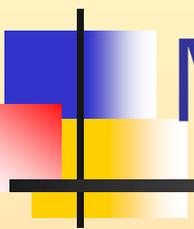
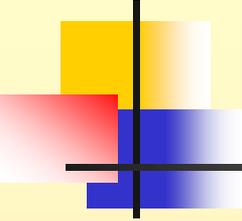


# The Sane Use of Psychotropic Medications



---

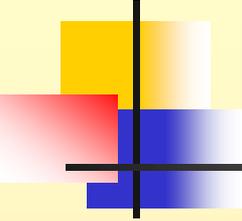
Steven Levenson, MD, CMD



# Key Concepts

---

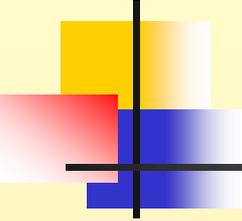
- *What challenges do nursing homes and physicians face related to addressing behavioral symptoms and altered mental function?*
- *How do nursing homes and practitioners handle acute problematic behavior and altered mental function? Is the approach optimal?*
- *What are key roles of the primary care practitioner and psychiatric consultant?*



# Key Concepts

---

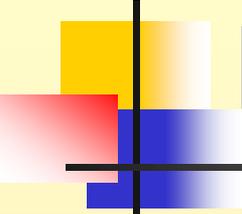
- Problematic behavior and altered mental function
  - Symptoms or syndromes (collections of signs and symptoms) needing careful evaluation and thoughtful management
- Disease or organ dysfunction may cause or affect behavior
- Disruptive or problematic behavior itself is not an illness or disease



# In the Nursing Home

---

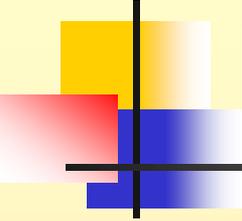
- Broad range of behavior
- Some behavior reflects diverse personalities and life experiences
- Some behavior is distressed, dysfunctional, disturbing, or disruptive
  - With or without impaired mood and cognition
- Allegedly problematic behavior often comparable to what occurs in society



# Managing Behavior Symptoms

---

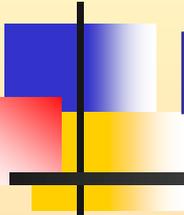
- Many situations manageable without hospitalization, psychiatric consultation
- Not helpful to
  - Respond emotionally and irrationally
  - Give medications to “control” behavior
  - Request immediate hospital / ER transfer
- Common responses
  - Call the police
  - Get a psychiatric consultation



# Psychiatric Practitioners

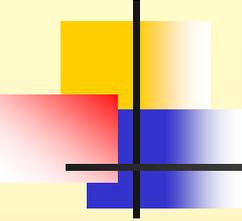
---

- Use judiciously
  - At least get story straight and define the issue in detail (i.e., what is happening) first
- Involvement sometimes helpful, sometimes unnecessary or insufficient or not readily available
- Overreliance on psychiatric consultation may cause harm
  - If substitutes for prompt recognition and management of medical causes



# RECOGNITION

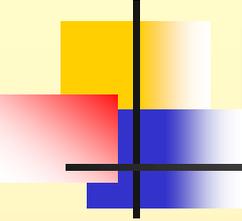
---



# Recognition

---

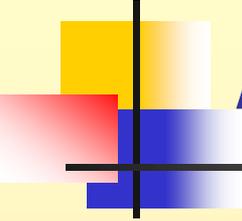
- *How do we identify individuals who may have acute problematic behavior and altered mental function?*



# Levels of Assessment

---

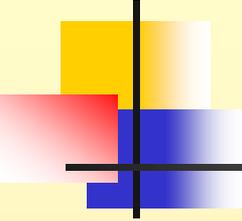
- Several levels of assessment
  - Basic recognition, documentation, and reporting of symptoms and risk factors
  - More detailed description of findings and investigation of causes
  - Interpret findings as basis for interventions



# Assessment Challenges

---

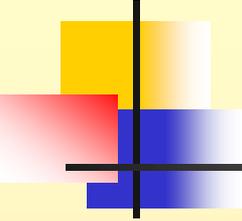
- Behavior is a symptom, like others
  - Unlike many other symptoms or condition changes, problematic behavior often affects other patients and staff
  - Often produces a sense of alarm and urgency to stop the symptom ASAP
- Professional approach
  - Important to assess behavioral symptoms and altered mental function in much the same way as other symptoms



# Recognition Phase: Goals and Principles

---

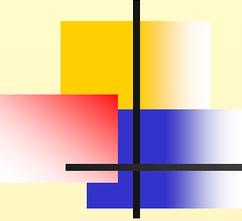
- Identify those who have or are at risk for problematic behavior or altered mental function (including delirium)
- Principles
  - Tell the story
  - Characterize problems and risks in enough detail to permit effective interventions
  - Don't be led down the wrong path by limiting scope of discussion



# Identify Situation

---

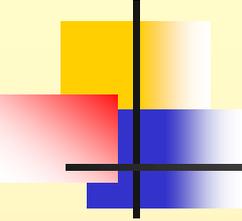
- *Identify current behavior, mood, cognition, and function*
- Several routes to identifying behavior issues or altered mental function (including delirium)
  - Symptoms
    - Patient exhibits problematic behavior or change in mental function



# Recognition of Confusion

---

- Has patient or family reported a change in cognition or behavior?
- Does transfer sheet from nursing home, ALF, or transferring facility indicate “altered mental status”?
  - Reports from transferring MD, nurses, CNAs
- Does behavior observed in the emergency room indicate “altered mental status”?
- Does initial visit with patient indicate a problem?



# Define the Situation

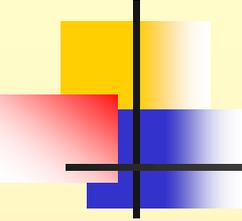
---

- *Identify current behavior, mood, cognition, and function*
- Review history
  - Recent and prior
- Observe patient in various situations
- Identify and document pertinent details
  - How the patient looks, thinks, and acts
  - Affect, appearance, insight, judgment, sensorium, thought content & process

# Importance of Adequate Information

CROCK

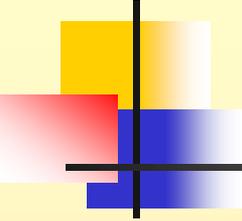




# Details

---

- *What are some important details of current behavior and mental function?*

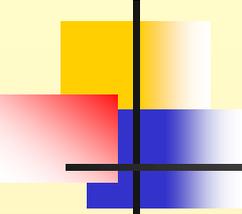


# Details Count

---

- Symptom details are essential
- Example
  - “Agitation” commonly used to describe diverse neuropsychiatric symptoms including irritability, restlessness, aggression, screaming, rummaging, resistance to care, and disinhibition
  - Common practice of documenting or treating “agitation” lacks clinical value
    - Needs more precise symptom description

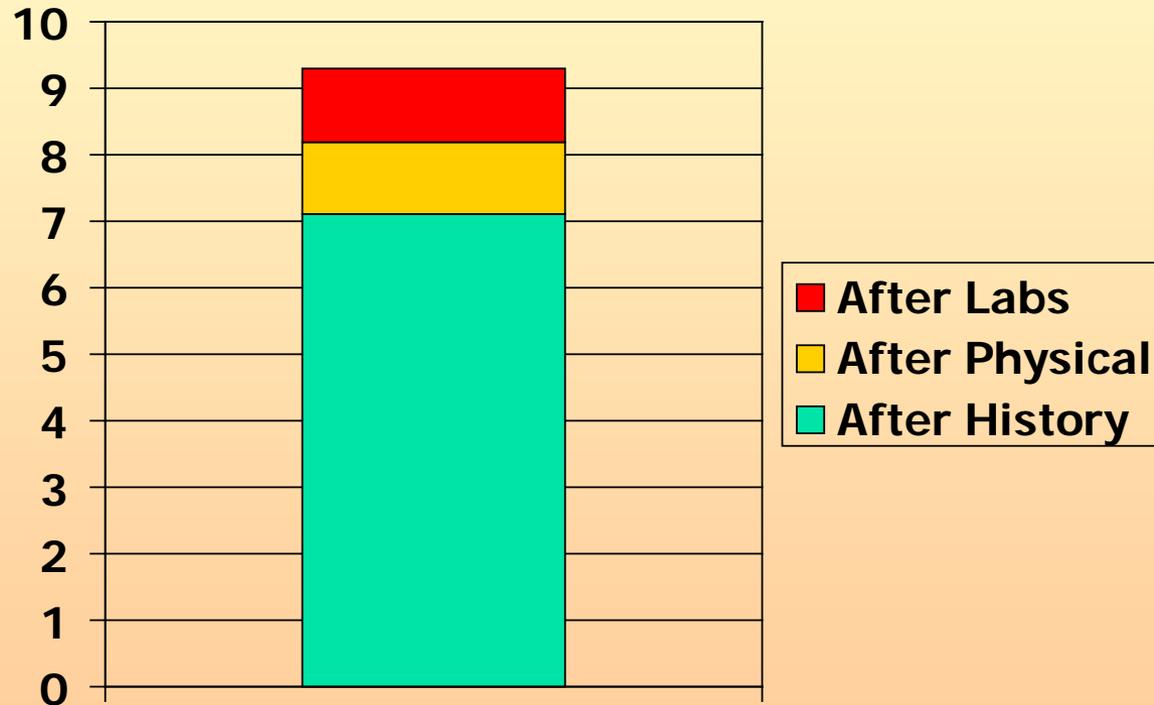
# Defining Behavioral Issues: Details



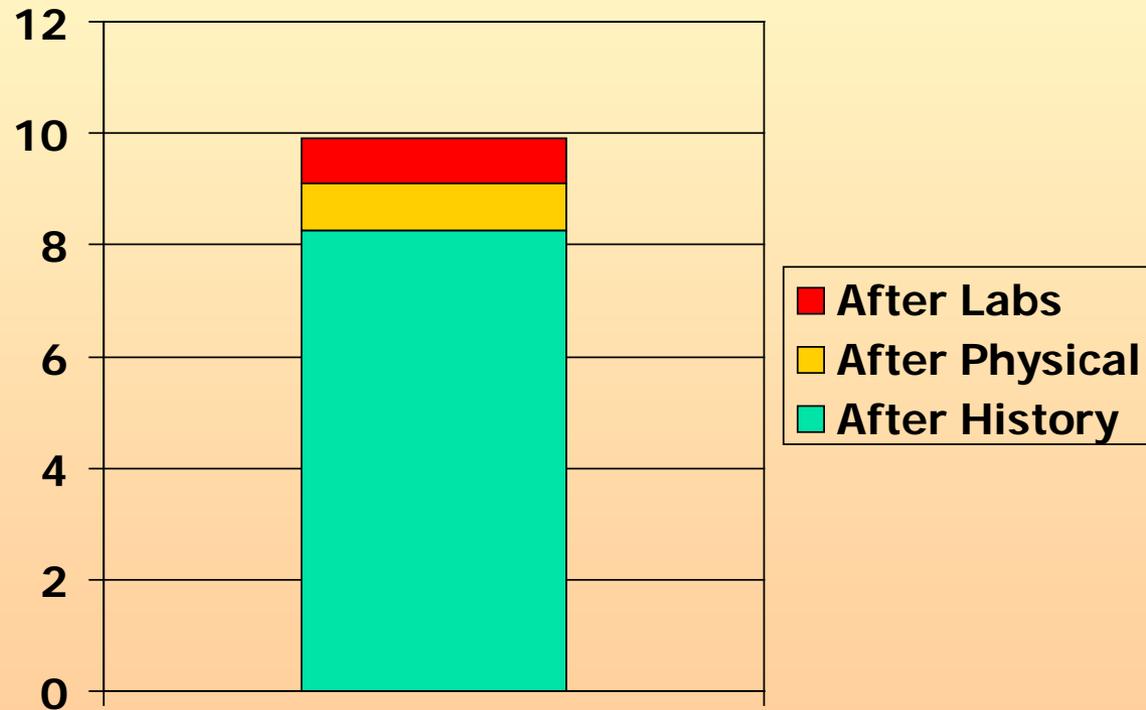
---

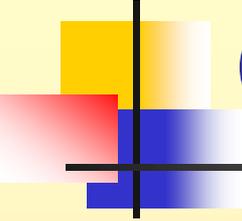
- Nature and relevant factors
  - Onset, preceding factors or triggers
- Course
  - Duration and frequency, continuous or intermittent, compared to usual
- Severity
  - Consequences of the behavior or change in mental function, reason why situation is problematic, danger to patient /others

# History is Most Important (1992)



# History is Most Important (1975)

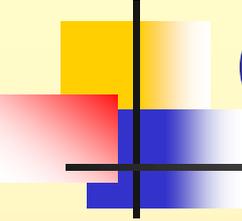




# Coordinated Approach

---

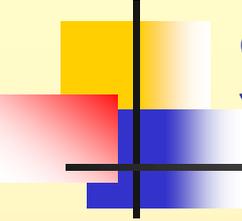
- Diverse staff contribute information
  - At least some staff should be able to use some specific terminology
  - For example, is someone calm or restless, is speech understandable and clear
- Licensed staff and practitioners
  - Should be able to provide more detail, using appropriate professional terminology
  - Basic neurological, mental status exam and some detailed behavioral observations



# Commonly Used Terms

---

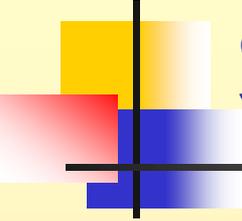
- *What are some commonly used terms in relation to behavior and mental function?*



# Some Definitions

---

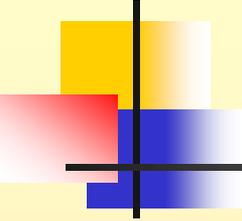
- Cognition
  - Actions related to obtaining and interpreting information, including learning, memory, perception, and thinking
- Behavior
  - An individual's actions and reactions



# Some Definitions

---

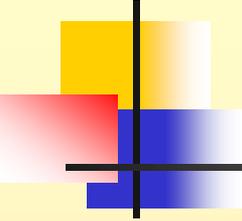
- Altered mental function
  - Significant change in alertness, mood or cognition that impacts an individual's function, comfort, safety, or social interactions
- Mental status
  - An individual's overall level of consciousness, awareness and responsiveness to the outside world



# Definition of "Confusion" <sup>1,2</sup>

---

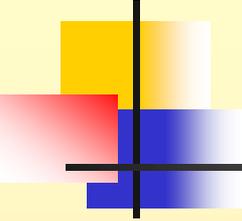
- Clouding of consciousness
- Disorientation
- Mixed up
- Confounded
- Perplexed
- Unclear
- Uncertain
- Flustered
- Altered mental state



# Delirium

---

- *What is delirium, and how does it relate to acute problematic behavior and altered mental function?*



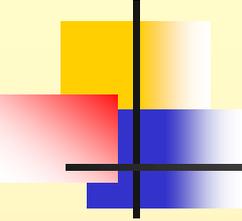
# Delirium

---

- Delirium

- A change in brain function due to a medical illness of acute or subacute onset, which presents with psychiatric symptoms, including
  - Disturbance of consciousness and attention
  - Change in cognition (e.g. perception, thought, and memory) and/or
  - Perceptual impairments (illusions, hallucinations, or delusions)

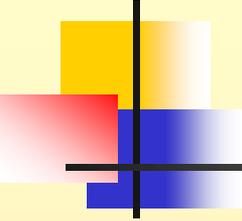
# Delirium: Tools to Help Identify



---

- Confusion Assessment Method (CAM)
  - Based on consideration of 11 different issues
- Lead to answering 4 questions
  - Is change in mental status acute and does it fluctuate throughout the day?
  - Patient difficulty in focusing attention?
  - Disorganized or incoherent speech?
  - Altered level of consciousness?

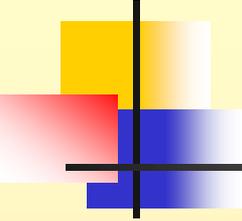
# Delirium: Tools to Help Identify



---

- CAM Interpretation

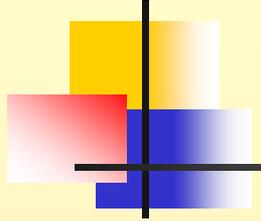
- Delirium suggested if 1 and 2 and either 3 or 4 are true
- Inouye SK, van Dyck CH, Alessi CA et al. Clarifying confusion: The confusion assessment method: A new method for detection of delirium. *Ann Intern Med* 1990;113:941–948



# Delirium: Varieties

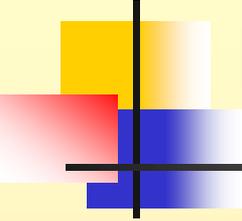
---

- Delirium-related disorders have common symptom presentation of disturbed consciousness and cognition
- May have different etiologies
  - Delirium due to a general medical condition
  - Substance-induced delirium
  - Delirium due to multiple etiologies
  - Delirium not otherwise specified
    - Adapted from DSM-IV (APA, 2000)



---

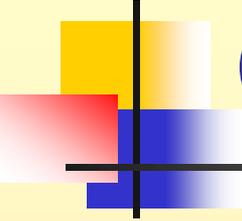
# ASSESSMENT



# Using the Information

---

- *What do we do with the information that has been obtained about behavior and mental function?*
  - A: Think carefully and systematically about causes
- *How can we try to identify causes of acute problematic behavior and altered mental function?*

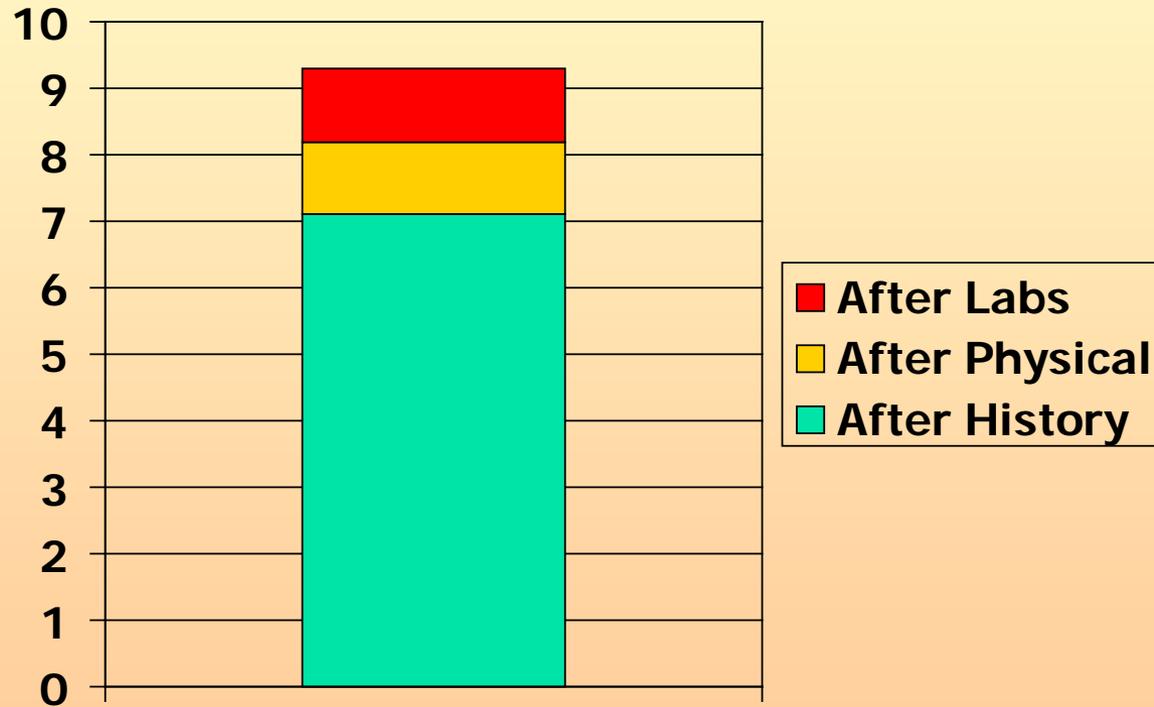


# Cause Identification

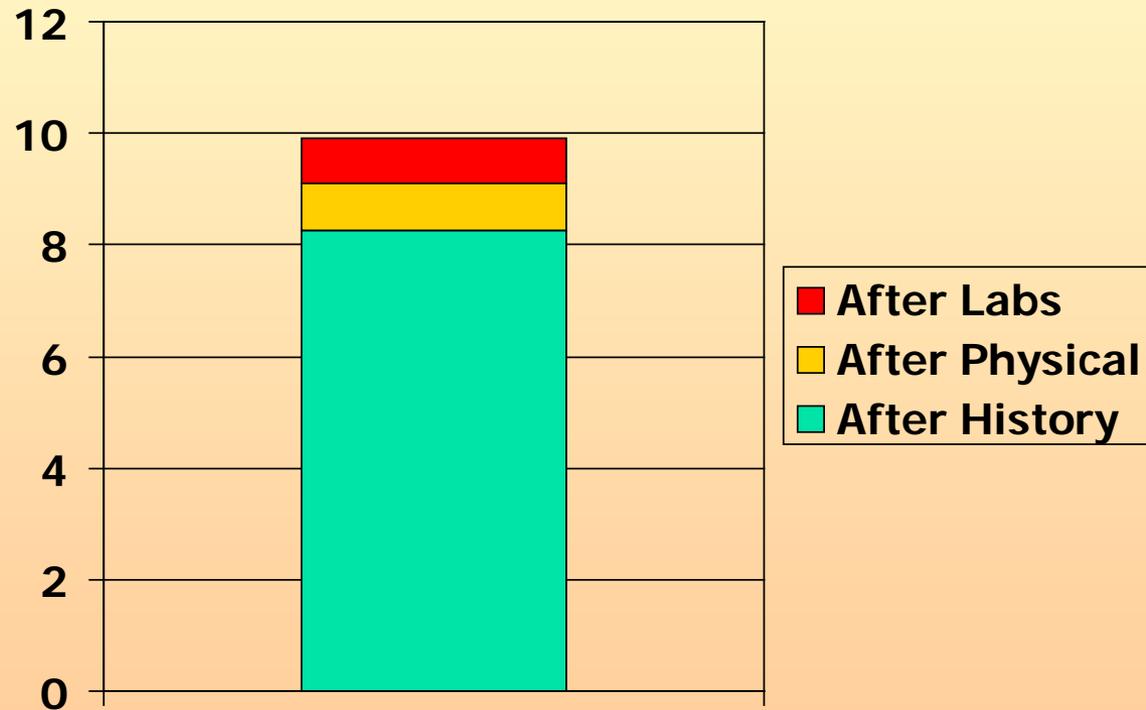
---

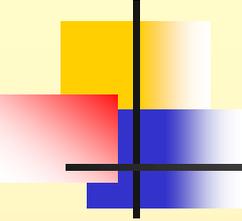
- *Identify cause(s) of problematic behavior and altered mental function*
- Systematic approach helps identify causes of problematic behavior and altered mental function
  - Begins with detailed description of current behavior, function, and mental status in proper context

# History is Most Important (1992)



# History is Most Important (1975)

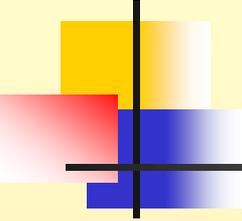




# Identify Causes

---

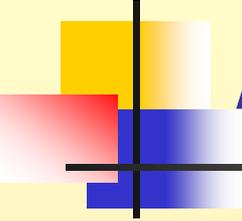
- “Obvious” can sometimes be misleading or provide only part of the explanation
  - For example, do not assume environmental causes until others considered
- MDS and RAPs are not designed to serve comprehensive, orderly, or timely approach to defining specific causes



# Identify Medical Causes

---

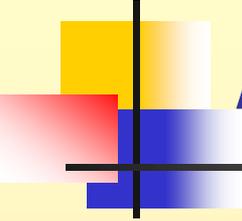
- *Review for medical illnesses with or without delirium*
- Consider based on history, known diagnoses, current signs and symptoms, risk factors, current medication regimen
- If evaluations and tests thus far do not reveal a specific cause
  - Consider additional medical, neurological, psychological, or psychiatric assessment



# Medical Conditions: Acute or Abrupt Onset

---

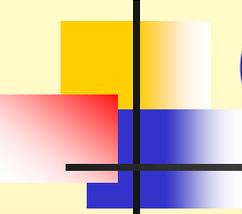
- Medication adverse consequences
- Fluid and electrolyte imbalance
- Infections
- Hypoglycemia or marked hyperglycemia
- Acute renal failure / Acid-base imbalance
- Acute hepatic failure
- Respiratory failure, hypoxia, CO<sub>2</sub> retention



# Medical Conditions: Acute or Abrupt Onset

---

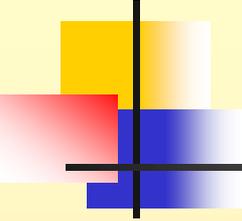
- Cardiac arrhythmia, myocardial infarction, or congestive heart failure
- Head trauma
- Stroke or seizure
- Pain, acute or chronic
- Urinary outlet obstruction
- Alcohol or drug abuse or withdrawal
- Postoperative state



# Medical Conditions: More Gradual

---

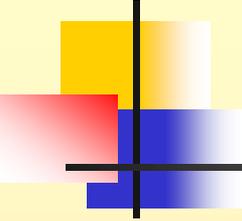
- Hypo- or hyperthyroidism
- Neoplasm
- Nutritional deficiency (e.g., folate, thiamine, Vitamin B12)
- Anemia
- Chronic constipation / fecal impaction
- Sensory deficits



# Diagnostic Test Options

---

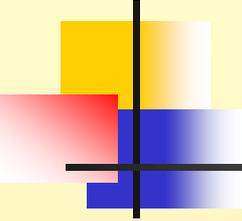
- Based on clinical suspicion and interpreted properly
- Electrolytes, BUN, glucose, creatinine
  - To identify fluid/electrolyte imbalance
- Serum osmolality, urine sodium
  - If hyponatremia is detected
- CBC with differential
  - If infection, inflammatory processes, bleeding, or anemia are suspected



# Diagnostic Test Options

---

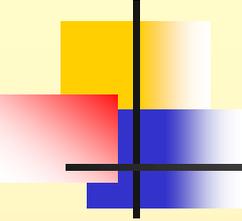
- Chest x-ray / Oxygen saturation (if pneumonia or pulmonary embolism are suspected)
- Urinalysis (if renal dysfunction or urinary tract infection are suspected on clinical grounds)



# Diagnostic Test Options

---

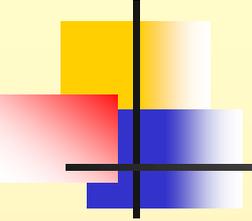
- Cultures of urine, blood or other tissues or body fluids (if infection is suspected on clinical grounds)
- Serum medication levels, when appropriate (to identify possible medication toxicity)
- Brain CT scan or MRI with enhancement (if findings suggest stroke or other acute neurological problem)



# Diagnostic Test Options

---

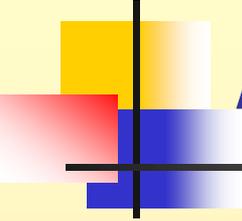
- EKG/rhythm strip (if a cardiac arrhythmia or other heart dysfunction is suspected)
- Serum Vitamin B12 level, liver function tests (to identify other metabolic abnormalities)
- TSH / free T4 / T3 (to identify possible thyroid dysfunction)



# Neuroimaging: CT and MRI

---

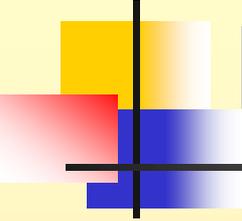
- Examples where computed tomography (CT) or magnetic resonance imaging (MRI) may help include:
  - Headache or other symptoms with focal neurological findings
  - Abrupt or rapid onset of cognitive decline
  - Onset of dementia before age 65
  - Atypical clinical features
  - Gait changes or motor signs only
  - Seizures



# Medications and Behavior / Altered Mental Function

---

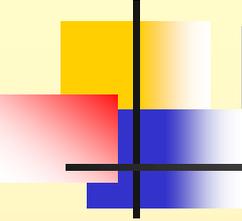
- *What medications can cause acute problematic behavior and altered mental function, and by what mechanisms?*



# Medication-Related Causes

---

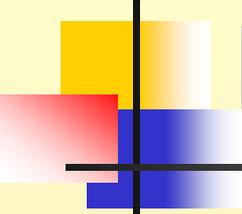
- Medications and related effects and adverse consequences are common and important causes of many psychiatric symptoms in susceptible individuals
  - Drugs that may cause psychiatric symptoms. Medical Letter 2002; 44(1134):59-62
- Staff and practitioner, with consultant pharmacist's input as needed, review current medication regimen for potentially problematic medications



# Medication-Related Issues

---

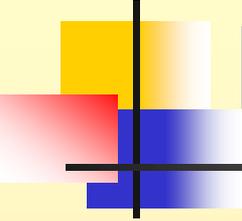
- Examples of mechanisms of medication-induced problematic behavior or AMF
  - Cause oversedation
  - Affect levels of neurotransmitters in the brain
  - Disrupt fluid and electrolyte balance
  - Impair kidney, heart, intestinal, lung, and other organ function



# Medication-Related Issues

---

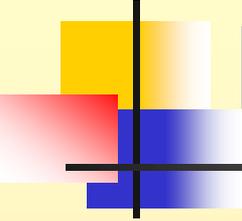
- Even if medication regimen has been stable and has not caused adverse reactions in the past
- Most significant / serious medication risks—including direct and indirect effects on mental function—have been identified and documented
  - Can be anticipated
  - Adverse consequences can often be prevented or at least readily identified



# Medication-Related Issues

---

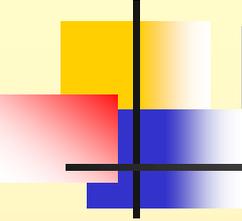
- F329, Unnecessary Medications
  - Surveyor Guidance under the OBRA '87 regulations
  - [www.cms.hhs.gov/transmittals/downloads/R22SOMA.pdf](http://www.cms.hhs.gov/transmittals/downloads/R22SOMA.pdf)



# Medication-Related Issues

---

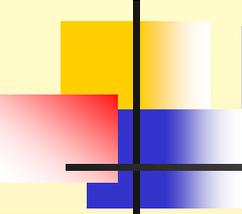
- Medications with anticholinergic properties are especially problematic
  - See OBRA F329 surveyor guidance, Table 2
  - Often not essential
  - Can be readily tapered or stopped
- Other medications can affect behavior and mental states by counteracting or overstimulating brain chemicals such as serotonin



# Medications and Behavior / Mental Function: Examples

---

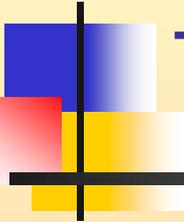
- Antiarrhythmic agents
- Anticholinergic agents (and medications with anticholinergic effects, side effects)
- Antidepressants
- Anticonvulsants
- Antiemetics
- Antihistamines/decongestants
- Antihypertensive agents



# Medications and Behavior / Mental Function: Examples

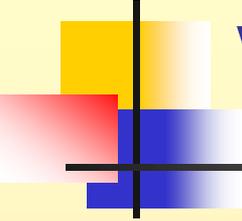
---

- Antineoplastic agents
- Anti-Parkinsons agents
- Corticosteroids
- Muscle relaxants
- Antipsychotic medications
- Opioids
- Sedatives/sleep medications



# TREATMENT / MANAGEMENT

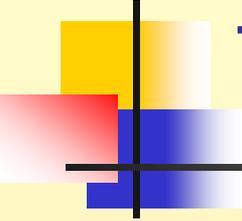
---



# Validate Conclusions

---

- *Establish working diagnosis and validate conclusions*
- Important to base treatment choices on
  - Clear rationale
  - Understanding of overall clinical situation
- Educated guesses, based on evidence, are sometimes necessary
  - Uneducated guesses often hazardous

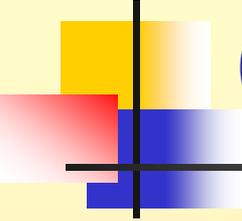


# Treatment Principles

---

- Identify treatment rationale and goals
  - Before or upon initiating interventions
- Sometimes, interventions must be started quickly
  - Often, time to assess and discuss situation in detail before or soon after intervening
- Even empirical interventions should have rational basis, not just guesswork

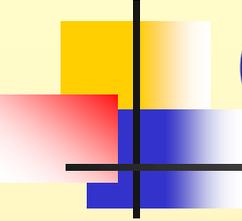
# Treatment Rationale and Goals



---

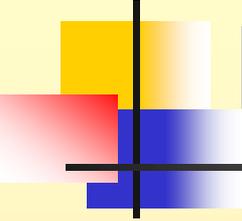
- Key questions
  - Why is patient's behavior problematic?
  - Why does behavior require an intervention
    - Why it cannot be accepted / tolerated as is
  - How was likely cause determined?
    - Distinguished from other possibilities
- How will proposed interventions address causes / contributing factors?
- How will proposed interventions improve well-being and quality of life?

# Treatment Rationale and Goals



---

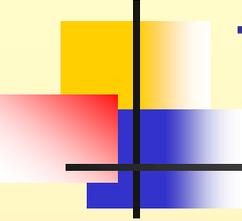
- What is expected outcome; e.g., complete or partial resolution, continued decline?
- What is likely time frame for expecting some significant changes?
- What are likely side effects or complications?



# Goals of Treatment and Management: Examples

---

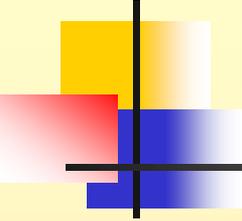
- Correct underlying causes of problematic behavior
- Reduce frequency of aggressive behavior
- Stabilize mood
- Reduce undesirable medication side effects



# The “ABC” Approach

---

- *How can an “ABC” framework help in planning and providing care?*

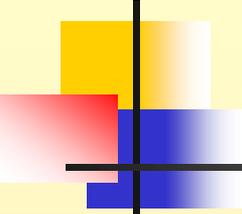


# Approach to Problematic Behavior: "ABC" Framework

---

- "A-B-C" concept
  - A: What are the **a**ntecedents to the behavior?
  - B: What is the **b**ehavior?
  - C: what are the **c**onsequences of the behavior?

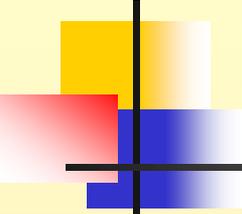
# Approach to Problematic Behavior



---

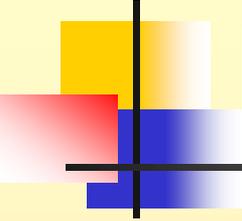
- Physical restraints and sedation directly address behavior (B) by disabling the individual
  - Both are undesirable in most situations
- Short of restraining or sedating, management is based on addressing
  - Antecedents (causes and contributing factors) (A)
  - Consequences (C)

# Approach to Problematic Behavior



---

- Medical interventions—including medications—often can address underlying organic causes and contributing factors (A)
- Consequences (C) are managed primarily by
  - Addressing antecedents (A)
  - Various nonmedical interventions

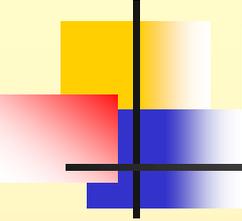


# Problematic Behavior Risks

---

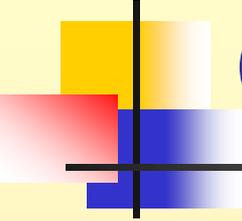
- Use recognized environmental and interpersonal approaches
  - Try to prevent behavioral problems
  - Minimize escalation of such problems by implementing soon after symptoms develop

# Applying “ABCs” to Care Planning



---

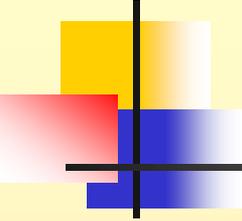
- Care planning and related discussions should include
  - Known or likely causes (A)
    - For example, address pain and discomfort and minimize sleep disruption
  - Identified target behaviors (B)
  - Individualized goals and strategies for addressing target behavior and its causes and consequences (C)



# Coordinating Approaches

---

- Uncoordinated activity =>
  - Unnecessary transfers
  - Improper management
  - Use of inappropriate medications Control information reporting
- Limit staff seeking new telephone orders, including medications
  - Especially on evenings and weekends
  - Essential to oversee phone calling!

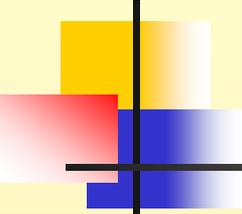


# Interventions

---

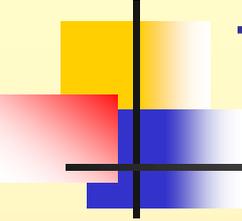
- *Provide symptomatic and cause-specific management*
  - Usually, both types of interventions are needed simultaneously
- Symptomatic Interventions
  - Not specifically targeted to causes
  - May be less effective if used without adequately managing treatable causes

# Treating Underlying Causes: Examples



---

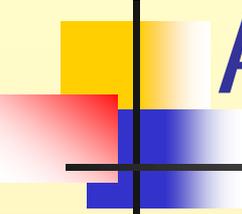
- Manage delirium
  - Correct fluid, sodium imbalances
- Treat acute exacerbations of psychotic disorders
  - Appropriate medications / supportive measures
- Address contributing factors
  - Reduce excessive noise, manage other aggressive residents



# Treatment

---

- Appropriate treatment depends on accurate diagnosis
- Address key medical conditions; for example
  - Hypo or hyperglycemia, hypercalcemia
  - Acid-base disturbances
  - Severe anemia
  - Hypoxemia / hypercapnea
  - Fever / infections
- Most of all

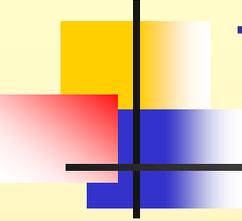


# Address Iatrogenic Causes

---



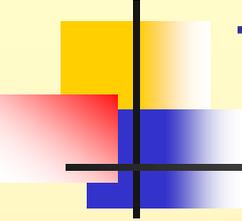
**Discontinue all possible offending medications**



# Treat Delirium and Psychosis

---

- Identify and treat underlying causes
- Ensure patient safety
- Support patient's functioning

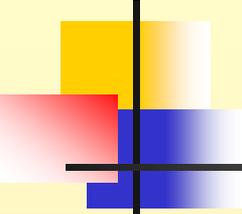


# Treat Delirium and Psychosis

---

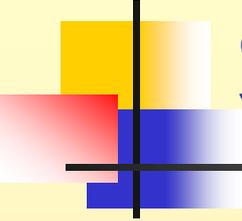
- Symptoms of acute psychosis unlikely to respond adequately to nonpharmacological interventions alone
- All patients with delirium and psychosis should also receive environmental and supportive interventions at least until mental function stabilizes or begins to improve

# Address Wandering and Sleep Disturbances



---

- Wandering often of concern
- Medical and pharmacologic options to address wandering are limited
  - May be helped by addressing underlying causes; for example
    - Reduce doses of medications causing motor restlessness mistaken for agitation
    - Treat psychosis that leads a patient to wander into others' rooms to try to find a nonexistent person

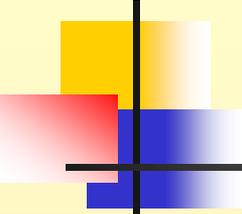


# Sleep Disturbance

---

- Seek underlying causes
- To extent possible, use nonpharmacological measures
- Use medications for sleep disorders judiciously and to the extent possible target them to causes
- AMDA Sleep Disorders clinical practice guideline

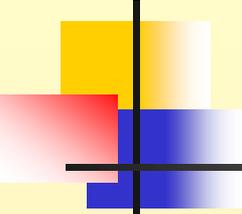
# Address Apathy and Mood Disorders



---

- Apathy and mood disorders may be associated with problematic behavior and apparent altered mental function
- Apathy and other passive behaviors are most common neuropsychiatric symptom in dementia
  - Affect over 70 percent of individuals with Alzheimer's disease

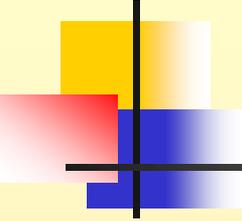
# Address Apathy and Mood Disorders



---

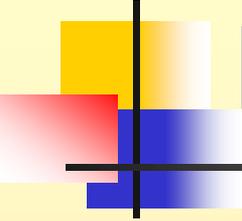
- Apathy can be a prominent symptom of diverse causes
  - Including (but not limited to) depression
- Important to distinguish apathy (a lack of motivation in affect, behavior, and cognition) and lethargy from mood disorders
  - Anemia, heart failure, medications, etc. can cause lethargy and weakness

# Address Apathy and Mood Disorders



---

- Apathy tends to have more symptoms related to motivation
  - Lack of interest, low energy, and psychomotor slowing, lack of emotional responsiveness, etc.
- Depression tends to relate more to mood, including dysphoria
  - Sadness, guilt feelings, self-criticism, helplessness, and hopelessness), suicidal ideation, etc.

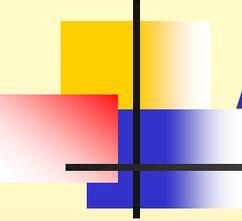


# Mood Disorders

---

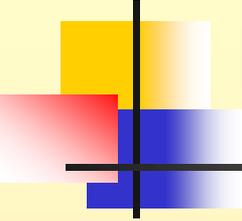
- Careful diagnosis of depression
- Commonly used empirical approach to treatment
- If mood disorder suspected, but initiating or increasing dose of antidepressant does not at least somewhat improve symptoms, consider other diagnoses before increasing doses further or adding more medications

# Using Medications Appropriately



---

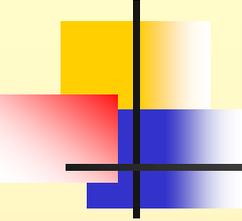
- *How do we use medications rationally to help manage acute problematic behavior and altered mental function?*



# Use Medications Appropriately

---

- *Use medications appropriately to address problematic behavior and altered mental function*
- Medications are commonly used
  - It is possible to use medications rationally to try to manage diverse causes of problematic behavior
  - Current use often questionable, based on uneducated guesswork

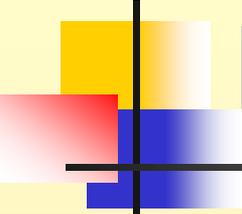


# Rational Medication Use

---

- Rational approach based on
  - Understanding mechanisms of action
  - Targeting medications to the identified or likely underlying causes of the problem
- No “magic bullets” that routinely or predictably improve or stop behavioral symptoms

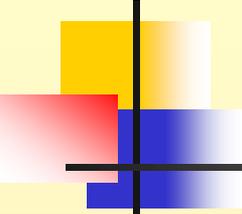
# Rational and Irrational Medication Use



---

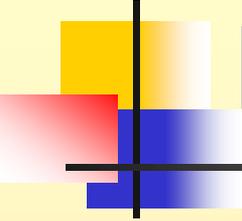
- Even rational medication use only sometimes successful and may be associated with significant risks and complications
- Random or irrational medication ordering and use often reflects uneducated guesswork, including misinterpretation of regulatory requirements

# Random Medication Interventions



---

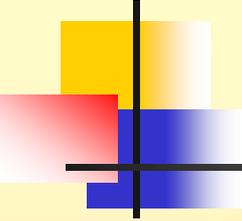
- May be problematic for several reasons
  - Inappropriate medication fails to address the problem
  - Wrong medication often causes serious adverse consequences
    - More medications added, further aggravate symptoms
  - Improperly treating underlying condition or situation often results in preventable crises and hospital transfers



# Key Considerations In Using Medications

---

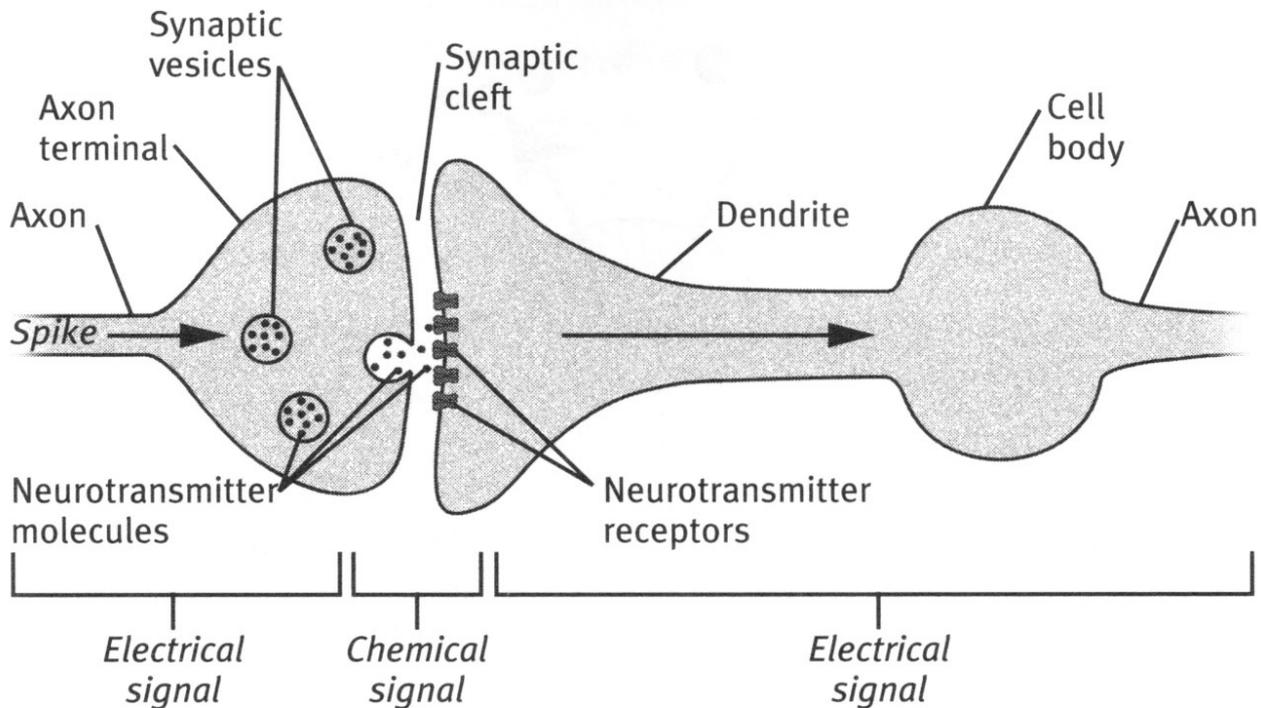
- Behavior influenced by
  - Brain's chemical and electrical activity
  - Function of every organ system
  - Other diverse factors



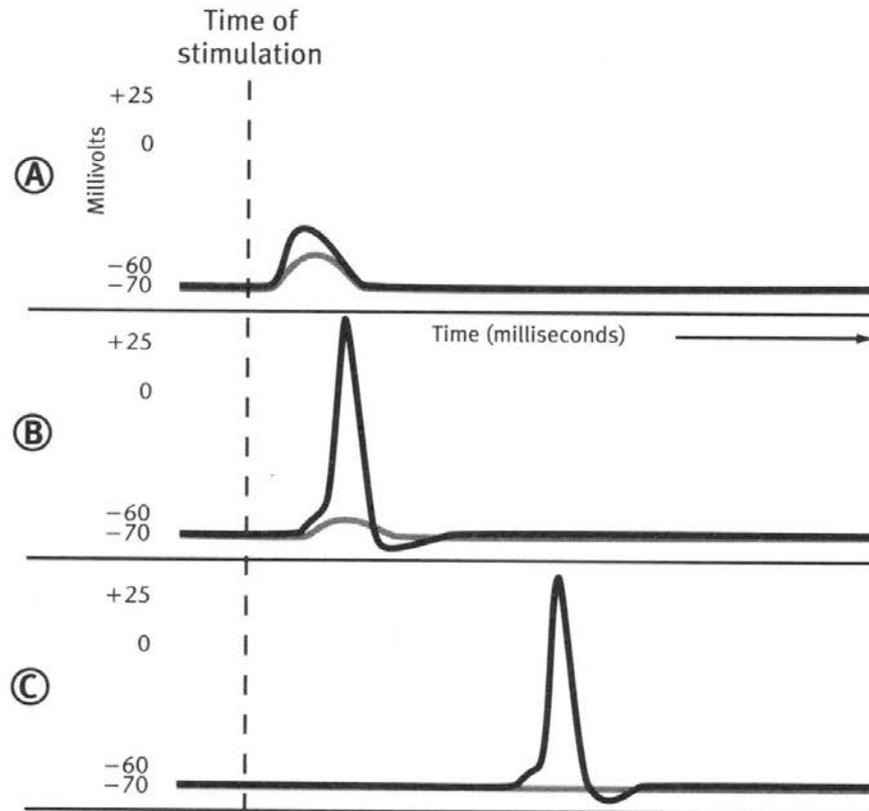
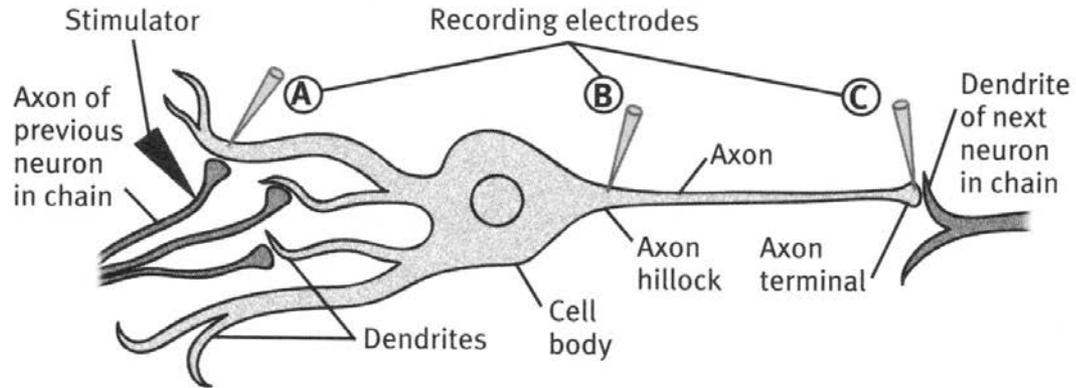
# Effects of Medications

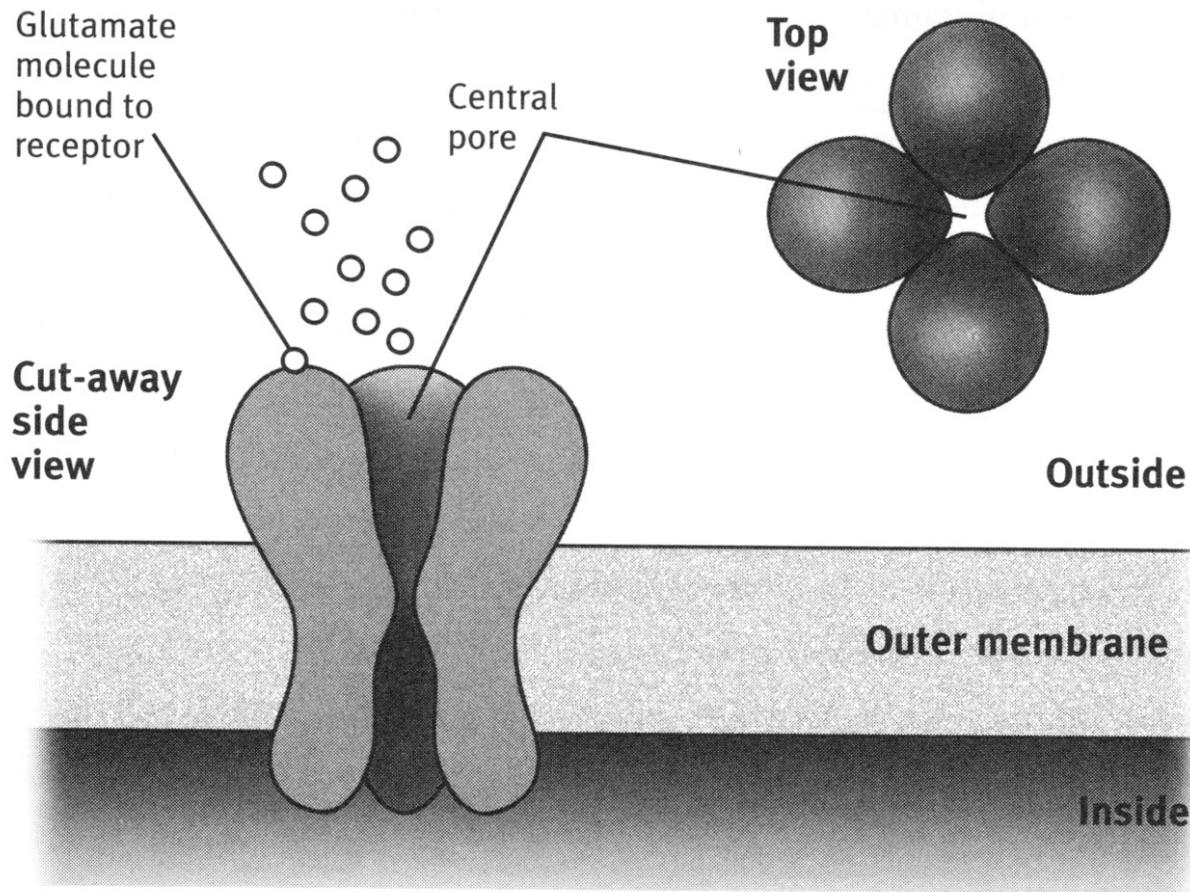
---

- Medications for behavioral symptoms and psychiatric disorders generally affect only one or, at best, several of the many chemicals that influence brain function and behavior



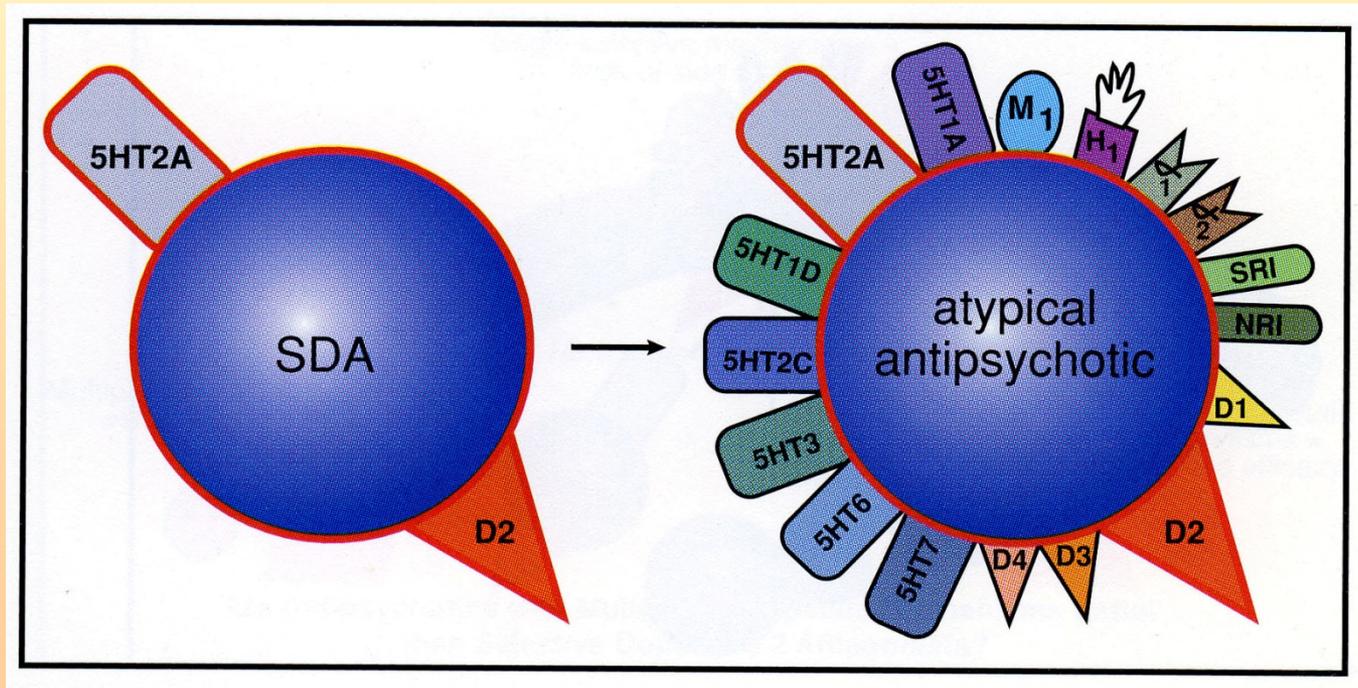
**FIGURE 2.3.** Synapses, the key sites in the brain for converting electrical signals to chemical signals and then back into electrical signals. Reading from left to right tells the story of synaptic signaling. *Joan M. K. Tycko, illustrator.*



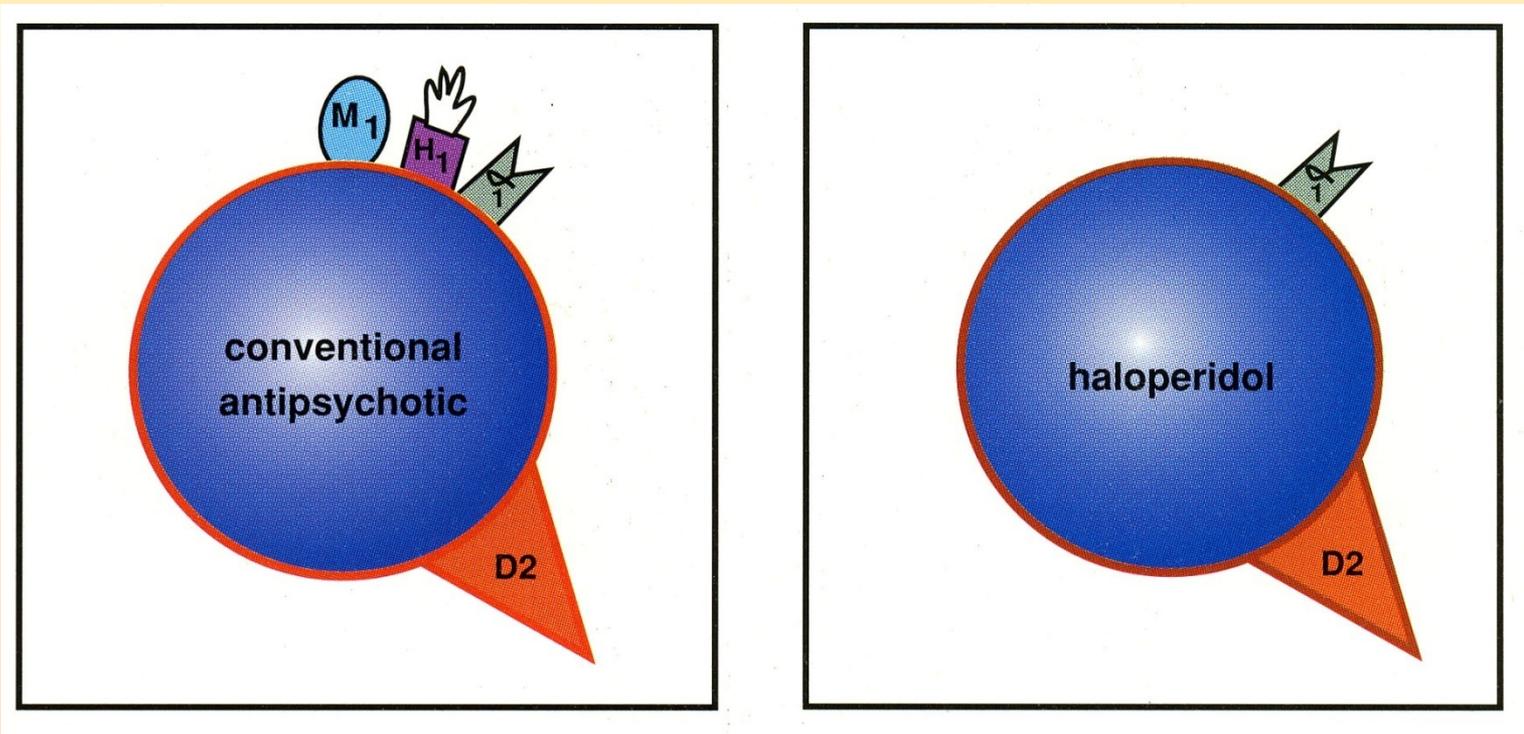


**FIGURE 2.6.** Schematic drawing of a glutamate receptor in the postsynaptic membrane. Glutamate binding to its receptor opens the central pore, the ion channel. *Joan M. K. Tycko, illustrator.*

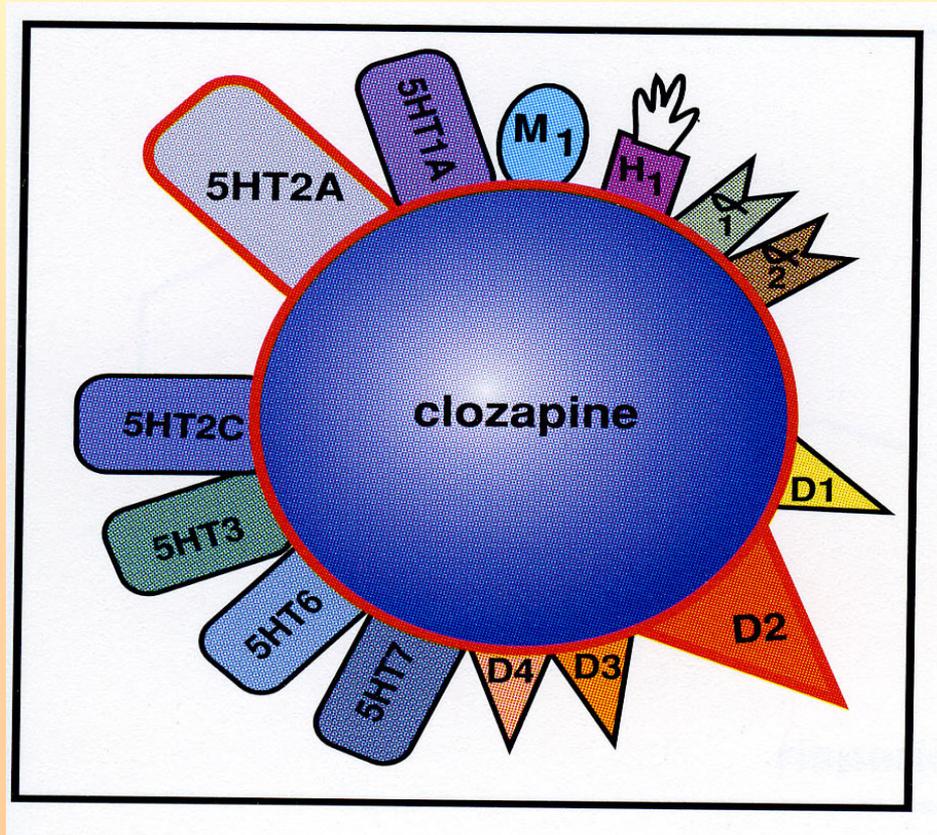
# Beyond Serotonin-Dopamine Antagonism

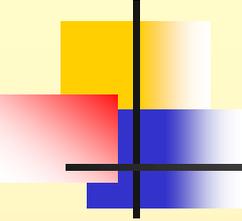


# Example of Conventional Antipsychotics: Haloperidol



# Example of Second Generation Antipsychotics: Clozapine

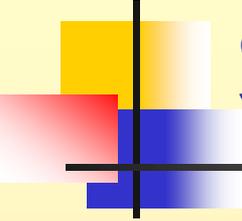




# Effects of Medications

---

- Examples
  - Cholinesterase inhibitors affect acetylcholine levels
  - Antidepressants may affect serotonin, norepinephrine, dopamine, and other neurotransmitters associated with mood
- Effective medications should be part of the overall approach to the patient, but rarely are the sole solution

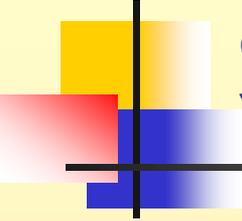


# Systematic Approach

---

- Systematic approach to medical treatment of behavioral symptoms more likely to be effective
- Obtain and review the details of the situation, including a history of the current behavior

1. *Identify current behavior*
2. *Identify & clarify problematic behavior*
3. *Identify risk factors*

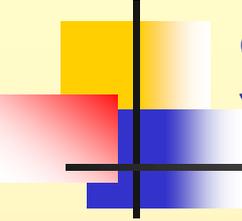


# Systematic Approach

---

- Determine most likely causes of the situation
  - Including current medication regimen

- 4. Identify the urgency of the situation*
- 5. Identify causes*
- 6. Review for contributing medical illness*
- 7. Perform diagnostic tests*
- 8. Identify contributing medications*

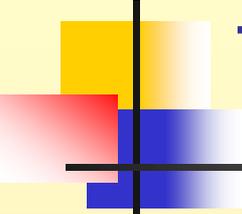


# Systematic Approach

---

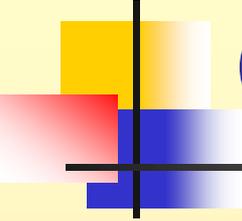
- Identify what the staff has already done, or could do, to try to understand and address the situation
- Consider whether the patient's behavior or condition is presenting imminent or high level of danger to self or others
  - Is urgent intervention warranted?
- Identify whether nonpharmacological approaches are feasible

# Making Decisions About Treatment



---

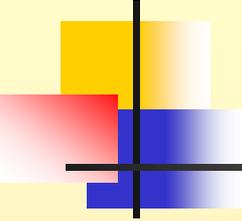
- Base decisions about medications on trying to identify and understand
  - Predominant symptom(s)
  - Likely causes
  - Mechanisms of action



# Agitated Behavior: Possible Causes

---

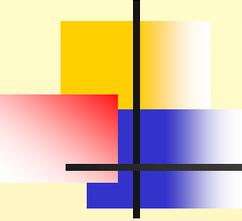
- Possible causes
  - Exacerbation of underlying psychotic disorder (e.g., depression with psychosis)
  - New onset of delirium
  - Adverse reaction to medications that were added recently to address similar symptoms



# Example: Agitated Behavior

---

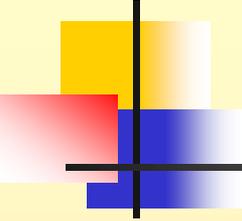
- Intervention possibilities
  - Needs more or less of current medications
  - Needs additional medications
  - Needs substantially or totally different approach with or without medications
- How many medications?
  - Sometimes, one medication will address root cause of multiple symptoms
  - At other times, multiple concurrent problems require multiple medications



# Before Adding Medications

---

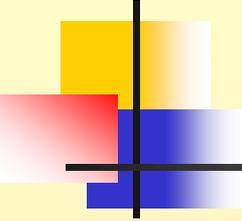
- Review current medication regimen including any recent changes
- Identify any medications that, either alone or in combination, could adversely affect behavior and mental function



# Delirium and Psychosis

---

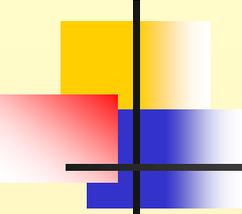
- Antipsychotic medications are approved to treat exacerbations of mental illnesses including schizophrenia
  - Not approved to treat psychosis or behavioral symptoms in individuals with dementia or delirium
  - Sometimes work empirically



# Delirium and Psychosis

---

- Medication doses may vary with
  - Age, weight, gender, severity of distress and psychotic symptoms, and underlying causes
  - Example: treating psychosis as an exacerbation of schizophrenia in a younger patient may require a much higher dose than treating psychosis related to dementia in an older patient

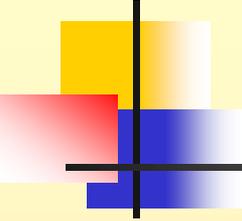


# Medications For Patients With Delirium or Psychosis

---

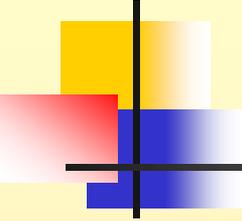
- If psychosis or delirium severe and debilitating
- Short-term oral or intramuscular second generation antipsychotic medication
  - Risperidone 0.5-1.0 mg bid
  - Olanzapine 5-10 mg/day
  - Ziprasidone 5-10 mg/day
  - Quetiapine 25-200 mg/day
  - Aripiprazole 75 mg/day

# Medications For Patients With Delirium or Psychosis



---

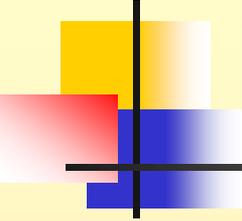
- Short-term use of oral or intramuscular second generation or first-generation antipsychotic medication
- Haloperidol (e.g., 0.5-2mg q8h) also effective
  - Still used to good effect
  - Others advocate only 2<sup>nd</sup> generation
- Still controversial whether 2<sup>nd</sup> generation truly advantageous for short-term use
- Simple empirical test of whether pertinent
  - Do symptoms subside after administering, without causing excessive sedation?



# Delirium and Psychosis

---

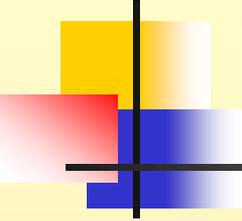
- Alternatively, judicious use of clonazepam (e. g., 0.5 – 1 mg. with a maximum of 3 mg per 24 hours) for those who are more sensitive to side effects of antipsychotic medications
  - For example, Parkinsons Disease, dementia due to Lewy body disease



# Physically Aggressive Behavior

---

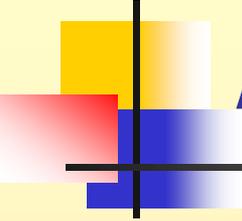
- Medications may help if they address underlying causes such as psychosis, mania, or a mood disorder
- When repeating or increasing doses does not at least partially reduce severity and frequency of aggression
  - May be more appropriate to stop medication and/or try something else



# Physically Aggressive Behavior

---

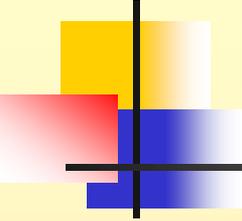
- Patients may respond to antimanic medication including antiepileptics (e.g., lamotrigene, valproic acid), clonazepam, lithium, or—when mania is associated with delusions or hallucinations—antipsychotics



# Aggression: Other Causes

---

- Personality disorders commonly have associated aggression
  - Do not respond readily to any category of medications
  - Nonpharmacological approaches preferable when most likely cause of physical aggression is a personality disorder (other than an obsessive-compulsive disorder)
  - Why run those with personality disorders out to the ER?

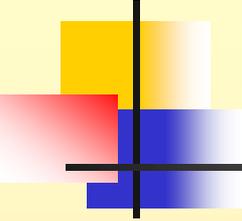


# Sexually Inappropriate Behavior

---

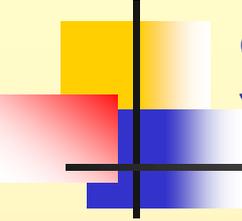
- Important to distinguish variants of normal sexual expression from disease-based sexually inappropriate behavior
  - Generally undesirable to try to use medications to try to suppress normal sexual expression
  - Success of medications for sexually inappropriate behavior may depend on underlying cause (e.g., mania, psychosis)

# Sexually Inappropriate Behavior



---

- Otherwise, try non-pharmacologic measures
  - Provide appropriate opportunities for desired nonsexual intimacy
  - Provide other outlets for sexual desires
  - Reduce barriers to more appropriate sexual expression
- For more difficult, disease-based cases
  - Get psychiatric consultation before trying medications

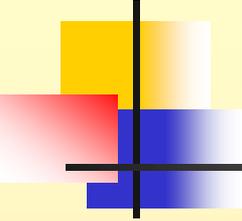


# Behavioral and Psychological Symptoms (BPSD)

---

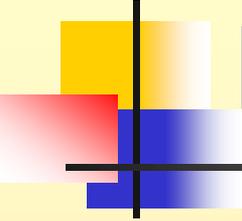
- Consider and address medical (e.g., pain, delirium), psychiatric, and environmental causes
- Consider nonpharmacological interventions to address nonspecific behavioral and psychological symptoms related to dementia before using medications

# Classes of Medications For BPSD



---

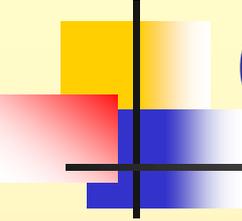
- Antipsychotics
- Cholinesterase inhibitors
- N-methyl-D-aspartate–receptor modulators
- Anticonvulsants
- Antidepressants
- Anxiolytics



# Medication Principles for BPSD

---

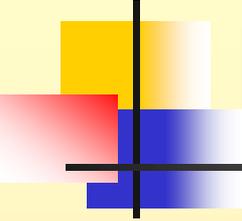
- No “magic bullets”
- No medication class demonstrated to have consistent, predictable benefits
- No established ways to predict who will respond or have long-term benefits
- Even apparently successful medication interventions require reevaluation
  - May need to be changed or discontinued, depending on subsequent results



# One Approach to BPSD

---

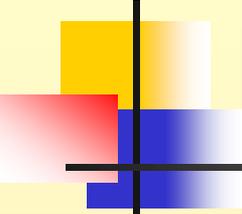
- Choose medications based on target symptom
  - For example, address psychotic symptoms with antipsychotic medication or anxiety symptoms such as repetitive vocalizations or pacing with an antidepressant
- However, randomized, controlled trials have yet to confirm that this approach is effective



# Limited Evidence of Efficacy

---

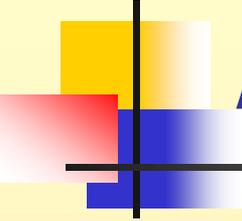
- As of 2008, only a few medications have randomized, controlled trials to support efficacy in treating BPSD in patients with Alzheimer's Disease or vascular dementia
- Some evidence for risperidone (up to 1 mg/day) and olanzapine (5 to 10 mg/day)



# Limited Evidence of Efficacy

---

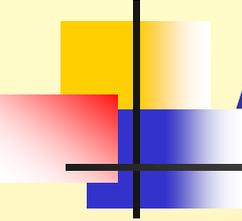
- Other second-generation antipsychotic medications include quetiapine, aripiprazole, or ziprasidone
  - Evidence of effectiveness of these options is scant
- No first generation antipsychotics have shown good evidence of effectiveness in the long-term treatment of BPSD



# Alternatives

---

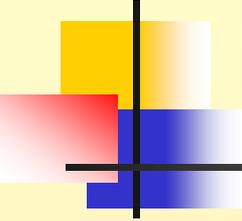
- Try memantine alone or combined with cholinesterase inhibitors
  - May be more effective in patients with dementia with Lewy bodies or related to Parkinson's Disease
  - To date, have demonstrated a small impact on neuropsychiatric symptoms
  - Efficacy still controversial



# Anticonvulsants

---

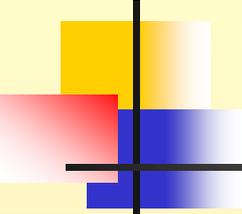
- Sometimes effective empirically in patients with difficult or resistant BPSD
- No controlled studies to date showing effectiveness
- Common significant side effects
  - Lamotrigene may have somewhat fewer than the others



# Benzodiazepines

---

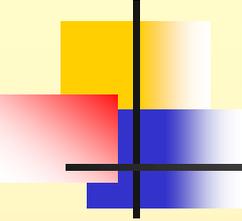
- Often overused and misunderstood
- Short half-life benzodiazepines (e.g., lorazepam or alprazolam)
  - Occasional minor anxiety symptoms or occasional marked agitation not handled by nonpharmacological measures
  - Tolerance occurs rapidly
- Not indicated for long-term treatment of behavioral symptoms or as a first-line agent to treat psychosis
  - Sometimes useful adjunct to other medications



# Benzodiazepines

---

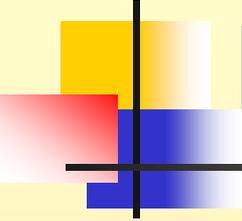
- May increase agitation, insomnia, and cause other side effects
- Clonazepam may be effective in mania and panic disorders
- All benzodiazepines associated to some degree with adverse consequences such as increased confusion, sedation, falls, and hip fractures in a susceptible population



# Benzodiazepines

---

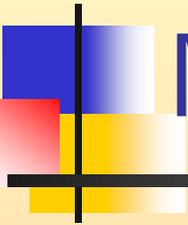
- Inappropriate use in patients with delirium and psychosis may
  - Permit symptoms to progress
    - Symptoms persist or worsen when sedation wears off
  - Lead to additional use of inappropriate and ineffective medications or unnecessary hospitalization
- Common “rebound” effects (anxiety, restlessness, and insomnia)



# Monitoring

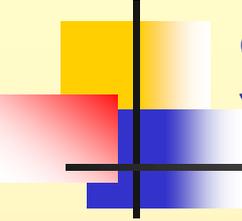
---

- *What are the key aspects of monitoring patients with acute problematic behavior and altered mental function?*



# MONITORING

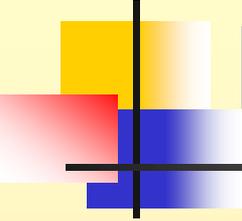
---



# STEP 13: Monitoring

---

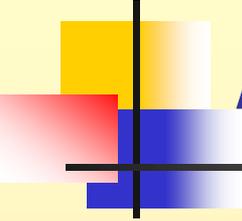
- *Monitor and adjust interventions as indicated*
- Monitor progress periodically
- Use same approaches as in Steps 1-8
- Continue to identify details of behavior and mental function
  - To permit comparison over time



# Monitoring

---

- Document patient's course often enough and in enough detail to enable
  - Decisions about whether symptoms are improving and interventions are effective
  - Whether diagnoses need to be reconsidered and interventions revised
- As with many symptoms, problematic behavior and altered mental function do not necessarily resolve immediately or totally

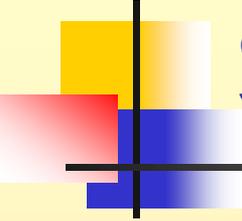


# Behavioral Symptoms: Anticipated Course

---

- Give time for appropriate interventions to take effect
  - Impatience can lead to addition of unnecessary medications that complicate situation
- Behavioral symptoms may fluctuate or recur periodically
  - Even with optimal approach

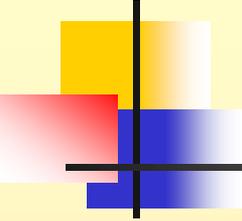
# Progress in Behavioral Symptoms



---

- If acute problematic behavior or altered mental function do not at least begin to stabilize or improve within 72 hours of initiating or modifying interventions
  - Review situation
  - Consider revisiting some of previous steps
  - Reconsider diagnoses and interventions
- Change interventions more quickly when evidence suggests that they may be inappropriate or problematic

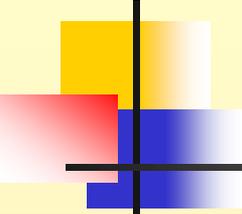
# Treatment and Symptom Improvement



---

- Adjust doses of medications based on symptoms and adverse consequences
- When medications are used, improvement in symptoms should roughly parallel dosage increases
  - No matter which medications tried, low dose should be at least somewhat effective to warrant raising the dose further

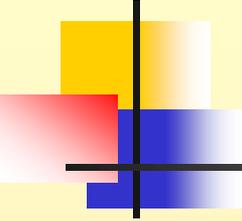
# Treatment and Symptom Improvement



---

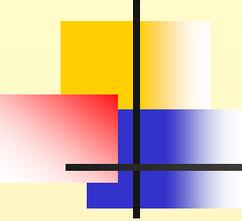
- If symptoms persist unchanged despite repeatedly increasing the dose
  - Medication not likely to be effective or will likely cause adverse consequences before effective dose is reached
- Only add medications appropriate for cause and nature of patient's symptoms
- Adding medications randomly in hope something might work, usually doesn't!

# Treatment and Symptom Improvement



---

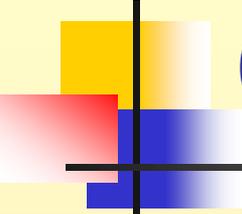
- If maximum recommended or tolerated dose of one medication reached with partial improvement of symptoms or improvement of one symptom but not others
  - Example: delusions have subsided but physical aggression remains
  - May be appropriate to add another medication as an adjunct or to treat other symptoms



# Psychiatric Consultation

---

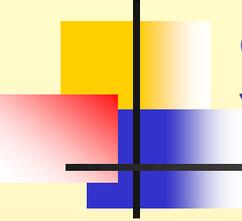
- Can help with follow-up
- Attending physician should remain involved
- Practitioner and staff should periodically reevaluate and discuss patient's condition and risk factors
- Practitioner should also assess patient as often as indicated by stability and severity of symptoms and causes



# Ongoing Monitoring

---

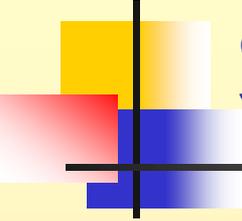
- For patient with delirium or urgent or emergency problematic behavior
  - Monitor at least several times daily until stable and/or improving
- For long-term stable (i.e., no more than occasional episodes) behavior risks
  - Staff monitor behavior at least quarterly or as frequently as indicated by patient condition and response to interventions



# Recurrent or Persistent Symptoms

---

- Reconsider underlying diagnosis and appropriateness of current treatments
- If tapering or stopping medication results in return of symptoms that cannot otherwise be controlled
  - Medication may still be pertinent and higher dose may be needed



# Recurrent or Persistent Symptoms

---

- If symptoms are little or no different as dose reduced
  - Additional attempted dose reduction may be indicated
- Information in F329: Unnecessary Medications surveyor guidance
  - Pertinent to review and tapering of psychopharmacologic medications
  - Important but not primary guide to appropriate action