Common Psychiatric Issues
in the General Hospital

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Situations Warranting Consultation

• Delirium
• Suicidal Patients
• Violent, Agitated, or Homicidal Patients
• Severe Anxiety and Mood Disorders
• Psychotic Patients
• Complicated Substance Withdrawal
• Assessment of Decision Making Capacity
• Psychiatric Reactions to Medical Conditions
• Medical Presentations of Psychiatric Conditions

When considering consultation...

• Assess for the presence of active symptoms
  – Mental illnesses often occur in episodes
  – Mental illnesses are often diagnosed over time
  – Inpatient consultation has limitations
    • Outpatient care and follow up are critical

• Collateral information is valuable
  – Document information from family members or outpatient providers during admission process

• Perform your own interview first
  – Multiple “snapshots” of behavior guide accurate diagnosis
  – Communication with the consultant is key
  – Maintain a medical differential to explain symptoms/behaviors

When considering consultation...

• Inpatient admission may be warranted for:
  – Suicidal Patients
    • Active, ongoing threats of suicide
    • Recent suicide attempt or serious self-inflicted bodily harm
  – Homicidal Patients

  – Severely decompensated mental illness
    • Inability to provide for basic needs
    • Food, shelter, water, medications, maintain safety & rights of patient and others
    • Bipolar mania, schizophrenia, others
### When considering consultation...

- Generally treated in outpatient settings:
  - Mild anxiety and depression
  - Adjustment disorders
  - Eating disorders
  - Substance Abuse and Dependence
  - Somatoform Disorders
  - All stable, interepisode mental health conditions

- Mental health follow-up is important in all cases
  - Chronic, episodic illnesses need ongoing care

### Managing Safety Risks

- Keep yourself safe
- Call Security early
- Coordinate and communicate plans with nurses and staff
- Have medications and restraints ready
- Environment check
  - Remove potentially dangerous or unnecessary objects/furniture from the room

### Safety / Lethality Risks

- Patients who may be at imminent risk for dangerous or violent behavior:
  - Suicidal Patients
  - Homicidal Patients
  - Psychotic Patients
  - Intoxicated Patients
  - Some Delirious or Demented patients
    - May perceive they are protecting themselves

- Future behavior cannot be predicted with 100% accuracy
  - Assessment of risk factors, insight, judgment and impulse control
  - What the patient says is not always everything...
  - Best predictor of future violence is a history of past violence

### Emergency Orders

- PRN medication for emergent behavioral agitation
  - Exclude the presence of delirium
  - Haldol 5 mg PO/IM q4 hours
  - Ativan 2 mg PO/IM q4 hours

- 1:1 Constant Attendant and Safety Precautions

- Medical Hold Order
  - Unsafe or lethal patients may not leave AMA
  - Discuss legal mechanisms with your risk manager

- Psychiatry Consultation
Case #1

- A 21 year old Caucasian female college student is brought to the ED by medics for “altered mental status”
- Was found at home by her roommate, obtunded, near several empty medication bottles and an empty bottle of wine
- Roommate found a note indicating that she was “saying goodbye” after breaking up with her boyfriend
- Has a history of “depression” and 1 previous suicide attempt

Suicide Risk Assessment

- Suicide cannot be predicted with 100% accuracy
- Suicide risk assessment should focus on:
  - Identifying and managing the patient’s suicide risk factors
- “No study has identified one specific risk factor or set of risk factors as specifically predictive of suicide or other suicidal behavior.”

Suicidal Behavior

- Suicide is a significant public health problem
  - 11th leading cause of death in the United States
    - 2nd leading cause of death in ages 25-34
    - 3rd leading cause in ages 10-24
    - 4th leading cause in ages 35-44
    - 5th leading cause in ages 45-54
- In adults, suicides outnumber homicides
- 30-60% of suicides have a prior attempt
- 10-14% eventually complete suicide
  - 10.7 suicides per 100,000 people per year

National Center for Health Statistics (NCHS), National Vital Statistics System, 2005
U.S. Centers for Disease Control and Prevention
## Suicidal Behavior

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Suicide Completion</strong></td>
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<tr>
<td>– 4 male : 1 female</td>
<td></td>
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<tr>
<td><strong>Suicide Attempts</strong></td>
<td></td>
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<tr>
<td>– 3 female : 1 male</td>
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<tr>
<td><strong>Firearms</strong></td>
<td>55-60%</td>
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<tr>
<td><strong>Hanging</strong></td>
<td>14%</td>
</tr>
<tr>
<td><strong>Ingestion/Overdose</strong></td>
<td>11%</td>
</tr>
<tr>
<td><strong>Gas/Carbon Monoxide</strong></td>
<td>9%</td>
</tr>
<tr>
<td><strong>Other Methods</strong></td>
<td>8%</td>
</tr>
</tbody>
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## Assessment of Suicidality

- Estimate and weigh the patient's risk through assessment of risk and protective factors
  - Primary and ongoing goal is reducing suicide risk
  - Degree of risk helps guide level of care and treatment planning

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## Assessment of Suicidality

- Interviewing the patient is the essential element of the suicide assessment process
- Assessment and treatment should occur in the least restrictive setting possible
  - But one that is likely to still afford adequate patient safety
- Suicide assessment scales lack the predictive validity necessary for use in routine clinical practice
  - Developed for research purposes

## Assessment of Suicidality

- Remember limitations of a single “snapshot”
  - Details count
  - Take your time
  - Documentation is always essential
  - Not all of the information may be immediately available
- Simply asking about suicidal ideation does not ensure that accurate or complete information will be received
  - Ambivalence and Resistance
    - Context/overweighting of the “Yes/No” question?
    - “Totality of Circumstances”
- Obtain information from collateral sources
  - Requires flexibility and communication
Static vs. Dynamic Risk Factors

<table>
<thead>
<tr>
<th>Static</th>
<th>Dynamic</th>
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<tbody>
<tr>
<td>• Previous suicide attempts</td>
<td>• Depression and hopelessness</td>
</tr>
<tr>
<td>• Alcohol abuse</td>
<td>• Severe anxiety or agitation</td>
</tr>
<tr>
<td>• Living alone</td>
<td>• Severe insomnia</td>
</tr>
<tr>
<td>• Family history</td>
<td>• Psychosis and delusions</td>
</tr>
<tr>
<td>• Unmarried</td>
<td>• Intoxication or recent alcohol abuse</td>
</tr>
<tr>
<td>• Lack of social support</td>
<td>• Access to firearms or lethal toxins</td>
</tr>
<tr>
<td>• Fall in social/economic status</td>
<td>• Recent stressful event</td>
</tr>
<tr>
<td>• Relationship status change</td>
<td></td>
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<tr>
<td>• Medical illness</td>
<td></td>
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<tr>
<td>• Unemployment</td>
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</table>

Complicating Factors

- Identification and treatment is necessary prior to accurately assessing suicide risk
  - Delirium
  - Intoxication
  - Other acute non-psychiatric medical problems
- Continually revisit risk factors in a flexible and longitudinal fashion
  - Changes in a patient’s dynamic (vs. static) risk factors?
  - Changes in treatment

Risk and Demographic Factors

- **Higher Risk:**
  - Young and old age
  - 10-24 and after 70
  - Males
  - Caucasians
  - Native Americans
  - Single
  - Divorced
  - Gay, lesbian, bisexual youth
  - Physicians
  - Dentists
  - Farmers
  - Jail/Prison Inmates
  - Protestant, atheist
  - Urban areas
- **Lower Risk:**
  - Pregnant women
  - Individuals with young children
  - Women
  - African-Americans
  - Married
  - Strong Religious Beliefs
  - Catholicism, Judaism
  - Rural areas

Higher Risk Circumstances Warranting Thorough Suicide Assessment

- Lack of improvement or gradual worsening despite treatment
- Significant interpersonal loss or psychosocial stressor
  - Divorce, financial loss, legal problems, personal shame or humiliation
  - Anticipated or experienced
- Onset of a physical illness
  - Particularly if life threatening, disfiguring, or associated with severe pain or loss of executive functioning
Assessment of Suicidality

- Suicidal or self-harming thoughts, plans, behaviors, and intent
  - Nature, frequency, depth, timing, and persistence of suicidal ideation
- Assessment of suicide plan
  - Lethality of plan
  - Specificity of plan
  - Characteristics of contemplated attempt

Psychiatric History

- Risk for suicide is elevated in untreated or treatment resistant mental illness
  - Mood disorders
    - Major depressive disorder
    - Bipolar mixed/Bipolar depressive episodes
  - Schizophrenia
  - Substance use disorders
  - Anxiety disorders
  - Personality disorders
    - Borderline, Antisocial, and Obsessive-Compulsive

Assessment of Suicidality

- Assessment of intent
  - Patient's expectation of lethality
  - Accidental death possible even with low intent
  - Sense of capability to carry out attempt?
- Access to firearms

Key History Points

- Previous psychiatric diagnoses and treatments
  - Past suicide attempts
  - Inpatient psychiatric hospitalizations
  - Treatment for substance use disorders
  - Strength and stability of the therapeutic relationship in current or past treatment
- Family history of:
  - Suicide or suicide attempts
  - Mental illness and/or psychiatric hospitalization
  - Substance abuse
Psychosocial Factors

- Acute psychosocial crises or chronic psychosocial stressors:
  - Actual or perceived interpersonal losses
  - Financial difficulties or changes in socioeconomic status
  - Housing problems
  - Family discord
  - Domestic violence
  - Past or current sexual or physical abuse or neglect
  - Stressors in gay, lesbian, or bisexual youths
  - Employment status
  - Important dates – anniversaries, holidays, etc.

High Risk Medical Conditions

- Epilepsy (including Temporal Lobe Epilepsy)
- Multiple Sclerosis
- Huntington's Disease
- Brain & Spinal Cord Injuries
- HIV/AIDS
- Malignancies (including head and neck)
- PUD
- SLE

Psychosocial Factors

- Living situation:
  - Infants or children in the home?
- Presence or absence of external supports
- Family characteristics and quality of family relationships
  - History of family conflict or separation, parental legal trouble, family substance use, domestic violence, and physical and/or sexual abuse
- Cultural or religious beliefs about death or suicide

High Risk Medical Conditions

- COPD
- Chronic HD-treated Renal Failure
- Heart Disease
- Functional impairments
- Pain
- Disfigurement
- Increased dependence on others
- Decreases in sight
“SAD PERSONS”

<table>
<thead>
<tr>
<th>Sex</th>
<th>Male; More men complete, more women attempt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Elderly or adolescents</td>
</tr>
<tr>
<td>Depression</td>
<td>Especially with hopelessness</td>
</tr>
<tr>
<td>Previous attempt</td>
<td>Especially if potentially lethal</td>
</tr>
<tr>
<td>Ethanol Abuse</td>
<td>Or other drugs</td>
</tr>
<tr>
<td>Rational thinking loss</td>
<td>Command hallucinations, delirium</td>
</tr>
<tr>
<td>Social Support Deficits</td>
<td>Or perception of poor supports</td>
</tr>
<tr>
<td>Organized Plan</td>
<td>Will, available means</td>
</tr>
<tr>
<td>No spouse</td>
<td>Separated/divorced/widowed/single</td>
</tr>
<tr>
<td>Sickness</td>
<td>Especially chronic and debilitating illnesses</td>
</tr>
</tbody>
</table>

Adapted from Patterson et al. Psychosomatics 24:343-349, 1983.

Management / Treatment Strategies

- Identify/Conceptualize the Risk Level
- Determine the setting for treatment and supervision
  - Protect the patient
  - Least restrictive yet most likely to be safe and effective
    - Inpatient hospitalization (voluntary or involuntary)
    - Partial hospital and intensive outpatient /day treatment programs
    - Outpatient ambulatory visits, groups
  - Weigh risks and benefits of intensive interventions
    - Disruption of employment, financial and other psychosocial stress, social stigma

Case #2

- 80 year old African-American female is admitted for “weakness” after calling 911. Complains of dizziness, hemoptysis, and atrial fibrillation with RVR; chest imaging in ED also concerning for possible malignancy
- Widowed, lives alone. Her children live out of state
- Family reports 6 months of worsening memory, falls at home, problems managing her medications correctly, forgetting names, and once becoming lost while driving
- No history of mental illness or substance abuse
- Following lunch on the day of admission, prior to completion of medical workup, patient reports wanting to go home
- “There’s nothing wrong with me... I’m an adult and I can do what I want. I’m of sound mind. Now let me go home!”

“IS PATH WARM”

- I Ideation
- S Substance Abuse
- P Purposelessness
- A Anxiety
- T Trapped
- H Hopelessness
- W Withdrawal
- A Anger
- R Recklessness
- M Mood Change

Adapted from the American Academy of Suicidology: www.suicidology.org
Capacity Assessment

- The presence of delirium, dementia, or another mental illness
  - Does not guarantee that a patient lacks capacity to provide informed consent

Decision Making Capacity

- Questionable capacity to make a decision?
  - Always educate the patient first
  - Assess and test patient understanding
- Psychiatry consultation may be helpful if:
  - Treating physician is unsure or needs a second opinion
    - All treating doctors need to know how to assess capacity
  - Active mental illness may be affecting the patient’s decision making
  - Problems identifying/treating causes of incapacity
- Psychiatrists do not declare patients incompetent
  - Opinions are limited to a specific decision at a specific point in time

Decision Making Capacity

- Red Flag Situations:
  - Abrupt changes in mental status or level of consciousness
  - Refusal of treatment
    - Unwilling to discuss why
    - Unclear or irrational reasoning
    - Refusal based on misinformation or irrational biases
  - Hasty acceptance of risky or invasive treatment
    - Without careful consideration of the risks and benefits
  - Patient has a known risk factor for impaired decision-making
    - Chronic neurologic or psychiatric condition
    - Significant cultural or language barrier
    - Education level concern

What’s the difference?

- Competency
  - Legal term
  - “The mental abilities and cognitive capabilities required to execute a legally recognized act rationally”
  - Determined by a judge
  - Law assumes an individual is competent until demonstrated otherwise
  - Making medical decisions is one form of competency
  - Guardianship
- Capacity
  - Ability to make a rational medical decision
  - Can be assessed by a physician
  - For a particular choice at a particular point in time

Tunzi, Am Fam Physician 2001;64:299-306
Leo, J Clinical Psychiatry 1:5 October 1999
<table>
<thead>
<tr>
<th>What is Decision Making Capacity?</th>
<th>Understanding Relevant Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• In obtaining informed consent for a particular treatment choice, treating physicians should assess the patient’s:</td>
<td>• Grasping the fundamental meaning of information communicated by physician</td>
</tr>
<tr>
<td>– Ability to communicate a choice</td>
<td>• Encourage patient to explain or paraphrase disclosed information regarding medical condition and treatment</td>
</tr>
<tr>
<td>– Ability to understand relevant information</td>
<td>– What is the problem with your health now?</td>
</tr>
<tr>
<td>– Ability to appreciate the nature of the situation and its likely consequences</td>
<td>– What is the recommended treatment?</td>
</tr>
<tr>
<td>– Ability to manipulate information rationally</td>
<td>– What are the possible risks and benefits of the treatment?</td>
</tr>
</tbody>
</table>

Applebaum PS. Assessment of Patients’ Competence to Consent to Treatment. N Engl J Med. 2007;357:18

<table>
<thead>
<tr>
<th>Communicating a Choice</th>
<th>Understanding Relevant Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Clearly indicating the preferred treatment option</td>
<td>• Any alternative treatments?</td>
</tr>
<tr>
<td>• Ask patient to indicate a treatment choice</td>
<td>• And their risks and benefits</td>
</tr>
<tr>
<td>– Have you decided to follow your doctor’s recommendation for treatment?</td>
<td>• The risks and benefits of no treatment</td>
</tr>
<tr>
<td>– Can you tell me what that decision is?</td>
<td>• Educate the patient first</td>
</tr>
<tr>
<td>– What is making it hard for you to decide?</td>
<td>• Avoid information laden “yes/no” questions</td>
</tr>
<tr>
<td>• Frequent reversals of choice may indicate lack of capacity</td>
<td>– “Mr. Smith, do you understand that if you don’t take these antibiotics for your infection, that you could die?”</td>
</tr>
</tbody>
</table>

Applebaum PS. Assessment of Patients’ Competence to Consent to Treatment. N Engl J Med. 2007;357:18
Appreciate the Situation and its Consequences

• Acknowledging medical condition and likely consequences of treatment
• Ask patient to describe their views of their medical condition, proposed treatment, and likely outcomes
  – What do you believe is wrong with your health now?
  – Do you believe that you need some kind of treatment?
  – What is treatment likely to do for you?
  – What makes you believe it will have that effect?
  – What do you believe will happen if you are not treated?
  – Why do you think your doctor has recommended this treatment?


Reason About Treatment Options

• Engaging in a rational process of manipulating the relevant information
• Ask patient to compare treatment options and consequence and to offer reasons for selection of option
  – How did you decide to accept or reject the recommended treatment?
  – What makes [chosen option] better than [alternative option]?
• Focus on process by which a decision is reached, not the outcome of the patient’s choice
  – Patients have the right to make “unreasonable” choices


Capacity threshold depends on the risk-benefit ratio for a given choice

<table>
<thead>
<tr>
<th></th>
<th>Low Risk/High Benefit Treatment</th>
<th>High Risk/Low Benefit Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Consents</td>
<td>Low Threshold for Capacity</td>
<td>High Threshold for Capacity</td>
</tr>
<tr>
<td>Patient Refuses</td>
<td>High Threshold for Capacity</td>
<td>Low Threshold for Capacity</td>
</tr>
</tbody>
</table>
Decision Making Capacity

- If a patient lacks capacity for a particular decision:
  - Obtain consent from surrogate decision maker
    - Legal next of kin < POA < Guardian
    - Consider Legal Services and Social Work assistance
  - Transient causes of incapacity → surrogate/POA
    - Delirium, acute mental illness
  - Lasting causes of incapacity that are not likely to quickly improve → guardianship
    - Dementia, mental retardation, chronic mental illness
    - Complete guardianship “expert evaluation” forms

Common Errors in Assessment of Decision Making Capacity

- Lack of capacity for one decision does not guarantee lack of capacity for all medical decisions
- Patient has not been given relevant or consistent information about the proposed treatment before the decision
- No assessment of functional capabilities
  - Cognitive Exams
  - OT/PT Evaluations
- Weight given to final decision versus how the patient arrives at the decision

Case #3

- 77 year old male brought to the hospital by ambulance after his wife called 911

- Acute onset early this morning of confusion, disorientation for time and place, inattention, clouded consciousness, auditory hallucinations, paranoia, and screaming “Fire in the hole!” and “Take cover!”

- His wife of 54 years is present at the bedside and provides a reliable history. She says that he has multiple medical problems including hypertension, hypothyroidism, diabetes, and high cholesterol. He has been feeling ill recently and was treated for an “infection.”

- He takes 12 different medications on a daily basis, including several with anticholinergic properties.

- He has no personal or family history of mental illness and no history of substance abuse. He retired from a career as an insurance salesman at age 65. They have 3 children and eight grandchildren.

- She says he was his “usual self” up until waking early this morning. She is quite frightened by his unpredictable behavior and has never seen him act like this in the past.
DSM-IV-TR Criteria

Delirium due to a General Medical Condition

- Disturbance of consciousness
  - Reduced ability to focus, sustain or shift attention
- Impairment of lucidity or other cognitive function or development of a perceptual disturbance
  - Not better accounted for by a dementia
- Distinctive clinical course
  - Develops over a short period of time and tends to fluctuate during the course of the day
- Evidence that the disturbance is caused by the direct physiologic effects of a general medical condition, substance use, or substance withdrawal

Why is recognizing and treating delirium so important?

- Morbidity and mortality of any serious disease are doubled with delirium
  - 3 month mortality rate is 28%
  - 1 year mortality rate is 50%
- Harbinger of death or worsening medical illness
- 10% of hospitalized patients have delirium at any point in time
  - 40% of elderly at some point during hospital stay

Delirium by other names

- Encephalopathy
- Metabolic Encephalopathy
- Hepatic Encephalopathy
- Acute Mental Status Change
- ICU Psychosis/ICU Syndrome
- Acute Organic Brain Syndrome
- Toxic Psychosis
- Febrile Insanity
- Acute Confusional State

Impact of Delirium

- Utilization of greater amounts of hospital resources
- Increased rates of ECF placement and length of hospital stays
- More frequent major postoperative complications
- Experience poor functional recovery
“Consciousness”

- Delirium always includes impairment of consciousness
  - Often apparent from the start of the interview
- “Paying attention” or “awareness”
- Ability to mentally respond to sensory experiences, including:
  - Awareness of immediate environment and circumstances
  - Ability to focus and sustain attention
  - Ability to shift attention

“Lucidity”

- “Clarity of thought”
- Effective use of cognitive functions for interacting with the immediate environment:
  - Memory registration, storage, and retrieval
  - Recognition, comprehension
  - Concentration
  - Reasoning and judgment
  - Language skills, ability to communicate

- Impairment of consciousness can impair lucidity
  - Impairment of lucidity does not necessarily imply impairment of consciousness, nor vice versa
### Clinical Features Suggesting Delirium in a “Psychotic” Patient

- Altered level of consciousness
  - Generally not seen in other mental illnesses
- Rapid onset of symptoms
- Recent onset of impairment of memory and other cognitive functions
- Disorientation for time and place (not caused by delusional thinking)
- Impaired awareness of the environment

### Some Characteristics of Delirium

- Delirium may include any psychiatric symptom:
  - Psychotic symptoms
    - Delusions, hallucinations, thought disorder, paranoia, fearfulness
    - Disorganized speech and thinking
      - Rambling or irrelevant conversation
      - Unclear or illogical flow of ideas
      - Unpredictable switching from subject to subject
  - Mood symptoms
    - Emotional lability
    - Depression to Euphoria
    - Irritability, agitation
    - Anxiety

### Clinical Features Suggesting Delirium in a “Psychotic” Patient

- Predominance of hallucinations in modalities other than auditory
- Presence of a non-psychiatric medical condition capable of altering metabolic support of brain function
- Evidence of use of a psychoactive substance capable of causing delirium during intoxication or withdrawal
- Onset of first psychotic episode after age 45
- No history of mental illness or premorbid symptoms

### Some Characteristics of Delirium

- Memory deficits
- Disorientation
- Visual-constructional impairment
- Language disturbance
- Sleep-wake cycle disturbance
- Psychomotor increase or decrease
- Nonspecific, nonlocalizing neurological abnormalities
  - Tremor, asterixis, myoclonus, change in muscle tone
### Subtypes of Delirium

<table>
<thead>
<tr>
<th>Subtype</th>
<th>Signs and Symptoms of Both Types</th>
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<tbody>
<tr>
<td>Hypoactive (~25%)</td>
<td>Lethargy and somnolence</td>
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<tr>
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<td>Withdrawn, apathetic</td>
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<tr>
<td></td>
<td>Decreased response to stimuli</td>
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<td></td>
<td>Psychomotor retardation</td>
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<tr>
<td></td>
<td>Inattentive</td>
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<tr>
<td></td>
<td>Slow speech</td>
</tr>
<tr>
<td>Hyperactive (~25%)</td>
<td>Sympathetic nervous system hyperactivity</td>
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<tr>
<td></td>
<td>Psychomotor agitation</td>
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<td>Verbal or physical aggression</td>
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<td></td>
<td>Motor perseveration</td>
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<td></td>
<td>Wandering</td>
</tr>
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<td>Increased alertness to stimuli</td>
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<td>Mood lability, anger, euphoria</td>
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<tr>
<td>Mixed (~50%)</td>
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</table>

### Clinical Course of Delirium

- **Onset:**
  - Typically acute (hours to days)
  - Occasionally subacute (days to weeks)
  - May be abrupt

- **Diurnal variation:**
  - FLUCTUATION is characteristic and highly suggestive
  - Lucidity is typically best in morning
  - Confusion is typically greatest at night

- **Environmental interaction:**
  - Worsened by excessive sensory stimulation or marked sensory deprivation

- **Duration:**
  - Typically hours to days
  - Sometimes weeks to months

- **Outcome:**
  - Many have full recovery
  - Often not by the time of discharge
  - Persistent cognitive deficits are common
  - Dementia, amnestic syndromes
  - New, lower cognitive baseline
  - Progression to other injuries and death

### Identify and Treat the Underlying Problem

- The primary treatment of delirium:
  - Diagnose and correct the underlying medical cause(s)!

- Reduce symptoms with medication and environmental interventions
  - Regardless of whether psychosis or agitation is present

*Practice guideline for the treatment of patients with delirium. Am J Psychiatry 1999*
### Delirium: Emergent Differential (“WHHHHIMP”)

- Wernicke's or Withdrawal
- Hypoxia
- Hypoglycemia
- Hypoperfusion
- Hypertension
- Infection or Intracranial bleed
- Meningitis
- Poisons or Medications

### Delirium: Expanded Differential (“I WATCH DEATH”)

#### CNS Pathology
- Abscess, hemorrhage, hydrocephalus, subdural hematoma, seizures, CVA, tumors, metastases, vasculitis

#### Hypoxia
- Anemia, carbon monoxide poisoning, hypotension, pulmonary failure, cardiac failure

#### Deficiencies
- Vitamin B₁₂, folate, thiamine, niacin

### Delirium: Expanded Differential (“I WATCH DEATH”)

#### Infection
- Sepsis, encephalitis, meningitis, syphilis, HIV, etc.

#### Withdrawal
- Alcohol, benzodiazepines, barbiturates

#### Acute Metabolic
- Electrolyte disturbance (especially Na⁺)
- Renal Failure
- Hepatic Failure
- Acidosis or alkalosis

#### Trauma
- Closed head injury, postoperative states, heat stroke, severe burns

#### Endocrine Disorders
- Thyroid disorder, high/low glucose, hypo/hyperadrenocorticism, hyperparathyroidism

#### Acute Vascular
- Hypertensive encephalopathy, stroke, arrhythmia, shock

#### Toxins or Drugs

#### Heavy Metals
- Lead, manganese, mercury
### Substances Associated with Delirium

**Anagelsics**
- Meperidine, opiates

**Antibiotics**
- Acyclovir, ganciclovir, amphotericin B, interferon, cephalosporins, rifampin, isoniazid, tetracycline, gentamicin, ticarcillin, fluoroquinolones

**Anticholinergics**
- Antihistamines, antispasmodics, atropine, benzotropine, phenothiazines, scopolamine, promethazine, tricyclic antidepressants, trihexyphenidyl, belladonna alkaloids

**Anticonvulsants**
- Phenobarbital, phenytoin, valproic acid

**Anti-inflammatory**
- Corticotropin, corticosteroids

**Anti-neoplastic drugs**
- Methotrexate, tamoxifen, vincristine, vinblastine, asparaginase, aminoglutethimide

**Antiparkinsonian drugs**
- Amantadine, bromocriptine, L-dopa, carbidopa

**Cardiac drugs**
- Beta-blockers, captopril, clonidine, digitalis, lidocaine, mexiletine, methyldopa, quinidine, tocainide, procainamide

**Sedative-hypnotics**
- Barbital, benzodiazepines, glutethimide

**Sympathomimetics**
- Amphetamine, cocaine, ephedrine, epinephrine, phenylephrine, theophylline

**Others**
- Cimetidine, disulfiram, lithium, metrizamide, ranitidine, quinacrine

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### Delirium: Basic Tests

- Chem 10
- LFTs
- CBC
- EKG
- CXR
- ABG or pulse ox
- Urine Tox Screen
- UA
- TSH
- Measurement of serum drug levels:
  - Theophylline
  - Digoxin
  - Phenobarbital
  - Cyclosporine
  - Lithium
  - Others
  - B12, folate

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### Delirium: Additional Tests

- EEG
  - Generalized slowing (unless withdrawal)
- Brain CT or MRI
- LP
- Ammonia
- ESR
- ANA
- HIV
- Heavy metal screen
- Urine porphyrin levels
Management of Delirium

• #1: Provide Medical Care
  • Find and correct the medical reason(s) for the delirium
    – Interview patient and family
      • Often requires phone calls and/or speaking with staff
    – History, physical, and neurologic exam
    – Cognitive Testing
      • Mini Mental Status Exam (MMSE)
      • Confusion Assessment Method (CAM/CAM-ICU)
      • Delirium Rating Scale (DRS)

• #2: Prevent and manage disruptive and dangerous behaviors
  – Place the patient in a room near the nursing station
  – Order a sitter for any dangerous behavior
  – Medical Hold Order if necessary
  – Low bed position
  – Use restraints only if necessary
    • Emergencies or if medications fail
    • May try Posey vest/bed belt first

Management of Delirium

• Review and monitor
  – Vitals (frequently)
  – Input/outputs
  – Oxygenation
  – Anesthesia records
• Determine if patient is in significant pain
• Review and discontinue nonessential medications
  – Correlate with behavioral changes?
  – The usual suspects:
    • Meperidine, diphenhydramine, scopolamine, phenergan, metoclopramide, alprazolam & lorazepam

• #2: Prevent and manage disruptive and dangerous behaviors
  – Avoid placing in a room with another delirious patient
  – Avoid a room cluttered with equipment or furniture
  – Avoid interruptions in sleep, whenever possible
Management of Delirium

• #3: Use/modify medications to reduce symptoms
  – Add Antipsychotics
    • Including for breakthrough agitation
    • Haldol, Risperdal, Seroquel, others
  – Avoid benzodiazepines unless in alcohol or sedative-hypnotic withdrawal delirium
  – Avoid narcotics unless the patient has significant pain
    • Do not use meperidine (seizures, delirium, serotonin syndrome)
  – Avoid anticholinergic medications
    • Effects are additive

Management of Delirium

• #4: Facilitate reality
  – Minimize transfers
  – Maximize staff continuity
  – Reduce excessive environmental stimuli (noise)
  – Orient patient to staff, surroundings, and situations repetitively
    • Especially before procedures
  – Repeatedly reassure the patient
  – Ensure use of hearing aids, glasses, dentures
  – Encourage the use of personal belongings

Antipsychotic Strategies in Delirium

– Scheduled low doses are preferable
  • Supplement with PRN doses for acute agitation
– What medical process is driving the delirium?
  • Determines how fast tapering should occur
– Lower doses in elderly
– What type of access?
  • Tablet, liquid, ODT, IM, IV
Antipsychotic Strategies in Delirium

- What is the underlying medical history?
  - Will patients need to take long term?
  - Do they have a mental illness?
- May lower seizure threshold
- EPS (especially acute dystonia & akathisia), BP changes
- May lengthen QTc: Risk for torsades de pointes
  - Caution for prolongation greater than 450 msec or 25% over previous EKG
  - Telemetry, dosage reduction, cardiology consultation
  - Monitor serum magnesium and potassium

Typical (First Generation) Antipsychotics

- Haloperidol
  - Oral, IM, IV
  - Efficacy well established— the “gold standard”
  - Scheduled low doses for delirium:
    - Conservative: Haldol 0.5-1 mg q12
    - Moderate: Haldol 2.5 mg q8
    - Aggressive: Haldol 5 mg q6h
  - PRN doses for acute agitation
    - Haldol 2.5-5 mg q4 hours
  - Lower risk of EPS with IV forms
  - IV dose is about twice as potent as oral doses
    - IV>IM>oral

Atypical (Second Generation) Antipsychotics

- Reasonable clinical evidence for:
  - Risperdal (risperidone)
  - Zyprexa (olanzapine)
  - Seroquel (quetiapine)
  - Geodon (ziprasidone)
  - Abilify (aripiprazole)

Course of Antipsychotic Treatment

- Patient Profile
  - Age, comorbidities, other medications, risk factors...
- Cause of delirium
- Length of time spent delirious
- New baseline?
- Response to treatment
- Discharge disposition
- Time until follow-up
- General strategy: taper off when patient improves
Benzodiazepines

- May worsen delirium/mental status changes or cause disinhibition
- Use primarily for alcohol or benzodiazepine withdrawal or seizure activity
- Benzodiazepine monotherapy:
  - Generally ineffective for other causes of delirium
  - May be combined with antipsychotics in exceptional situations
    - Extreme agitation (e.g. added with Haldol 5-10 mg IV)