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

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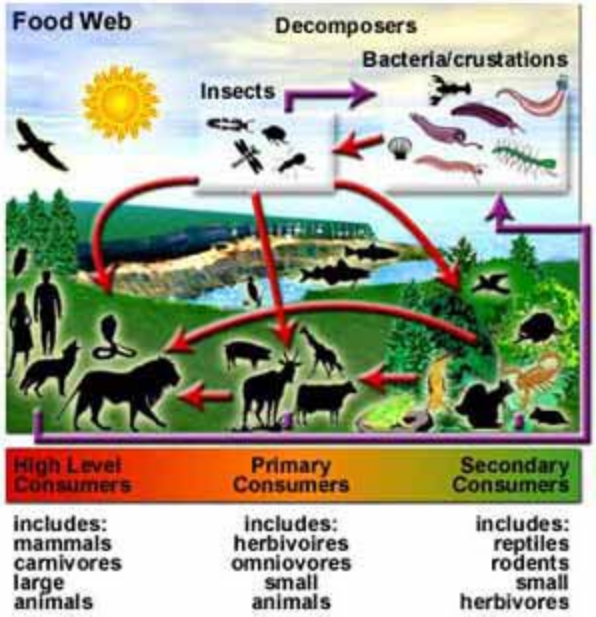
Geriatrics: Challenges to Usual Clinical Approaches

- **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"**

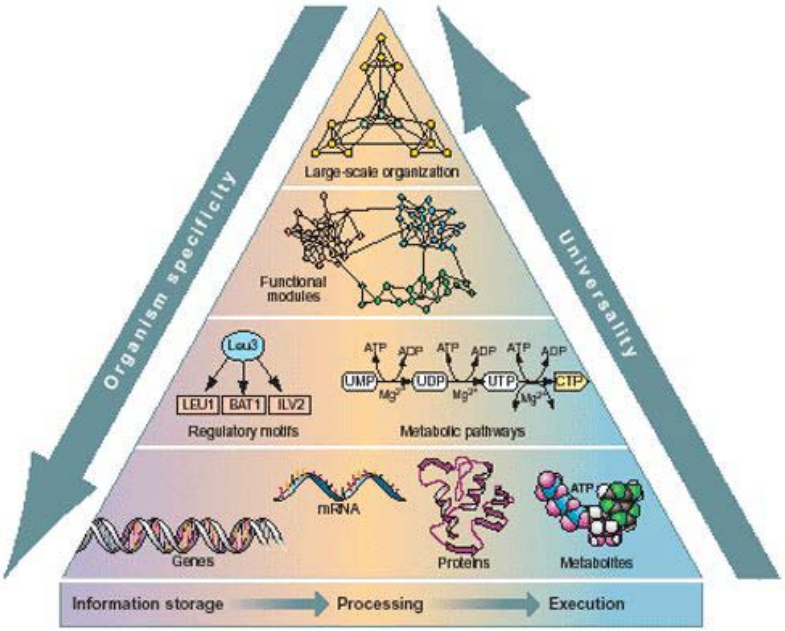
Ecology: Interacting Individuals & Interacting Systems

- Individual:
  - Atoms, molecules
  - Cells, organs
  - Organisms, groups
  - Organizations
- Systems:
  - Solutions
  - Metabolic pathways
  - Executive functions
  - Ideas, values
  - Social networks
  - Cultures

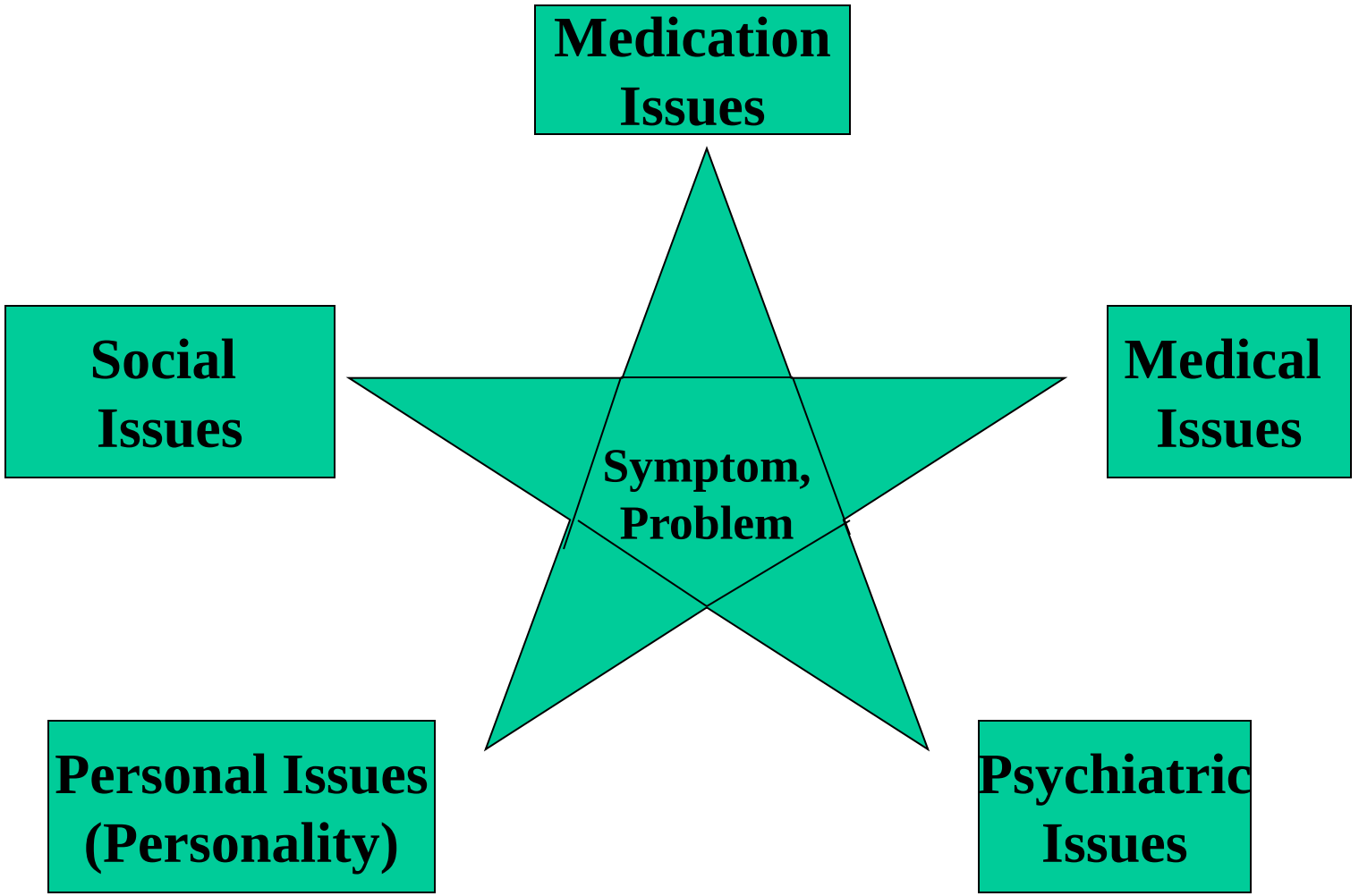


Ecological Levels in Geriatrics

- Environmental
- Political
- Social
- Family
- Personal
- Physiological
- Metabolic
- Biochemical
- Physical

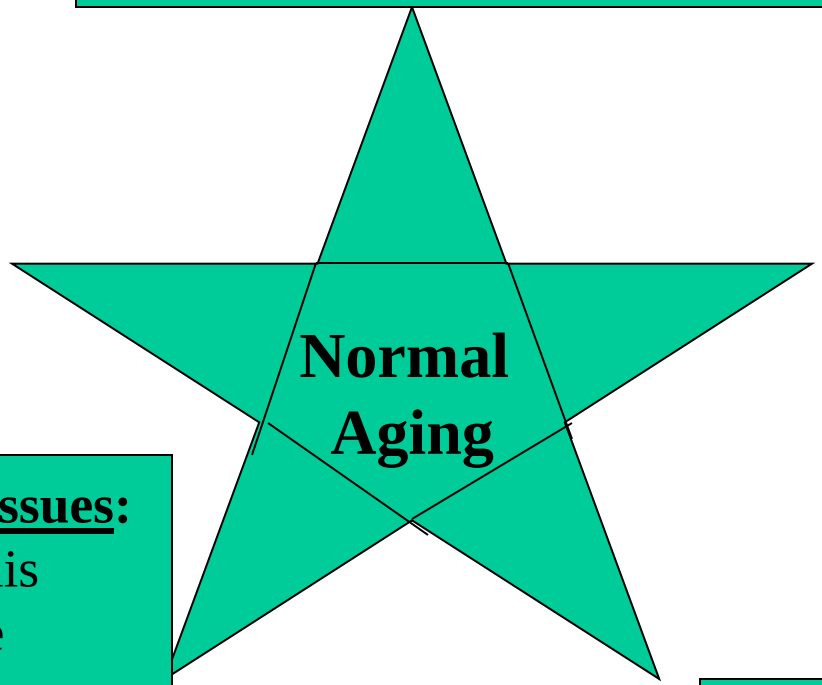


Understanding & Addressing Geriatric Problems: The Wisconsin "Star" Method



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

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



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

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

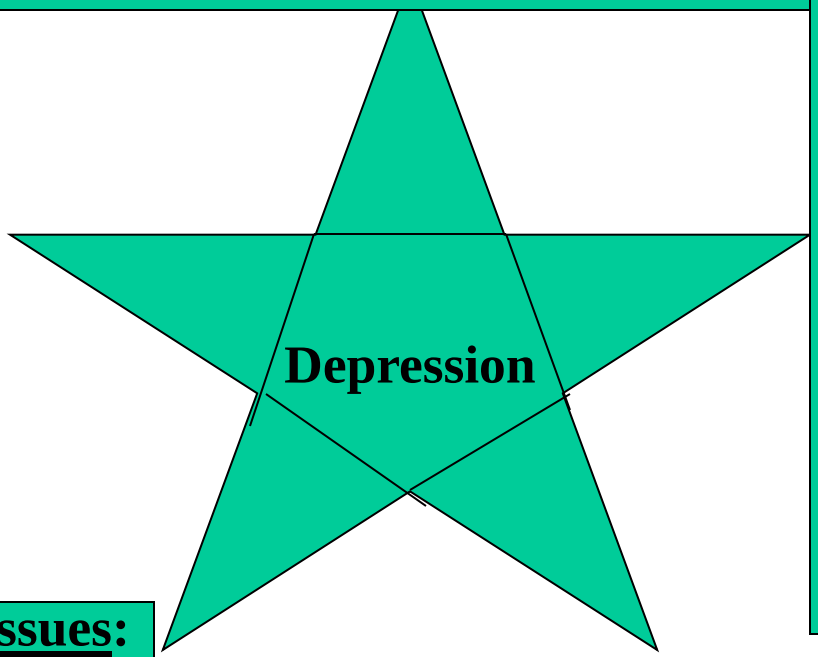
Psychiatric Issues:
Cognition: reduced speed;
harder to learn/multi-task
but good retention
Not normal--
significant memory loss
sustained low mood

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

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

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



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

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

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:
  - ↑ (x 2) risk of depression
  - Men 18%; women 28%
- With depression:
  - ↑ risk of hyperglycemia
  - ↑ 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

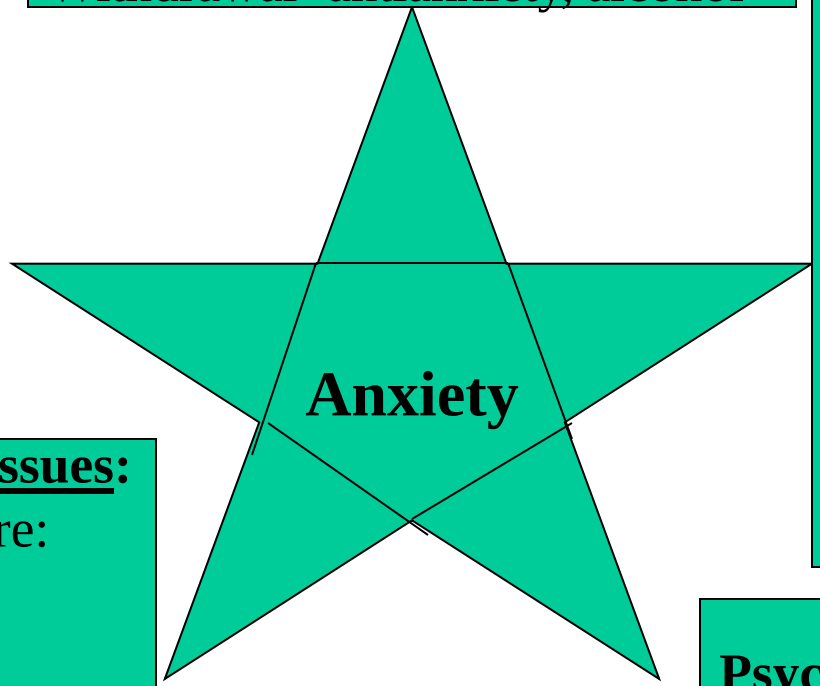
- **Cerebrovascular disease:** (CVD) may predispose, precipitate, or perpetuate depression (hypothesis)
- **Supporting evidence:**
  - Co-morbidity: depression w/ CVD & risk factors
  - Pts w/ ischemic lesions (vs. those w/o):
    - Greater overall cognitive impairment: fluency, naming
    - More apathy, 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

Medication Issues:
Antihistamine, anticholinergic
Stimulants, caffeine, anti-asthma
Antidepressants, antipsychotics
Withdrawal- antianxiety, alcohol

Social issues:
Disability
Dependence
Finances
Housing
Interpersonal conflict
Caregiving burden
Crime, abuse



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Personality/personal issues:
Excessive inflexibility re:
-defense/aggression
-self-consciousness
-open/closed to experience
-trust
-altruism
-defiance/submission
-conscientiousness
-control
History of trauma

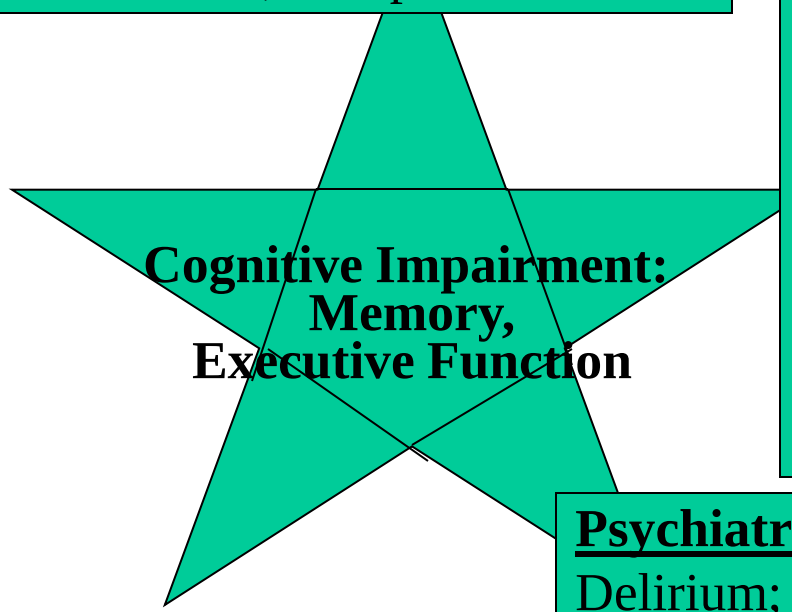
Psychiatric issues:
Adjustment disorder; Phobias
Generalized anxiety disorder
Panic disorder; OCD; PTSD
Mood disorders- esp depression
Substance abuse- esp caffeine
Psychotic disorders

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 (5^{th} 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)

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

Social Issues:
Stressors
Caregiver support
DPOAHC



Medical issues:
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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

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

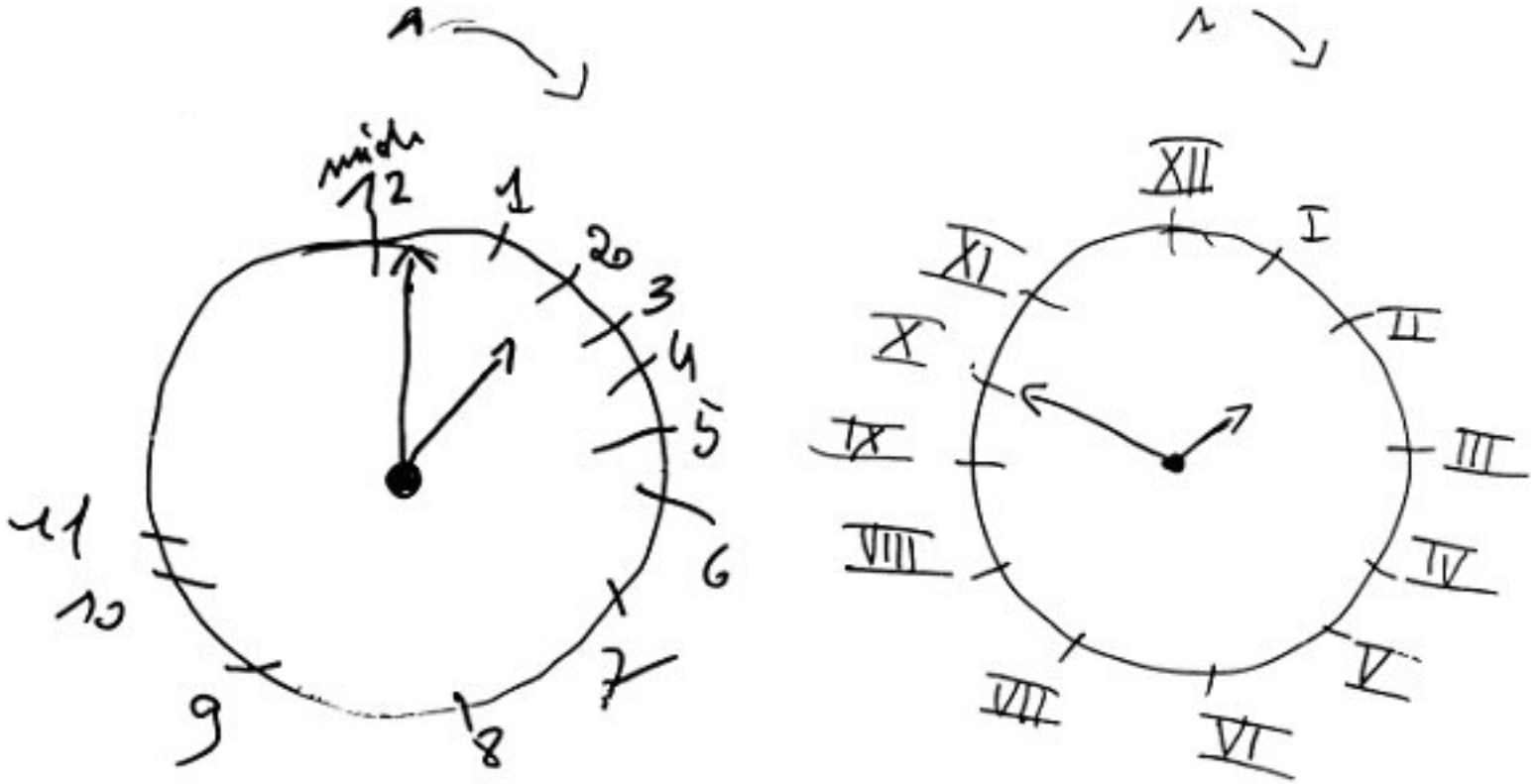
Executive Functions

- 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

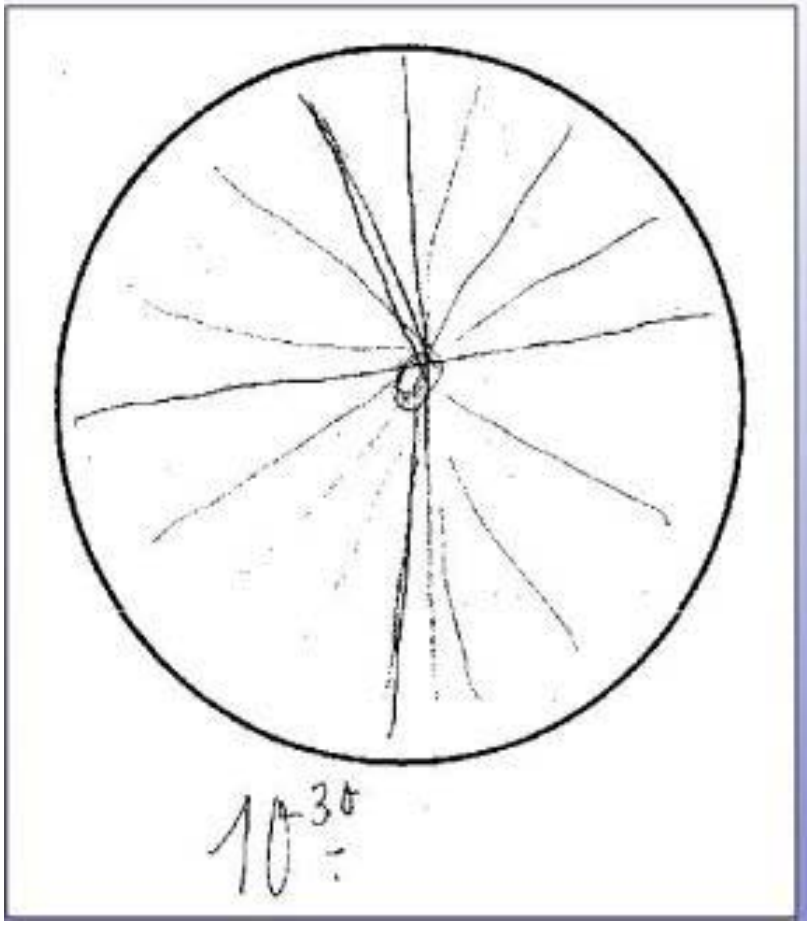
- Multiple cognitive deficits: memory impairment and one or more:
  - disturbed executive fx, aphasia, apraxia, agnosia
- Cognitive deficits result in decline in function (fx)
- For Alzheimer's: gradual onset, continuing decline, other diagnoses excluded, not substance-induced
- For Vascular: focal symptoms/signs 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

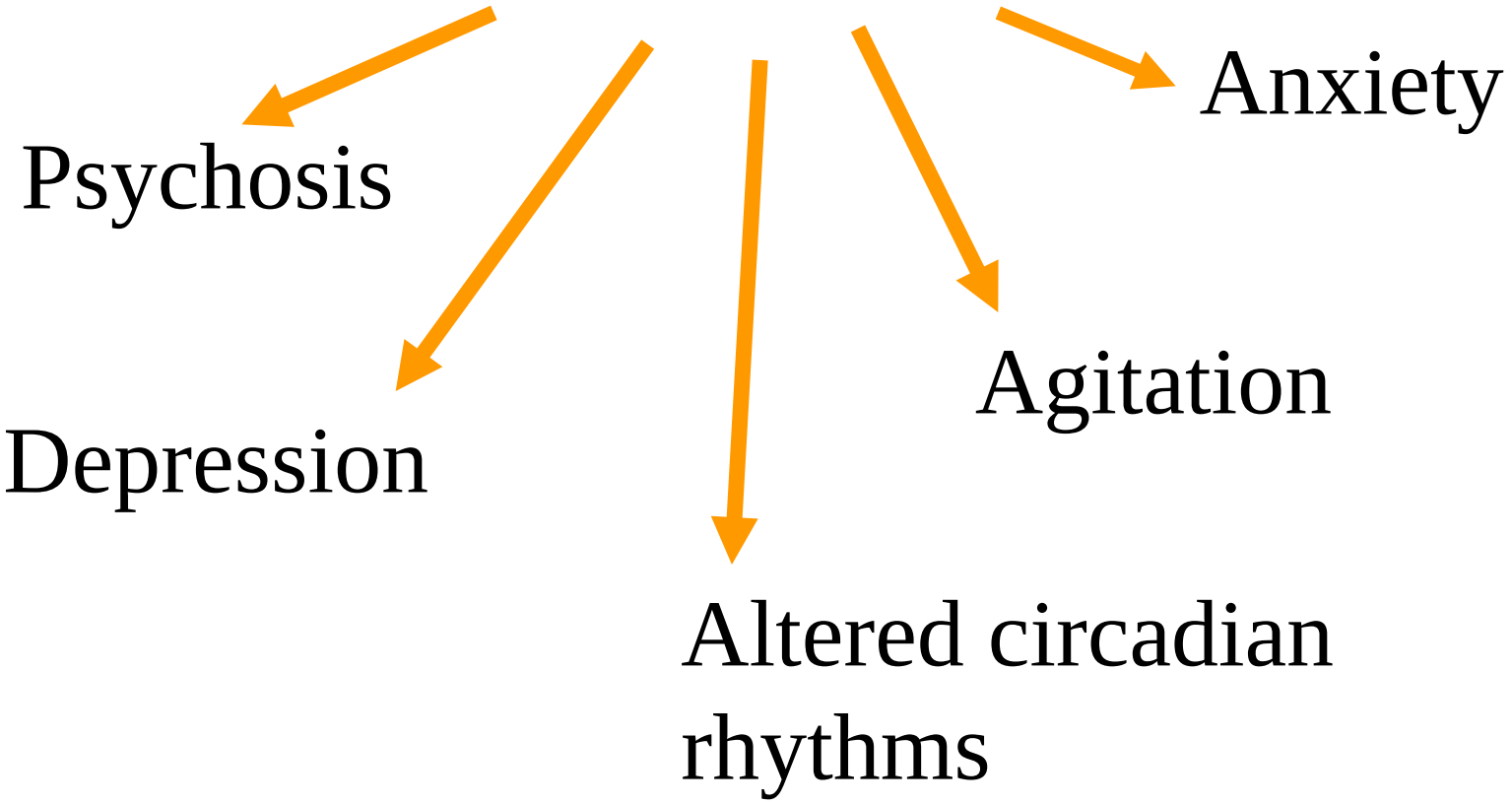
Draw a clock!

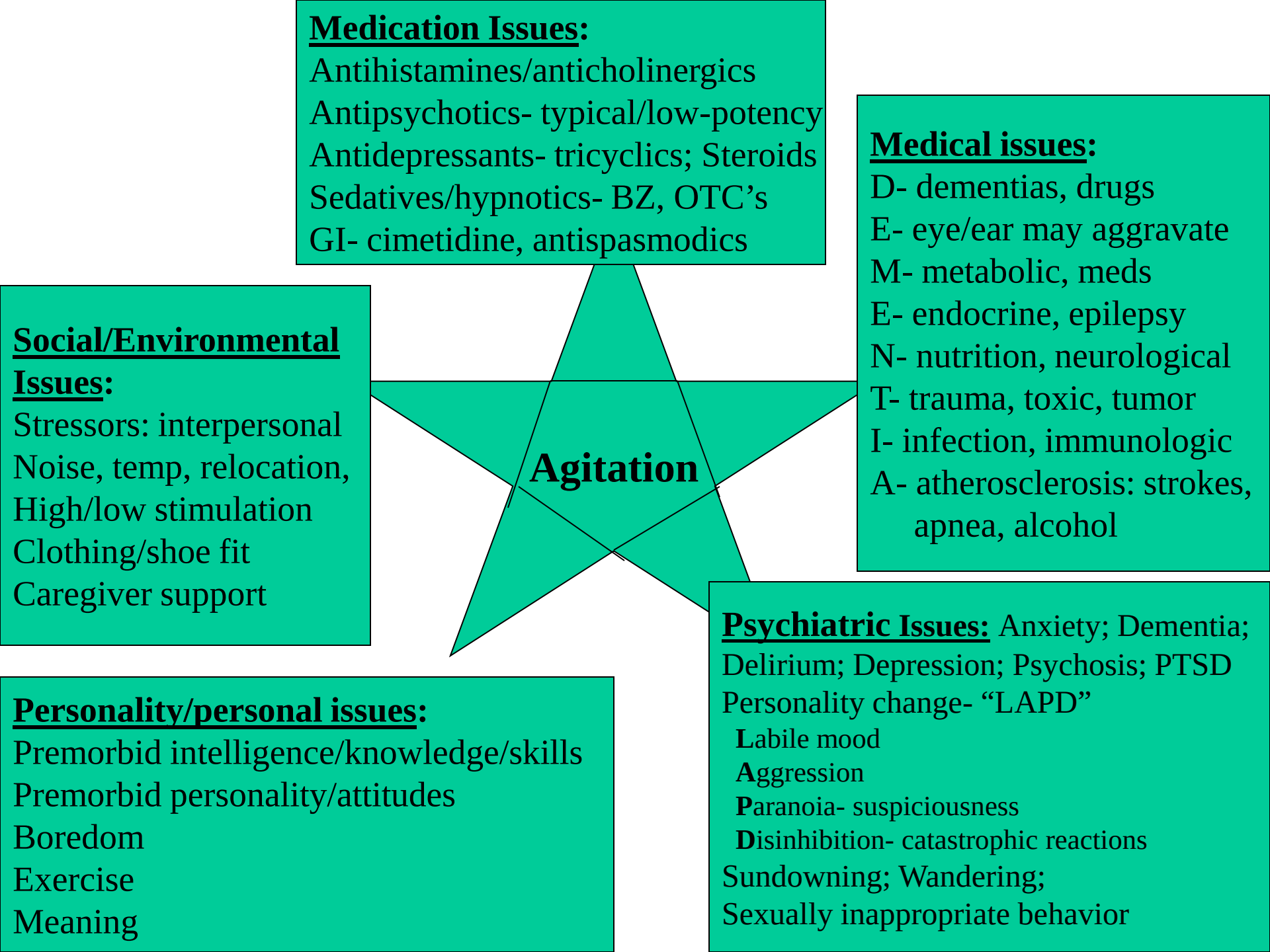


Patient
- Male, 75 years old
- MMSE = 28 points

Diagnosis
- Definite AD
  (4 years after the drawing)

Symptom Complexes of BPSD

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GI- cimetidine, antispasmodics
Medical issues:
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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
Social/Environmental Issues:
Stressors: interpersonal
Noise, temp, relocation,
High/low stimulation
Clothing/shoe fit
Caregiver support
Agitation
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 $\rightarrow$ 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
- Chloral hydrate
- H_2-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
- ↑ HR, RR
- Labs: ↑CPK, WBC, LFT; myoglobinuria

Serotonin syndrome

- Excessive serotonin: usually due to drug interactions
- Fever: variable
- Hypomania; restlessness
- Shivering/chattering
- Confusion
- Tremulousness
- ↑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

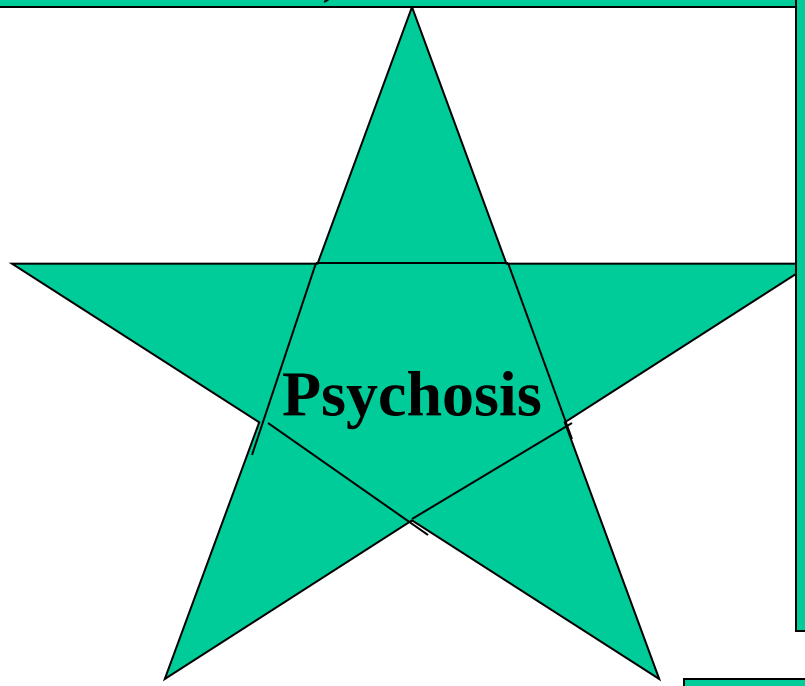
- Wernicke's encephalopathy (acute)
  - Ataxia (unsteady gait)
  - Nystagmus (abnormal eye movement)
  - Amnesia: anterograde- unable to learn/retain new information
  - Rx: thiamine by IM or IV
- Korsakoff's psychosis (chronic)
  - Persistent anterograde amnesia (40% confabulate)
  - Preventable if 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)

Medication Issues:
Analgesics; anticholinergic; digoxin
Antiparkinsons; steroids; cimetidine
Sedatives, hypnotics, stimulants
Antihistamines, anticonvulsants

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



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Personal/personality issues:
"Eccentric"
Suspicious

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

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% x 1 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

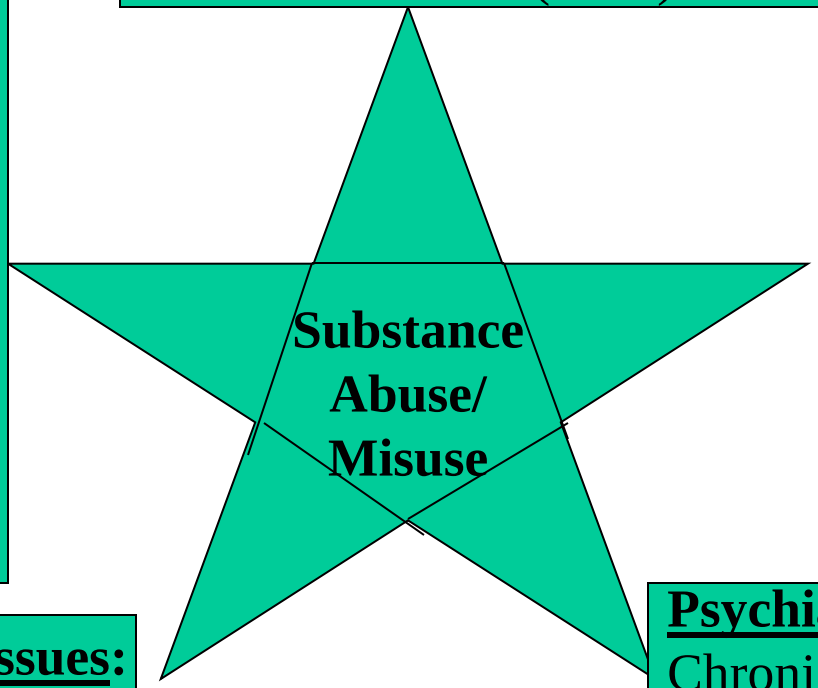
- Diet:↓ saturated fats & cholesterol in diet; ↑ fiber
- ↓ Weight (by 1-2#/wk) & ↑ Physical activity
- For elevated LDL cholesterol:
  - Statins; bile acid binders; nicotinic/fibric acids
- For ↑ BP: antihypertensive medication
- For insulin resistance: metformin, thiazolidenidiones
- For prevention 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 w/ 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 ↓ O_2 & ↑ CO_2



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

Social issues:
More free time to use
Norms for drinking:
-different communities
-peer pressures
Changes in
relationships
Grief, boredom
Undue pessimism

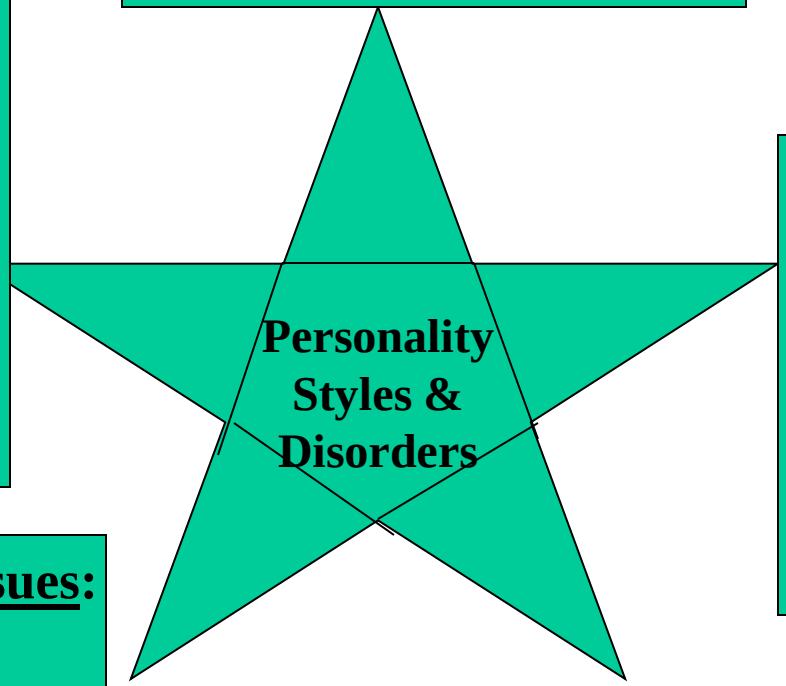
Medical Issues:
Chronic pain
Chronic fatigue
Chronic insomnia
Decreased tolerance, falls
Mimic other illnesses
Excess impairment

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

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

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



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

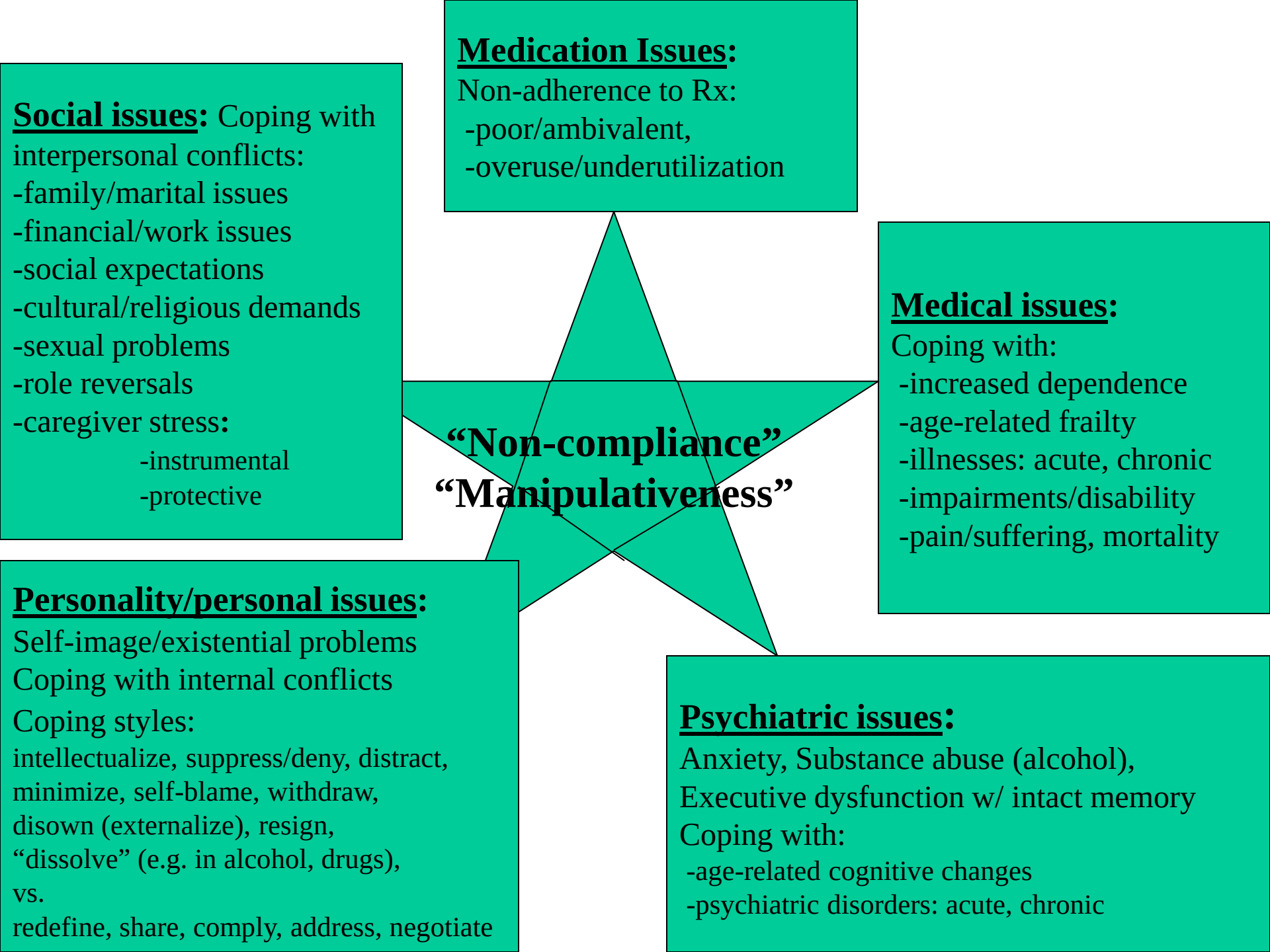
Personality/personal issues:
Flexibility/inflexibility:
-defensive/aggressive
-self-consciousness
-open/closed to experience
-trust/suspicion
-concern for others/self
-compliant/defiant; control
-conscientiousness

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

Personality Change: A Visual Analogue

The Art of Carolus Horn

www.alzheimer-insights.com/insights/vol6no2/vol6no2_ind.htm


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

Medical issues:

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

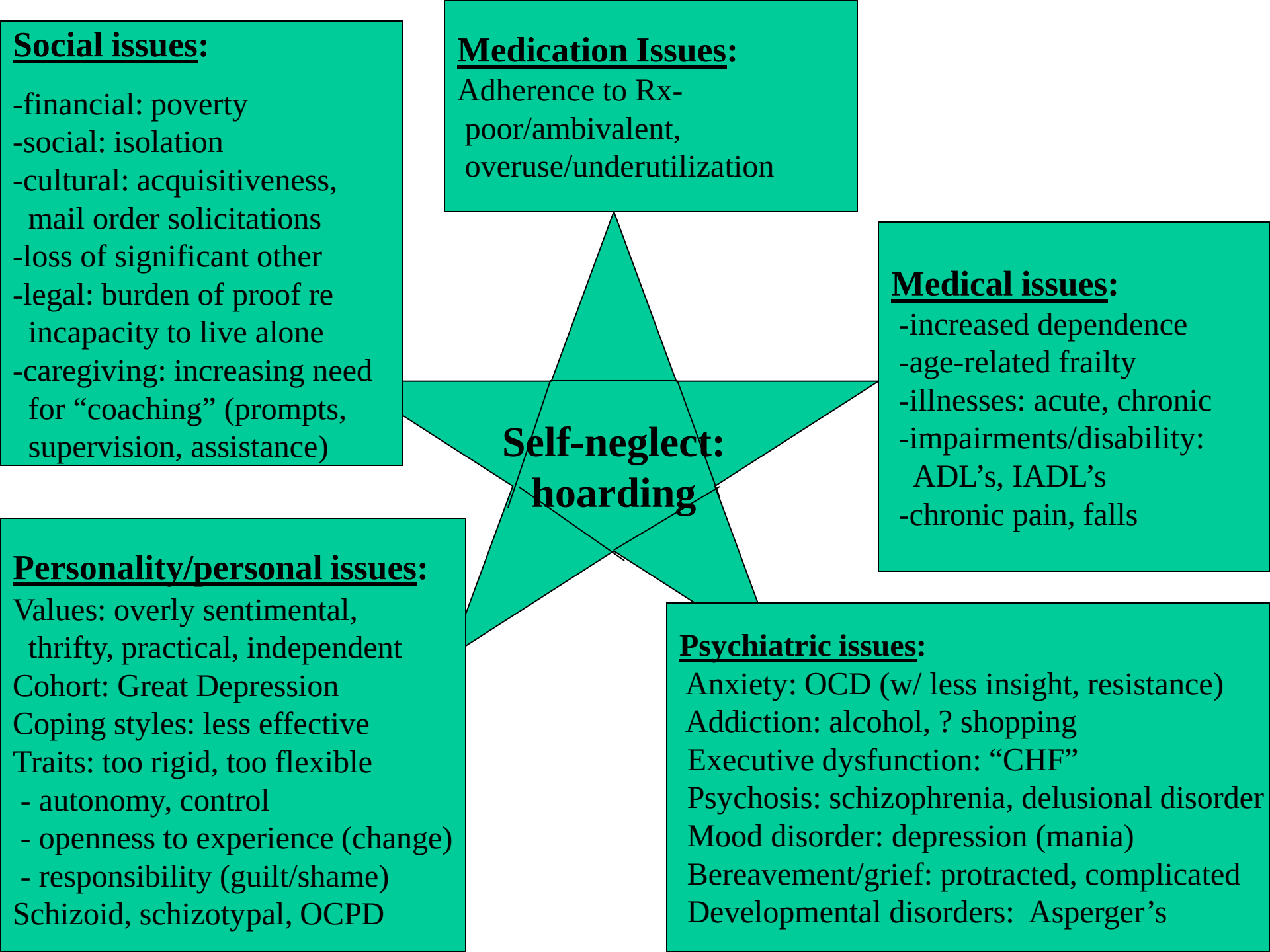
Self-neglect: squalor, homelessness

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

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


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

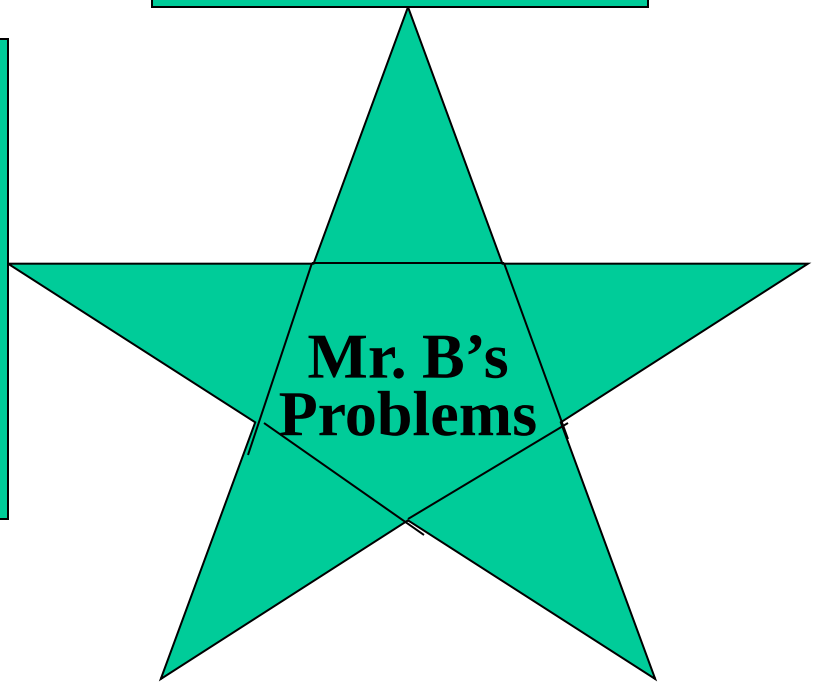
Medication Issues:
Primary Care Providers
Pharmacist; Visiting Nurse
Caregivers- adherence to Rx

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



Medication issues:
Furosemide
Lisinopril
Carbi/levo-dopa
Ibuprofen

Social issues:
Social withdrawal
Marginal finances
Spouse in wheelchair
Supportive grand-daughter off to college

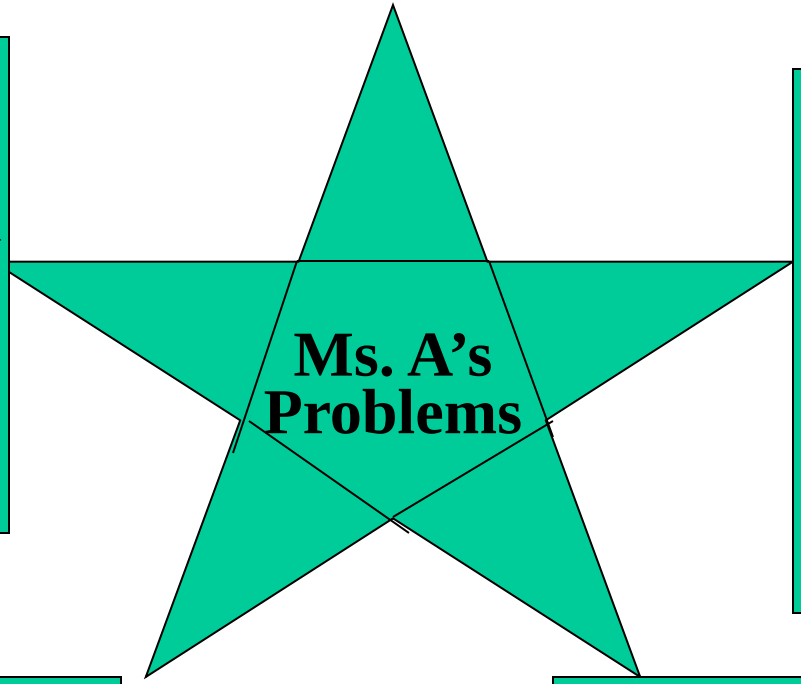
Medical issues:
Hypertension
Congestive heart failure
Parkinson's disease w/ frequent falls
Arthritis

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

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

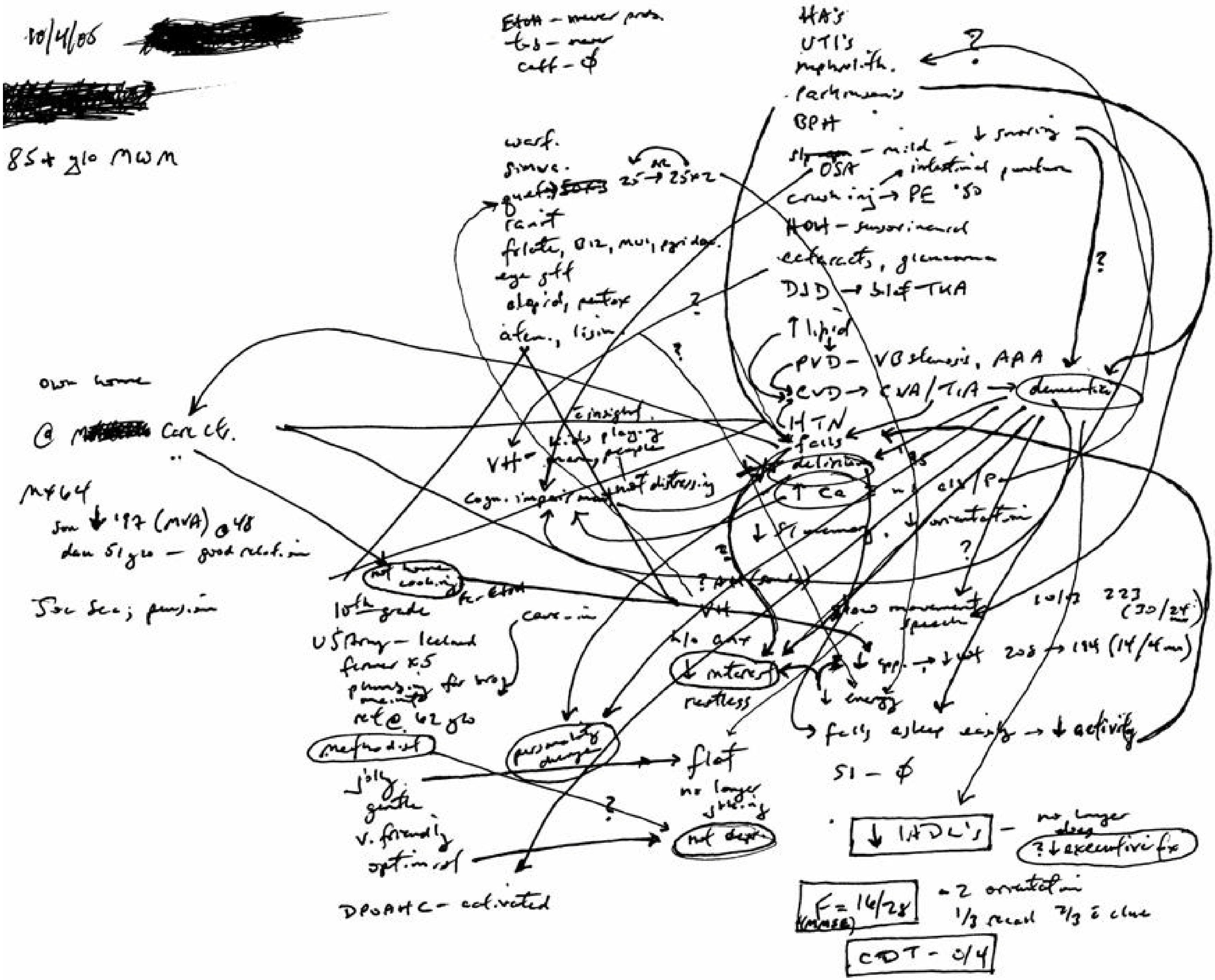
Social issues:
Widowed
Estranged from children
Living alone in squalor
Marginal finances
Support- none
Multiple calls to 911



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


10/4/05 [redacted]
[redacted]
85 y/o MWM
own home
@ M[redacted] Care Ctr.
m × 64
son ↓ '97 (MVA) @ 48
dau 51 y/o – good relat.ion
Soc Sec; pension
EtOH – never prob.
tob – never
caff – ϕ
warf.
simva.
quet
ranit
folate, B12, MVI, pyridox.
eye gtt
alagrid, pentox
aten., lisin.
25 → 25×2
HA's
UTI's
nephrolith.
Parkinson's
BPH
mild – ↓ snoring
OSA
intestinal puncture
crushing → PE '50
HOH – sensorineural
cataracts, glaucoma
DJD → bilat TKA
↑ lipid
PVD – VB stenosis, AAA
CVD → CVA/TIA → dementia
HTN
falls
delirium
↑ Ca
↓ ST memory, ↓ orientation
c insight
kids playing
VH – many people
not distressing
cogn. impairment
?
not home cooking
for EtOH
10th grade
US Army – Iceland
farmer × 5
plumbing for long
maint.
ret @ 62 y/o
methodical
care-ion
jolly
gentle
v. friendly
optimistic
DPOAHC – activated
personality change
flat
no longer joking
not depr.
VH
h/o OAT
↓ interest
restless
? AH
slow movements
speech
↓ app. → ↓ wt 208 → 194 (14/4 mo)
↓ energy
falls asleep easily → ↓ activity
SI – ϕ
10/13 223 (30/24)
↓ IADL's
no longer
? ↓ executive fx
F = 16/28 (MMSE)
– 2 orientation
1/3 recall 2/3 c clue
CDT – 0/4

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**

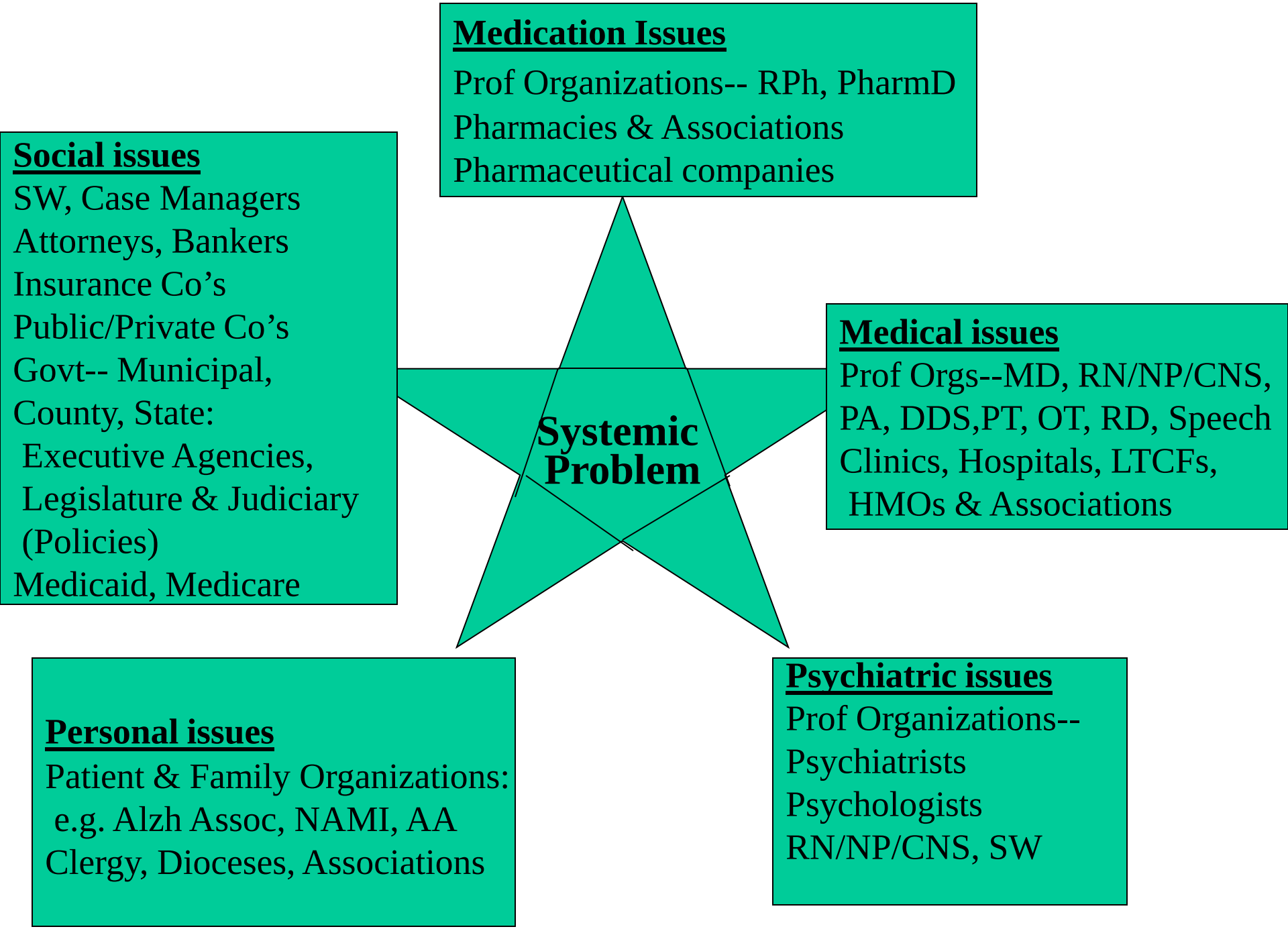
Summary- Approach

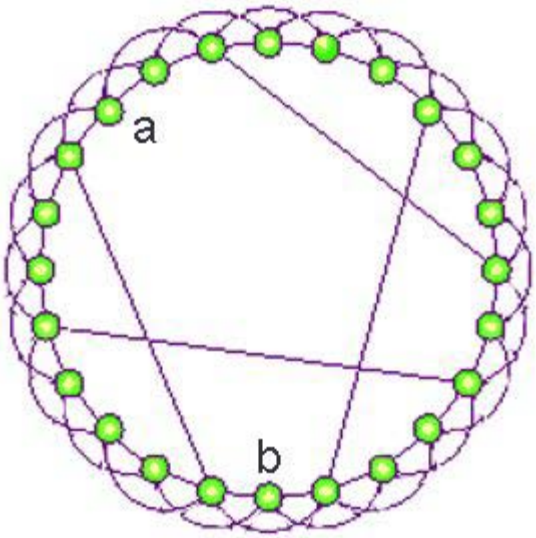
- **Build & maintain a therapeutic alliance:**
  - **Adjust approach according to each patient-partner's individual cognitive and personality style, history, current abilities/disabilities**
- **Nurture empathy:**
  - **discover/share some things in common**
  - **appeal to, build on patient-partner's 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
Systemic Problem
Medical issues
Prof Orgs--MD, RN/NP/CNS,
PA, DDS,PT, OT, RD, Speech
Clinics, Hospitals, LTCFs,
HMOs & Associations
Personal issues
Patient & Family Organizations:
e.g. Alzh Assoc, NAMI, AA
Clergy, Dioceses, Associations
Psychiatric issues
Prof Organizations--
Psychiatrists
Psychologists
RN/NP/CNS, SW


a
b

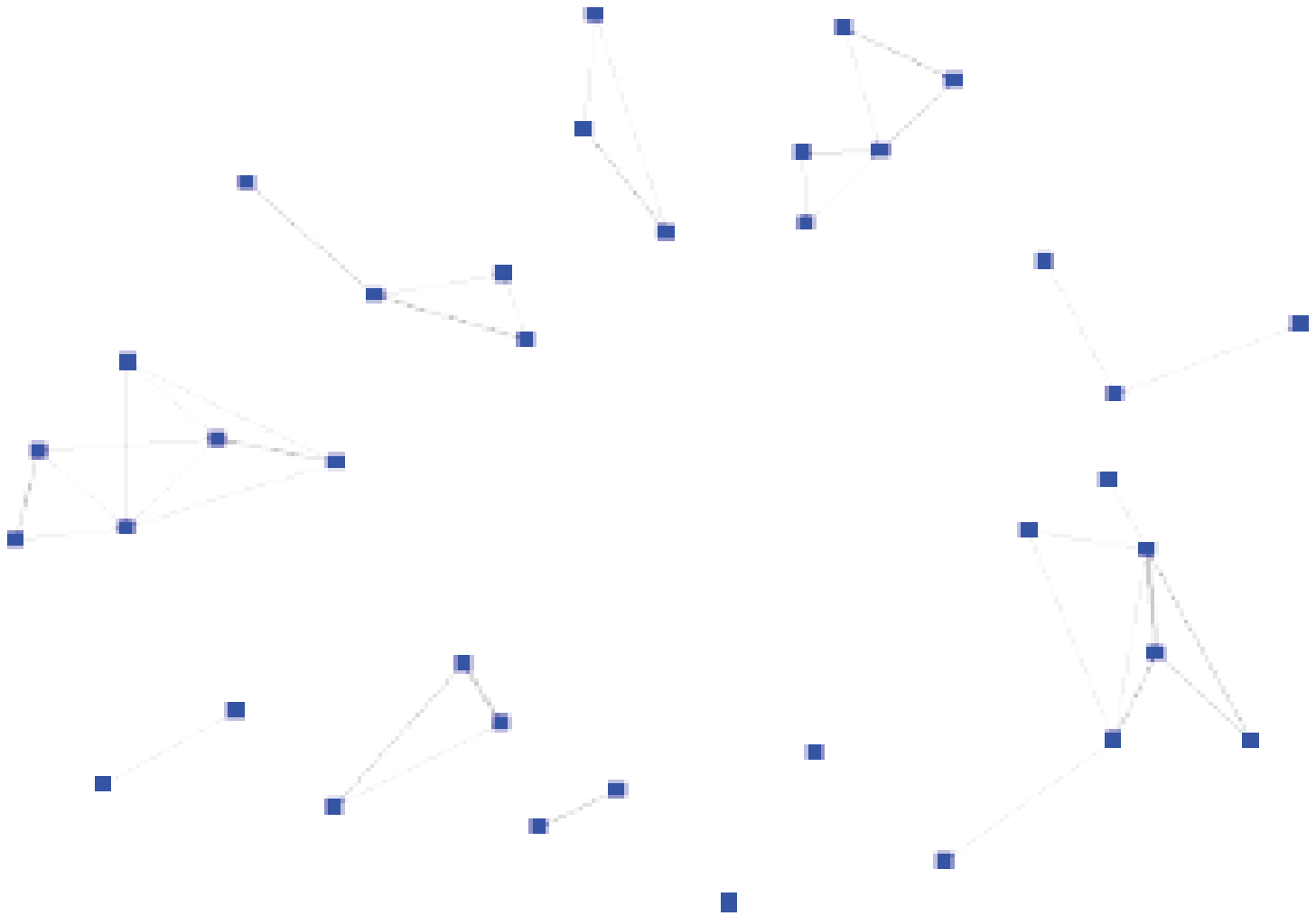


Figure 1 — Scattered Fragments

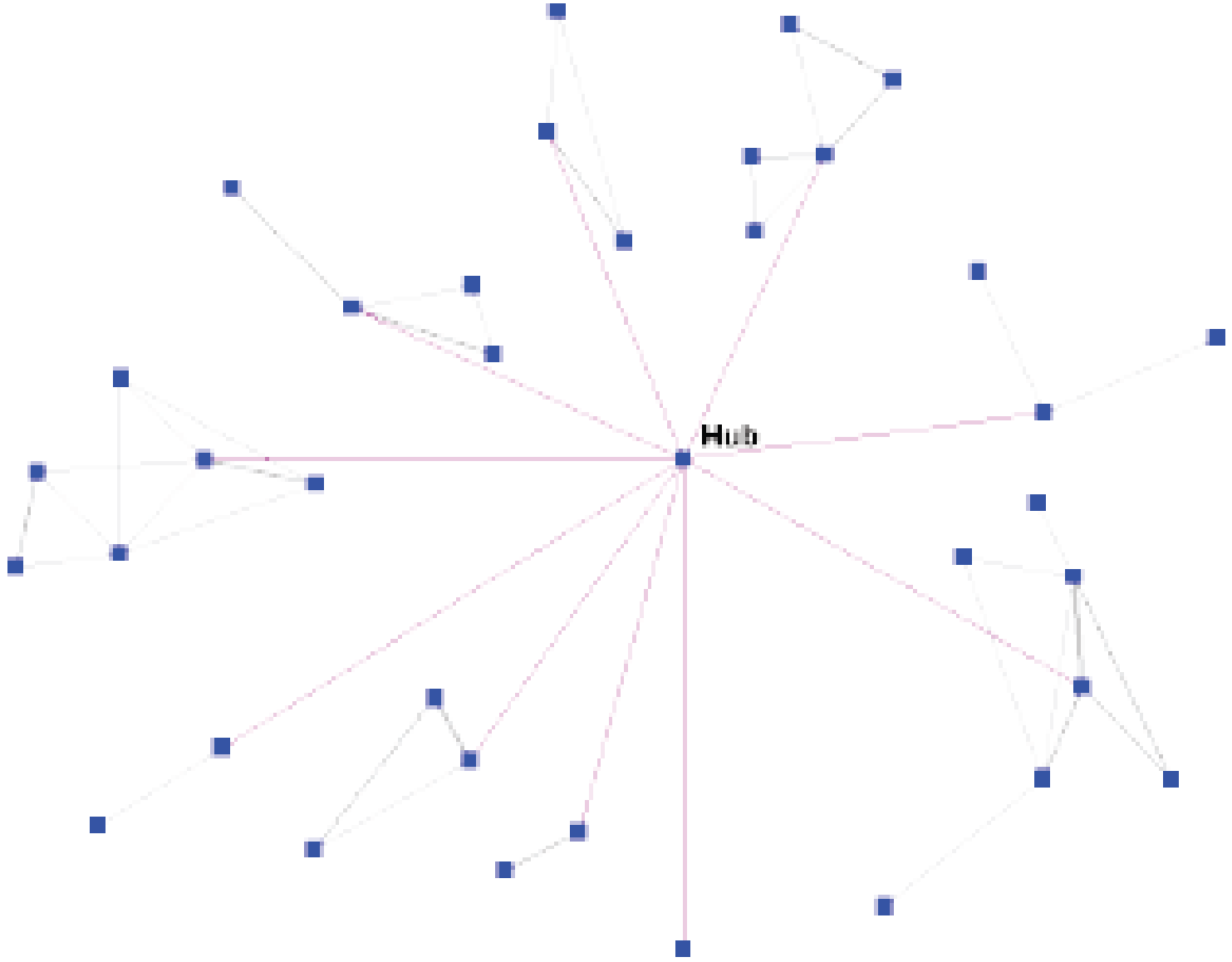


Figure 2 – Hub-and-Spoke Network

Figure 3 – Multi-Hub Small World Network

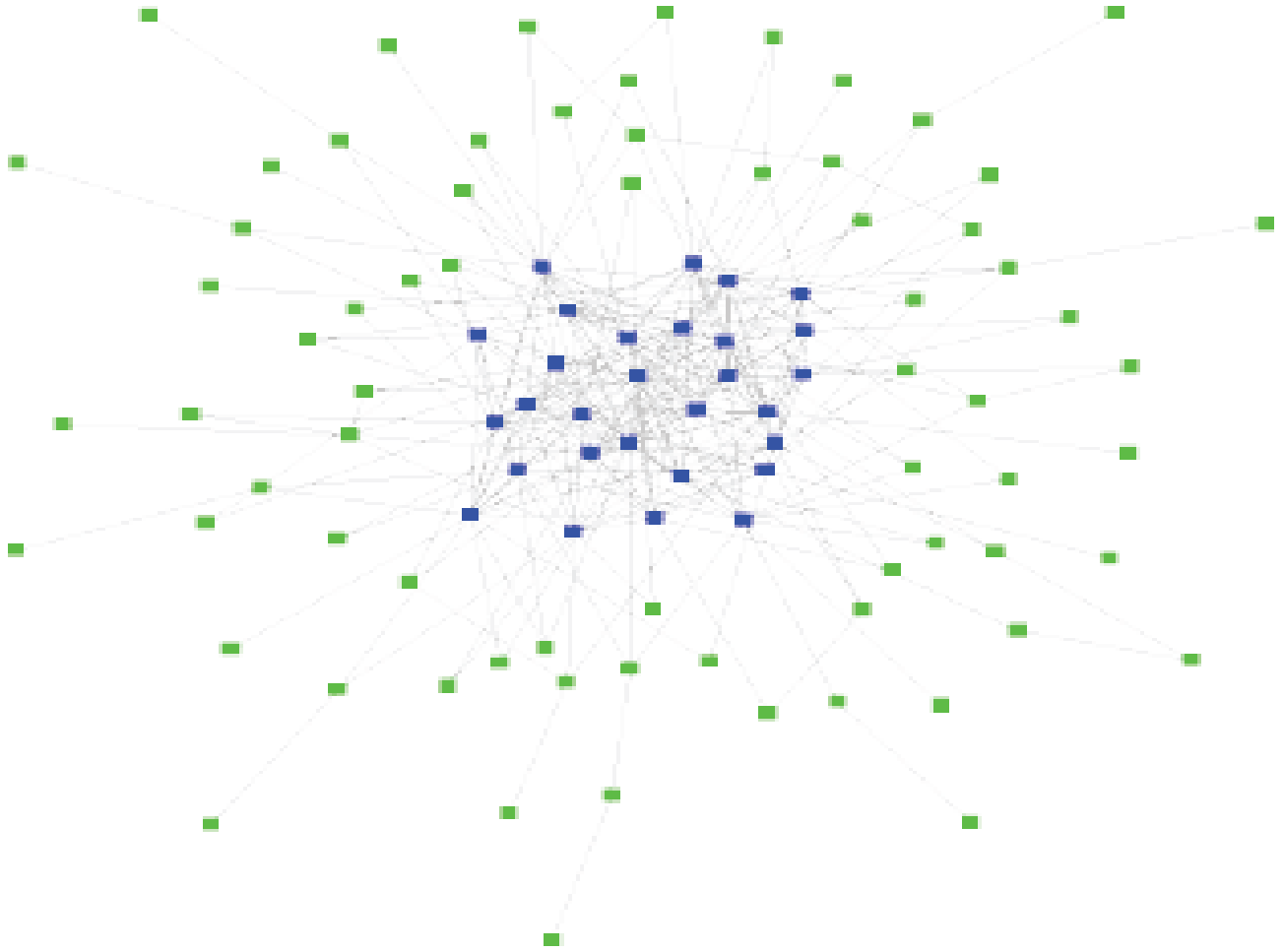


Figure 4 — Core/Periphery Network