Age is opportunity no less,
Than youth itself, though in another dress,
And as the evening twilight fades away,
The sky is filled with stars, invisible by day.

~Henry Wadsworth Longfellow, *Morituri Salutamus*

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Medication: (Yellow)

Principles of Prescribing for the Older Adult • Medication Use in the Geriatric Population

Gradual Dose Reduction • Is the Symptom Due to Disease or Drugs?

Function: (Blue)

Capacity Assessment: Medical Decision Making • Capacity Assessment: Guardianship

Functional Assessment • Lubben Social Network Scale • Screening for Risk of Falls

Tinetti Gait & Balance • Environmental Considerations • Incontinence Diagnosis Algorithm

Depression: (Goldenrod)

Geriatric Depression Screen • CAGE (Alcohol Assessment) • Caregiver Burnout Assessment

Targeting Antidepressants

Delirium: (Green)

Delirium vs. Dementia • Confusion Assessment Method (CAM) • Delirium Management

Dementia: (Pink)

Compare and Contrast Types of Dementia • Mini Cog Evaluation • SLUMS • MoCA

Origin of Behavioral Symptoms • Nonpharmacological Approach to Behaviors in Dementia

Medication Approach to Behaviors in Dementia

Principles of Prescribing for the Older Population

1. Consider nonpharmacologic approaches
2. Consider the risk v benefit before prescribing any drug
3. Set specific goals and timelines for assessing drug therapy outcomes
4. Discontinue unnecessary or ineffective therapy
5. Consider any new symptom as a possible drug side-effect
6. Use safer alternatives instead of high-risk drugs
7. When initiating new agents, start with lower doses, titrate slowly, increase as indicated
8. Include pharmacists on the interdisciplinary team

"Doctors pour medicines about which they know little, for diseases about which they know less, into human beings about whom they know nothing." Voltaire

Selected Medications to Avoid in the Elderly:

1. Barbiturates (e.g. Phenobarbital)
2. Benzodiazepines (e.g. temazepam (Restoril®), diazepam (Valium®))
3. Megestrol (Megace®)
4. Metoclopramide (Reglan®)
5. Oral meperidine (Demerol®)
6. Antihistamines (e.g. diphenhydramine (Benadryl®))(high anticholinergic effect)
7. Doxepin, amitriptyline (high anticholinergic effect)
8. Muscle relaxants (e.g. carisoprodol (Soma®))

(American Geriatrics Society, 2012)

Medication Use in the Geriatric Population

Problem	Medications and Non Pharmacologic Interventions to CONSIDER using or to AVOID
Sleep	***CONSIDER*: Melatonin, Trazodone** ***AVOID**: benzodiazepines, doxepin (Sinequan), diphenhydramine (Benadryl)* ***DO***: Create calm environment, decrease noise & light, provide warm drink and massage
Behavior Aggression, combativeness, hallucinations/delusions, severe agitation, delirium	***CONSIDER:* -Neuroleptics** Haloperidol (Hadol) 0.125-0.5 mg IV/IM/PO Q 30 min. x 2, then 1 mg Q 2 hrs until Sx under control. *Not to exceed 4* mg/24 hrs. **Preferred treatment for short-term use (1-3 days only)** **-Atypical Antipsychotics:** • Quetiapine (Seroquel) 12.5- 25 mg PO QHS-BID **1st line for Parkinson's or Lewy Body dementia, less risk of "black box" side effects** • Risperidone .25-.5 BID (Risperdal), aripiprazole 2-5 mg daily (Abilify): Less sedating than quetiapine so better if need a daytime drug **-Mood Stabilizers:** Valproic acid 125- 250 mg BID (Depakote) ***AVOID:*** Long term use of antipsychotics ***DO:*** Redirect, have family near patient, ambulate, address pain, D/C or secure lines, provide quiet environment, evaluate for UTI, constipation
Memory Memory impairment w/ anxiety, restlessness, wandering, apathy, hallucinations (LBD)	***CONSIDER:* Donepezil, memantine** Analgesics, if suspicion or history of pain SSRI's (See Card: "Targeting Antidepressants") ***AVOID:*** Long-acting Benzodiazepines ***DO:*** Encourage exercise, exposure to daylight and fresh air, friends and family involvement, evaluate for UTI, constipation
Depression	***DO:*** See Card: "Targeting Antidepressants"

For each problem: CONSIDER (Medication) • AVOID: (Medication) • DO: (Non-pharmacological intervention)

Gradual Dose Reduction (GDR) of Psychoactive Medications

Definition

Gradual dose reduction consists of the stepwise tapering of a dose to determine if symptoms, conditions, or risks can be managed by a lower dose or if the dose or medication can be discontinued.

Rationale

Psychoactive medications have limited evidence of effectiveness and are associated with potentially serious side effects including tardive dyskinesia, increased risk of stroke and mortality and metabolic abnormalities such as elevated blood glucose and lipids.

Federal Requirements

Federal guidelines mandate GDR be attempted (unless clinically contraindicated) and documented in nursing facilities as follows:

1. Antipsychotics
   - In two separate quarters during the first year, then annually
2. Sedative/Hypnotics
   - At least quarterly
3. Other psychopharmacologic drugs (such as anti-anxiety medications)
   - In two separate quarters during the first year, then annually

Gradual Dose Reduction (GDR) of Psychoactive Medications

Potential Positive Outcomes of GDR

By encouraging the use of the lowest possible dosage and identifying when psychoactive medications are no longer needed studies have found that a well-coordinated team approach to GDR can DECREASE:

- Psychiatric discharges to hospital
- Pressure ulcers
- Use of psychoactive medications (antipsychotic, sedative/hypnotic and anti-anxiety medications)
- Decline in ADLs
- Untreated depression
- Fractures, high risk falls and falls resulting in hospitalization

(Coggins, Evans, & Bruce, 2010)

Promoting GDR in Nursing Facilities

In order for a nursing facility to have an effective GDR program all staff must be willing to collaborate to reduce and possibly discontinue the use of psychoactive medications. GDR can be hard work, but the positive outcomes will be well worth the effort.

Is the Symptom Disease-related or Drug-related?

Be on the Lookout for the Side Effects of Medications

- Medications are the single most important health care technology in preventing illness, disability, and death in the geriatric population.

BUT,

- Any new symptom in an elderly patient should be considered a drug side effect unless proven otherwise.

> *"Those who care for the elderly must not be too quick to attribute symptoms – such as confusion, forgetfulness, gait instability, Parkinsonian signs, incontinence, or fatigue – to the onset of new illness or to aging itself, without first assessing whether they may in fact be adverse medication effects.*
>
> *-Gurwitz et al., 1995*

Is the Symptom Disease-related or Drug-related?

Avoid the negative stereotype of aging – each of the following could be side effects of medications:

- Confusion
- Weakness
- Constipation
- Dry mouth
- Abnormal heart rhythm
- Sedation
- Tremor
- Hair loss
- Urinary incontinence
- Negative behaviors
- Sensory deficits
- Taste disturbance
- Fainting
- Urinary retention

- Any new symptom in an elderly patient should be considered a drug effect unless proven otherwise.
- Treating a new symptom that may be drug-related with another medication can lead to "polypharmacy" where the patient is taking excessive and unnecessary medications.
- Polypharmacy can be avoided through a careful and ongoing review of the patient's medication regimen.

Capacity Assessment: Medical Decision Making

1. Have patient describe his/her medical issue(s)
2. Have patient paraphrase what the recommended treatment is as well as the other options
3. Have patient explain what the treatment involves
4. Have patient express what he/she wants to do
5. Have patient explain the reasons behind his/her decision
6. Have patient explain the risks and benefits of his/her decision

Capacity Assessment: Placement

1. Obtain FUNCTIONAL ASSESSEMENT (OT and PT)
2. Review patient's functional history
3. Have patient express specific concerns of his/her providers
4. Have patient express whether he/she agrees with the concerns (insight)
5. Have patient state what he/she wants to do
6. Have patient explain risks and benefits of his/her decision
7. Have patient explain reasons behind his/her decision

Capacity Assessment: Guardianship

1. Obtain collateral history from family and primary care provider
2. Have patient explain his/her medical issues and medications
3. Have patient explain his/her finances
4. Have patient explain a routine day including how he/she obtains meals (ADLS/IADLS), takes his/her medications, etc
5. Ask patient judgment questions :
    - "What would you do if you smelled smoke?"
    - "What would you do if you were having chest pain?"
    - "What is the number for emergency?"
6. SLUMS
7. Assess patient's insight into functional deficits

Capacity Assessment: Will

1. Assess if patient knows he/she is making a will
2. Assess why he/she is choosing to make the will at this point in time
3. Have patient explain the nature and extent of his/her property
4. Have patient explain who is important to him/her (family and/or friends)
5. Have patient explain the effects/consequences of the manner in which his/her property will be disposed

Functional Assessment (Adapted from: Lachs et al., 1990)

Target Area	Assessment	Abnormal Result/Intervention
Measured by Support Staff—Reviewed by PCP		
Nutrition	Review measured height and weight (calculate Body Mass Index)	BMI< 20 or 10 lb weight loss in 6months: Evaluate for medical illness, ADL/IADL problems
Questionnaire or Review of Symptoms		
Vision	Do you have any difficulty with reading, watching TV, reading road signs?	Refer to eye professional
Depression	Do you often feel sad or depressed?	Geriatric Depression Screen / Patient Health Questionnaire (PHQ-9) (*see Depression Screen card*)
ADLs	Can you get out of bed yourself? Can you dress yourself?	If abnormal, determine reasons, corroborate with caregiver, evaluate other ADLs, IADLs Interventions—home health, MSW, etc.
IADLs	Can you make your own meals? Can you do your own shopping?	
Home environment	Do you have trouble with stairs inside or outside your home?	If yes, home safety evaluation
Incontinence	Do you ever lose urine or get wet?	If yes, frequency, amount, reversible causes? (*see Incontinence Algorithm card*)
Social Support	Who would be able to help you in case of an emergency?	If unable to identify, MSW referral
Performance-based Assessment		
Hearing	Whispered question	Check for cerumen, Refer Audiology
Upper Extremity	*Proximal*—"Touch the back of your head with both hands" *Distal*—"Pick up the pen"	Examine UE for pain, weakness, limited ROM-consider rehab referral
Lower Extremity	*Timed Get-up-and-Go*—"Rise from chair, walk 10 feet, return, sit down"	Abnormal (>15 sec)—neurologic, musculoskeletal evaluations. Refer to PT for gait/balance evaluation

LUBBEN SOCIAL NETWORK SCALE – 6 (LSNS-6)

FAMILY: *Considering the people to whom you are related by birth, marriage, adoption, etc.*

1. How many relatives do you see or hear from at least once a month?
   0=*none* 1=*one* 2=*two* 3=*three or four* 4=*five thru eight* 5=*nine or more*

2. How many relatives do you feel at ease with that you can talk about private matters?
   0=*none* 1=*one* 2=*two* 3=*three or four* 4=*five thru eight* 5=*nine or more*

3. How many relatives do you feel close to such that you could call on them for help?
   0=*none* 1=*one* 2=*two* 3=*three or four* 4=*five thru eight* 5=*nine or more*

FRIENDSHIPS: *Considering all of your friends including those who live in your neighborhood*

1. How many friends do you see or hear from at least once a month?
   0=*none* 1=*one* 2=*two* 3=*three or four* 4=*five thru eight* 5=*nine or more*

2. How many friends do you feel at ease with that you can talk about private matters?
   0=*none* 1=*one* 2=*two* 3=*three or four* 4=*five thru eight* 5=*nine or more*

3. How many friends do you feel close to such that you could call on them for help?
   0=*none* 1=*one* 2=*two* 3=*three or four* 4=*five thru eight* 5=*nine or more*

LSNS-6 total score is an equally weighted sum of these six items: Scores range from 0 to 30

A person scoring less than 12 is considered at risk for social isolation

(Lubben et al., 2006)

Screening for Risk of Falls (Adapted from Tinetti, 2003)

1. Ask all patients ≥75 years about falls, balance, or gait problems in past year
0-1 falls in past year/no balance/gait problems—No intervention (recommend participation in an exercise program that includes balance/strength training)
2 or more falls or gait/balance problems—Falls assessment

2. Timed Up and Go Test: Ask the patient to rise from a chair (without using their hands), walk ten feet, turn, walk back to chair, and sit down. He/she should be able to perform this in 15 seconds or less. If not, the test is abnormal.
Longer than 15 seconds suggests increased risk for falls

Falls Assessment

Assessment and Risk Factor	Management
Medication use 4 or more medications increases fall risk High-risk medications (benzodiazepines, sleeping medications, neuroleptics, antidepressants, anticonvulsants)	Review and reduce medications
Vitamin D levels Interpretation of serum concentrations (<20 ng/ml is deficient)	Prescribe Vitamin D supplement, recommended 4000 IU Vit D3 daily from diet and supplements (American Geriatrics Society Workgroup on Vitamin D Supplementation for Older Adults, 2013)
Vision Acuity (Jaeger card reading vision > 20/40 is abnormal) Decreased depth perception- Decreased contrast sensitivity, Cataracts	Ample lighting without glare. Avoid multifocal glasses when walking, keep a light on at night for visibility going to bathroom. Refer to eye specialist
Orthostatic Hypotension Measure after 5 mins supine; immediately after standing and 2 minutes after standing, ≥ 20mmHg (or 20%) drop systolic BP	Dx/Tx underlying cause. Medication review, adequate hydration, elevate head of bead, rise slowly, support stockings
Balance & Gait Perform targeted neurologic examination. Perform targeted musculoskeletal examination, and environmental evaluation (home safety evaluation; avoid bare feet, stockings, or slippers)	Dx/Tx underlying cause, Increase proprioceptive input (assistive device, footwear with low heel, thin sole); Refer to Podiatrist, Refer to PT for gait/balance training, strengthening, ROM, assistive device, Tai Chi

Falls Assessment – Environmental Considerations	
Assessment and Risk Factor – Home Safety	**Management**
Stairs Slippery surface on stairs; poor or no banisters; uneven steps	Add abrasive strips or paint to stair tread edges; install or repair banisters; replace stairs with uneven steps
Walkways Obstructed or hazardous walkways	Remove obstacles (including snow/ice, shrubs, weeds); repair broken, cracked sidewalks; install lighting (e.g., motion detectors, solar-powered lights)
Tile or linoleum floors at entrances, in bathroom, in kitchen Smooth floors that are slippery when wet	Use a secure, non-slip mat with double-sided tape to ensure mat is secure
Bathtub/shower/toilet Slipping or falling in the bathroom; no or poorly placed grab bars; using towel racks as grab bars; hygiene items hard to reach	Install grab bars; place non-slip mats in the shower/bathtub; install a shower seat; install a storage unit within the shower/bathtub; avoid using slippery bar soap and instead try liquid soap; install a raised toilet seat
Kitchen Items out of reach (too low, high, or far back), use of ladders or step stools	Avoid using step stools or chairs to reach things, rather move all items within reach
Bedroom Light switch and/or telephone not easily reached from bed; bed hard to get in and out of (too high); electric cords running across floor posing tripping hazard; bathroom does not adjoin bedroom	Place a lamp next to bed or rearrange furniture so bed is next to a light switch; place cordless or cell phone next to bed; reduce or secure cords with tape; lower bed height; use night lights with timer or motion sensor so they turn on at bedtime; place a portable commode near the bed to reduce trips to bathroom
General Clutter, laundry, electrical cords in traffic areas, hallways, staircases; loose throw rugs or carpets with frayed, curled edges; pets sleeping or pet toys on the floor; poorly lit areas	Pick up items on the floor; store laundry in hampers; secure cords with tape; secure rugs, carpets with non-slip pads, tape; encourage pets to sleep on a bed or blanket out of the way; install general, rather than area, lighting; install nightlights

TINETTI BALANCE ASSESSMENT SCALE

BALANCE SECTION: Patient is seated in hard, armless chair.

Sitting balance	▪ Leans or slides in chair ▪ Steady, safe	=0 =1
Rises from chair	▪ Unable to without help ▪ Able, uses arms to help ▪ Able without use of arms	=0 =1 =2
Attempts to rise	▪ Unable to without help ▪ Able, requires > 1 attempt ▪ Able to rise, 1 attempt	=0 =1 =2
Immediate standing Balance (first 5 seconds)	▪ Unsteady (staggers, moves feet, trunk sway) ▪ Steady but uses walker or other support ▪ Steady without walker or other support	=0 =1 =2
Standing balance	▪ Unsteady ▪ Steady but wide stance and uses support ▪ Narrow stance without support	=0 =1 =2
Nudged	▪ Begins to fall ▪ Staggers, grabs, catches self ▪ Steady	=0 =1 =2
Eyes closed	▪ Unsteady ▪ Steady	=0 =1
Turning 360 degrees	▪ Discontinuous steps ▪ Continuous	=0 =1
	▪ Unsteady (grabs, staggers) ▪ Steady	=0 =1
Sitting down	▪ Unsafe (misjudged distance, falls into chair) ▪ Uses arms or not a smooth motion ▪ Safe, smooth union	=0 =1 =2
	Balance score	/16

(Tinetti, Williams, & Mayewski, 1986)

TINETTI BALANCE ASSESSMENT SCALE

GAIT SECTION

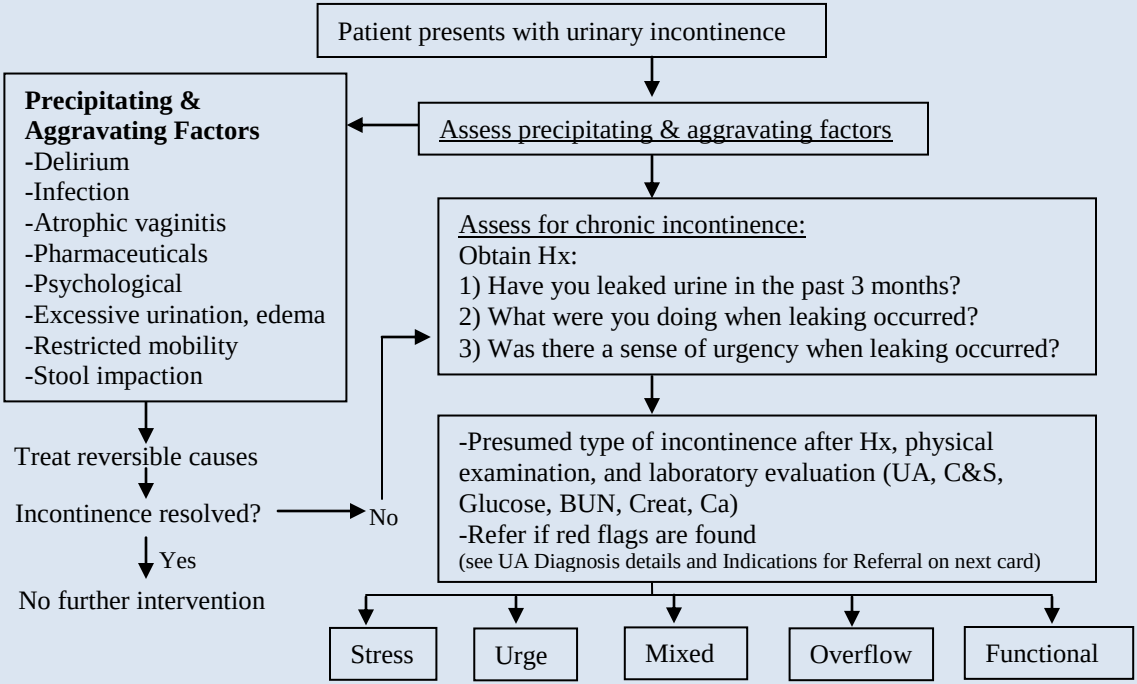
Patient stands with therapist, walks across room (+/- aids), first at usual pace, then at rapid pace.

Indication of gait (immediately after told to "go")	▪ Any hesitancy or multiple attempts ▪ No hesitancy	=0 =1
Stop length and height	▪ Step to ▪ Step through R ▪ Step through L	=0 =1 =1
Foot clearance	▪ Foot drop ▪ L foot clears floor ▪ R foot clears floor	=0 =1 =1
Step symmetry	▪ Right and left step length not equal ▪ Right and left step length appear equal	=0 =1
Step continuity	▪ Stopping or discontinuity between steps ▪ Steps appear continuous	=0 =1
Path	▪ Marked deviation ▪ Mild/moderate deviation or uses w. aid ▪ Straight without w. aid	=0 =1 =2
Trunk	▪ Marked sway or uses w. aid ▪ No sway but flex, knees or back or uses arms for stability ▪ No sway, flex., use of arms or w. aid	=0 =1 =2
Walking time	▪ Heels apart ▪ Heels almost touching while walking	=0 =1
	Gait score	/12
	Balance score carried forward	/16
	Total Score = Balance + Gait score	/28

Risk Indicators:

Tinetti Tool Score	Risk of Falls
≤ 18	High
19-23	Moderate
≥ 24	Low

Incontinence Algorithm (Adapted from Khandelwal & Kistler, 2013)



Diagnosis of Urinary Incontinence (Adapted from Khandelwal & Kistler, 2013)

Type	Diagnosis	Primary Treatment*
Stress	-Symptoms with coughing, sneezing, or exercise, no nocturia -Voiding diary: small volume leakage (5-10 mL) with activity -Cough stress test: leakage coincides with coughing -PVR urine < 50 mL	-Pelvic floor (Kegel) exercises -Biofeedback, behavioral training -Alpha agonists (with caution) -Consider surgical bladder-neck suspension
Urge	-Symptoms of urgency -Voiding diary: variable volume loss; frequency and nocturia noted -Cough stress test: may show delayed leakage after cough -PVR urine < 50 mL	-Identify and treat aggravating factors -Address environmental and functional issues -Scheduled toileting -Training (e.g. biofeedback, behavioral) -Bladder relaxants, a-blockers if BPH present (with caution) -Surgical removal of irritating lesions
Mixed	-Symptoms often occur with activity or coughing, but cause urgency & greater urine loss -Voiding diary: varies -Cough stress test: may show leakage with coughing -PVR urine < 50 mL	-Identify and treat aggravating factors -Training (e.g. biofeedback, behavioral) -Scheduled toileting -Address environmental and functional issues
Overflow	-Cannot distinguish based on history alone. May have urgency or leakage -Voiding diary: varies -PVR urine > 200 mL	-Identify and treat aggravating factors -a-blockers if BPH present (avoid anti-cholinergics) -Surgical removal of obstruction -Intermittent catheterization (if practical)
Functional	-Symptoms may include cognitive impairment and degree of immobility***** -Voiding diary: may show pattern in circumstances of incontinence -PVR urine: varies	-Identify and treat aggravating factors -Behavioral therapies (e.g. scheduled toileting) -Environmental manipulations -Incontinence undergarments and pads -External collection device
Indications for Referral (Women's health, Urology, Pelvic floor PT)	-Pelvic pain, relapse, or recurrent urinary tract infections -Marked prostate enlargement -Postvoid residual volume > 200 mL -Uncertain diagnosis or lack of response to treatment	-New-onset neurologic symptoms, muscle weakness, or both -Pelvic organ prolapsed past the introitus -Persistent hematuria or proteinuria -Previous pelvic surgery or radiation

Avoid medications in people with dementia, falls, or low BP

Geriatric Depression Screen

Suggestive of depression if abnormal answers to 2 or more questions:

1. Are you basically satisfied with your life? (Abnl = No)
2. Do you often get bored? (Abnl = Yes)
3. Do you often feel helpless? (Abnl = Yes)
4. Do you prefer to stay at home rather than going out and doing new things? (Abnl = Yes)
5. Do you feel pretty worthless the way you are now? (Abnl = Yes)

Sensitivity 0.97/ Specificity 0.85 (Hoyl et al., 1999)

Patient Health Questionnaire (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems:
(0=Not at all; 1=Several days; 2=More than half the days; 3=Nearly every day)

1. Little interest or pleasure in doing things
2. Feeling down, depressed or hopeless
3. Trouble falling or staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down
7. Trouble concentrating on things, such as reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have noticed. Or being so fidgety or restless that you have been moving around a lot more than usual
9. Thoughts that you would be better off dead, or of hurting yourself
10. If you have checked off any of the above problems, how difficult have these problems make it for you to do your work, take care of things at home, or get along with other people? (Not difficult, somewhat difficult, very difficult, extremely difficult)

If there are at least 4 questions answered with 2 or 3 (or 3 questions answered with 2 or 3, plus a response of 1,2, or 3 to question 9), consider a depressive disorder. Add score to determine severity.
Sensitivity 0.88/Specificity 0.88 for major depression (Kroenke, Spitzer, & Williams, 2001)

CAGE

- Have you ever felt the need to **CUT** down on drinking?
- Have you ever felt **ANNOYED** by criticism of your drinking?
- Have you ever had **GUILTY** feelings about your drinking?
- Do you ever take a morning **EYE OPENER** (a drink first thing in the morning to steady your nerves or get rid of a hangover)?
- One positive response to any CAGE question suggests the need for closer assessment.
- A positive response to at least two questions is seen in the majority of patients with alcoholism and to all four questions in approximately 50 percent
- Sensitivity of 53% and a specificity of 93% when a combined target of alcohol abuse, dependence and harmful drinking was the goal of screening (Fiellin, Reid, & O'Connor, 2000).

- **1 drink per day is recommended drinking limit for persons aged 65 and older**
- **Drink = 12 oz beer, 4-6 oz wine, 1.5 oz hard liquor, 3 oz fortified wine.**
- **Medicare allows reimbursement of this, bill code: G0396**

Modified Caregiver Strain Index (Thorton & Travis, 2003)

Please answer each question according to the following scale:

Yes, on a regular basis (2 pts.) • Yes, sometimes (1 pt.) • No (0 pts.)

1. My sleep is disturbed.
2. Caregiving is inconvenient.
3. Caregiving is a physical strain.
4. Caregiving is confining.
5. There have been family adjustments.
6. There have been changes in personal plans.
7. There have been other demands on my time.
8. There have been emotional adjustments.
9. Some behavior is upsetting.
10. It is upsetting to find the person I care for has changed so much from his/her former self.
11. There have been work adjustments.
12. Caregiving is a financial strain.
13. I feel completely overwhelmed.

Scoring:
0= No caregiver strain
26= Severe Strain

Alzheimer's Association
24-hour helpline
1.800.272.3900
info@alz.org

Targeting Antidepressants

Symptom	First Line Therapy	Other choices
Depression/Anxiety	Citalopram, Sertraline	Escitalopram
And Insomnia	Mirtazapine (choose first or add on) 7.5-15mg	Trazodone Melatonin
And Pain	Duloxetine	Venlafaxine
And Weight loss	Mirtazapine	Bupropion
And Apathy	Venlafaxine	

Start dose low, increase slowly to effective dose. Add other agents if necessary. Watch and counsel for side effects.

Comparison of Delirium and Dementia

	DELIRIUM	**DEMENTIA**
Onset	Abrupt	Usually insidious; abrupt in some strokes or trauma
Course	Fluctuates	Slow decline
Duration	Hours to weeks	Months to years
Attention	Impaired	Intact early; impaired late
Sleep-wake	Disrupted	Usually normal
Alertness	Impaired	Normal
Orientation	Impaired	Intact early; impaired late
Behavior	Agitated, withdrawn or depressed, or combination	Intact early
Speech	Incoherent, rapid/slowed	Word-finding problems
Thoughts	Disorganized, delusions	Impoverished
Perceptions	Hallucinations/delusions	Usually intact early

(Gower, Gatewood, & Kang, 2012)

Assessment for Delirium
The Confusion Assessment Method (CAM)

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 mental status from the patient's baseline? Did the (abnormal) behavior fluctuate during the day (tend to come and go, or increase and decrease in severity)?

2. Inattention

Did the patient have difficulty focusing attention (e.g. being easily distractible) or have difficulty keeping track of what was being said?

3a. Disorganized Thinking

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?

3b. Altered Level of Consciousness

Overall, how would you rate this patient's level of consciousness? (alert [normal], vigilant [hyper-alert], lethargic [drowsy, easily aroused], stupor [difficult to arouse], or coma [un-arousable]). *Positive for any answer other than "alert".*

Sensitivity: 94%-100%; Specificity: 90%-95%

(Inouye et al., 1990)

General Tips for Management of DELIRIUM in Older Adults

1. Carefully review current medication list and dosages.
2. Discontinue non-essential meds.
3. For medications considered essential, ALWAYS USE THE LOWEST EFFECTIVE DOSE.
4. Maintain pain relief measures, if warranted. Use non-pharmacological pain approaches (activity, heating pad) as first line therapy
5. List of meds known to cause delirium (on back) is not all-inclusive, but captures some of the most agreed upon medications that can contribute to delirium, with some suggested alternatives.
6. Be on the watch for possible medication withdrawals: antidepressants, antipsychotics, anxiolytics, analgesics, and hormones.

Patients at risk for DELIRIUM:

Host factors	Illness-related factors
Advanced age	Acidosis
Alcoholism	Anemia, hydration, nutrition
Cognitive impairment	Fever/ infection, sepsis
Depression	Metabolic disturbances (e.g., Na, Ca, BUN, bilirubin)
Hypertension	Respiratory disease/mechanical ventilation
Vision/ hearing impairment	High severity of illness
Heart disease	Immobilization, sleep disturbances
History of delirium	Medications (see list on back of card)

Treatments for Delirium

- Haloperidol .5-2 mg every 1 hour as needed, max 4.5 mg/d
- Quetiapine (Seroquel) 12.5-25 mg twice daily
- Risperidone (Risperdal) .5-1 mg twice daily
- Clonidine 0.1-0.2 mg PO/PFT EVERY 1 HOUR AS NEEDED for hypertension due to agitation. May repeat x 3 doses as needed, until SBP < 160 mmHg

Medications to AVOID/MINIMIZE in patients at risk for delirium:

A. Benzodiazepines
B. H2 blockers : ranitidine, cimetidine
C. Analgesics: morphine, meperidine, etc.
D. Anti-infectives: amphotericin, aminoglycosides, high dose penicillins, cephalosporins, bactrim, metronidazole, isoniazid, fluroquinolones.
E. Anticholinergics: diphenhydramine, hydroxyzine, scopolamine, glycopyrrolate
F. Corticosteroids
G. Antiemetics: metoclopramide, promethazine, prochlorperazine
H. Anti-depressants: TCAs, paroxetine, lithium
I. Antispasmotics: oxybutinin
J. Local anesthetics: lidocaine, bupivicaine
K. Cardiac meds: anti-arrhythmics (e.g., amiodarone, quinidine, digoxin), ACE inhibitors, beta-blockers

Alternatives:

For analgesia: Consider scheduled acetaminophen. **Oxycodone starting at 2.5 mg every 6-8 hrs**. Patients over 65 may achieve adequate relief with lower, less frequent dosing. Always use the lowest effective dose

For nausea: **ondansetron (Zofran) 4 mg IV or po q12h prn**

For insomnia: non-pharmacological strategies (e.g., relaxation strategies, backrubs, herbal teas, warm milk) or medications such as **trazodone 25 mg po qhs or melatonin .5-1 mg qhs**

For depression: **citalopram 10mg daily**, titrate up to 20mg after 1 week

For PUD prophylaxis: **omeprazole 20 mg daily**

Compare and Contrast Types of Dementia

Disorder	Alzheimer's Dementia	Vascular Dementia
Prevalence	50-70%	5-10%, 20% mixed AD and vascular
History Onset Duration	Insidious, may present w/ depression, average 8-12 years till death	Hx of HTN, vascular disease, CAD, abrupt but may be insidious
Motor signs	Late	Balance deficits or hemiparesis
Attention	Normal	Difficulty with mental tracking
Memory	Early: trouble learning new info & retaining it	Decreased memory retrieval
Language	Aphasia, anomia, decreased verbal fluency (later)	Variable depending on lesion
Visual Spatial	Mild early and progressive	Variable, depending on lesion
Mood, Affect	Apathy, depression, personality change	Behavioral changes (e.g., irritability, labile emotions)
Executive Function	Mild early and progressive	Can be more prominent than memory loss
Treatment	Acetylcholine esterase inhibitors, Memantine, treat depression, behavioral issues / vascular risk factors	Acetylcholine esterase inhibitors, treat vascular risk factors

Compare and Contrast Types of Dementia

Disorder	Fronto-temporal Dementia	Parkinson's Disease	Lewy Body Dementia
Prevalence	5%	1 million Americans	25% at autopsy
History Onset Duration	Insidious, personality change, apathy, disinhibition	Motor signs precede dementia by years	Prominent detailed visual hallucinations; parkinsonism & dementia occur within 1-2 years of each other
Motor signs	Apractic gait, 30% have extra-pyramidal sx	Tremor, stiffness, gait changes	Parkinsonism, but tremor less prominent
Attention	Normal until late	Slowed thought process	Marked fluctuation in alertness, attention
Memory	Often normal (8% impaired)	Slowing	Mildly impaired early
Language	Impaired, fluent or non-fluent	Slowing	Slowing
Visual Spatial	Minimal problems	Impaired	Prominent visual spatial abnormality
Mood, Affect	Marked apathy, Disinhibition Personality change	>40% have depression	Daytime sleepiness
Executive Function	Abnormal, especially judgment	Slowing of thought process	Impaired
Treatment	Treat behavior, mean age at death 65	Treat Parkinson's disease; avoid Haldol	AVOID neuroleptics, USE: Acetylcholine Esterase inhibitors, Parkinsonism may be difficult to Rx

DEMENTIA ASSESSMENTS

Assessment	When to Use…
MINI-COG	-quick and accurate (99% sensitivity) Dementia screening test -if patient scores less than perfect, do SLUMS or MoCA
St. Louis University Mental Status Examination (SLUMS)	-Validated for mild cognitive impairment (MCI) and Dementia -Free and fairly quick to perform
Montreal Cognitive Assessment (MoCA©)	-Good test for patients with vascular Dementia or Parkinson's -Good test if you are concerned about driving -Good test for patients with advanced education -Does not require permission for clinical use
Mini Mental State Examination (MMSE©)	-Use for following Dementia course -Only test validated for following Alzheimer's Disease over time -copyrighted and requires usage agreement

Mini-Cog Dementia Screen

- 99% Sensitivity (Scanlan & Borson, 2001)
- **3-Item Recall**
  - Ask the patient to remember the names of 3 objects
  - 1 point for each recalled object
- **Clock Draw**
  - Ask patient to draw a large circle, fill in the numbers on a clock face and set the hands at 11:10
  - Score as **Normal** (patient indicates the correct time and clock appears grossly normal) or **Abnormal**

Scoring:

3 recalled words, normal clock	Negative for cognitive impairment	
1-2 recalled words, normal clock	Negative for cognitive impairment	
1-2 recalled words, abnormal clock	Positive for cognitive impairment	Perform SLUMS or MoCA
0 recalled words	Positive for cognitive impairment	

SLUMS Examination

1. **What day of the week is it?** (1)
2. **What is the year?** (1)
3. **What state are we in?** (1)
4. **Please remember these five objects. I will ask you what they are later.**
   Apple Pen Tie House Car
5. **You have $100 and you go to the store and buy a dozen apples for $3 and a tricycle for $20.**
   How much did you spend? (1)
   How much do you have left? (2)
6. **Please name as many animals as you can in one minute.**
   (0) 0-4 animals (1) 5-9 animals (2) 10-14 animals (3) 15+ animals
7. **What are the five objects I asked you to remember?** 1 point for each correct.
8. **I am going to give you a series of numbers and I would like you to give them to me backwards. For example, if I say 42, you would say 24.**
   (0) 87 (1) 649 (1) 8537
9. **Please draw a clock face, put in the numbers, and set the time to ten minutes past eleven.**
   (2) Hour markers okay
   (2) Time correct

10. Please place an X in the triangle. (1)

Which of the above figures is largest? (1)

11. I am going to tell you a story. Please listen carefully because afterwards, I'm going to ask you some questions about it.

Jill was a very successful stockbroker. She made a lot of money in the stock market. She then met Jack, a devastatingly handsome man. She married him and had three children. They lived in Chicago. She then stopped work and stayed at home to bring up her children. When they were teenagers, she went back to work. She and Jack lived happily ever after.

What was the female's name? (2) **What work did she do?** (2)

When did she go back to work? (2) **What state did she live in?** (2)

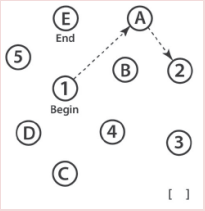
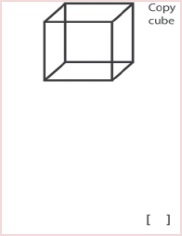
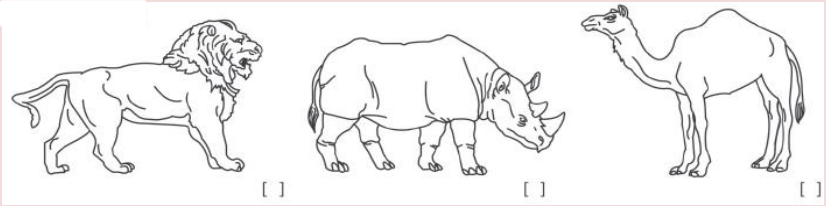
SCORING

High School Education		Less Than High School Education
27-30	Normal	25-30
21-26	MNCD*	20-24
1-20	Dementia	.1-19

*Mild Neurocognitive Disorder

(Tariq et al., 2006)

MONTREAL COGNITIVE ASSESSMENT (MoCA©)

	SCORING
VISUOSPATIAL/EXECUTIVE  (1 point for correct execution)  (1 point for correct execution)  (correct Contour: 1 point) (correct Numbers: 1 point) (correct Hands: 1 point)	__/5
NAMING 	__/3

MONTREAL COGNITIVE ASSESSMENT (MoCA©)

	SCORING
MEMORY **Read a list of words, patient must repeat them. Do 2 trials, even if 1st is successful.** **Do a recall after 5 minutes:** Face Velvet Church Daisy Red	No points
ATTENTION **Read a list of digits** *(1 digit/sec)* ***Patient has to repeat them in the forward order:*** 2 1 8 5 4	__/1
Read a list of digits *(1 digit/sec)* ***Patient has to repeat them in the forward order:*** 7 4 2	__/1
Read a list of letters. Patient must tap with his hand at each letter A: (no points if ≥2 errors) F B A C M N A A J K L B A F A K D E A A A J A M O F A A B	__/1
Serial subtraction starting at 100: (5/4 correct: 3 points; 2/3 correct: 2 points; 1 correct: 1 point) 93 86 79 72 65	__/3
LANUAGE **Repeat:** I only know that John is the one to help today The cat always hid under the couch when dogs were in the room.	__/1 __/1
Fluency / Name maximum number of words in one minute that begin with the letter F (N ≥ 11 words)	__/1
ABSTRACTION **Similarity between (e.g banana – orange = fruit):** Train – Bicycle Watch – Ruler	__/2
DELAYED RECALL (points for UNCUED only) **Patient must recall words with no cue:** Face Velvet Church Daisy Red (if unsuccessful) with category cue: (if unsuccessful) multiple choice cue:	__/5
ORIENTATION Date Month Year Day Place City	__/6

(Nasreddine et al., 2005)

Origin of Behavioral Symptoms

Environment	Process	Comfort	Neurobiology
unfamiliar	no dignity	pain	over-reactive
complex	no choices	wet	under-reactive
frustrating	no role	cold	misperception
disorienting	no intimacy	warm	misinterpret
noisy	hurried	hungry	affectively-dysregulated
busy	harried	impacted	amnestic
boring	can’t hear	reflux	
intrusive	can’t see	tired	
strangers	can’t understand	anxious	
		bad food	

Non-Pharmacological Approaches to Behavioral Symptoms in Dementia

- Attempt nonpharmacologic measures first
- Determine if there are unmet needs
- Ensure that comorbid conditions are optimally treated
- Set reasonable goal of reduction – rather than elimination – of behaviors
- Educate caregivers, and screen caregivers for burnout

Symptom	Response
Indecisiveness	-Reduce choices
Disorientation	-Provide a predictable routine -Avoid relocation -Allow patient to dress in his/her own clothing and keep possessions -Use calendar, clocks, labels, and newspapers for orientation to time -Use color-coded or graphic labels as cues for orientation in the home environment
Hallucination	-Do not be overly concerned if hallucinations are not distressing to the patient -Consider antipsychotic agents where necessary, but fully inform family/caregivers of risks/benefits
Delusions	-Redirect and distract the patient -Consider using antipsychotic medications, but fully inform family/caregivers of risks/benefits
Repetitiveness	-Answer decisively, then distract
Lack of motivation	-Ensure tasks are simple so the patient can complete them; break up complex tasks into smaller steps -Before performing procedures/activities, explain to the patient in simple language
Wandering	-Register the patient in the Alzheimer's Association Safe Return Program -Secure environment with complex handles; Equip doors and gates with safety locks -Inform neighbors
Agitation	-Use distraction and redirection of activities to divert patient from problematic situations -Reduce excess stimulation and outings to crowded places -Use lighting to reduce confusion and restlessness at night -Avoid glare from windows and mirrors, noise from a television, and household clutter
Accident-prone	-Provide a safe environment (no sharp-edged furniture, no slippery floors or throw rugs, no obtrusive electrical cords) -Install grab bars by the toilet and in the shower

(Sadowski & Galcin, 2012; Raetz, 2013)

Symptomatic Approach to Behaviors in Dementia: Targeting Symptoms

Responsive to Rx

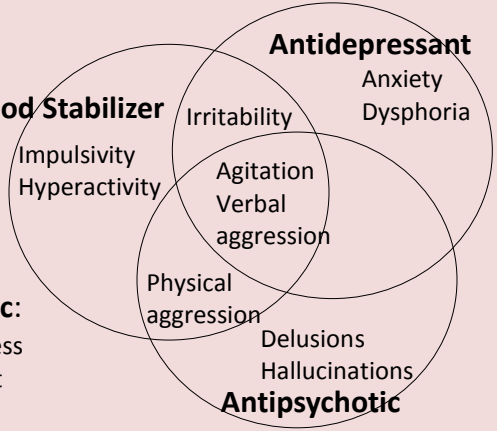
- Anxiety
- Irritability / anger
- Delusions
- Hallucinations
- Insomnia / parasomnia
- Agitation / aggression
- Hyperactivity
- Dysphoria
- Apathy

Less Responsive to Rx

- Perseverative yelling
- Pacing
- Exit seeking
- Wandering
- Disrobing
- Sundowning
- Sexual impulsivity

Symptomatic Approach to Behaviors in Dementia: Medications

- *Attempt nonpharmacologic measures first!*



Dietary Supplement:
(Melatonin)

REM
Sleep
behavior

Cholinesterase Inhibitor:

Apathy
Hallucinations
Misperceptions
Confusion
Inattention

Analgesic:

Restlessness
Calling out
Grimacing
Combative

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