Dementia and Delirium

Dr. Valerie Gruss, PhD, APN, CNP-BC
Clinical Associate Professor
University of Illinois at Chicago

Learning Objectives

Upon completion of this learning module, learners will be better able to:

• Summarize the difference between dementia and delirium
• Discuss the use of standardized tools for measuring cognitive, and behavioral changes to assess for dementia and delirium
• Apply management principles according to pharmacological/non-pharmacological strategies
• Utilize materials to educate patients and family/caregivers

Difference Between Dementia and Delirium
Dementia and Delirium Incidence

**Dementia** and Older Adults
- 10% > age 65, 50% > age 85
- Alzheimer’s disease accounts for 60-80% of cases

**Delirium** and Older Adults
- 10-40% in-hospital incidence (new onset)
- 31-83% of mechanically ventilated pts (all ages)
- Medication-induced in 22-39% of cases

### 3 D’s Definitions

- **DEMENTIA**
  - Cognitive decline due to brain disease
  - Chronic, subtle, incurable, progressive

- **DEPRESSION**
  - Change in mood, feelings of worthlessness
  - Variable (worse in AM), cognition intact, reversible

- **DELIRIUM**
  - Acute change in mental status
  - Acute, obvious, reversible, fluctuating

### Similarities

**DEMENTIA** **DEPRESSION** **DELIRIUM**
The common similarities
(cognitive and behavioral changes)

DEMENTIA

LEARNING AND RETAINING NEW INFORMATION CHANGES
HANDLING COMPLEX TASKS CHANGES
REASONING ABILITY
SPATIAL ABILITY
LANGUAGE CHANGES
BEHAVIOR CHANGES

DEPRESSION

Dementia Vs. Delirium Symptoms

<table>
<thead>
<tr>
<th></th>
<th>Dementia</th>
<th>Delirium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood</td>
<td>Unaltered</td>
<td>Altered</td>
</tr>
<tr>
<td>Duration</td>
<td>Fragmented and invariable</td>
<td>Sudden, tends to occur</td>
</tr>
<tr>
<td>Awareness/attention</td>
<td>Unaltered</td>
<td>Reduced</td>
</tr>
<tr>
<td>Attention</td>
<td>Usually unaltered</td>
<td>Frequent confusion, forgetfulness</td>
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<tr>
<td>Orientation/Thinking</td>
<td>Impaired, line of ability to recognize everyday objects</td>
<td>Disorientation from place, disorganized thinking</td>
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<tr>
<td>Perception</td>
<td>Prone to hallucinations</td>
<td>Open hallucinations, delusions</td>
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<tr>
<td>Memory</td>
<td>Impaired (visual and short term, difficulty in keeping current situation)</td>
<td>Impaired memory &amp; short term</td>
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Dementia
Dementia

- Dementia is the impairment of cognitive and functional abilities together with behavioral symptoms (Dubois, et al. 2015)

- Dementia was renamed neurocognitive disorder (NCD) in DSM-5 (APA, 2013) for the purpose of this presentation, we will use the term dementia

<table>
<thead>
<tr>
<th>Type of Dementia</th>
<th>% of Dementia Cases</th>
<th>Presenting Symptoms</th>
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</thead>
<tbody>
<tr>
<td>Alzheimer’s Disease (AD)</td>
<td>60-70%</td>
<td>Slow progressive memory loss</td>
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<tr>
<td>Vascular dementia (formerly multi-infarct dementia)</td>
<td>15-20%</td>
<td>Can develop abruptly (after stroke) or step-wise (small vessel disease)</td>
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<tr>
<td>Dementia with Lewy bodies (DLB)</td>
<td>10-15%</td>
<td>Visual hallucinations in early stages, Parkinsonism (tremor, bradykinesia, shuffling gait)</td>
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<tr>
<td>Frontotemporal dementia (FTLD)</td>
<td>10%</td>
<td>Vascular dementia (similar to AD)</td>
</tr>
<tr>
<td>Dementia related to other disorders, i.e., Parkinson’s disease dementia (PDD)</td>
<td>2%</td>
<td>Brainstem disease, although motor symptoms are present</td>
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<tr>
<td>Rare Dementias: Alcohol related, Corticobasal degeneration, Frontotemporal dementia, Progressive Supranuclear Palsy, Multiple sclerosis, Huntington’s, Normal pressure hydrocephalus</td>
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</tbody>
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![Link to Figures 1 and 2](https://www.alz.org/documents_custom/2016-facts-and-figures.pdf) (Robinson et al., 2015)

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4/26/2017
**Risk Factors and Prevention**

**Risk Factors**

- Age over 65
- Family History (apolipoprotein E gene, epsilon 4 allele on chromosome 19)
- Head trauma
- Cardiovascular disease (hypertension, hyperlipidemia)
- Diabetes
- Depression
- Smoking
- Decreased physical activity
- Less education (possibly) (Simmons, et al 2011)

**Prevention**

- Healthy lifestyle, including physical and intellectual activity
- Use helmets, seatbelts
- Optimize treatment of hypertension and other diseases
- Smoking cessation
- Active field of investigation
  - No drug or supplement therapies yet proven to reduce risk

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**Stages of Dementia**

Dementia is conceptualized as a disease continuum. Therefore this presentation covers the disease in three stages (Dubois, et al 2015)

- Early Stage (including Mild Cognitive Impairment MCI)
  - Middle Stage
  - Late Stage

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**Clinical Course for Alzheimer’s Disease**

- Early Stage
  - Changes begin 20 years or more before diagnosis
- Middle Stage
  - Lasts from 2 to 10 years
- Late Stage
  - May last 3 – 5 years

https://www.alz.org/braintour/progression.asp
Patients typically show changes in

- **Cognition (Thinking)**
- **Language**
- **Psychosocial Behavior**
- **Functioning (change in needs)**

**Cognition/Thinking changes**

- **Agnosia** (Funnell, 2000)
- **Apraxia (loss of purposeful movement)** (Kovach, 2013)
- **Difficulty following a conversation, movie or story** (Daly, 2016)
- **Difficulty following directions** (Daly, 2016)
- **Disorientated to place and time** (Kovach, 2013)
- **Loss of remote and recent memory** (Kovach, 2013)
- **Often cannot learn new things** (Anjum, 2016)
- **Poor recall** (Kovach, 2013)

**Language Changes**

- **Aphasia** (Kovach, 2013)
- **Loss of vocabulary, especially proper nouns** (Daly, 2016)
- **More word-finding difficulty** (Anjum, 2016; Daly, 2016)
- **May use word substitution or make up new words** (Daly, 2016)

**STRENGTH: intact phonology, syntax and oral reading of familiar text** (Krompinger & Miller, 2009)
Psychosocial Behavior Changes

- Tendency to talk about nothing or ramble (Kovach, 2013)
- Wandering and difficulties way-finding (Kovach, 2013)
- Hallucinations (Kovach, 2013)
- Sleep disturbance, “sundowning” (Cipriani, et al, 2013)

  - Onset of behavioral symptoms such as agitation, impulsive and aggressive behaviors, socially inappropriate behaviors—although these symptoms do not always appear

Function Changes (change in needs)

- Increasing loss of functional abilities (mobility, toileting, use telephone, shop independently, manage own medications, handle finances) (Kovach, 2013)
- Requiring more assistance with personal care (bathing, dressing, eating) (Kovach, 2013)
- Increased concern for safety (DiZazzo-Miller et al, 2013)
- Should stop driving (Anjum, 2016)

Tools for Assessing Dementia
Dementia Assessment Tools

- Functional Assessment Staging (FAST) (Sclan, et al. 1992)  
- Mini-Cog™ (Rowe, et al. 2006)  
- Montreal Cognitive Assessment (MoCA) (Nasreddine, 2005)  
- Rapid Cognitive Screen (RCS) (Malmstron, et al. 2015)  
- Saint Louis University Mental Status Examination (SLUMS) (Barbey and Tones, 2015)  
  http://medschool.slu.edu/agingsuccessfully/pdfsurveys/slumsexam_05.pdf

Management principles according to pharmacological/non-pharmacological strategies

- Brief Cognitive Rating Scale (BCRS)  (Allen, 2011)  
- Geriatric Deterioration Scale (GDS)  (Reisberg, 1982)  
- Mini Mental Status exam (MMSE) no longer used (due to copyright)
Management: Pharmacologic

**Medications**

Should be considered in early stage unless there is a delay in diagnosis. Then begin in middle stage or at time of diagnosis

- FDA approved medications for Alzheimer's Disease

- Acetylcholinesterase inhibitors (AChEIs) (donepezil, galantamine, rivastigmine)
  - Donepezil 10 mg po daily x 6 months (Winblad, 2006)

- N-methyl-D-aspartate (NMDA) receptor antagonists

- Combination Medication Therapy

### Pharmacotherapy in Other Dementias: Cholinesterase Inhibitors

**Vascular Dementia**
- No effect with rivastigmine — — — —
- Questionable effect with donepezil — — — —

**Frontotemporal Dementia**
- No effect with galantamine — — — —
- American Psychiatric Association guidelines: "little evidence overall to support the use of any particular agent for frontotemporal dementia" — — — —

**Lewy Body Dementia**
- Benefit with rivastigmine — — — —
- Eligibility: MMSE 17-9 (range 10-20)
- Mean MMSE 17.9 (range 10-20)
- Benefit with donepezil — — — —
- Eligibility: MMSE 10-25
- Mean MMSE not reported

Management: Non-Pharmacologic Treatment

- Exercise, balanced diet, stress reduction
- Smoking cessation counselling
- Optimize management and treatment of other medical conditions
- Work to maximize and maintain function
- Establish relationship with patient and caregivers – regular appointments every 3-6 months
- Set realistic goals
- Supportive individual and group therapy
- Attention to safety
- Cognitive and non-cognitive behavior therapy
Management: Non-Pharmacologic Treatment
Cognitive Therapy

Patients should be advised to:
- Stay active
- Get enough restful sleep
- Eating right
- Minimize stress
- Keep brain active through games and engaging activities
- Socialize
- Create supportive environmental modifications – calendars, clocks, to-do lists

http://www.healthinaging.org/files/documents/tipsheet

Management: Non-Pharmacologic Treatment
Non-cognitive Behavioral approaches

Optimize environment: Environmental treatments
- Aromatherapy (Nguyen and Paton, 2008)
- Balanced stimulation-consistent routines and consistent caregivers (Gruss et al, 2004)
- Bright light therapy (Onega et al, 2016)
- Music therapy (music & memory) (https://musicandmemory.org/)
- “Natural” environments (Whear et al, 2014)
- Snoezelen Therapy (Huesgen et al, 2014)
- White Noise Treatments (Kaneko et al, 2013)

Behavioral approaches/treatments
- Dementia Care mapping and Person-Centered Care (Chenoweth et al, 2009)
- Meaningful Activities for middle and late stages: reminiscence, family and structured social activities, music, dancing (Harmer et al, 2008)
- Simulated Presence Therapy (Sellers, 2006)
- Touch Therapy (Nicholls et al, 2012)
- Validation Therapy (Feil, 2014)
Management: Non-Pharmacologic
Managing Behavioral Changes

Difficult Behaviors
• Physically aggressive
• Physically non-aggressive
• Verbally aggressive
• Verbal non-aggressive
• Other: Hallucinations/paranoid/delusions; Inappropriate sexual behaviors

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Management: Non-Pharmacologic
Managing Behavioral Changes

Repetitive Actions/words
Avoid: Telling patient to stop or asking why he is doing it

Suggestions:
• Touch,
• Mirroring,
• Eye contact,
• Music
• Occupy person's hand with an activity, doll, stuffed animal, ball
• Distract with food, music, exercise
• Ignore behavior or question
• Give him/her full attention and respond to emotional needs

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Management: Non-Pharmacologic
Managing Behavioral Changes

Wandering
Suggestions:
• Direct person to labeled rooms (bedroom, toilet)
• Decrease noise levels and number of people interacting at one time
• Go for walk
• Redirect with food, conversation, activity
• Home safety to avoid elopement

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Management: Non-Pharmacologic
Managing Behavioral Changes

Hallucinations, Paranoia, Delusions

Suggestions:
- Address environmental cause
- Decrease noise levels and number of people interacting at one time
- Go for walk
- Redirect with food, conversation, activity
- Home safety to avoid elopement

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Management: Non-Pharmacologic
Safety Issues

Areas of safety (Lach and Chang, 2007)
- A safe home
- Driving
- Traveling
- Wandering

Safety tips:
- Reassure the Person with dementia you are there to help them
- Remove potentially harmful, sharp or breakable objects
- Use safety plugs on electric outlets
- Keep childproof caps on medication and household cleaners
- Install locks out of sight

Resource Needs of Person with Dementia and Caregivers

Difference in caregivers needs by stage of dementia (DiZazzo-Miller, et al. 2013)

Early stage care recipients and caregivers report:
- Receiving the diagnosis of Alzheimer’s disease from health professional was helpful
- Information overload—too much information initially given
- Difficult to navigate websites
- Lack of information on how to assist PwD with their ADLs
- Need information for low-income families
- Distance and travel issues were a barrier to attending support meetings
Resource Needs of Person with Dementia and Caregivers

Difference in caregivers needs by stage of dementia (DiZazzo-Miller, et al. 2013)

Middle stage care recipients and caregivers report:

• Would have preferred "one stop shopping" to access resources
• Preference and use of internet in searching for resources
• Want more locations for respite care, mobility/transportation and home health care agencies specializing in dementia care
• Want to speak one-on-one with people to discuss concerns and seek out further resources

Resource Needs of Person with Dementia and Caregivers

Difference in caregivers needs by stage of dementia (DiZazzo-Miller, et al. 2013)

Late stage care recipients and caregivers report they:

• Access internet for resources
• Depend on family for support
• Access Alzheimer's Association programs

Resource Needs of Person with Dementia and Caregivers

Free Mobile App about Dementia

Caregivers from all stages report the lack of a "one-stop shopping" for resources and information related to caring for a person with dementia. Engageal.com has developed an on-line free Mobile App called:

Dementia Guide Expert for families

iOS on Apple App Store Android on Google Play

The dementia guide is a resource guide for persons with dementia, families and caregivers and offers helpful advice and support as you travel through each stage of the dementia experience. Our approach is dementia positive and our goal is to improve the quality of life of persons with dementia, families and caregivers.

Download for free today!
Advanced Care Planning

To prepare family members for difficult decisions (feeding, management of infection, hospitalization, nursing home placement), health care professionals should:

- Discuss the disease trajectory and expected complications
- Discuss basic principles of surrogate decision-making
- Before complications occur
- To prevent unwanted treatments or interventions
- Educate families on the role of hospice and palliative care

Treatment decisions in late dementia should:

- Correspond with the patient’s goals of care
- Be a shared decision among health care proxies and healthcare professionals
- Involve a discussion of potential benefits and harms


Delirium

Delirium Definition

Delirium is a disturbance of consciousness with inattention accompanied by a change in cognition or perceptual disturbance that develops over a short period of time (hours to days) and fluctuates over time.

Approximately 15-60% of older adults experience delirium prior to or during a hospitalization but the diagnosis of delirium is missed in up to 70% of cases! (Medscape, accessed 4/25/17)
Delirium Types

**Agitated Delirium (hyperactive):**
Hyperactive, excitable, restless, picking at bedclothes, irritable. Behavior is detrimental to patient's and staff's well-being and safety

**Hypoactive Delirium:**
Lethargic, apathetic, sluggish, unaware, sparse/slow speech. Often "missed" or mistaken for depression or fatigue

**Mixed:**
A combination of both agitated and hypoactive delirium

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Delirium: Risk Factors

**RISK FACTORS**
- Advanced Age
- Infection
- CNS disease
- Polypharmacy
- Hypoalbuminemia
- Electrolyte abnormalities
- GI/GU disorders
- Cardiopulmonary disorder
- Sensory changes

**VULNERABILITY FACTORS**
- Impaired vision
- Severe illness on Admission
- Pre-existing cognitive impairment
- Dehydration
- Serum Creatinine ≥ 18 mg/dL
- Use of Physical Restraints
- Use of indwelling catheter
- Malnutrition

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Medications Associated with Delirium

**Medications with Anticholinergic Effects**
- Anticholinergics
- Antihistamines
- Antipsychotics
- Antispasmodics
- Cyclic antidepressants
- Mydriatics

**Traditional Medicines**
- Burdock root
- Black hibiscus
- Atropa belladonna
- Mandrake
- Jimson weed
- St. John's Wort
- Valerian

**Miscellaneous Agents**
- Hypoglycemics
- Hypotensive agents
- Diuretics
- Oxytocics
- Muscle relaxants
- Anticonvulsants
- Antiemetics
- H-2 receptor blockers

**BEER's List:** [www.tahsa.org/files/DDF/medbeer.pdf](http://www.tahsa.org/files/DDF/medbeer.pdf)


**START:** [http://ageing.oxfordjournals.org/content/36/6/632.abstract](http://ageing.oxfordjournals.org/content/36/6/632.abstract)
Delirium Symptoms

- Usually oriented to person, not place/time
- Disorganized thinking
- Impaired attention/focus
- Difficult to follow/understand
- May be loud, argumentative
- Altered Perceptions: visual or auditory hallucinations
- Confusion/cognition fluctuate throughout day

Delirium on Dementia

- Delirium occurs 4-5 times more often in persons with dementia
- 22-89% incidence of delirium superimposed on dementia
- Acute changes are often attributed to "sundowning"
- Abuse of ETOH, drugs or OTC meds may be confused with dementia

Delirium Screening Tools
Confusion Assessment Method (CAM) Tool

**Acute Change or Fluctuation in Mental Status**—Assess by history and observation. Staff and family can attest to the admission/pre-op, or pre-hospital cognitive status of the patient. Any acute confusional state should make the provider consider delirium.

**Inattention**—Is the patient able to answer a direct question with an appropriate answer? Can the patient stay “on track” in normal conversation? If the answer is no, also look for fluctuations in level of attention, which can further signal delirium.

**Disorganized Thinking**—Is the patient’s speech/thought process rambling, unclear, unpredictable, illogical, and/or irrelevant?

**Altered Level of Consciousness**—Assess the patient for alertness, vigilance, lethargy, stupor, or coma.

**CAM-ICU**

Confusion Assessment Method for the Intensive care population:

CAM ICU calculator: [https://www.qxmd.com/calculator/calculator_312/cam-icu](https://www.qxmd.com/calculator/calculator_312/cam-icu)

**CAM screens for delirium**

The short version of CAM considers that a diagnosis of delirium is likely if the following are present:

- Acute onset and fluctuating course and
- Inattention and
- Either disorganized thinking or an altered level of consciousness

**CAM Short Form**: [https://www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=cam+assessment+form](https://www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=cam+assessment+form)

**CAM**

The Confusion Assessment Method (CAM) Diagnostic Algorithm:

Consider the diagnosis of delirium if 1 and 2, AND either 3a or 3b are positive:

1. **Acute Onset and Fluctuating Course**
   - Is there evidence of an acute change in normal status from the patient’s baseline?
   - Did the abnormal behavior fluctuate during the day (tired to conscious and go, or increase and decrease in severity)?

2. **Inattention**
   - Did the patient have difficulty focusing attention (e.g. being easily distracted) or have difficulty keeping track of what was being said?

3a. **Disorganized Thinking**
   - Was the patient’s thinking disorganized or incoherent: such as rambling, jumping from subject to subject, or unrelated?

3b. **Altered Level of Consciousness**
   - Overall, how would you rate this patient’s level of consciousness? (alert normal, vigilant [hyper-aroused], lethargic [showing, easily aroused], stupor [difficult to arouse], or coma [unarousable]). Positive for any answer other than “alert”.

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**CAM**
Management principles for Delirium

Management tips for delirium in the hospitalized older person
- Avoid physical restraints
- Reduction of potential causes (metabolic, infectious, sedative/analgesic meds, agitation, withdrawal)
- Avoidance of offending medications (eg, morphine, anticholinergics, neuroleptics, benzodiazepines)
- Use of specific medications for delirium; low dose (eg, per delirium, alcohol withdrawal guidelines)
- Treat pain
- Anticipate evening/nighttime agitation
- Frequent assessment, reorientation with special attention at night
- Consistent caregiving, familiar faces, family or sitter to stay at bedside at night, if necessary
- Minimize stimulation in environment but maintain routine
- Simplify communication strategies

Management: PREVENTING Delirium
Prevention Tips
- Perform admission cognitive function test to establish a baseline
- Treat underlying medical causes
- Remove all lines/catheters as soon as possible
- Obtain a nutrition/dietary consult
- Encourage frequent re-orientation by staff
- Ensure hearing aids, glasses, and teeth are used, and travel with patients on transfer through facilities
- Check for clocks, schedule boards, visible calendar in all patients’ rooms
- Encourage family participation in hospital
- Order physical therapy/early mobilization
- Encourage good sleep hygiene—don’t interrupt sleep for vital signs, blood draws, daily weights
Dr. Valerie Gruss, PhD, APN-CNP-BC, vgruss@uic.edu

References


