Medical Illnesses in Geriatric Mental Health & Substance Abuse: The Wisconsin “Star” Method

Tim Howell MD, MA
University of Wisconsin: Department of Psychiatry
Madison VA Hospital: MHSL, GRECC

October 2006
Geriatrics: Challenges to Usual Clinical Approaches

• Problems in the elderly are often:
  – Multifactorial & interacting
  – Characterized by unusual presentations
  – Colored by each individual’s unique personality, history of experiences, & values
  – Changing over time

• Risks for coming to premature closure:
  – Degrees of clinical complexity: sometimes daunting
  – Incomplete clinical information
  – Higher levels of ambiguity:
    • Re diagnosis, treatment (e.g. trade-offs), & prognosis
  – Common approaches to thinking/addressing problems: “either/or”
    • Linear: rigorous, but overly focused (“trees” vs. “forest”)
    • Holistic: broader, but diffuse (“forest” vs. “trees”)

• Need for an integrated ecological approach: “both/and”
Ecology: Interacting Individuals & Interacting Systems

- Individual:
  - Atoms, molecules
  - Cells, organs
  - Organisms, groups
  - Organizations

- Systems:
  - Solutions
  - Metabolic pathways
  - Executive functions
  - Ideas, values
  - Social networks
  - Cultures
Ecological Levels in Geriatrics

- Environmental
- Political
- Social
- Family
- Personal
- Physiological
- Metabolic
- Biochemical
- Physical
Understanding & Addressing Geriatric Problems: The Wisconsin “Star” Method

- Medication Issues
- Social Issues
- Personal Issues (Personality)
- Psychiatric Issues
- Medical Issues

Symptom, Problem
**Social Issues**: Expected changes: loss of people, roles, independence
Retirement: freedom/boredom
Finances; Housing
Transportation; Legal
Access to services
Assets/strengths

**Personality/personal issues**: Stable personality— if this changes, think disease
Unique mix of traits
Coping- flexibility vs. rigidity
Personal/cultural values re: life, aging, illness, functional decline, mortality, religion
Developmental- integrity vs. despair; meaning

**Normal Aging**

**Medication Issues**: Multiple meds/providers & interactions
Adherence: reliable use; OTC;
left over/saved; borrowed
Effects on brain function

**Medical Issues**: Varied rates of decline in organ function
Functional impairments
Chronic illnesses
Excess impairment
Atypical symptoms
Diagnostic/prognostic ambiguities
Young-old vs. old-old

**Psychiatric Issues**: Cognition: reduced speed; harder to learn/multi-task but good retention
Not normal-- significant memory loss sustained low mood
Drug Interactions (DI)

- Pharmacodynamic: e.g. cumulative effects of multiple drugs with anticholinergic, antihistaminic properties
- Pharmacokinetic: e.g. increase or decrease in metabolism of active drug
- DI potential among antidepressants:
  - Low: citalopram, sertraline, bupropion, mirtazapine, trazodone
  - High: nefazodone, paroxetine, fluvoxamine, fluoxetine
**Depression**

**Social issues:**
- Retirement
- Family role change
- Unexpected losses: spouse, offspring, sibs, friends, pets
- Physical disability - loss of usual way to cope, find meaning

**Personality/personal issues:**
- Personality - rigid; guilt/shame
- Hopeless/helpless/worthless - loss of meaning, source of self-esteem: autonomy, skill, control, strength, sexuality, appearance, relationship, job, money, etc.

**Psychiatric issues:**
- Mood disorders: depression, mania
- Atypical symptoms: denial, irritability, anxiety, physical symptoms (e.g. GI, pain)
- Dementia/Delirium/Anxiety/Psychosis
- Suicide risk: highest - lone, older white men

**Medication Issues:**
- Alcohol, caffeine, sedatives, steroids
- Cardiac drugs, antihistamines
- Anticonvulsants, antihypertensives, Anti-parkinson’s, chemotherapy

**Medical Issues:**
- D-dementias, drugs
- E-eye/ear
- M-metabolic, meds
- E-endocrine, epilepsy
- N-nutrition, neurological
- T-trauma, toxic, tumor
- I-infection, immunologic
- A- atherosclerosis (strokes) (sleep) apnea, alcohol
Late-life Depression: Costs

- Dysphoria- suffering
- Physical symptoms
- Amplification of dysfunction- disability
- Quality of life
- Utilization of healthcare resources
- Medical mortality
- Suicide
Late-life Depression: Psychiatric Morbidity

• Increased use of alcohol, sedatives

• Reduced cognitive function
  – impaired attention, memory, executive function
  – slowed mental processing
  – “depressive pseudodementia”
  – excess impairment in dementia & stroke

• Increased risk (x 2) of suicide

• Increased caregiver burdens
  – Family
  – Staff (e.g. LTC settings)
Late-life Depression: Medical Morbidity & Mortality

• ↓ adherence (x 3) to medical regimens:
  – Appointments, medications
  – Exercise, diet, vaccinations

• ↑ (x 1.5-2.5) risk of coronary artery disease

• ↑ (x 4.6) post-MI mortality:
  – Greater with recurrent depression
Late-life Depression & Medical Morbidity/Mortality: Possible Mechanisms

- Neuroendocrine:
  - autonomic function
  - hypothalamic pituitary adrenal (HPA) axis
- Increased platelet activation (aggregation)
- Endothelial dysfunction
- ↓ Beat-to-beat variability of heart rate
- ↓ Adherence to regimens
- Lifestyle factors, including smoking
Depression & Diabetes

• With diabetes:
  – $\uparrow$ (x 2) risk of depression
  – Men 18%; women 28%

• With depression:
  – $\uparrow$ risk of hyperglycemia
  – $\uparrow$ risk of complications of diabetes
Suicide in US: 65+ Years Old

• Rates:
  (per 100,000 population)

  • Men
    – White- 44
    – Non-white- 16

  • Women
    – White- 6
    – Non-white- 3

• Other Risk Factors:

  • Increasing age- for men (≥80 highest)
  • Depression
  • Psychotic depression
  • Substance abuse
  • Recent loss
  • Recent disability
  • Chronic pain
Vascular Depression Hypothesis

- **Cerebrovascular disease**: (CVD) may predispose, precipitate, or perpetuate depression (hypothesis)
- **Supporting evidence:**
  - Co-morbidity: depression w/ CVD & risk factors
  - Pts w/ ischemic lesions (vs. those w/o):
    - Greater overall cognitive impairment: fluency, naming
    - More apathy, psychomotor retardation
    - Less agitation, guilt, insight
- **Mechanism**: ? cumulative disruption of--
  - prefrontal cortical systems
  - their modulating pathways
Depression-Executive Function Syndrome

- Frontostriatal-limbic dysfunction
- Psychomotor retardation
- Decreased interest in activities
- Suspiciousness
- Impairment in IADL’s
- Biological symptoms fewer, less intense
- Poor/slow response to TCA’s, SSRI’s
Chronic Pain

- Acute pain: anxiety (e.g. angina, fracture)
- Chronic pain (> 6 months; e.g. arthritis, cancer)
  - Anxiety
  - Depression: 70% prevalence; risk factor for suicide
  - Insomnia
- Susceptibility factors:
  - Genetic
  - Context: meaning
  - Cultural
- Requires recognition (5th vital sign) & assertive treatment
- Analgesics: non-narcotic & narcotic; regular schedule (vs. prn)
- Antidepressants: TCA’s, SNRI’s, SSRI’s (even without depression)
- Anticonvulsants: e.g. carbamazepine, gabapentin
- Treatments may have psychiatric side effects (trade-offs)
**Cognitive Impairment:**
Memory, Executive Function

**Social Issues:**
Stressors
Caregiver support
DPOAHC

**Medication Issues:**
Antihistamines/anticholinergics
Antipsychotics- typical/low-potency
Antidepressants; Steroids
Sedatives/hypnotics- BZ, OTC’s
GI- cimetidine, antispasmodics

**Psychiatric Issues:**
Dementia; Delirium; Depression; Psychosis
Personality changes- “LAPD”
Labile moods: sudden, disproportionate
Apathy (Amotivation); Aggression
Paranoia- suspiciousness
Disinhibition- catastrophic reactions
Agitation; Sundowning; Wandering
Reckless/careless/“sexual” behaviors

**Personality/personal issues:**
Prior intelligence/knowledge/skills
Previous personality/attitudes
Advanced directives

**Medical issues:**
D- dementias, drugs
E- eye/ear may aggravate
M- metabolic, meds
E- endocrine, epilepsy
N- nutrition, neurological
T- trauma, toxicity, tumor
I- infection, immunologic
A- atherosclerosis: strokes, (sleep) apnea, alcohol

**Medical issues:**
D- dementias, drugs
E- eye/ear may aggravate
M- metabolic, meds
E- endocrine, epilepsy
N- nutrition, neurological
T- trauma, toxicity, tumor
I- infection, immunologic
A- atherosclerosis: strokes, (sleep) apnea, alcohol
Executive Functions

- Attention: response inhibition
- Memory: working memory
- Planning: sense of the future, abstract thinking
- Implementing plans: decide/start/sustain/stop
- Set-shifting: flexibility
- Organization: categorizing, sequencing
- Multi-tasking
- Insight: awareness of self & others, judgment
- Problem-solving: new (vs. familiar/learned)
DSM-IV Diagnostic Criteria for Dementia

- Multiple cognitive deficits: memory impairment and one or more:
  - disturbed executive fx, aphasia, apraxia, agnosia
- Cognitive deficits result in decline in function (fx)
- For Alzheimer’s: gradual onset, continuing decline, other diagnoses excluded, not substance-induced
- For Vascular: focal symptoms/signs or lab evidence
- For general medical: direct result of other condition (e.g. Parkinson’s)
Screening for Executive Function: The Clock Drawing Test
Cognitive Impairment: Executive Dysfunction with Intact Memory

Draw a clock!

Patient
- Male, 75 years old
- MMSE = 28 points

Diagnosis
- Definite AD
  (4 years after the drawing)
Symptom Complexes of BPSD

Psychosis
Depression
Altered circadian rhythms
Anxiety
Agitation
**Agitation**

**Social/Environmental Issues:**
- Stressors: interpersonal
- Noise, temp, relocation,
- High/low stimulation
- Clothing/shoe fit
- Caregiver support

**Medical Issues:**
- D- dementias, drugs
- E- eye/ear may aggravate
- M- metabolic, meds
- E- endocrine, epilepsy
- N- nutrition, neurological
- T- trauma, toxic, tumor
- I- infection, immunologic
- A- atherosclerosis: strokes, apnea, alcohol

**Medication Issues:**
- Antihistamines/anticholinergics
- Antipsychotics- typical/low-potency
- Antidepressants- tricyclics; Steroids
- Sedatives/hypnotics- BZ, OTC’s
- GI- cimetidene, antispasmodics

**Psychiatric Issues:**
- Anxiety; Dementia;
- Delirium; Depression; Psychosis; PTSD
- Personality change- “LAPD”
  - Labile mood
  - Aggression
  - Paranoia- suspiciousness
  - Disinhibition- catastrophic reactions
- Sundowning; Wandering;
- Sexually inappropriate behavior

**Personality/personal issues:**
- Premorbid intelligence/knowledge/skills
- Premorbid personality/attitudes
- Boredom
- Exercise
- Meaning
Atypical Antipsychotics in BPSD: Risk of Cerebrovascular Adverse Events (CVAE)-1

• Atypical antipsychotics for BPSD:
  – Use is widely-endorsed by experts
  – Best studied class of treatments for BPSD
  – Have less severe adverse side effects than typical antipsychotics
  – First choice for psychotic symptoms in dementia
  – Alternate choice for other forms of BPSD (per some experts)
Atypical Antipsychotics in BPSD: Risk of Cerebrovascular Adverse Events (CVAE)-2

• Warnings about possible links with CVAE
  – 2002: Health Canada: risperidone (4% vs. 2%)
  – 2003: US FDA: risperidone
  – 2004: pooled data: 3X risk-risperidone/olanzapine
  – 2004: UK Committee on Safety of Medications: warning to discontinue both for BPSD, switch to other Rx’s

• ? Risks of quetiapine, aripiprazole
• ? Risks of typical antipsychotics
Retrospective cohort study (population based) 
SS Gill, PA Rochon, N Hermann, et. al BMJ 2005

• Older adults (65+) w/ dementia newly Rx’d w/ antipsychotic (Ontario, Canada): N=32,710
• Studied prior to issuance of warnings (4/97-3/02)
• Atypical: N=17,845  Typical: N=14,865
• Outcome measure: hosp adm- ischemic CVA
• Excluded: 
  – pts on other psychotropic meds, or switched between antipsychotics
  – Pts w/ other co-morbid psychotic disorders (e.g. schizophrenia)
Retrospective cohort study (population based)
SS Gill, PA Rochon, N Hermann, et. al BMJ 2005

• Controlled for:
  – Age, sex, low income, LTC placement, freq of medical contact
  – H/o CVA, A fib, DM, MI in past 3 mos, CHF, burden from comorbid disease
  – Meds: antiplatelet, warfarin, BP, ACE inhibitors, lipid lowering, diabetic, HRT

• Atypicals: Risp: 75.7%; Olanz: 19.4%; Quet: 4.9%

• Typicals: high potency 57.1%; low potency 42.9%
Retrospective cohort study
BMJ 2005: Results

• Results: atypical vs. typical antipsychotic
  – Adjusted hazard ratio: 1.01,
  – 95% confidence interval: 0.81 to 1.26

• Adjusted hazard ratios:
  – Risperidone: 1.04 (0.82-1.31)
  – Olanzapine: 0.91 (0.62-1.32)
  – Quetiapine: 0.78 (0.38-1.57)
Retrospective cohort study
BMJ 2005: Recommendations

• In BPSD, rule out medical problems, meds predisposing to delirium
• Initially consider non-pharmacological interventions
• Tailor pharmacotherapy to individual pt
• Weigh other potential SE’s of Rx:
  – EPSE, TD, falls, sedation, etc.
Delirium Also Known As…

- acute confusional state
- acute mental status change
- altered mental status
- organic brain syndrome
- reversible dementia
- toxic or metabolic encephalopathy
Associated with Delirium:

• 1/3 of older patients presenting to the ER
• 1/3 of inpatients aged 70+ on general medical units, half of whom are delirious on admission
• A 10-fold risk of death in hospital
• A 3- to 5-fold ↑ risk of in-hospital complications, prolonged stay, NH placement
• Poor functional recovery and ↑ risk of death up to 2 years following discharge
• Persistence of delirium → poor long-term outcomes
Delirium: Various Forms

- Hyperactive or agitated delirium
  - harder to miss
- Hypoactive ("quiet") delirium
  - less recognized/appropriately treated
- Mixed
- Additional features: emotional symptoms, psychotic symptoms, "sundowning"
Delirium: DSM-IV Diagnostic Criteria

- Disturbance of consciousness: reduced ability to focus, sustain, or shift attention
- Change in cognition (e.g. memory, orientation, or language disturbance) or a perceptual disturbance; not due to pre-existing dementia
- Development over a short time (hours to days) and fluctuation during the day
- By history, physical, or labs: disturbance is directly attributable to a medical condition
Diagnosing Delirium

• Under-recognition is a major problem
  – nurses recognize & document < 50%
  – physicians recognize/document 20%
• DSM-IV criteria precise but difficult to apply
• Confusion Assessment Method (CAM)
  – clinically more useful
  – >95% sensitivity and specificity
Delirium: Predisposing Factors

- Advanced age
- Dementia
- Functional impairment in ADL’s
- Medical co-morbidity
- History of alcohol abuse
- Male sex
- Sensory impairment (↓vision, ↓hearing)
Delirium: Precipitating Factors

- Cardiac events
- Pulmonary events
- Bed rest
- Drug withdrawal (sedatives, alcohol)
- Fecal impaction
- Fluid or electrolyte disturbances
- Indwelling devices

- Infections (esp. respiratory, urinary)
- Medications
- Restraints
- Severe anemia
- Uncontrolled pain
- Urinary retention
Evaluation of Delirium: History & Physical

- History:
  - Focus on time course of cognitive changes, esp. association w/ other symptoms, events
  - Med review, incl. OTC drugs, alcohol

- Physical examination (PE):
  - Vital signs
  - General medical evaluation
  - Neurologic and mental status examination
Evaluation of Delirium: Lab Testing

- Based on history and physical
- CBC, electrolytes, renal function tests
- Helpful: UA, LFT’s, serum drug levels, arterial blood gases, chest x-ray, ECG, cultures (sputum, urine, blood)
- Neuroimaging less helpful, except with head trauma or new focal neurologic findings
- EEG & CSF rarely helpful, unless associated seizure activity or signs of meningitis
Delirium: Keys to Management

• Requires interdisciplinary effort by MDs, nurses, case coordinators, family, others--“ad hoc team”
• Multifactorial approach is most successful because multiple factors contribute to delirium
• Failure to diagnose and manage delirium → costly, life-threatening complications, loss of function
Management of Delirium: General Principles

• Treat the underlying disease(s)
• Address contributing factors
• To avoid complications of delirium:
  - remove indwelling devices ASAP
  - prevent/treat constipation, urinary retention
  - encourage sleep hygiene, avoid sedatives
• Optimize medication regimen
Management of Delirium: Reduce Needless Drugs

- Alcohol
- Antibiotics
- Anticholinergics
- Anticonvulsants
- Antidepressants
- Antihistamines
- Antiparkinsonians
- Antipsychotics
- Barbiturates
- Benzodiazepines
- Chlortal hydrate
- H₂-blocking agents
- Lithium
- Opioid analgesics (esp. meperidine)
Special Concerns in Psychiatric Patients (1)

**Neuroleptic Malignant Syndrome**
- Antipsychotic Side Effect
- Confusion
- Muscle rigidity
- Pallor/flushing (BP)
- Fever; sweating
- Tremulousness
- $^{\uparrow}$HR, RR
- Labs: $^{\uparrow}$CPK, WBC, LFT; myoglobinuria

**Serotonin syndrome**
- Excessive serotonin: usually due to drug interactions
- Fever: variable
- Hypomania; restlessness
- Shivering/chattering
- Confusion
- Tremulousness
- $^{\uparrow}$reflexes/myoclonus
- Diarrhea
- Labs: nonspecific
Special Concerns in Psychiatric Patients (2)

**Anticholinergic Delirium**
- Usually due to additive effects of multiple drugs:
  - Antipsychotics- low potency
  - Antidepressants- tricyclic
  - Antiparkinson- e.g. Cogentin
- Confusion; Fever; ↑ HR
- Dilated, sluggish pupils
- Dry skin; ↓ sweating
- Constipation; Urinary retention
- Labs: nonspecific

**“Anticholinergicity”**
- Lasix 0.22
- digoxin 0.25
- theophylline 0.44
- Warfarin 0.12
- isosorbide 0.15
- codeine 0.11
- cimetidine 0.86
- ranitidine 0.22
- propranolol 0.00

ng/ml atropine equivalents
## Special Concerns in Psychiatric Patients (3)

### Lithium Toxicity
- Elderly more susceptible: ↑sensitivity; drug interactions, esp. Li & NSAID’s
- Confusion; Restlessness
- Nausea, vomiting, diarrhea
- Tremor: fine → coarse
- Unsteady gait; ↑ reflexes
- Muscle rigidity (EPS-like)
- Slurred speech; Incontinence
- Seizures; Stupor->Coma
- Labs: ↑ WBC

### Alcohol Withdrawal
- Often overlooked w/ older adults
- Usually within one week of reducing/discontinuing alcohol
- Tremor: coarse
- Nausea, vomiting
- Malaise, weakness
- ↑ HR, ↑ BP
- Sweating
- Anxiety; irritability
- Confusion
- Hallucinations
- Labs: nonspecific
Alcohol Amnestic Disorder: A Neuropsychiatric Emergency

- Wernicke’s encephalopathy (acute)
  - Ataxia (unsteady gait)
  - Nystagmus (abnormal eye movement)
  - Amnesia: anterograde - unable to learn/retain new information
  - Rx: thiamine by IM or IV

- Korsakoff’s psychosis (chronic)
  - Persistent anterograde amnesia (40% confabulate)
  - Preventable if thiamine administered promptly
Cognitive Impairment & Diabetes

• ↑ risk of macrovascular disease:
  – Coronary artery disease (CAD), stroke
• ↑ risk of microvascular disease:
  – Retinopathy, kidney disease, peripheral neuropathy
• ↑ risk (x 2) of cognitive decline:
  – Cerebrovascular disease (macro/micro)
  – Alzheimer’s disease (synergy)
Psychosis

Social issues:
- Single: never married, divorced, widowed
- Social isolation: living alone, poor relationship with caregiver, no children/friends
- Lower social class

Personal/personality issues:
- “Eccentric”
- Suspicious

Medical issues:
- D- dementias, drugs
- E- eye/ear may predispose
- M- metabolic, meds
- E- endocrine, epilepsy
- N- nutrition, neurological
- T- trauma, toxic, tumor
- I- infection, immunologic
- A- atherosclerosis (strokes), (sleep) apnea, alcohol

Psychiatric issues:
- Dementias
- Affective disorders: depression
- Delirium
- Affective disorders: mania
- Schizophrenia: early-/late-onset
- Delusional disorder

Medication Issues:
- Analgesics; anticholinergic; digoxin
- Antiparkinsons; steroids; cimetidine
- Sedatives, hypnotics, stimulants
- Antihistamines, anticonvulsants
Schizophrenia, Metabolic Syndrome, & Atypical Antipsychotics

• ↑ prevalence of obesity & diabetes in schizophrenia prior to introduction of atypicals
  – Attributed to poor diet, lack of exercise, high rates of smoking

• Metabolic syndrome-- co-occurrence of:
  – Obesity, insulin resistance, dyslipidemia, hypertension, atherosclerosis (CAD)
Metabolic Syndrome: Criteria

- Abdominal obesity-- waist circumference:
  - Men: > 40 inches
  - Women: > 35 inch waist
- Fasting triglycerides: > 150 mg/dl
- High density lipoprotein (HDL)
  - Men: <40 mg/dl
  - Women: <50 mg/dl
- Blood pressure: >130/>85 or on Rx
- Fasting glucose: >110 mg/dl, or on Rx
Glucose Regulation, Diabetes, Adiposity, & Dyslipidemia- 1

- Pancreas secretes insulin
- Insulin acts on receptors:
  - in muscle, stimulates glucose uptake
  - in liver, inhibits glucose production
  - in fat, inhibits lipid breakdown & release of free fatty acids (FFA)
- Type 2 diabetes: usual onset > 45 years old
  - Inadequate insulin secretion
  - Insulin resistance: ↓ effect of insulin on receptors
Glucose Regulation, Diabetes, Adiposity, & Dyslipidemia- 2

• Early in Type 2 diabetes, with ↑ insulin resistance:
  – compensatory ↑ in pancreatic secretion of insulin
  – ↑ fasting triglycerides
  – ↓ HDL cholesterol
  – ↑ LDL cholesterol

• After 7-10 years of Type 2 diabetes:
  – ↓ secretion of insulin (pancreatic “burnout”)
  – dysregulation (disinhibition) of liver glucose production
  – ↑ fasting blood glucose (prediabetes > 100-125; diabetes >125)
  – dysregulation (disinhibition) of lipid breakdown in fat, w/ ↑ release of free fatty acids (i.e. dyslipidemia)
Glucose Regulation, Diabetes, Adiposity, & Dyslipidemia - 3

• Dysregulation of insulin secretion, liver glucose production, & lipid breakdown:
  – ↑ vulnerability to physiological stress
  – ↑ risk of severe hyperglycemia
  – ↑ risk of pancreatic “shutdown”
  – ↑ risk of diabetic ketoacidosis

• Insulin resistance & type 2 diabetes:
  – Occur in context of overweight & obesity (esp abdominal adiposity)
  – Variability: 70% genetic; 30% adiposity & fitness
  – Can sometimes occur in absence of excessive weight
Metabolic Syndrome & Coronary Artery Disease

• ↑ risk (25-50%) of CAD in men:
  – w/ 3 criteria: 31%
  – w/ 4-5 criteria: 41%

• Risk of CAD w/ diabetes: 20%

• Other risk factors for CAD:
  – ↑ LDL cholesterol
  – Tobacco smoking
  – Family history of premature CAD
  – Age: men >45 y/o; women > 55 y/o
Schizophrenia & Metabolic Syndrome: Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE)

- Prevalence of metabolic syndrome: 43%
  - Waist circumference: 39%
  - Hypertension: 46%
  - ↑ triglycerides: 58%
  - ↓ HDL cholesterol: 55%
  - Glucose > 100: 27%

- Odds ratio vs. controls:
  - Men: x 2.3
  - Women: x 3.2
Atypical Antipsychotics & Weight Gain

- Most: clozapine, olanzapine
- Intermediate: quetiapine, risperidone
- Least: ziprasidone, aripiprazole
- Possible mechanisms:
  - Appetite stimulation
  - Increased caloric intake: \(3\% \times 1 \text{ yr} = 10\#\)
  - Reduced physical activity
  - Impaired metabolic regulation:
    - \(?\) Effects via serotonin, norepinephrine, & histamine
Atypical Antipsychotics & Metabolic Syndrome

- Association w/ weight gain/adiposity
  - Correlates w/ antihistaminic & anticholinergic effects
- Non-association w/ weight gain:
  - Medication-associated insulin resistance
  - Alteration in insulin secretion and/or sensitivity
- Reduction in insulin sensitivity
  - Alterations of gene products in insulin signaling pathway
  - ↑ circulating factors that alter insulin signaling
  - ? impairment of glucose transporters regulated by insulin
Management of Metabolic Syndrome

• Diet: ↓ saturated fats & cholesterol in diet; ↑ fiber
• ↓ Weight (by 1-2#/wk) & ↑ Physical activity
• For elevated LDL cholesterol:
  – Statins; bile acid binders; nicotinic/fibric acids
• For ↑ BP: antihypertensive medication
• For insulin resistance: metformin, thiazolidenidiones
• For prevention of MI, CVA: aspirin
• Monitor wt/ht; waist, BP, FBS, lipid profile
• Consider change in Rx for weight gain >5%
Sleep-Disordered Breathing: Sleep Apnea

- Repetitive cessation of breathing while asleep
- Symptoms:
  - Apneas/hr: mild (5-15), moderate (16-30), severe (>30)
  - Snoring (associated with multiple arousals during sleep)
  - Excessive daytime sleepiness (EDS)
  - Risk factors: obesity, age, male, oropharyngeal anatomy, dementia
- Central and/or obstructive (OSA) forms
Sleep-Disordered Breathing: Sleep Apnea

- Can exacerbate/cause depression, insomnia, cognitive impairment
- In schizophrenia: ↑ weight associated w/ ↑ OSA
- Can be exacerbated by:
  - Hypnotics for insomnia: benzodiazepines
  - Alcohol
  - Mechanisms: relaxation of oropharyngeal muscle, blunting normal response to ↓ O₂ & ↑ CO₂
Social issues:
More free time to use
Norms for drinking:
- different communities
- peer pressures
Changes in relationships
Grief, boredom
Undue pessimism

Personality/personal issues:
Norms for drinking at different ages
Prior use of illicit drugs
Underreporting
Denial/minimization
Guilt/shame/hopelessness

Medication Issues:
Narcotic analgesics; hypnotics
Sedatives; stimulants
Interactions with Rx, over-the-counter (OTC) meds

Medical Issues:
Chronic pain
Chronic fatigue
Chronic insomnia
Decreased tolerance, falls
Mimic other illnesses
Excess impairment

Psychiatric Issues:
Chronic anxiety
Recurrent depression, mania
Cognitive impairment-secondary
Alcohol: early- vs. late-onset
Nicotine; Caffeine; Narcotics
Increased rate of spontaneous remission

Substance Abuse/Misuse
**Personality Styles & Disorders**

**Medication Issues:**
Adherence to Rx-poor/ambivalent/good, overuse/underutilization

**Social issues:**
Interpersonal relations
Communication
Conflict resolution
Increasing dependence on others
Role reversals
Caregiver stress:
  - instrumental
  - protective

**Personality/personal issues:**
Flexibility/inflexibility:
  - defensive/aggressive
  - self-consciousness
  - open/closed to experience
  - trust/suspicion
  - concern for others/self
  - compliant/defiant; control
  - conscientiousness

**Psychiatric issues:**
Coping with:
  - age-related cognitive changes
  - psychiatric disorders: acute, chronic

**Medical issues:**
Coping with:
  - age-related frailty
  - illnesses: acute, chronic
  - impairments/disability
  - pain/suffering, mortality
Personality Change: A Visual Analogue
The Art of Carolus Horn
www.alzheimer-insights.com/insights/vol6no2/vol6no2_ind.htm
Non-compliance

Medication Issues:
Non-adherence to Rx:
- poor/ambivalent,
- overuse/underutilization

Social issues:
Coping with interpersonal conflicts:
- family/marital issues
- financial/work issues
- social expectations
- cultural/religious demands
- sexual problems
- role reversals
- caregiver stress:
  - instrumental
  - protective

Personality/personal issues:
Self-image/existential problems
Coping with internal conflicts
Coping styles:
  intellectualize, suppress/deny, distract,
  minimize, self-blame, withdraw,
  disown (externalize), resign,
  "dissolve" (e.g. in alcohol, drugs),
  vs.
  redefine, share, comply, address, negotiate

Medical issues:
Coping with:
- increased dependence
- age-related frailty
- illnesses: acute, chronic
- impairments/disability
- pain/suffering, mortality

Psychiatric issues:
Anxiety, Substance abuse (alcohol),
Executive dysfunction w/ intact memory
Coping with:
- age-related cognitive changes
- psychiatric disorders: acute, chronic
Social issues:
- financial: poverty
- social: isolation, hostile neighborhood
- loss of significant other
- legal: burden of proof re incapacity to live alone
- caregiving: increasing need for “coaching” (prompts, supervision, assistance)

Medication Issues:
Adherence to Rx-poor/ambivalent, overuse/underutilization

Self-neglect: squalor, homelessness

Personality/personal issues:
Values: independence, self-reliance
Cohort: Great Depression
Coping styles: less effective
Traits: too rigid, too flexible
- autonomy, suspiciousness
- openness to experience (change)
- responsibility (guilt/shame)
Schizoid, schizotypal, OCPD

Medical issues:
- increased dependence
- age-related frailty
- illnesses: acute, chronic
- impairments/disability: ADL’s, IADL’s
- chronic pain, falls

Psychiatric issues:
Executive dysfunction: self-monitor, plan, initiate/sustain effort for IADL’s, ADL’s
Psychosis: schizophrenia, delusional disorder
Mood disorder: depression, mania
Bereavement/grief: protracted, complicated
Addiction: alcohol
Hoarding
Self-neglect: hoarding

Social issues:
- financial: poverty
- social: isolation
- cultural: acquisitiveness, mail order solicitations
- loss of significant other
- legal: burden of proof re incapacity to live alone
- caregiving: increasing need for “coaching” (prompts, supervision, assistance)

Medication Issues:
Adherence to Rx-poor/ambivalent, overuse/underutilization

Personality/personal issues:
Values: overly sentimental, thrifty, practical, independent
Cohort: Great Depression
Coping styles: less effective
Traits: too rigid, too flexible
- autonomy, control
- openness to experience (change)
- responsibility (guilt/shame)
Schizoid, schizotypal, OCPD

Psychiatric issues:
Anxiety: OCD (w/ less insight, resistance)
Addiction: alcohol, ? shopping
Executive dysfunction: “CHF”
Psychosis: schizophrenia, delusional disorder
Mood disorder: depression (mania)
Bereavement/grief: protracted, complicated
Developmental disorders: Asperger’s

Medical issues:
- increased dependence
- age-related frailty
- illnesses: acute, chronic
- impairments/disability: ADL’s, IADL’s
- chronic pain, falls
Medication Issues:
Primary Care Providers
Pharmacist; Visiting Nurse
Caregivers- adherence to Rx

Social issues:
Family
Friends
Social Worker
Case Manager
Attorney
Banker
Clergy
I-team

Medical issues:
Internal/Family Medicine
Dentist; RN; NP; PA; PT;
OT; RD; Speech

Personality/personal issues:
Patient
Family- immediate, extended
Friends
Neighbors
Clergy

Psychiatric issues:
Psychiatrist- geriatric, general
Psychologist- geriatric, general
RN/NP/CNS- geriatric, general
**Mr. B’s Problems**

**Medication issues:**
- Furosemide
- Lisinopril
- Carbi/levo-dopa
- Ibuprofen

**Social issues:**
- Social withdrawal
- Marginal finances
- Spouse in wheelchair
- Supportive granddaughter off to college

**Medical issues:**
- Hypertension
- Congestive heart failure
- Parkinson’s disease w/ frequent falls
- Arthritis

**Personality/personal issues:**
- 67 years old, retired bus driver
- Worried about appearance: won’t use walker
- Coped through activity—fishing, hunting
- Very loyal to family— as provider

**Psychiatric issues:**
- Depressive disorder w/ anxiety
- Memory problems—mild
- Visual hallucinations
- Decreased ability to manage affairs
- Low motivation/initiative
Ms. A’s Problems

Medication issues:
? Self-medicating with over-the-counter meds, EtOH

Social issues:
Widowed
Estranged from children
Living alone in squalor
Marginal finances
Support- none
Multiple calls to 911

Medical issues:
Hypertension
Osteoarthritis
Osteoporosis
History of falls
Malnutrition
Family history of sister with Alzheimer’s disease

Personality/personal issues:
81 years old
Retired music teacher
“Fussy”
“Stubborn”
Independent

Psychiatric issues:
Delusions of intruders poisoning her
Hallucinations- visual & musical
Memory problems- mild
Irritability, aggression w/ cares
Summary- Assessment

• Problems in the elderly are often:
  – Multifactorial, interacting, initially daunting
  – Characterized by unusual presentations
  – Colored by each individual’s unique personality & history of experiences

• Avoid coming to premature closure
  – Cultivate a higher tolerance of ambiguities re diagnosis, treatment (trade-offs), & prognosis
  – Seek input from collateral sources of information
  – Keep re-assessing, especially as situations change
Summary- Approach

• Build & maintain a therapeutic alliance:
  – Adjust approach according to each patient-partner’s individual cognitive and personality style, history, current abilities/disabilities

• Nurture empathy:
  – discover/share some things in common
  – appeal to, build on patient-partner’s strengths/assets
  – facilitate grieving of irretrievable losses-- “don’t just do something, be there”
Summary- Interventions

- Take an integrated ecological approach:
  - Attend to factors in all 5 domains (holistic perspective)
  - Attend to how these factors interact (ecological perspective)
  - Readjust goals as situations evolve
  - Look for vicious cycles; try to establish virtuous cycles via specific interventions (linear perspective)
  - Remember that even small improvements can make big differences in quality of life
  - Try to set up ad hoc teams with members supporting each other as well as the patient-partner
  - Use analogous approaches to address larger systems issues

- Remember the STAR!!*

*D Krahn
### Medication Issues
- Prof Organizations: RPh, PharmD
- Pharmacies & Associations
- Pharmaceutical companies

### Social issues
- SW, Case Managers
- Attorneys, Bankers
- Insurance Co’s
- Public/Private Co’s
- Govt-- Municipal, County, State:
  - Executive Agencies,
  - Legislature & Judiciary
    - (Policies)
- Medicaid, Medicare

### Medical issues
- Prof Orgs: MD, RN/NP/CNS, PA, DDS, PT, OT, RD, Speech
- Clinics, Hospitals, LTCFs, HMOs & Associations

### Psychiatric issues
- Prof Organizations: Psychiatrists
- Psychologists
- RN/NP/CNS, SW

### Personal issues
- Patient & Family Organizations: e.g. Alzh Assoc, NAMI, AA
- Clergy, Dioceses, Associations

### Systemic Problem

---

- **Systemic Problem**
Figure 1 – Scattered Fragments
Figure 3 – Multi-Hub Small World Network
Figure 4 – Core/Periphery Network