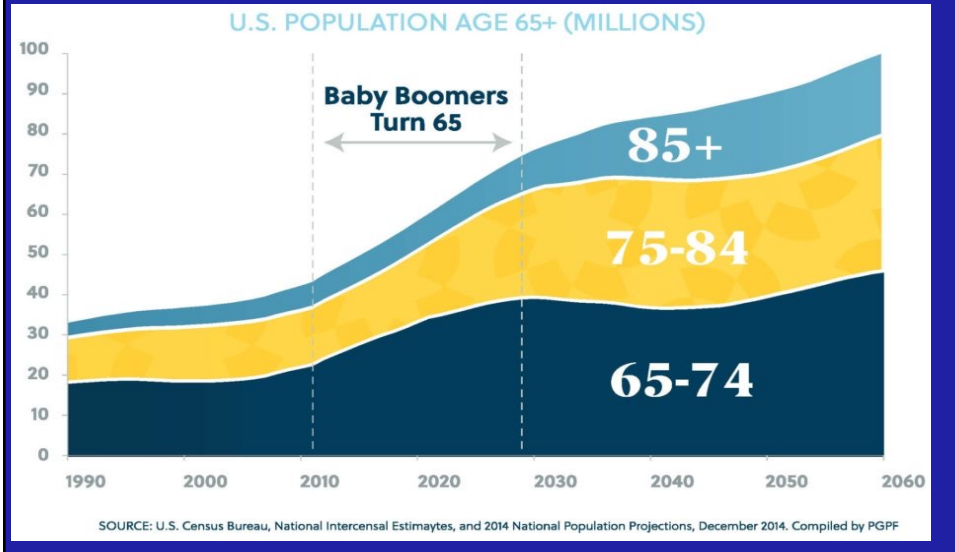
- The goal of an AFHS is to deliver comprehensive, patient-centered care that addresses the unique needs and preferences of older adults (with **Multi-complexity**)
- By focusing on the 4Ms (**What Matters, Medication, Mobility & Mentation**), healthcare providers can improve outcomes, reduce unnecessary interventions, and enhance the overall quality of life for older patients



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## Age Friendly Health Systems (AFHS) – Why?


### ■ US Census Bureau



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### THE GERIATRICS5Ms

**MULTICOMPLEXITY**  
...describes the whole person, typically an older adult, living with multiple chronic conditions, advanced illness, and/or with complicated biopsychosocial needs



Geriatrics health professionals focus on these 4Ms...

<b>MIND</b>	<ul style="list-style-type: none"> <li>■ Mentation</li> <li>■ Dementia</li> <li>■ Delirium</li> <li>■ Depression</li> </ul>
<b>MOBILITY</b>	<ul style="list-style-type: none"> <li>■ Amount of mobility; function</li> <li>■ Impaired gait and balance</li> <li>■ Fall injury prevention</li> </ul>
<b>MEDICATIONS</b>	<ul style="list-style-type: none"> <li>■ Polypharmacy, deprescribing</li> <li>■ Optimal prescribing</li> <li>■ Adverse medication effects and medication burden</li> </ul>
<b>WHAT MATTERS MOST</b>	<ul style="list-style-type: none"> <li>■ Each individual's own meaningful health outcome goals and care preferences</li> </ul>

<https://www.americangeriatrics.org/sites/default/files/media/press/AGS%20Geriatric%205Ms%20Complexities%20for%20Medication%20Students.pdf>  
 Image Credit: American Geriatrics Society

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## Applying AFHS 5Ms - Pharmacist

### ■ Multi-complexity

- Help patients manage a variety of health conditions or situations
- Assess living conditions when they are affected by older age, health conditions and social concerns
- The TEAM approach!

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## Applying AFHS 5Ms - Pharmacist

### ■ What Matters Most

- Identify patient's primary health priority
  - Coordinate advance care planning
- Ask patients what matters most to them
- Ask patients if any current medications are preventing them from achieving their goals

Goals of care

Share Decision Making

Medication Adherence

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## Applying AFHS 5Ms - Pharmacist

↓ Use of PIMs

↓ Poly-pharmacy

↓ Drug-related problems/cost

### ■ Medication

- Obtain accurate medication history
  - Complete list with indications
- Identify potentially inappropriate meds (PIMs)
- Recognize medication related problems
  - Consider deprescribing
  - Offer non-pharmacologic options
- Assess and provide social support for medication management or access

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## Applying AFHS 5Ms - Pharmacist

↓ Falls,  
↓ Meds with  
increased fall  
risk

Use of  
easy-  
open caps

### ■ Mobility

- Ask about fall history
  - Assess risk for falls
- Evaluate if taking any meds that impact mobility
  - Include herbs, OTCs and substances (alcohol, illicit drugs)
- Ask if patients have mobility issue that prevent them from accessing medications
  - Opening bottles, access to pharmacy
- Provide assistance to aid daily activities and med adherence

Adherence  
packaging,  
use of  
pharmacy  
delivery

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## Applying AFHS 5Ms - Pharmacist

### ■ Mentation

↓ Adverse effects

Promote use of adherence devices

- Ask patients what difficulty they have taking their medications
  - Use normalizing statements
  - Show empathy
- Evaluate whether any medications cause patients to feel confused, foggy, sleepy, anxious, depressed, or feeling “not well”
- Consider screening for depression, dementia and delirium

Simply regimens

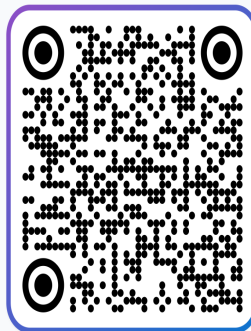
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When poll is active respond at [PollEv.com/sumlam](https://PollEv.com/sumlam)

📲 Activate this Poll with the Poll Everywhere Live app.

📺 If video conferencing, you must be sharing your full screen to share the activated poll.

All of the following are key areas of the Age-Friendly 5Ms framework EXCEPT:

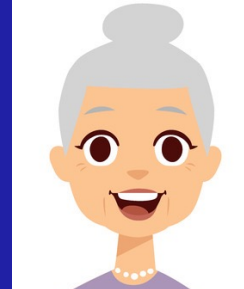


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## Meet Mrs. Jones (75 years old)

- Mrs. Jones is a 75-year-old woman accompanied by her daughter to establish primary care at a Geriatric Medicine clinic. She was diagnosed with mild-moderate dementia one year ago. Today her main complaint is “feeling tired every day.” Daughter also reports the following:
  - Forgetting times and dates easily
  - Misplacing and losing items
  - Repeating questions and current events
  - Reminding daughter to “visit her dad” in the hospital
  - Missing medication doses
  - Increasing difficulty with managing finances
- Osteoarthritis in hands and hip × 6 years
- Hypertension × 15 years
- Dyslipidemia × 6 years
- Urinary incontinence × 6 months

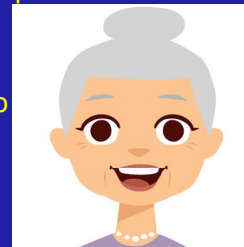


<https://images.app.goo.gl/brauxGiGQZEP7Z9x6>

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## Meet Mrs. Jones (75 years old)

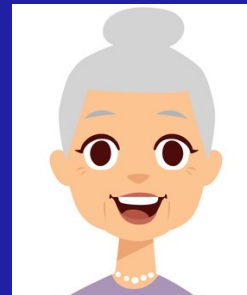
- **FH:** Both parents deceased. No significant history
- **SH:** Lives alone; has been widowed for 6 months (husband died after a long battle with cancer); never smoked; occasional alcohol use
- **NKDA**
- **Current Meds:**
  - Rivastigmine 1.5 mg po twice daily × 6 months, often skips doses
  - Lisinopril 10 mg po once daily × 15 years
  - Simvastatin 20 mg po every evening × 6 years, often skips doses
  - Aspirin 81 mg po once daily × 15 years
  - Oxybutynin 2.5 mg po twice daily × 6 months
  - Simply Sleep® 2 Caplets at bedtime started 7 days ago
  - Acetaminophen 325 mg PRN “pain and aches all over”



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## Meet Mrs. Jones (75 years old)

- BP 144/82, P 76, RR 18, T 98 F; Wt 135 lb (61 kg), Ht 5'4"
- Motor, sensory, CNs, cerebellar, and gait normal
- Displayed tearfulness and frustration during Folstein MMSE score 21/30 today (12 months ago: 24/30)
- Disoriented to season, month, date, and day of week
- Good registration but impaired attention and very poor short-term memory  
Unable to remember any of three items after 3 minutes. Able to follow commands
- Electrolytes WNL      Glu 102 mg/dL
- BUN 16 mg/dL          SCr 1.3 mg/dL
- Crcl 33 ml/min        Alb 4.0 g/dL
- Hgb 13.5 g/dL        Hct 39.0%
- Vit B12 180 pg/mL    Folate >4 ng/mL
- TSH & T4, lipid panel, liver function test WNL



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What are Mrs. Jones' potential therapeutic issues?

Mrs. Jones has a diagnosis of **dementia**. Based on clinical findings, what is the possibility of her having **delirium**?

What is the possibility of her having **depression**?

How would you apply **the AFHS 5Ms framework** to promote patient-entered care for her?

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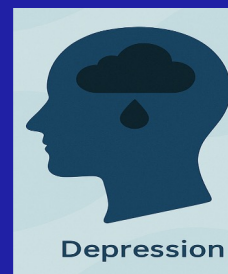
## Seeing Clearly in 3Ds



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## Depression in the Elderly

- Prevalence: 5 - 15% community setting, 14 - 50% nursing home
- Often re-occurrence but 30% are late-onset depression
- Often coexist with or precipitated by
  - CVD, MI and **DEMENTIA!**
- Prevalence of depression in Alzheimer's dementia is 10 – 20%



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## Depression is Associated with Cognitive Impairment!

- Early onset depression may be a risk factor for mild cognitive impairment
- Late onset depression can be a prodrome of dementia
- **A first episode of depression in later life should be considered a red flag and prompt an assessment for cognitive impairment**



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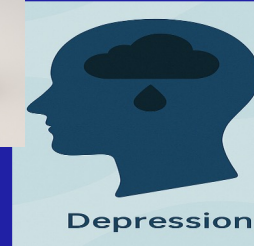
## Assessment & Presentation - Risk factors

- Concomitant disease states, polypharmacy
  - Widowed, divorced or retired
  - Stressful life events
  - Lack of social support network
  - Substance abuse
  - Prior depressive episodes
  - Other associated medical illness
    - Hypothyroidism
    - Coronary artery disease
    - Myocardial infarction
    - Macular degeneration
    - Diabetes
    - Cancer
- Co-morbid CNS diseases
  - Parkinson's
  - **Alzheimer Disease**
  - **Cognitive impairment**
  - Stroke
  - Multiple sclerosis
  - Brain ischemic disease
- **Common social stressors**
  - Loss of spouse
  - Forced relocation (w family, nursing home, etc)
  - Retirement (decreased self-worth, boredom and loss of income)

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## Assessment & Presentation – Drug Induced

- Narcotics
- Beta blockers
- Clonidine
- Hydralazine
- Digoxin
- Sedatives (benzodiazepines)
- Steroids
- Interferons
- Anti-psychotics
- Levodopa
- Triptans
- Varenicline
- Tamoxifen



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## Assessment & Presentation

- ❖ Atypical features in older adults!
- ❖ Diagnosis of major Depressive Disorder (DSM-5)
  - ❖ must be present nearly every day during a 2-wk period
- **\*Depressed mood\* or**
- **\*Loss of interest or pleasure\***
- Plus 4 or more of the following symptoms
  - Weight loss or appetite change
  - Insomnia or hypersomnia
  - Psychomotor agitation or retardation
  - Loss of energy or fatigue
  - Feeling of worthlessness or guilt
  - Difficulty with concentration or indecisiveness
  - Thoughts of suicide

**\*Older adults tend to have somatic complaints**

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## Screening for Depression Geriatric Depression Scale (GDS)

1.	Are you basically satisfied with your life?	yes	no (1)
2.	Have you dropped many of your activities and interests?	yes (1)	no
3.	Do you feel that your life is empty?	yes (1)	no
4.	Do you often get bored?	yes (1)	no
5.	Are you hopeful about the future?	yes	no (1)
6.	Are you bothered by thoughts you can't get out of your head?	yes (1)	no
7.	Are you in good spirits most of the time?	yes	no (1)
8.	Are you afraid that something bad is going to happen to you?	yes (1)	no
9.	Do you feel happy most of the time?	yes	no (1)
10.	Do you often feel helpless?	yes (1)	no
11.	Do you often get restless and fidgety?	yes (1)	no
12.	Do you prefer to stay at home rather than go out and do things?	yes (1)	no
13.	Do you frequently worry about the future?	yes (1)	no
14.	Do you feel you have more problems with memory than most?	yes (1)	no
15.	Do you think it is wonderful to be alive now?	yes	no (1)
16.	Do you feel downhearted and blue?	yes (1)	no
17.	Do you feel pretty worthless the way you are now?	yes (1)	no
18.	Do you worry a lot about the past?	yes (1)	no
19.	Do you find life very exciting?	yes	no (1)
20.	Is it hard for you to get started on new projects?	yes (1)	no
21.	Do you feel full of energy?	yes	no (1)
22.	Do you feel that your situation is hopeless?	yes (1)	no
23.	Do you think that most people are better off than you are?	yes (1)	no
24.	Do you frequently get upset over little things?	yes (1)	no
25.	Do you frequently feel like crying?	yes (1)	no
26.	Do you have trouble concentrating?	yes (1)	no
27.	Do you enjoy getting up in the morning?	yes	no (1)
28.	Do you prefer to avoid social occasions?	yes (1)	no
29.	Is it easy for you to make decisions?	yes	no (1)
30.	Is your mind as clear as it used to be?	yes	no (1)

<https://integrationacademy.ahrq.gov/sites/default/files/2020-07/Update%20Geriatric%20Depression%20Scale-30.pdf>

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## Additional Screening Tools for Depression

- Cornell Scale for Depression and Dementia (CSDD)
  - Assess s/s of major depression in pts with dementia  
<https://www.dementiaresearch.org.au/wp-content/uploads/2016/06/CSDD.pdf>
- Patient healthcare Questionnaire (PHQ-9)  
<https://www.apa.org/depression-guideline/patient-health-questionnaire.pdf>

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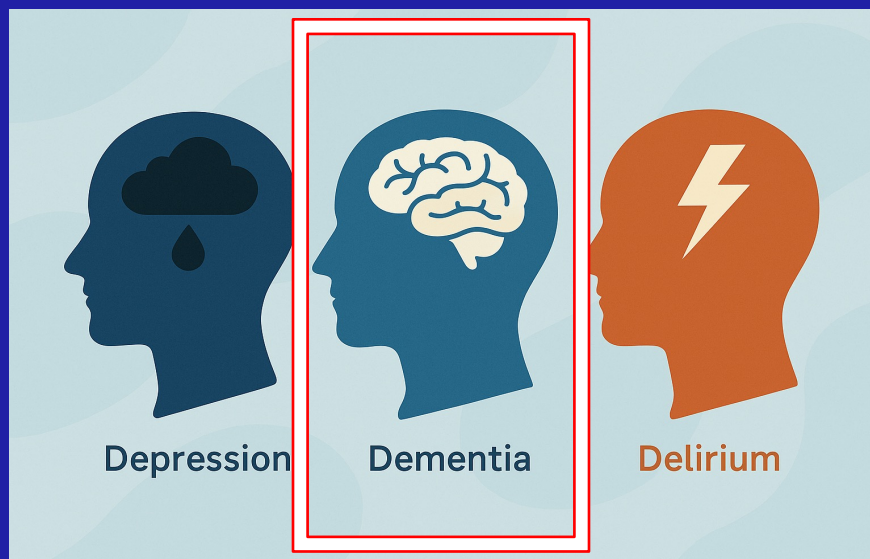
## Clinical Pearls for Treating Depression in Older Adults

- Symptom **remission** should be the optimal goal
  - Increase daily function and less risk for relapse in the long run
  - About 20% or more will achieve goal
- Consider psychotherapy
- First line antidepressants
  - SSRI:
    - Avoid paroxetine (antimuscarinic SE)
    - Avoid citalopram > 20 mg daily (QTc prolongation)
    - Fluoxetine & paroxetine (more drug interactions)
    - Monitor for side effects: hyponatremia, falls, ect
  - SNRI: venlafaxine, desvenlafaxine, duloxetine
  - Bupropion
  - Mirtazepine



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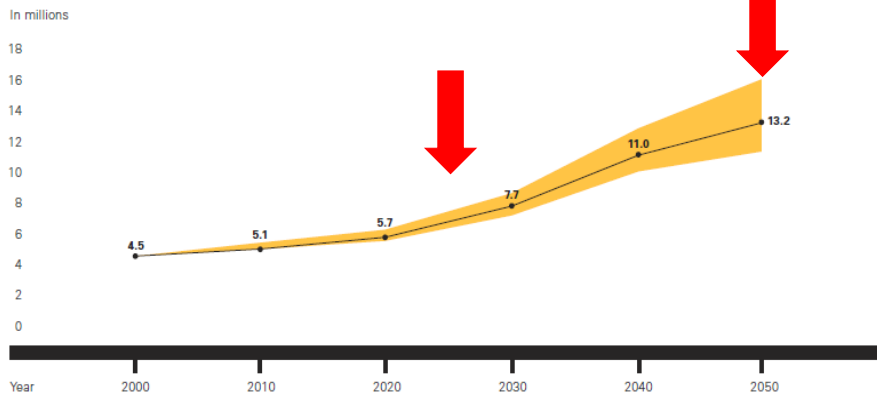
## Seeing Clearly in 3Ds



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# Alzheimer's Dementia in Older Adults

**figure 4:** Projected Numbers of People Aged 65 and Over in the U.S. Population with Alzheimer's Disease (in Millions) Using the U.S. Census Bureau Estimates of Population Growth\*



\*Numbers indicate middle estimates per decade. Colored areas indicate low and high estimates per decade.  
Created from data from Hebert et al 2003.<sup>491, 491</sup>

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## Facts about the Alzheimer's Crisis

Source: <https://www.alz.org/alzheimers-dementia/facts-figures>

ALZHEIMER'S DISEASE IS THE  
**6TH LEADING CAUSE**  
OF DEATH IN THE UNITED STATES

In 2017, Alzheimer's and other dementias will cost the nation \$259 billion. By 2050, these costs could rise as high as  
**\$1.1 TRILLION**

**MORE THAN 5 MILLION AMERICANS ARE LIVING WITH ALZHEIMER'S. BY 2050, THIS NUMBER COULD RISE AS HIGH AS 16 MILLION**

**EVERY 66 SECONDS**  
someone in the United States develops the disease

**35%** of caregivers for people with Alzheimer's or another dementia report that their health has gotten worse due to care responsibilities, compared to **19%** of caregivers for older people without dementia

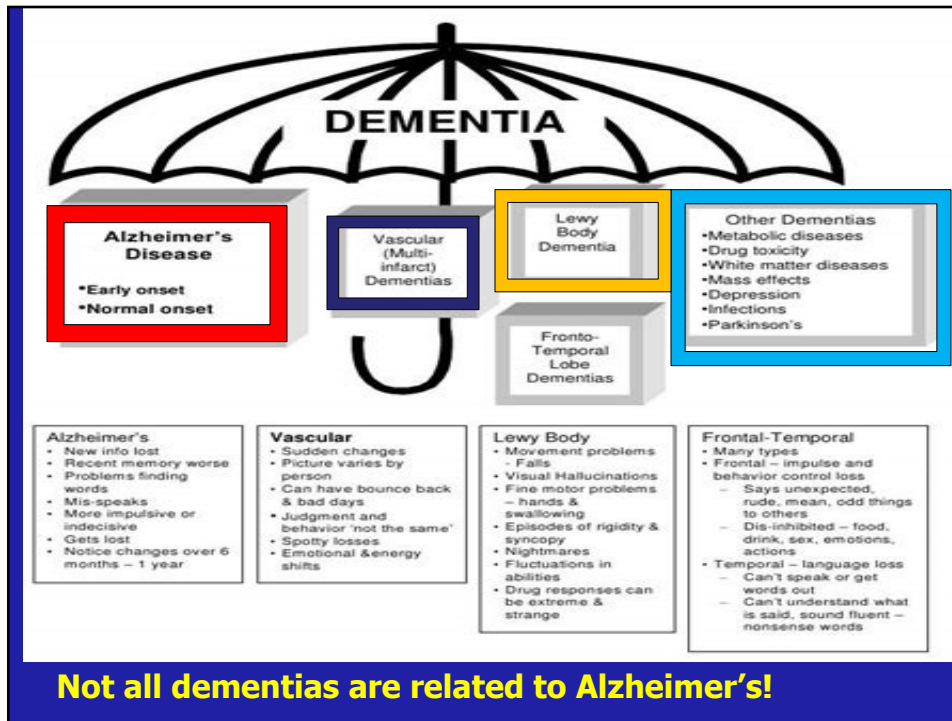
**1 IN 3** seniors dies with Alzheimer's or another dementia

Since 2000, deaths from heart disease have decreased by 14% while deaths from Alzheimer's disease have increased by 89%

**MORE THAN 15 MILLION AMERICANS** provide unpaid care for people with Alzheimer's or other dementias. **IN 2016**, these caregivers provided an estimated **18.2 BILLION HOURS** of care valued at over **\$230 BILLION**

**IT KILLS MORE THAN** breast cancer and prostate cancer **COMBINED**

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## Assessment & Presentation - Alzheimer's Dementia

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- **Cognitive**
  - Memory loss
  - Aphasia (inability to communicate effectively)
  - Apraxia (inability to perform daily activities/motor tasks)
  - Agnosia (inability to interpret sensory stimuli/recognize familiar objects)
  - Disorientation
  - Impaired executive functioning (planning, organizing, abstract thought)
- **Neuropsychiatric:** depression, psychotic symptoms, behavioral disturbances
- **Functional:** inability to care for self

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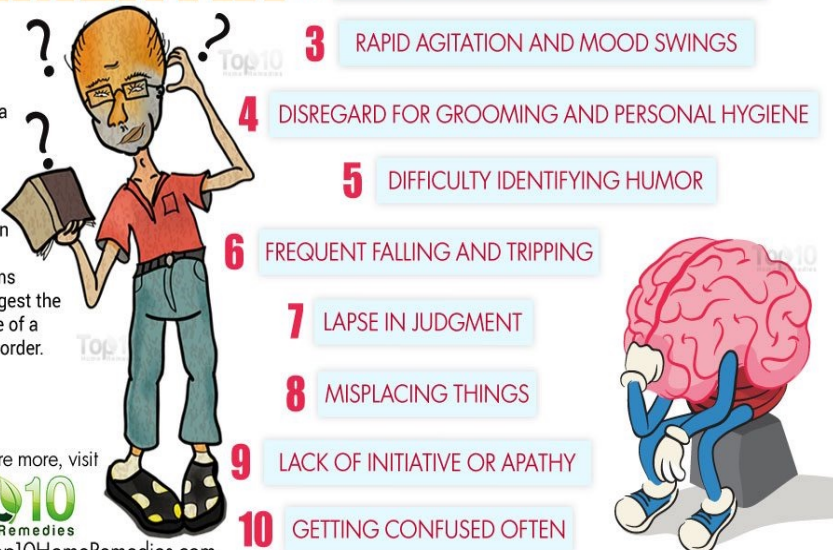
10 EARLY SIGNS & SYMPTOMS OF

# DEMENTIA

Dementia is not a disease, rather it is a collection of many symptoms that suggest the presence of a brain disorder.

To explore more, visit  
  
[www.Top10HomeRemedies.com](http://www.Top10HomeRemedies.com)

- 1 SUBTLE SHORT-TERM MEMORY LOSS
- 2 DIFFICULTY COMMUNICATING THOUGHTS
- 3 RAPID AGITATION AND MOOD SWINGS
- 4 DISREGARD FOR GROOMING AND PERSONAL HYGIENE
- 5 DIFFICULTY IDENTIFYING HUMOR
- 6 FREQUENT FALLING AND TRIPPING
- 7 LAPSE IN JUDGMENT
- 8 MISPLACING THINGS
- 9 LACK OF INITIATIVE OR APATHY
- 10 GETTING CONFUSED OFTEN



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## Screening / Assessment for Dementia

Mini-Cog	<ul style="list-style-type: none"> <li><a href="https://mini-cog.com/download-the-mini-cog-instrument/">https://mini-cog.com/download-the-mini-cog-instrument/</a></li> </ul>
AD-8	<ul style="list-style-type: none"> <li><a href="https://www.alz.org/getmedia/6e7291bf-4ac8-40ed-a148-824d4591ed7e/ad8-dementia-screening.pdf">https://www.alz.org/getmedia/6e7291bf-4ac8-40ed-a148-824d4591ed7e/ad8-dementia-screening.pdf</a></li> </ul>
MMSE	<ul style="list-style-type: none"> <li><a href="https://cgateoolkit.ca/Uploads/ContentDocuments/MMS E.pdf">https://cgateoolkit.ca/Uploads/ContentDocuments/MMS E.pdf</a></li> </ul>
Montreal Cognitive Assessment	<ul style="list-style-type: none"> <li><a href="https://www.smchealth.org/sites/main/files/file-attachments/moca-instructions-english_2010.pdf">https://www.smchealth.org/sites/main/files/file-attachments/moca-instructions-english_2010.pdf</a></li> </ul>

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Stage	Daily Routine	Behaviors	Cognition
Mild MMSE 21-26	<input type="checkbox"/> Episodes of getting lost in familiar places <input type="checkbox"/> Difficulty in performing everyday tasks (finance management) <input type="checkbox"/> Forget appointments	<input type="checkbox"/> Feelings of anxiety or <b>depression</b> <input type="checkbox"/> Withdrawing socially	<input type="checkbox"/> Episodes of short-term memory loss <input type="checkbox"/> Misplacing items and having difficulty finding them <input type="checkbox"/> Unable to remember names or objects
Moderate MMSE 10-20	<input type="checkbox"/> Unable to perform everyday tasks (cooking or self care)	<input type="checkbox"/> <b>Depression</b> , paranoia, sleep problems, emotional episodes due to frustration	<input type="checkbox"/> Difficulty engaging in conversations and recognizing family members and/or caregivers
Severe MMSE 0-9	<input type="checkbox"/> Completely dependent on caregiver <input type="checkbox"/> Loss of bladder & bowel control	<input type="checkbox"/> Episodes of <b>aggression</b> <input type="checkbox"/> <b>Delusions</b> or <b>paranoia</b>	<input type="checkbox"/> Loss of judgment <input type="checkbox"/> Gradual loss of speech & ability to solve problems

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## Clinical Pearls for Treating Alzheimer Disease

- Proper screening and diagnosis of Alzheimer's disease
- Educate patient and family about disease process
- Discuss medicolegal issues
- Provide information on support groups
- Assess baseline functionality, medical and psychiatric state

- Minimize use of anticholinergic medications
- Regularly review medication regimen
  - Assess potential benefits, adverse effects and cost

**Screen patients for cognitive impairment & provide referrals!**

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## Assessment & Presentation – Drug Induced

Consider medication assessment and deprescribe

- <https://www.hii.iu.edu/resources/anticholinergic-cognitive-burden-scale.pdf>

Anticholinergic burden scale

- <https://www.acbcalc.com/>



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## Nonpharmacologic Therapies

<i>Modality</i>	<i>Type of dementia</i>	<i>Evidence</i>
Enjoyable leisure activities (per patient preference)	Mild cognitive impairment, mild to moderate dementia	Decreased neuropsychiatric symptoms and functional capacity, slowing of memory loss
Mental stimulation programs (e.g., puzzles, word games, past/reminiscence therapy, indoor gardening, baking)	Mild to moderate dementia	Improved cognition and self-reported quality of life and well-being; no effect on functional status, mood, or behavior
Occupational therapy training in coping strategies and cognitive aides	Mild to moderate dementia	Improved cognition
Structured physical exercise programs	Mild to severe Alzheimer disease	Improved physical function, reduced neuropsychiatric symptoms (including depression), slower rate of functional decline, no improvement in cognition

Source: Epperly T, et al. Alzheimer Disease: Pharmacologic and Nonpharmacologic Therapies for Cognitive and Functional Symptoms. Am Fam Physician. 2017;95(11):771-778.

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## Providing Education & Support for Caregivers

### Basic Principles of Care for the Person with Alzheimer Dementia

- Consider vision, hearing, or other sensory impairments
- Find optimal level of autonomy and adjust expectations for patient performance over time
- Avoid confrontation. Remain calm, firm, and supportive if the patient becomes upset
- Maintain a consistent, structured environment with stimulation level appropriate to the individual patient
- Provide frequent reminders, explanations, and orientation cues. Employ guiding, demonstration, and reinforcement
- Reduce choices, keep requests and demands of the patient simple, and avoid complex tasks that lead to frustration
- Bring sudden declines in function and the emergence of new symptoms to professional attention

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## Clinical Pearls for Treating Alzheimer Disease

- Key Recommendations (Evidence Grading A)
- Cholinesterase inhibitors should be considered for treatment of cognitive and functional decline in patients with mild to moderate AD.
- Memantine should be considered for treatment of cognitive and functional decline in patients with moderate to severe AD.
- The addition of memantine should be considered for treatment of cognitive and functional symptoms in patients with moderate to severe Alzheimer disease or mixed dementia who are already receiving a cholinesterase inhibitor.
- A structured physical exercise program should be recommended for patients with Alzheimer disease of any severity.

Source: Epperly T, et al. Alzheimer Disease: Pharmacologic and Nonpharmacologic Therapies for Cognitive and Functional Symptoms. Am Fam Physician. 2017;95(11):771-778.

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## Clinical Pearls for Treating Alzheimer Disease

### Key Recommendations (Evidence Grading B)

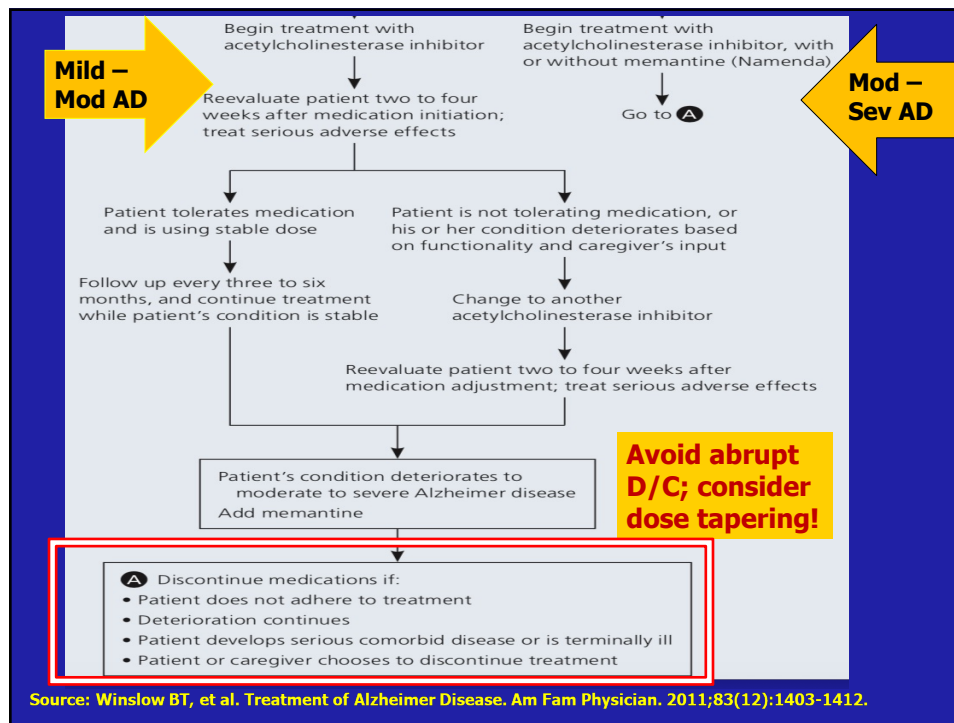
- The addition of vitamin E (2,000 IU per day) should be considered for treatment of mild to moderate AD in patients who are already receiving a cholinesterase inhibitor.
- Cognitive stimulation programs should be recommended for patients with mild to moderate cognitive impairment.
  - <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD005562.pub2/epdf/abstract>

#### American Geriatrics Society

Do not prescribe cholinesterase inhibitors for dementia without periodic assessment for perceived cognitive benefits and adverse gastrointestinal effects!

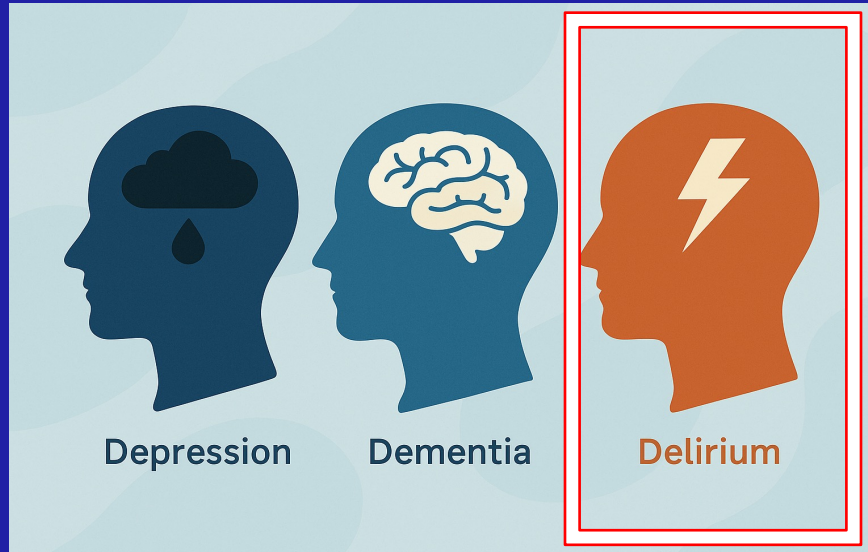
Source: Epperly T, et al. Alzheimer Disease: Pharmacologic and Nonpharmacologic Therapies for Cognitive and Functional Symptoms. Am Fam Physician. 2017;95(11):771-778.

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## Seeing Clearly in 3Ds



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## Delirium in the Elderly

Delirium: an acute, reversible organic mental syndrome with disorders of attention and awareness, developing over hours to days

- At hospital admission: 14%-24%
- During hospitalization: 6%-56%
- Postoperative: 15-53%; ICU: 70%-87%
- Nursing homes or post-acute care settings: up to 60%
- Palliative care: up to 83%
- Prevalence of delirium increases with age
  - Delirium in the community: 1-2%
  - Older than 85 years old: 14%
  - Older patients at emergency department: 10-30%

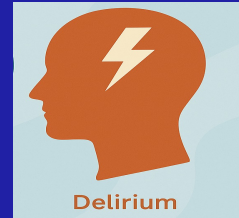
**Inouye SK. NEJM 2006;354:1157-65**

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## Delirium in the Elderly

- Delirium: highly variable course
  - 20 – 69% recover within 1 day
  - 15% may have symptoms lasting 10 days or more
  - Delirium is seen in hospital discharge in 45% of incident cases
    - 33% persists at least a month later
- Patients with advanced age or pre-existing **dementia** are likely to have a more prolonged course

DELIRIUM IS A **GERIATRIC SYNDROME!**



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## Diagnosis of Delirium Confusion Assessment Method (CAM)

### Feature 1: *Acute Onset or Fluctuating Course*

This feature is usually obtained from a family member or nurse and is shown by positive responses to the following questions: Is there evidence of an acute change in mental status from the patient's baseline? Did the (abnormal) behavior fluctuate during the day, that is, tend to come and go, or increase and decrease in severity?

### Feature 2: *Inattention*

This feature is shown by a positive response to the following question: Did the patient have difficulty focusing attention, for example, being easily distractible, or having difficulty keeping track of what was being said?

### Feature 3: *Disorganized thinking*

This feature is shown by a positive response to the following question: Was the patient's thinking disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?

### Feature 4: *Altered Level of consciousness*

This feature is shown by any answer other than "alert" to the following question: Overall, how would you rate this patient's level of consciousness? (alert [normal], vigilant [hyperalert], lethargic [drowsy, easily aroused], stupor [difficult to arouse], or coma [unarousable])

<https://hign.org/consultgeri/try-this-series/confusion-assessment-method-cam>

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## Assessment & Presentation

- Predisposing Factors
  - Age >65
  - Physical frailty
  - Severe illness
  - Multiple disease
  - **DEMENTIA**
  - Infection/dehydration
  - **Visual or hearing impairment**
  - **Polypharmacy**
  - Alcoholism
  - Renal impairment
  - Malnutrition
- Precipitating Factors
  - Severe acute illness
  - **Infection**
  - Operation with general anesthesia
  - **Electrolyte imbalance**
  - Liver failure with hepatic encephalopathy
  - Renal failure
  - Respiratory failure
  - **Drugs**
  - **Pain**
  - Hematological
  - Cerebral causes
  - Urinary retention
  - Fecal impaction
  - Unfamiliar environment

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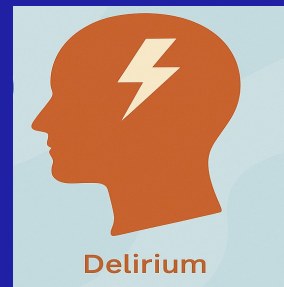
## Assessment & Presentation

- Subtypes of Delirium
  - Hyper-active
    - Increased motor activities
    - Agitation, hallucination, inappropriate behavior
  - Hypo-active
    - Reduced motor activities
    - Somnolence, withdrawal
  - Mixed
    - Alternating between agitated and quiet forms
  - Watch out for **drug induced!**

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## Drug Induced Delirium

- Misuse of prescribed medications
- Side effects of medications
- Drug-drug interactions
- Drug-herb interactions
- Improper use of over-the-counter medications
- Alcohol intoxication or withdrawal



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## Avoid Delirogenic Medications

Type of Drugs	Examples
Antihistamine	Hydroxyzine, <b>diphenhydramine</b> Chlorphenamine, promethazine
Antispasmodics	Hyoscyamine
Antidepressants	Amitriptyline, <b>paroxetine</b>
Anticonvulsants	<b>Phenytoin</b> , phenobarbital
Antiemetics	Prochlorperazine
Antipsychotics	Chlorpromazine
Benzodiazepines/ Hypnotics agents	Chlordiazepoxide, chloral hydrate, diazepam, thiopental
Analgesics	Codeine, fentanyl, <b>morphine</b>
Cardiovascular	Atenolol, digoxin, dopamine, furosemide lidocaine
Corticosteroids	Dexamethasone, <b>hydrocortisone</b> , prednisolone
Antiparkinsonian	Benzatropine
Antimuscarinics	<b>Oxybutynin</b> , atropine
Brochodilator	Theophylline

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## Avoid Delirogenic Medications!

Highly Anticholinergic Drugs	Consider Switching to Alternatives
Antidepressants (tertiary TCA)	SSRI, SNRI, mirtazapine, bupropion
Antihistamine (diphenhydramine)	Second generation antihistamine (loratadine, etc)
Antiparkinsonian (Benztropine, trihexyphenidyl)	Levodopa
Cimetidine, ranitidine	Proton pump inhibitors
Antispasmodic (oxybutynin, tolterodine)	Darifenacin, solifenacin, trospium, mirabegron, vibegron
Low potency antipsychotics (chlorpromazine, thioridazine)	Haloperidol, atypical antipsychotics

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## Clinical Pearls for Management of Delirium

- Identify and treat the underlying cause
- Non-pharmacologic intervention is the first-line management option
  - Provide supportive and restorative care
- Drug therapy reserved for pts
  - Severe agitation at risk for interruption of essential medical care
  - Pose safety hazard to themselves or staff
  - Monitor for side effect
  - Keep the lowest possible dose for clinical benefits
  - Discontinue drug or taper off as delirium resolves
- Haloperidol 0.25 – 0.5 mg orally or IM BID (may repeat q 20-30 min, Not to exceed 3-5 mg in 24 hours)
- Seroquel 12.5 – 25 mg BID
- Olanzapine 2.5 – 5 mg BID
- Risperidone 0.5 – 1 mg BID
- Management of sleep-wake cycle
  - Melatonin 3 – 5 mg qHS
  - Ramelteon 8 mg qHS






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## Seeing Clearly in 3Ds






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## See Clearly in 3Ds – Clinical Features

Features	Delirium	Dementia	Depression
<b>Definition</b>	Reduced level of <b>consciousness</b>	Global decline in <b>cognition</b> in clear consciousness	Disturbance in <b>mood</b> , with associated low vital sense and low self-attitude
<b>Core Symptoms</b>	<b>Inattention</b> , distractibility, drowsiness, confusion	Amnesia, aphasia, agnosia, apraxia, disturbed executive functioning	<b>Sadness, anhedonia</b> , crying, vague somatic complaints (older adults)
			
	Delirium	Dementia	Depression

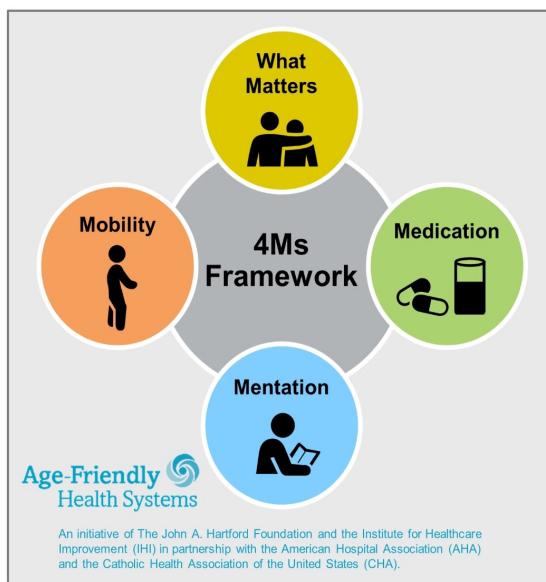
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## See Clearly in 3Ds – Clinical Features

Features	 Delirium	 Dementia	 Depression
<b>Common associated symptoms</b>	Cognitive impairment, hallucinations, mood lability	Depression, delusions, hallucinations, irritability	Fatigue, insomnia, anorexia, guilt, hopelessness; prodrome of dementia
<b>Temporal features</b>	<b>Acute</b> or subacute onset	<b>Chronic</b> onset, usually <b>gradual</b>	<b>Episodic</b> , subacute onset
<b>Diurnal features</b>	Usually <b>worse in the evening &amp; night</b>	No clear pattern	Usually <b>worse in morning</b>

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## 4Ms Framework of an Age-Friendly Health System



For related work, this graphic may be used in its entirety without requesting permission. Graphic files and guidance at [ih.org/Age-Friendly](http://ih.org/Age-Friendly)

### 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

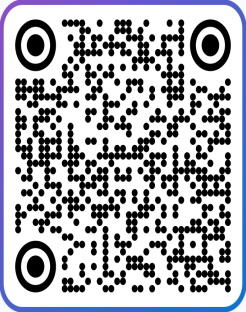
Ensure that older adults move safely every day in order to maintain function and do What Matters.

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When poll is active respond at [PollEv.com/sumlam](https://PollEv.com/sumlam)

📲 Activate this Poll with the Poll Everywhere Live app. 📺 If video conferencing, you must be sharing your full screen to share the activated poll.

What are Mrs. Jones' potential therapeutic issues?



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# Applying 5Ms Framework

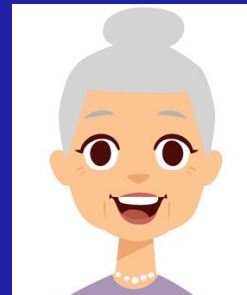
- Multi-complexity
- What Matters Most
- Medication
- Mobility
- Mentation

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What are Mrs. Jones' "Medication" issues?

- Medication non-adherence
- Inadequate treatment of dementia
- Memory problem exacerbated by drugs
- Potential delirium precipitated by drugs

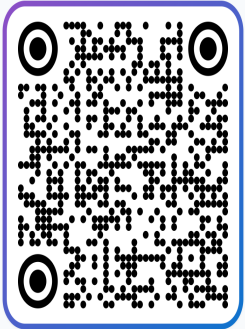


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How would you apply "Mentation" framework to promote age-friendly care for her?



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# Applying 5Ms Framework

Multi-complexity	<ol style="list-style-type: none"> <li>1. Having multi-morbidities, including new diagnosis of dementia with worsening symptoms</li> <li>2. Recently widowed, lives alone</li> </ol>
What Matters Most	<ol style="list-style-type: none"> <li>1. Being able to live alone and independently</li> <li>2. Being able to adhere to med regimen as prescribed</li> </ol>
Medication	<ol style="list-style-type: none"> <li>1. Taking several potentially inappropriate meds (Simply Sleep® oxybutynin, etc)</li> <li>2. Polypharmacy (statin for primary prevention)</li> </ol>
Mobility	<ol style="list-style-type: none"> <li>1. Ask about fall history and alcohol intake; use of anticholinergic drugs increases fall risk</li> <li>2. Get visual aids, home safety measures</li> </ol>
Mentation	<ol style="list-style-type: none"> <li>1. Optimize treatment for dementia; check hearing</li> <li>2. Screening for depression (GDS) and delirium (CAM)</li> </ol>

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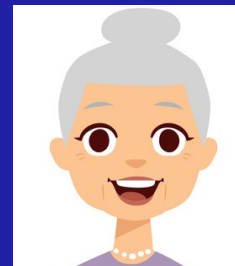
## Meet Mrs. Jones (85 years old)

10 years later...

Mrs. Jones resides in a nursing home with a 12-year history of Alzheimer's disease (mod – severe stage for 3 years). She has worsening of kidney function, profound memory deficits and does not recognize her daughter most of the time. She is mostly bed-bound and requires help with activities of daily living. She has difficulty swallowing food and medications; sometimes coughs with even small oral intake. Her daughter wishes her to take fewer oral meds and asks about "new IV drugs for Alzheimer's disease."

Her current meds:

- Donepezil 10 mg daily x 10 years
- Memantine 10 mg daily x 3 years
- Lisinopril 10 mg po once daily x 25 years
- Simvastatin 20 mg po every evening
  - restarted 5 years ago after a MI
- Aspirin 81 mg po once daily
  - restarted 5 years ago after a MI
- Ensure® multiple times daily



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# Applying 5Ms Framework

Multi-complexity

What Matters Most

Medication

Mobility

Mentation

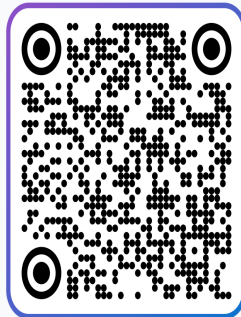
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📲 Activate this Poll with the Poll Everywhere Live app.

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How would you apply "Medication" framework to promote age-friendly care for her?



v1.1.0

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