

# **3D: Dementia Delirium Depression**

**A Practical Guide**

**UVA 3<sup>rd</sup> year student Geriatrics Clerkship**

**Archbald & Balogun**

**2013**

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# Workshop Objectives

By the end of this sessions, students will be able to:

- Recognize the different clinical presentations of delirium, dementia and depression
- Explore risk factors for Delirium, Depression & Dementia
- Evaluate and differentiate between elderly patients with Delirium, Depression & Dementia
- Discuss medical interventions for Delirium, Depression & Dementia

# Keeping Granny Safe on July 1

## Minimum Geriatric Competencies for Medical Students as Determined by a Systematic Multimethod Consensus Process in 2007

### Medication Management

1. Explain impact of age-related changes on drug selection and dose based on knowledge of age-related changes in renal and hepatic function, body composition, and central nervous system sensitivity.
2. Identify medications, including anticholinergic, psychoactive, anticoagulant, analgesic, hypoglycemic, and cardiovascular drugs, that should be avoided or used with caution in older adults, and explain the potential problems associated with each.
3. Document a patient's complete medication list, including prescribed, herbal, and over-the-counter medications, and, for each medication, provide the dose, frequency, indication, benefit, side effects, and an assessment of adherence.

### Cognitive and Behavioral Disorders

4. Define and distinguish among the clinical presentations of delirium, dementia, and depression.
5. Formulate a differential diagnosis and implement initial evaluation in a patient who exhibits dementia, delirium, or depression.
6. In an older patient with delirium, urgently initiate a diagnostic workup to determine the root cause (etiology).
7. Perform and interpret a cognitive assessment in older patients for whom there are concerns regarding memory or function.
8. Develop an evaluation and nonpharmacologic management plan for agitated demented or delirious patients.

### Self-Care Capacity

9. Assess and describe baseline and current functional abilities (instrumental activities of daily living, activities of daily living, and special senses) in an older patient by collecting historical data from multiple sources and performing a confirmatory physical examination.
10. Develop a preliminary management plan for patients presenting with functional deficits, including adaptive interventions and involvement of interdisciplinary team members from appropriate disciplines, such as social work, nursing, rehabilitation, nutrition, and pharmacy.
11. Identify and assess safety risks in the home environment, and make recommendations to mitigate these.

### Falls, Balance, Gait Disorders

12. Ask all patients > 65 years old, or their caregivers, about falls in the last year, watch the patient rise from a chair and walk (or transfer), and then record and interpret the findings.
13. In a patient who has fallen, construct a differential diagnosis and evaluation plan that addresses the multiple etiologies identified by history, physical examination, and functional assessment.

### Health Care Planning and Promotion

14. Define and differentiate among types of code status, health care proxies, and advance directives in the state where one is training.
15. Accurately identify clinical situations where life expectancy, functional status, patient preference, or goals of care should override standard recommendations for screening tests in older adults.
16. Accurately identify clinical situations where life expectancy, functional status, patient preference, or goals of care should override standard recommendations for treatment in older adults.

### Atypical Presentation of Disease

17. Identify at least three physiologic changes of aging for each organ system and their impact on the patient, including their contribution to homeostasis (the age-related narrowing of homeostatic reserve mechanisms).
18. Generate a differential diagnosis based on recognition of the unique presentations of common conditions in older adults, including acute coronary syndrome, dehydration, urinary tract infection, acute abdomen, and pneumonia.

### Palliative Care

19. Assess and provide initial management of pain and key nonpain symptoms based on patient's goals of care.
20. Identify the psychological, social, and spiritual needs of patients with advanced illness and their family members, and link these identified needs with the appropriate interdisciplinary team members.
21. Present palliative care (including hospice) as a positive, active treatment option for a patient with advanced disease.

### Hospital Care for Elders

22. Identify potential hazards of hospitalization for all older adult patients (including immobility, delirium, medication side effects, malnutrition, pressure ulcers, procedures, peri- and postoperative periods, and hospital acquired infections) and identify potential prevention strategies.
23. Explain the risks, indications, alternatives, and contraindications for indwelling (Foley) catheter use in the older adult patient.
24. Explain the risks, indications, alternatives, and contraindications for physical and pharmacological restraint use.
25. Communicate the key components of a safe discharge plan (e.g., accurate medication list, plan for follow-up), including comparing/contrasting potential sites for discharge.
26. Conduct a surveillance examination of areas of the skin at high risk for pressure ulcers, and describe existing ulcers.



## 3Ds

# Dementia, Delirium, Depression

- In any given pt, critical to distinguish which is present
- Details of Dementia & Depression presented in other clerkships
- Geriatrics focus on
  - Delirium
  - Distinguishing 3Ds clinically

# Case 1: Ms. S

82 yo woman, AL resident with HTN, DM2, Stage IV CKD, CAD, CVA, HLD, OP, GAD, MDD, HL, MD. A/w femoral neck fracture after GLF s/p surgical repair HD 1.

Hosp Meds: dalteparin, simvastatin, ASA, lisinopril, metoprolol, regular insulin per a SS, and PRN acetaminophen

Home meds: simvastatin, ASA, lisinopril, metoprolol, venlafaxine, alprazolam, glipizide, aledronate, Ca/Vit D, and Miralax.

**HD2: daughter is concerned about her mental status.**

She awakens when called by name but closes her eyes for prolonged periods. She complains of feeling tired and doesn't want to talk much. She is distracted by the voices in the hallway, so questions must be repeated several times. She is oriented x2. The daughter says she was doing much better this morning, but was also confused last night.

- **QUESTIONS:**

- Does this patient have delirium?
- What are the key features of delirium?
- In what other ways can delirium present?

# Case 1: Ms. Spacey

82 yo woman, AL resident with HTN, DM2, Stage IV CKD, CAD, CVA, HLD, OP, GAD, MDD, HL, MD. A/w femoral neck fracture after GLF s/p surgical repair HD I.

Hosp Meds: dalteparin, simvastatin, ASA, lisinopril, metoprolol, regular insulin per a SS, and PRN acetaminophen

Home meds: simvastatin, ASA, lisinopril, metoprolol, venlafaxine, alprazolam, glipizide, aledronate, Ca/Vit D, and Miralax.

**HD2: daughter is concerned about her mental status.**

She **awakens** when called by name but **closes her eyes** for prolonged periods. She complains of feeling tired and doesn't want to talk much. She is **distracted** by the voices in the hallway, so questions must be repeated several times. She is **oriented x2**. The daughter says she was doing much **better this morning**, but was also confused last night.

- **QUESTIONS:**

- Does this patient have delirium, depression, dementia?
- What are the key features of her impairment?
- How would you diagnose her impairment?
- In what other ways could this impairment present?

# Ms. S has delirium, why?

Acute

Fluctuating

Inattention

Disorganized thinking

Altered LOC

Cognitive deficits

Perceptual disturbances

Psychomotor disturbance

Altered sleep-wake cycle

Emotionally labile





# Confusion Assessment Method (CAM)

- Validated tool
- Diagnosis of delirium requires features  
1 AND 2 and either 3 OR 4
  1. Acute change in mental status with fluctuating course
  2. Inattention
  3. Disorganized thinking
  4. Altered level on consciousness



# Why is Delirium important?

- Common.
  - Occurs in up to 57% of post-op pts
  - More common with advancing age
- Deadly.
  - Mortality rates equal to sepsis and MI (22-76%) while in the hospital
  - One-year mortality 35-40%
- Costly
  - ~\$6.9 Billion of Medicare hospital expenditures.
- Complex
  - Usually multi-factorial
  - Predisposing and precipitating factors
  - Difficult to manage
- Marker of quality of care.
- **Preventable**



# Case 1: Ms. Spacey

- What predisposing risk factors does she have for developing delirium?
- Why does sensory impairment increase the risk of developing delirium?



# Causes

- **Predisposing factors**
- Advanced Age
- Dementia
- Functional impairment
- High medical co-morbidity
- Hx of alcohol abuse
- Male gender
- Sensory impairment (blindness, deafness)

# Case I: Ms. Spacey- bedside exam

- The intern has a hard time figuring out the exact home medication list and orders meds based partially on an old note in Epic.
- *HR is 99. BP is stable. Temperature is 37.4. RR is 25, O2 sat is 91% on room air. Her hearing aids and eye glasses are on her tray. Mucous membranes are dry.*
- *Admission orders specify strict bed rest and nurses are checking vitals q4hrs around the clock. Pt has a Foley catheter. Bedside chart confirms poor PO intake and no BM since admission.*
- QUESTIONS:
  - Identify 10 potential precipitating factors for delirium in this scenario.
  - Which precipitating factors are modifiable or preventable?

# Causes

- **Predisposing factors**

- Advanced Age
- ➔ Dementia
- Functional impairment
- ➔ High medical co-morbidity
- Hx of alcohol abuse
- Male gender
- ➔ Sensory impairment (blindness, deafness)

- **Precipitating factors**

- ➔ Medications
- ➔ Acute illness (cardiac, pulmonary events)
- ➔ Postoperative
- Infections (respiratory, urinary)
- Fluid and electrolyte imbalance
- ➔ Bed rest/hospital admission
- ➔ Pain/discomfort - Urinary retention, fecal impaction, indwelling devices (foley)
- Intracranial events
- Severe Anemia
- Use of Restraints



## Case I: Ms. Spacey - Part D

- How would you evaluate her?
- What labs, imaging or other tests would you order?
- What interventions would you put in place?


# Work-Up of Delirium

## Labs

- High-yield labs:
  - BG
  - CBC with differential
  - CMP
  - UA with Urine Cx
- If indicated:
  - Drug levels
  - Troponin
  - ABG
  - Other cultures

## Imaging and Other Tests

- High-yield tests:
  - CXR
- If indicated:
  - EKG
- Rarely helpful:
  - CT head
  - EEG
  - LP



**At midnight, you are called to the bedside because the patient is confused, combative and resistant to care.**

How are you going to manage this patient's agitation?





**Could Ms. Spacey's delirium have been prevented?**

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# Hospital Elder Life Program (HELP)

- Concept evaluated by Inouye, et. al
- Unit-based, multi-component strategy to prevent delirium.
- Standardized protocols addressing 6 risk factors:
  - Cognitive impairment
  - Sleep deprivation
  - Immobility
  - Visual impairment
  - Hearing impairment
  - Dehydration

Inouye SK, et al. A multicomponent intervention to prevent delirium in hospitalized older patients. *N Engl J Med* 1999;340:9:669-76.

# Hospital Elder Life Program (HELP)

## Cognitive impairment

- Orientation protocol and cognitively stimulating activities.

## Sleep deprivation

- Warm drink, relaxing music, back massage
- Noise reduction, reschedule meds and procedures

## Immobility

- Ambulation or ROM exercises TID, avoid use of urinary catheters and restraints

## Visual impairment

- Visual aids, adaptive equipment (ex. fluorescent tape on call bell).

## Hearing impairment

- Amplifying devices, wax disimpaction

## Dehydration

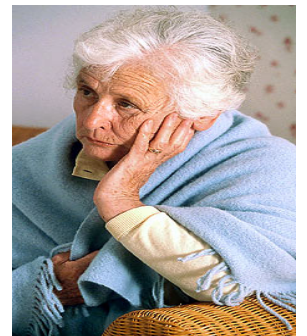
- Early recognition and volume repletion

Inouye SK, et al. A multicomponent intervention to prevent delirium in hospitalized older patients. N Engl J Med 1999;340:9:669-76.

## Case 2: Mrs. F

- 67 yo with history of HTN presents to your clinic with complaints of “memory loss”.
- Her family has noted a general decline in her hygiene.
- Although they report that she has been less available to them over the last several months, they also admit that her memory problems began a few years ago.
- She is widowed and lives alone.

Is this Mild Cognitive Impairment,  
Delirium, or Dementia?



# Delirium vs. Dementia

Feature	Delirium	Dementia
Onset	Acute	Insidious
Course	Fluctuating	Progressive
Duration	Hours to months	Months to years
Consciousness	Reduced	Clear
Attention	Impaired	Normal - early stages
Orientation	Impaired	Impaired
Memory	Impaired	Impaired
Thinking	Disorganized	Impoverished
Perception (ex. hallucinations)	Present	Often absent early
Speech	Incoherent	Word finding difficulty

# Dementia

- **Acquired** syndrome of **irreversible** significant decline in **memory** and other **cognitive functioning** sufficient to affect **daily living**
- Memory impairment present in earliest stages
  - **Gradual** onset with progressive decline in cognitive functioning
  - Motor and sensory functions are spared until late stages



## Case. 2: Ms. Forgetful

- How would you evaluate this patient?
- What medical tests would you order?

# Assessment of Dementia

- History
  - Functional status: ADLs, Falls
  - Alcohol use
  - Medications
  - PMHx (cardiac)
- Physical examination
  - Vitals
  - Neurologic
    - Gait Assessment (**Timed Get up & go**)
    - Mental status evaluation
      - **Folstein's MMSE**
      - **Mini Cog**
      - **Timed Animal Naming test**
- Neuropsychological testing



# Dementia Labs and Imaging Recommendations

- CBC
- Serum B12
- TSH-reflex
- CMP (Renal, Lytes, LFTs)
- Structural imaging initially
  - PET may be helpful if type uncertain
- RPR– if pt **is or was** high risk



## Case 2: Ms. Forgetful

- On examination:
  - Vital signs are stable
  - MMSE: 19/30
  - No focal deficits, stable gait
- Lab tests: WNL
- CTscan: cerebral atrophy



# Current therapies for Alzheimer's Dementia

## Acetylcholinesterase inhibitors (AChEI)

- FDA approved
  - Donepezil (Aricept)
  - Rivastigmine (Exelon)
  - Galantamine (Reminyl)
- **Delay** progressive cognitive decline
- **Delay** nursing home placement



# Types of Dementia

- **Alzheimer's dementia (75%)**
- **Vascular dementia (15–25%)**
- **Others**
  - **Dementia with Lewy Bodies**  
Fluctuating attention, extrapyramidal signs, psychosis (hallucinations)
  - **Frontotemporal dementia**  
Speech/ language disorder, disinhibition, hyperorality
  - **Huntington's Disease**  
Executive dysfunction, chorea
  - **Creutzfeldt-Jakob Disease**  
Ataxia, myoclonus, language disturbance



## Case 3. Mr. M

- 85yo Caucasian widower with a PMH of HTN, CAD and HLD comes to see you in clinic and complains of fatigue and loss of interest in his usual hobbies- ongoing for several months.
- Also has insomnia most nights
- He has lived alone since his wife's death about a year ago and now says he has great difficulty getting things around the house done, including remembering to pay the bills.
- You note that he is quite disheveled in appearance
  
- Is this more likely Delirium, Dementia or Depression?
- What screening tools would you use in evaluating the patient?



# Major Depression

- DSM IV criteria
- 5 or more of the following, present for at least two weeks
  - **Depressed mood**
  - **Loss of interest or pleasure in activities**
  - Changes in appetite or weight
  - Insomnia or hypersomnia
  - Psychomotor retardation or agitation
  - Fatigue or loss of energy
  - Feelings of worthlessness or guilt
  - Difficulty thinking, concentrating or making decisions
  - Recurrent thoughts of death or suicidal ideation or attempts
- In late life: more likely to be chronic
- Recovery more transient, frequent relapses
- More so with extensive comorbidity



# Screening tools

- Two question screener
  - ‘During the past month, have you been bothered by feeling down, depressed or hopeless?’
  - ‘During the past month, have you been bothered by little interest or pleasure in doing things?’
- Geriatric depression scale (multiple sites)
- PHQ-9 (primary care settings)
- Cornell Scale for Depression in Dementia
- Center for Epidemiologic Studies Depression Scale

# Screening tools

## Screening Instruments for Late-Life Depression for Use in Primary Care

	<b>Sensitivity percent</b>	<b>Specificity percent</b>	<b>Inpatient</b>	<b>Outpatient</b>	<b>Physically ill</b>	<b>Cognitively impaired</b>
Two-question screen	97	67	Unknown	Yes	Unknown	No
Geriatric Depression Scale (5-item)	94	81	Yes	Yes	Yes	Unknown
PHQ-9 (9-item)	88	88	Unknown	Yes	Yes	Unknown
Cornell Scale for Depression in Dementia (19-item)	90	75	Yes	Yes	Unknown	Yes
Center for Epidemiologic Studies - Depression Scale (20-item)	93	73	No	Yes	Unknown	No





## Case 3. Mr. Morose

- From his responses to the 2- question screener, you determine that he is depressed.
- He denies any suicidal ideations.

### QUESTIONS

- What risk factors does he have for developing depression?
- How would you go about evaluating him?
- What treatment options would you use?

# Risk Factors

- Depression in early life
  - Usually have a familial history
- Female
- Social isolation
- Marital status
  - Widowed, divorced, separated
- Lower socioeconomic status
- Medical co-morbidities
- Uncontrolled pain
- Insomnia
- Functional and Cognitive Impairment



# Evaluation

## **Complete history guides treatment!**

- Assess for **suicide** ideation, plan, attempt
  - Urgent psychiatric referral!
- Assess for **psychotic** symptoms
- Is the patient on meds with depressant s/e?
  - benzodiazepines, opiates or abusing alcohol
- Other medical conditions a/w depression
  - hypothyroidism, diabetes
- H/o prior depressive episodes
- H/o prior med therapy
- Family history of depression



## Case 3. Mr. Morse

- What are the treatment options available for Mr. Morse?



# Treatment

- Psychotherapy
- Pharmacotherapy
- Electroconvulsive therapy
  - Can be used in combination or singly
  - Better outcomes with combination therapy

# Key References

## **Required**

- Leipzig, R, et al. Keeping Granny Safe on July 1: A Consensus on Minimum Geriatrics Competencies for Graduating Medical Students. Acad Med 2009; 84:5:604-10
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- Unutzer, J, Late-Life Depression. NEJM, 2007; 357;22;2269-76

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- Inouye SK, et al. A multicomponent intervention to prevent delirium in hospitalized older patients. NEJM 1999;340:9:669-76.
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