UPMC LIFE CHANGING MEDICINE

Sudden Confusion in Elderly What Does It Mean?

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Objectives

- Identify the most common causes of confusion in the older adult
- Identify the differences in presentation of hypoactive and hyperactive delirium
- Understand the importance of establishing baseline mental status
- Identify predisposing and precipitating factors for delirium development
- Review high risk medication for delirium development
- Explore delirium initiatives in three acute care settings
- Identify non-pharmacological approaches to delirium management

Some Strategies for This Session

Confusion in the Older Adult

- Accepted as a normal consequence of aging
- Term used as a general label for cognitive changes
- Typically implies an untreatable condition

3 D's of Dementia, Depression, Delirium

- Incidence increases as we age
- Occur separately or in combination
- Only delirium has a sudden onset
  - "Never acted like this before"
  - "Very agitated today"
  - "Kept him sitting at the nurses station so we could keep an eye on him"
  - "He needs something to settle him down"

Comparison Chart for the 3 D's

Comparison of the Clinical Features of Delirium, Dementia, and Depression

Clinical Feature	Delirium	Dementia	Depression
Onset	Sudden/abrupt; depends on cause; often at twilight or in darkness	Insidious/slow and often unrecognized; depends on cause	Coincides with major life changes; often abrupt, but can be gradual
Course	Short, diurnal fluctuations in symptoms; worse at night, in darkness, and on awakening	Long, no diurnal effects; symptoms progressive yet relatively stable over time; may see deficits with increased stress	Diurnal effects, typically worse in the morning; situational fluctuations, but less than with delirium
Progression	Abrupt	Slow but uneven	Variable; rapid or slow but even
Duration	Hours to less than 1 month; seldom longer	Months to years	At least 6 weeks; can be several months to years
Consciousness	Reduced	Clear	Clear
Alertness	Fluctuates; lethargic or hypervigilant	Generally normal	Normal
Attention	Impaired; fluctuates	Generally normal	Minimal impairment, but is distractible
Orientation	Generally impaired; severity varies	Generally normal	Selective disorientation
Memory	Recent and immediate impaired	Recent and remote impaired	Selective or "patchy" impairment; "islands" of intact memory; evaluation often difficult due to low motivation
Thinking	Disorganized, distorted, fragmented; incoherent speech, either slow or accelerated	Difficulty with abstraction; thoughts impoverished; judgment impaired; words difficult to find	Intact but with themes of hopelessness, helplessness, or self-deprecation
Perception	Distorted; illusions, delusions, and hallucinations; difficulty distinguishing between reality and misperceptions	Misperceptions usually absent	Intact; delusions and hallucinations absent except in severe cases
Psychomotor behavior	Variable; hypokinetic, hyperkinetic, and mixed	Normal; may have apraxia	Variable; psychomotor retardation or agitation
Sleep/wake cycle	Disturbed; cycle reversed	Fragmented	Disturbed; usually early morning awakening
Associated features	Variable affective changes; symptoms of autonomic hyperarousal; exaggeration of personality type; associated with acute physical illness	Affect tends to be superficial, inappropriate, and labile; attempts to conceal deficits in intellect; personality changes, aphasia, agnosia may be present; lacks insight	Affect depressed; dysphoric mood; exaggerated and detailed complaints; preoccupied with personal thoughts; insight present; verbal elaboration; somatic complaints, poor hygiene, and neglect of self
Assessment	Distracted from task; numerous errors	Failings highlighted by family, frequent "near miss" answers; struggles with test; great effort to find an appropriate reply; frequent requests for feedback on performance	Failings highlighted by individual, frequent "don't knows;" little effort; frequently gives up; indifferent toward test: does not care or attempt to find answer

Reprinted with Permission from Springer Publishing Company. Forman, M., Fletcher, K., Mion, L., & Trygstad, L.(2003). Assessing Cognitive Function in Mezey, M, Fulmer T, Abraham I, (editors); Zwicker, D, (managing editor). *Geriatric Nursing Protocols for Best Practice*. 2nd ed. New York (NY): Springer Publishing Company, Inc.; p. 102-103.

"In U.S. hospitals, five older patients become delirious every minute" (Inouye, 2014).

What is delirium?

- Acute ***disease***
  - Acute onset of confusion
  - Impaired attention
  - Disorganized thinking
  - Altered level of consciousness

Videos

- Delirium Vignettes
  - Hypoactive
  - Hyperactive
  - ICU

Our Aging Population

- In 2009: 39.6 million over 65, 13% of the U.S. population
  - Represent 60-70% of all hospital admissions
  - Average length of stay 5.6 days for seniors versus 4.8 days for all other ages
  - Incidence of delirium increases length of stay to 7.8 days **(**McCusker, J, Cole, MG, Dendukuri, N, Belzile, E, 2003)
- In 2030: 72 million over 65, 19% of the U.S. population
- Pennsylvania:
  - 2010 Older adults represented 16% of total population
  - 2030 Older adults will represent 22.6% of total population

Administration on Aging

Our Aging Body

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Delirium is……

- Often unrecognized or attributed to dementia
  - Nondetection rates as high as 69% (Yanamadala, Wieland, Heflin, 2103)
- Preventable in 30-40% of cases (Inouye, 2014) through risk factor identification and modification
  - Also results in prevention of other geriatric syndromes
- Associated with:
  - increased mortality rate
  - functional decline
  - falls
  - increased nursing time
  - longer lengths of hospital stay
  - higher rates of new nursing home placement

Stats

Incidence of delirium per situation:

- At hospital admission – 14 to 24%
- During hospitalization – Another 6 to 56%
- Older postoperative patients – 15 to 53%
- Postoperative hip fracture patients – up to 65%
- Intensive care patients – 70 to 87%

- Mortality rates
  - among hospitalized patients with delirium range from 22 to 76%
    - Which is as high as those with sepsis and myocardial infarction)
  - one year mortality rate associated with cases of delirium is 35 to 40%

Inouye SK, 2014

Predisposing Factors

- Advanced age > 70
- Dementia
- Depression
- Multi-morbidity
- Sensory deficits: hearing, vision
- TIA/stroke

Precipitating Factors

- Medications
- Immobilization
- Indwelling bladders catheters
- Metabolic derangements
- Infections
- Iatrogenic events
- Surgery

Inouye SK, 2014

Management of Treatable Causes of Delirium

- **D**rugs
- **E**motional
- **L**ow PO2 (Anemia, PE, MI, CVA)
- **I**nfection
- **R**etention of urine and feces
- **I**ctal states
- **U**ndernutrition/dehydration
- **M**etabolic disorders (e.g., hypothyroid)
- **S**ubdural

Flaherty JH, Morley JE, 2013

Medications and Older Adults

Medication Appropriateness

Is there an indication for the drug?
Is the medication effective for the condition?
Is the dosage correct?
Are the directions correct?
Are there clinically significant drug-drug interactions?
Are there clinically significant drug-disease interactions?
Are the directions practical?
Is this drug the least expensive alternative compared to others of equal utility?
Is there unnecessary duplication with other drugs?
Is the duration of therapy acceptable?

Hanlon JT et al. J Clin Epidemiol 1992;45:1045-1051.

High Risk Medications and Delirium

- Benzodiazepines
- Nonbenzodiazepine hypnotics
- Anticholinergics

Table 9. Drugs with Strong Anticholinergic Properties

Antihistamines	Antiparkinson agents	Skeletal Muscle Relaxants
Brompheniramine	Benztropine	Carisoprodol
Carbinoxamine	Trihexyphenidyl	Cyclobenzaprine
Chlorpheniramine		Orphenadrine
Clemastine		Tizanidine
Cyproheptadine		
Dimenhydrinate		
Diphenhydramine		
Hydroxyzine		
Loratadine		
Meclizine		
Antidepressants	**Antipsychotics**	
Amitriptyline	Chlorpromazine	
Amoxapine	Clozapine	
Clomipramine	Fluphenazine	
Desipramine	Loxapine	
Doxepin	Olanzapine	
Imipramine	Perphenazine	
Nortriptyline	Pimozide	
Paroxetine	Prochlorperazine	
Protriptyline	Promethazine	
Trimipramine	Thioridazine	
	Thiothixene	
	Trifluoperazine	
Antimuscarinics (urinary incontinence)	**Antispasmodics**	
Darifenacin	Atropine products	
Fesoterodine	Belladonna alkaloids	
Flavoxate	Dicyclomine	
Oxybutynin	Homatropine	
Solifenacin	Hyoscyamine products	
Tolterodine	Propantheline	
Trospium	Scopolamine	

Beers Criteria 2012

Insomnia

- Address underlying issues
  - Sleep history
    - Pittsburgh Sleep Quality Index
  - Medical History
  - Medication History
  - Mobility

Sleeping Medications in the Older Adult

- Increase sleep time by an average of 25 minutes
- Decrease length of time to fall asleep by 10 minutes
- Clinical benefits may be modest at best
- Increase in adverse effects
  - Daytime drowsiness
  - Nightmares
  - GI disturbances
  - Dizziness
  - Motor vehicle accidents
  - Falls
- Are the benefits worth the risks?

Glass, Lanctot, Herrmann, Sproute, busto, 2005

Alternatives to Sleeping Medication

Soft music

Temperature

Lighting

Comfort

QUIET

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Do we have a problem with NOISE?

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Other High Risk Medications

- Antibiotics in the fluoroquinolone class
- Tricyclic antidepressants
- Corticosteroids
- Digoxin
- H2 Blockers
- Anti-epileptics
- Muscle relaxants
- Pain medications: Double edge sword
  - Meperidine
  - NSAIDS

PAIN-AD for Adults with Dementia

Pain Assessment in Advanced Dementia (PAINAD) Scale

Description: The Pain Assessment in Advanced Dementia (PAINAD) Scale was developed to assess pain in patients who are cognitively impaired, non-communicative, or suffering from dementia and unable to use self report methods to describe pain. Observation of patients during activity records behavioral indicators of pain: breathing, negative vocalization, facial expression, body language, and consolability.

How to use: PAINAD is a five item observational tool with numerical equivalents for each of the five behavior items listed, with total scores ranging from 0 to 10. Each of the five assessments contains a range from 0 to 2 and the sum of each of the five categories results in the total numerical score. To use:

Assess the patient during periods of activity, such as turning, ambulating or transferring. Assess the patient for each of the 5 indicators and assign a numerical point value based on each of the 5 assessment indicators. Obtain a total score by adding scores of the 5 indicators. The total score ranges from a minimum of 0 to a maximum of 10.

Pain Assessment in Advanced Dementia (PAINAD) Scale

Items	0	1	2	Score
Breathing independent of vocalization	Normal	Normal	Noisy labored breathing	
Negative vocalization	None	Occasional moan or groan Low level speech with negative or disapproving quality	Repeated calling out. Loud moaning or groaning. Crying	
Facial Expression	Smiling or inexpressive	Sad. Frightened. Frown.	Facial grimacing.	
Body language	Relaxed	Tense. Distressed pacing. Fidgeting	Rigid. Fists clenched. Knees pulled up. Pulling or pushing away. Striking out.	
Consolability	No need to console	Distracted reassured by voice or touch	Unable to console, distract or reassure	
			Total	

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Delirium Prevention = Modifying Risk Factors

- Determine baseline mental status: family, nursing facility
- Identify delirium risk factors
- Initiate preventative strategies to modify risk factors

Rate Your Preventative Strategies

- Ongoing assessment for high risk medications
- Early and regular mobilization
- Discontinue unnecessary medical equipment/tethers
- “Protect” sleeping during the night
- Address pain
- Address sensory deficits
- Prevent dehydration
- Gentle re-orientation
- Incorporate patient routine
- Monitor for metabolic and electrolyte abnormalities
- Educate and involve families

Key Factors if Delirium Develops

#1 Recognize it: bedside nurse is key

- Symptoms fluctuate throughout the day

#2 Address underlying causes

#3 Rarely a single reason; require multifactorial approach

Types of Delirium Assessments

Depending on hospital preference:

- CAM Confusion Assessment Method
- NU-DESC Nursing Delirium Screening Scale
- ICDSC for ICU Delirium

Confusion Assessment Method

Four Elements

Must have 1 and 2 and either 3 or 4

1. Acute onset, fluctuating course
2. Inattention
3. Disorganized thinking
4. Altered level of consciousness

Management of Delirium

- Include preventative strategies
- Identify and treat underlying causes
- Pharmacological approaches
- Non-pharmacological approaches

Case Study

- 82 year old male admitted for prostate surgery
- Hx of diabetes, hypertension, moderate hearing loss
- Alert and oriented, active lifestyle
- Restricts fluid intake to avoid getting up often at night
- Preoperative labs are WNL except for a low hematocrit and slightly elevated BUN/Creatinine ratio

What risk factors does he have for delirium development?

What additional features may contribute to delirium during his hospital stay?

What steps should you take?

Case Study

- 82 year old male admitted for prostate surgery from PCH
- Hx of Alzheimer's disease, diabetes, hypertension, moderate hearing loss
- Ambulates without assistance
- Staff restricts fluid intake to avoid his awakening at night to go to the bathroom
- Preoperative labs are WNL except for a low hematocrit and slightly elevated BUN/Creatinine ratio

What risk factors does he have for delirium development?

What additional features may contribute to delirium during his hospital stay?

What steps should you take?

A **49** year old man is admitted following a fall at home in which he suffered a torn rotator cuff of the right shoulder. He has a history of an aortic valve replacement and a two vessel coronary artery bypass graft 3 years ago.

His medications include simvastin, clopidogrel, lisinopril, aspirin, amitriptyline, oxycodone and phenytoin (hx seizures)

He is in his third day post op and ready to be discharged. He spent the past two days sleeping on and off following the administration of pain medication. Last night he had difficulty sleeping and was quite angry at his physician for not discharging him yesterday. An order was obtained for Xanax which was administered at 3 am. He slept until breakfast was served.

A **79** year old man is admitted following a fall at home in which he suffered a torn rotator cuff of the right shoulder. He has a history of an aortic valve replacement and a two vessel coronary artery bypass graft 3 years ago.

His medications include simvastin, clopidogrel, lisinopril, aspirin, amitriptyline, oxycodone and phenytoin (hx seizures)

He is in his third day post op and ready to be discharged. He spent the past two days sleeping on and off following the administration of pain medication. Last night he had difficulty sleeping and was quite angry at his physician for not discharging him yesterday. An order was obtained for Xanax which was administered at 3 am. He slept until breakfast was served.

Examples of UPMC Current Practices

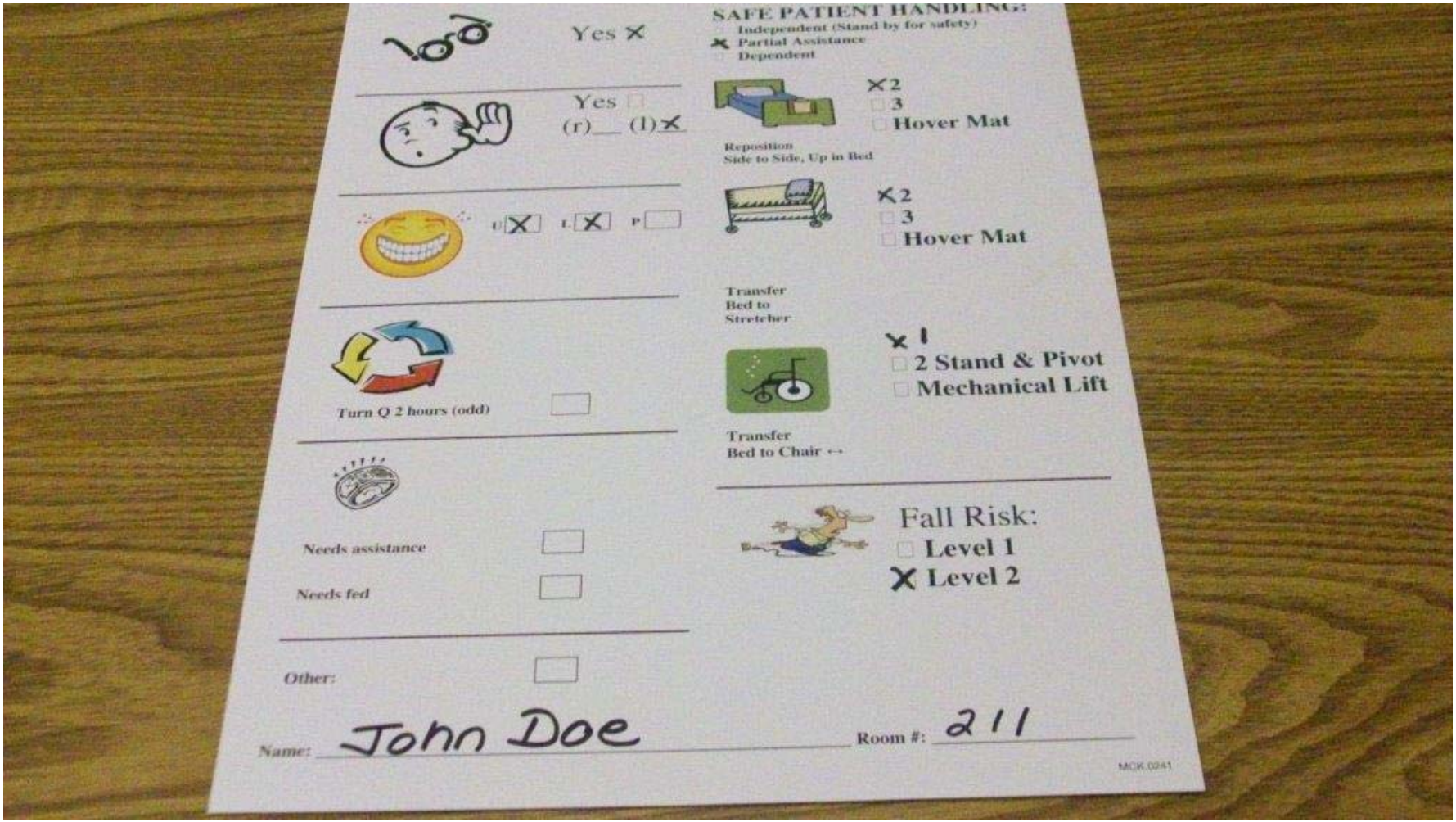
- UPMC Shadyside: Hospital Elder Life Program (HELP)
  - Annual financial return from HELP**: $7,368,549**
- UPMC McKeesport: Use of Mini-CAM (Confusion Assessment Method) in the “Fracture Program.”
- Magee-Womens Hospital: Delirium and risk assessment upon admission, change in condition, transfer, and every shift . Multidisciplinary approach to prevent and manage delirium.
- UPMC Passavant: Delirium Task Force was recently formed to include representatives of the ICU Protocol Team, Pharmacy, Nursing Education, and the Restraint Reduction Team

UPMC McKeesport Delirium Initiatives

Delirium Risk Reduction Task Force

- Targeted medications
  - High incidence of anticholinergic side effects
    - Diphenhydramine
    - Hydroxyzine
    - Meperidine
  - If patients is >65 years old – physician is contacted
- Automatic Therapeutic Interchanges
- AGS Beer's Criteria

UPMC McKeesport Delirium Initiatives



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UPMC McKeesport Delirium Initiatives

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EXPLORE Activity Bags

Items for EXPLORE Bags

Puzzles with larger pieces (50 pieces or less).
Consider easy assembly with simplified picture

Large faced deck of cards

Magazines, gardening catalogs with large pictures

Obtain items from home such as favorite pictures

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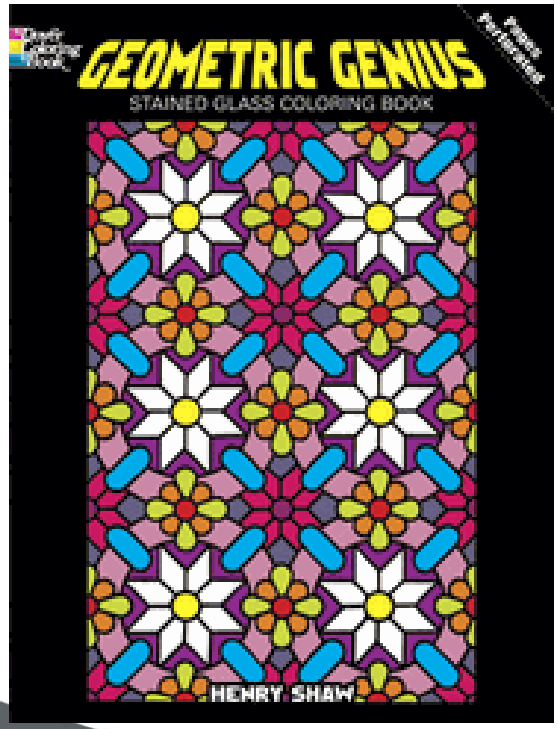
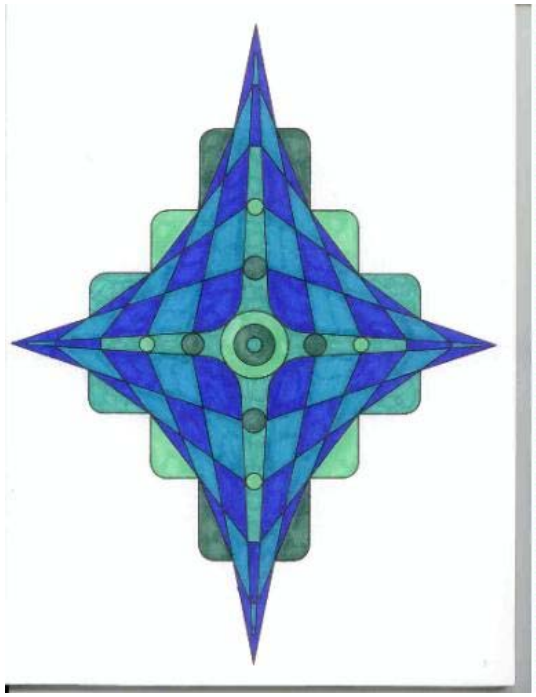
Coloring Books

- Many book selections are available for older adult use. Please avoid the use of coloring books designed for children.





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QUESTIONS

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