

Delirium in the Emergency Department

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Cumming School of Medicine

What is delirium?

- Acute confusional state
- Disturbance of consciousness with reduced attention
- A change in cognition or perceptual disturbance
- Develops over a short period of time
- Evidence of medical cause from history, physical, or investigations

DSM criteria

Delirium Subtypes

- **Hyperactive**
 - Increased activity levels (overactive)
 - Loss of control of activity
 - Movements are unproductive or lacking in purpose
 - Lost sense of control over actions
- **Hypoactive**
 - Decreased speed of actions
 - moving more slowly
 - takes longer than usual to perform tasks
 - Decreased amount of speech
 - less speech
 - decreased spontaneous speech

Delirium

- Common in frail older patients with acute illness
- Often seen in patients with underlying dementia
- Prevalence:
 - **10-17% of older patients in the ED**
 - 10-25% of medical in-patients
 - 10-50% of surgical in-patients
 - 30-80% of ICU patients

Delirium in Context of Frailty

- **Frailty Definition:** The variable susceptibility to adverse health outcomes of people of the same chronologic age
- Frail older adults behave as complex systems close to failure
 - Fail in highest order functions:
 - **Attention (delirium)**
 - Ambulation (falls)
 - Opposable Thumbs (impaired function)
 - Social interaction (social withdrawal)

Delirium - Risk Factors

- Often seen in patients with:
 - Dementia
 - Greater co-morbidities
 - Functional (ADL) Impairment
 - Sensory impairment
 - Depression
 - Psychotropic drug use (including sedatives & narcotics)
 - Presenting with
 - Severe illness
 - Dehydration

(Inouye Ann Int Med 1993; Han Acad Emerg Med 2009)

Iatrogenic Risk Factors

- Use of physical restraints
- Use of bladder catheters
- Any iatrogenic event
- >3 Meds added
- Malnutrition

(Inouye JAMA 1996)

Why is delirium a concern?

- Can take months to resolve (if at all)
- Increased mortality
- Higher rates of in-hospital complications
- Longer lengths of ICU and hospital stay
- Persistent cognitive and functional deficits
- Higher rates of discharge to long-term care

(Salluh *BMJ* 2015; Marcantonio *JAMA* 1994; Inouye *JGIM* 1998; Francis *JAGS* 1992; O’Keeffe *JAGS* 1997)

Diagnosis – Simplifying it

Start with:

- Two-Item Bedside Test
 - Months of the year backwards
 - What is the day of the week?
- Helpful at ruling out delirium
 - 93% Sensitive (64% Specific)
 - LR 0.1 (+LR 2.59)

(Fick J Hosp Med 2015)

Diagnosis – Confirmation

Confusion Assessment Method (CAM)

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

Diagnosis of delirium if 1, 2, and either 3 or 4

(Inouye Ann Intern Med 1990)

Diagnosis

CAM

- Easy to administer
- Accurate
 - 86% Sensitive
 - 93% Specific
- High interobserver reliability
- Helpful at ruling-in and ruling-out delirium:
 - +LR 9.6 (5.8-16)
 - LR 0.16 (0.08-0.29)

(Inouye Ann Intern Med 1990; Wong JAMA 2010)

Applying the CAM

3D-CAM

- 3min diagnostic interview for CAM-defined delirium
- 20 items
- Accurate
 - 95% (84%-99%) Sensitive
 - 94% (90%-97%) Specific
- Useful in those with Dementia
 - 96% (82%-100%) Sensitive
 - 86% (67%-96%) Specific

3D - CAM

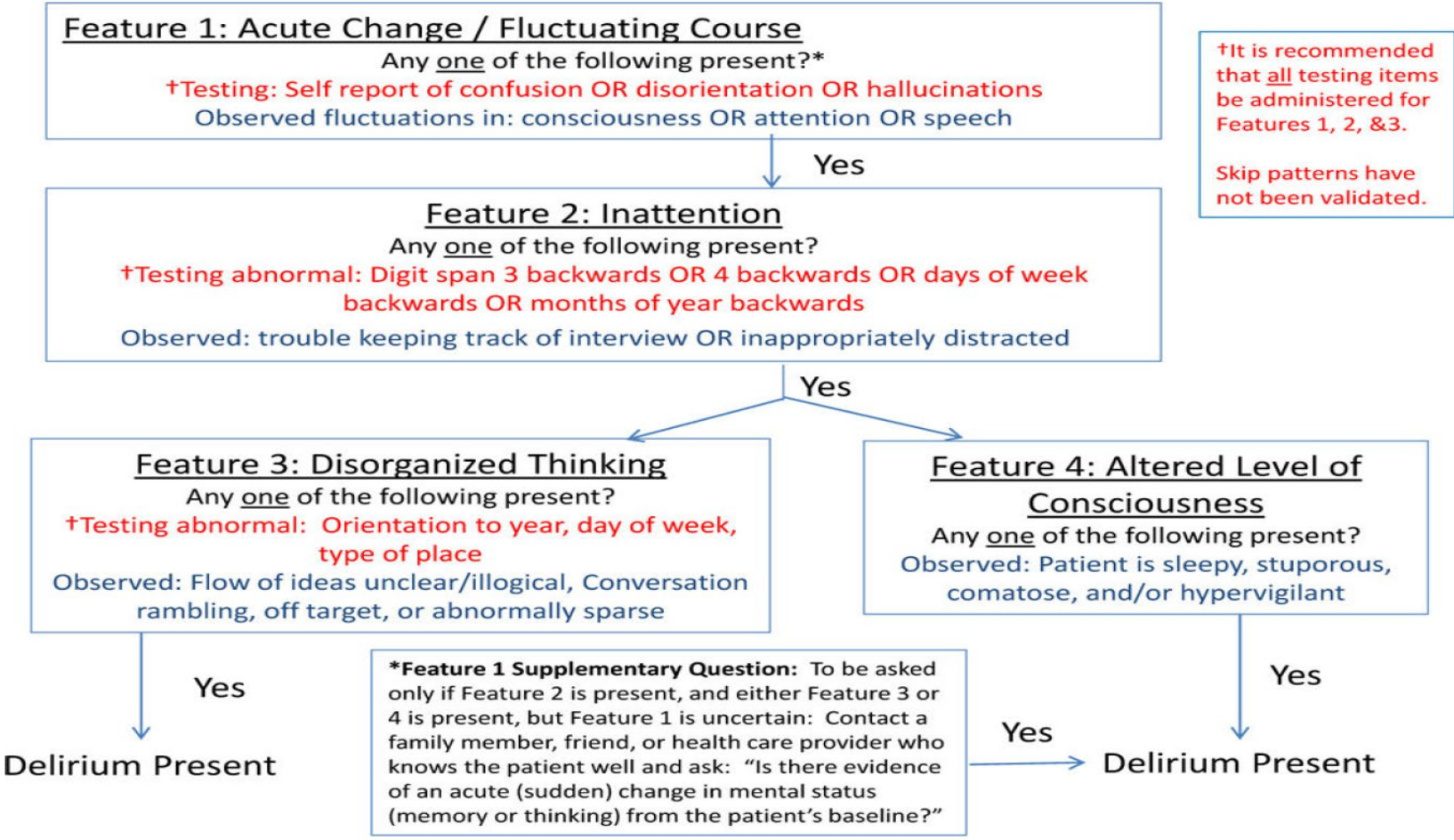


Figure 1. Overview of 3D-CAM Assessment
This figure depicts the CAM diagnostic algorithm, with the 3D-CAM items and scoring summarized under each CAM diagnostic feature.

Diagnosing Delirium in those with Dementia

- CAM
 - Specificity 96-100%
 - Sensitivity 77%
 - +LR = 19
 - -LR = 0.24
 - 3D- CAM
 - 96% Sensitive; 86% Specific
- EEG
 - Specificity 91%
 - Sensitivity 67%
 - +LR = 7
 - -LR = 0.36

Subsyndromal Delirium

- Presence of 1 or more symptoms of delirium but not meeting delirium diagnostic criteria
- 1-2 Core Criteria on CAM
- Prevalence = 23% (95%CI 9-42%)
- Similar risk factors as delirium
- Outcomes are intermediate between those with and without delirium

(Cole *Int J Geriatr Psych* 2013)

Prevention is Key

Multi-component Preventive Strategies Work

3 trials involving hip fracture pts (N = 646)

Summary RR 0.75 (95% CI 0.64-0.88)

NNT= 7 (95%CI 4-20)

No positive pharmacological trials

(Holroyd-Leduc C

Preventing (and Managing) Delirium

Multi-component Interventions in the ED:

- Optimize sensory input
- Orientation protocols
- Comfort rounds
- Provision of familiar items and family presence
- Avoidance of restraints
- Use of atypical antipsychotics only where indicated
- Avoid missing meals
- Mobilize around the ED; up in chair for meals
- Screening for treatable causes

(Holroyd-Leduc *CMAJ* 2010; Sullinger *Ann Pharmacother* 2016; Bounds *Am J Crit Care* 2016)

Comfort Rounds

- Intentional patient-focused scheduled rounds
- Focuses on addressing unmet care needs
 - Toileting
 - Mobilization
 - Hydration/Nutrition
 - Pain
- Addresses patient orientation and safety issues
- Supports Delirium prevention and management
- Collaborative approach to care that involves all team members

What is the evidence for Comfort Rounds?

- Systematic literature review
 - 11 studies
 - Level of evidence: IIa-b (fair to very good evidence)
 - Medical/Surgical/ICU/Rehabilitation units
 - Looked at q1h or q2h rounding
- Outcomes
 - 5/6 studies showed reduction in call light use
 - 7/9 studies showed reduced fall rates
 - 8/9 studies showed improved patient satisfaction
 - Anticipation and attention to personal needs
 - Timeliness of nurses' response
 - Management of pain

What about diagnosing Dementia or Depression in Setting of Delirium?

- Collateral history may be suggestive of dementia or depression
- Depression and Dementia should not be diagnosed in the setting of acute delirium
- Need to address delirium first

Pain Management and Delirium

- Pain is a risk factor for delirium and agitation
- In frail older adults
 - Consider use of Acetaminophen regular dosing to help decrease amount of narcotics required
 - Consider non-pharmacological strategies
 - Warm/cold compresses
 - (Relaxation therapy/Massage/Music)

Pain Management and Delirium

- Narcotics in frail older adults
 - Start at doses 1/3 to 1/2 that used in younger adults and titrate up slowly
 - Consider the cumulative effect
 - age-related changes in body composition
 - age-related + disease-related changes in creatinine clearance
 - Consider drug-drug interactions (e.g. SSRIs) and drug-disease interactions (e.g. COPD)
 - For the strong-acting opioids, dose is more important than choice of narcotic

(van ojik Drugs and Aging 2012)

Managing Agitation/Aggression

Use non-Pharmacological Approaches First:

– Basics:

- Calm approach
- Reassure them that you are there to help
- Consider your non-verbal communication
- Optimize vision/hearing



N.I.C.E. & E.A.S.Y. Approach

Alzheimer's Society Canada

Name

Introduce

Contact

Eye Contact

&

Explain

Avoid Arguments

Smile

You are the Key



It's All in Your Approach...

Name they prefer

Introduce yourself: **NOD**

- each time you interact

Contact

- Offer to Shake hands
- If asleep: firm pressure on knee / shoulder to announce your physical presence
 - Soft touch is 'arousing' touch (think spiders crawling across your skin...)

Eye contact – demonstrates authentic listening

&

Explain what you are going to do **BEFORE** you do it!

- No one likes 'surprises'...
- Use single *step instruction* (5 words or less)

Avoid Arguments

- If **any** resistance (physical or verbal),
consider trying the intervention at a later time
- Ensure you have been '**NICE**' before you trial any intervention.

Smile

- Take a moment to '*breathe*', calm yourself, smile and you will present as a
'safer', less 'threatening' care provider

You are the key!

- You are in control and have the ability to change your approach to ensure a
successful interaction

Managing Agitation/Aggression

- Second Line: Trial atypical neuroleptics

Risperidone 0.25mg bid

Olanzapine 2.5mg daily

Seroquel 12.5mg qhs

(Ozbolt J Am Med Dir Ass 2008)

- Start low and titrate slowly
- Frequently reassess and taper as soon as possible
- There are side effects and risks
 - EPS
 - Delirium, over sedation and cognitive decline
 - Functional decline and falls
 - Increased risk of stroke (1-2% absolute increase)
 - Increased risk of death (1% absolute increase)

(Sink JAMA 2005; Schneider JAMA 2005)

Case Discussions