

Delirium: The Acute Neurobehavioral Emergency

Recognition, Assessment, and Evidence-Based Management

Clinical Reference / 15-Minute Synthesis

Target Audience: Acute Care & General Medical Professionals

Last Updated: Current Evidence Base

The Silent Medical Emergency

10-50%

Hospital Prevalence

The most common psychiatric complication of general medical illness

80%

ICU Patient Rate

Nearly universal in mechanically ventilated, critically ill populations

2-10 Days

Typical Acute Duration

A prolonged state of acute global brain dysfunction

30%

6-Month Mortality

In ICU populations, rivaling major organ failure

Delirium is a final common pathway of systemic physiological derangement—an acute **medical emergency** requiring urgent identification of precipitants.

DELIRIUM (Acute Brain Failure)

A. Disturbed Attention & Awareness

The cardinal, pathognomonic feature: reduced ability to direct, focus, sustain, or shift attention.

B. Additional Cognitive Disturbance

Memory deficit, disorientation, language/visuospatial impairment, or perceptual disturbance.

C. Acute & Fluctuating Course

Develops over hours to days; severity waxes and wanes throughout the day.

D. Direct Physiological Cause

Evidence from history, labs, or exam of a medical condition, substance, or medication.

E. Exclusion Criterion

Does not occur in the context of a severely reduced level of consciousness/coma.

Underlying Medical Etiology

The Psychomotor Subtype Spectrum

Hyperactive (20-30%)

- **Features:** Increased arousal, agitation, restlessness, combativeness, rapid speech.

Clinical Note: Highly disruptive to staff, easiest to identify. Slightly better prognosis.

Mixed (45-50%)

- **Features:** Alternating between hyperactive and hypoactive within hours or days.



Clinical Note: The most common presentation. Highly challenging to manage due to unpredictability.

Hypoactive (20-25%)

- **Features:** Decreased arousal, apathy, slow speech, profound psychomotor retardation.

Clinical Note: High-Risk. Frequently missed or misdiagnosed as depression/fatigue. Associated with the highest mortality rates.

The Pathophysiology Cascade: How Systemic Insult Causes Brain Failure

Systemic Precipitants

- Infections, Hypoxia, Metabolic Derangement, Medications



Neurotransmitter & Inflammatory Crisis

- ↓ Acetylcholine (The primary deficit)
- ↑ Dopamine & Serotonin
- ↑ Pro-inflammatory Cytokines (IL-1 β , TNF- α , IL-6)



Thalamocortical Disruption: Loss of **sensory filtering** causes profound inattention, disorganized thinking, and perceptual flooding.

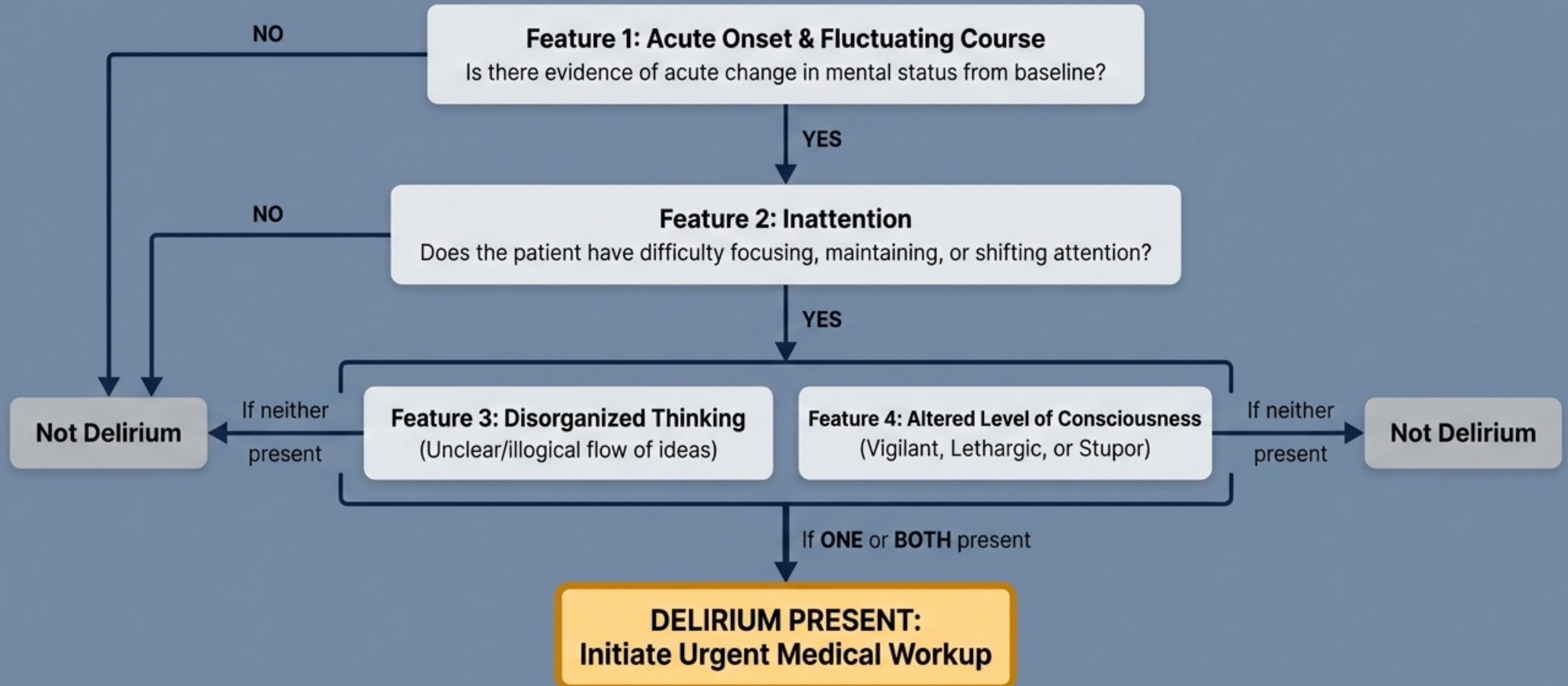
The Diagnostic Matrix: Parsing Delirium from Mimics

	Delirium	Dementia	Psychosis	Catatonia
Onset	Acute (hrs-days)	Insidious (mo-yrs)	Acute/subacute	Acute/fluctuating
Attention	Markedly ↓ (Defining)	Relatively spared	Usually normal	Variable/reduced
Fluctuation	Marked (Defining)	Gradual decline	Stable (chronic)	Waxy flexibility
Sleep-Wake	Severely disrupted	Relatively normal	Disrupted (variable)	Can sleep
Hallucinations	Simple, visual	Rare, late-stage	Complex, auditory	Absent

Crucial Distinction: Catatonia (often co-occurring in the ICU) maintains relatively preserved consciousness despite profound psychomotor immobility. Delirium always involves disturbed consciousness.

Rapid Detection: The CAM Algorithm

The 2-minute gold-standard screening tool (90-95% sensitivity).



The Precipitants: Deprescribing as a Primary Intervention

High-Risk Pharmacy Dashboard



Anticholinergics

Antihistamines, TCAs.
Directly depletes necessary
Acetylcholine.



Benzodiazepines

Paradoxically worsens
delirium despite apparent
sedation.



Opioids

Accumulate in renal
dysfunction; metabolites
precipitate delirium.



Corticosteroids

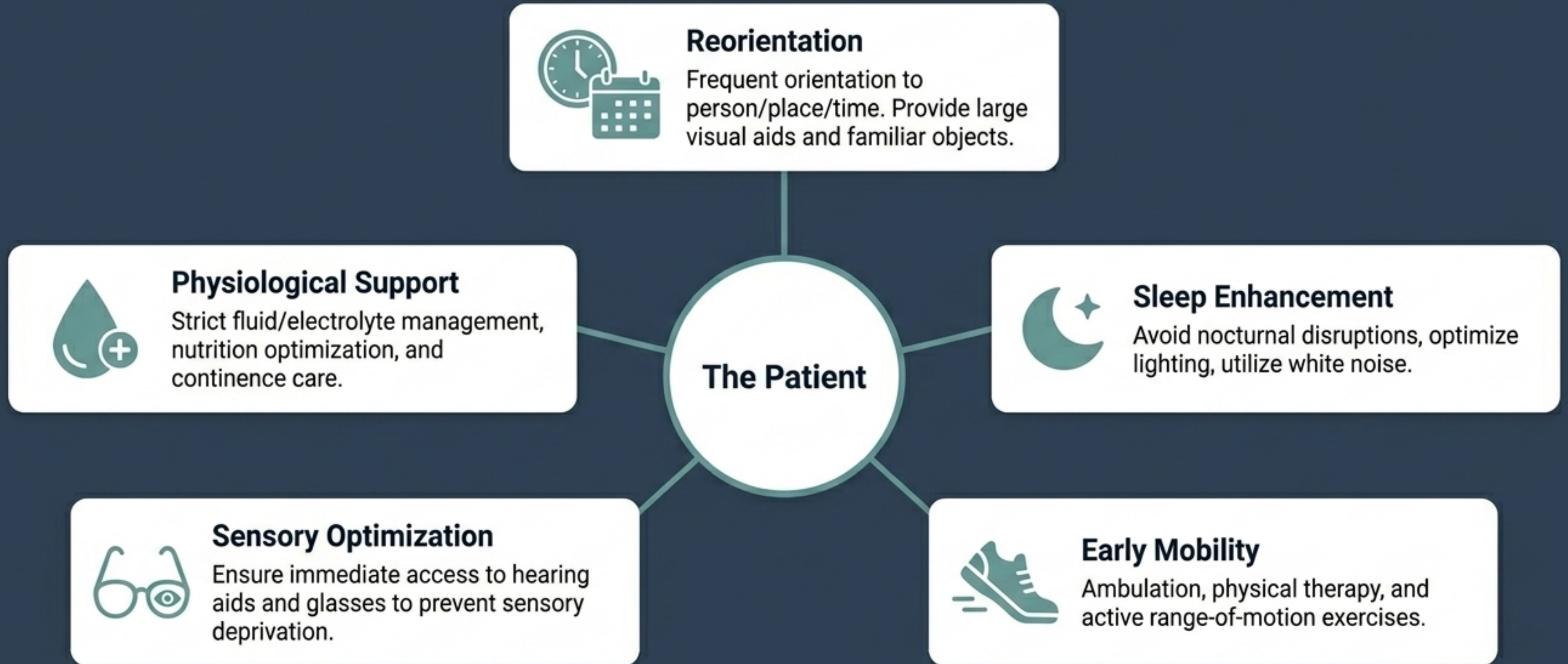
High-dose or chronic
exposure triggers acute
psychiatric manifestations.

5-Step Checklist

- ✓ 1. Map all current medications to acute necessity.
- ✓ 2. Identify and flag any CNS-depressant or anticholinergic agents.
- ✓ 3. Hold or discontinue medications with the highest delirium risk.
- ✓ 4. Taper long-acting agents gradually (monitor for withdrawal).
- ✓ 5. Optimize pain control using non-opioid multimodal strategies where possible.

First-Line Defense: The HELP Protocol Dashboard

Multicomponent, non-pharmacological interventions are the evidence-based first-line treatment (reduces incidence by 30-40%).



The Evidence Reality: Antipsychotics in Delirium

Routine antipsychotic use does not improve delirium outcomes and may increase adverse effects.
Use is strictly limited to specific safety parameters.

Acceptable Indications

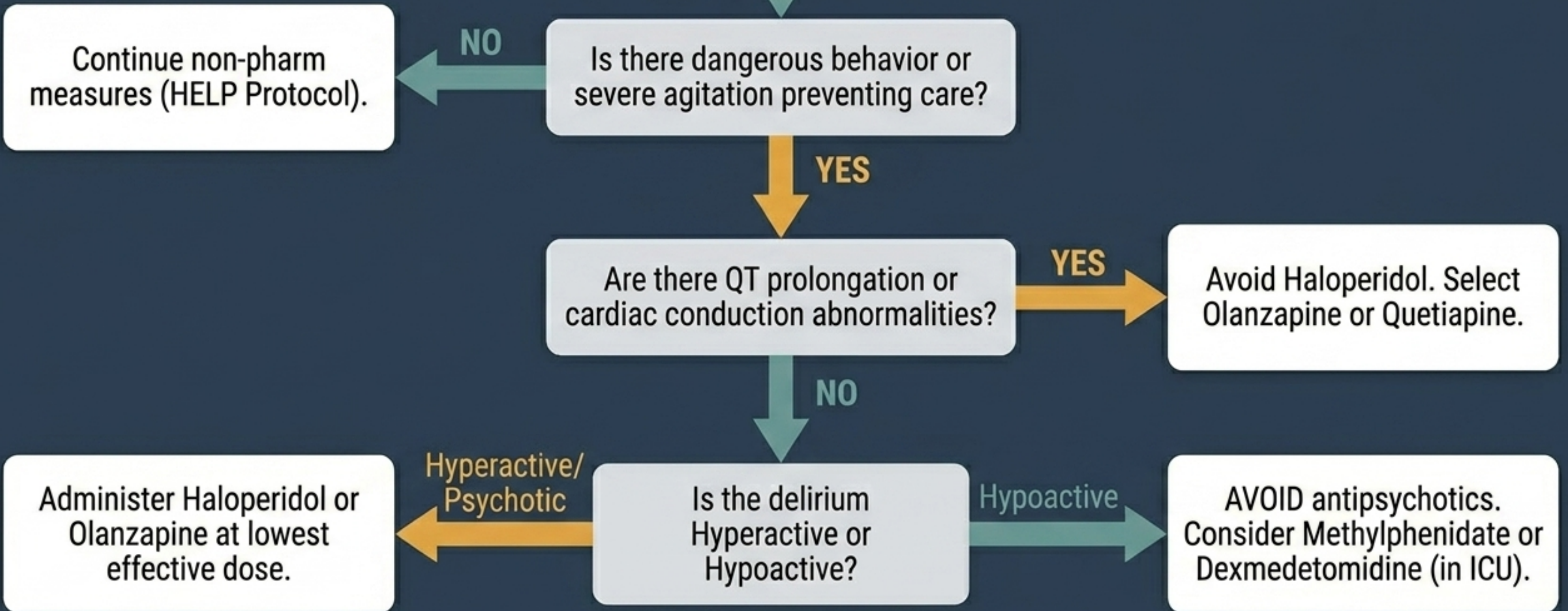
- ✓ Dangerous or violent behavior requiring immediate sedation for staff/patient safety.
- ✓ Severe agitation actively preventing essential life-saving medical care.
- ✓ Active psychotic symptoms (distressing hallucinations or delusions).
- ✓ Hyperactive delirium completely unresponsive to HELP non-pharmacological measures.

Strict Avoidance Criteria

- ✗ Mild-to-moderate delirium amenable to supportive care.
- ✗ Hypoactive delirium (antipsychotics will dangerously worsen psychomotor retardation).
- ✗ Baseline QT prolongation or cardiac conduction abnormalities.
- ✗ Known neuroleptic sensitivity (e.g., Lewy Body Dementia, Parkinson's Disease).

The Pharmacological Decision Tree

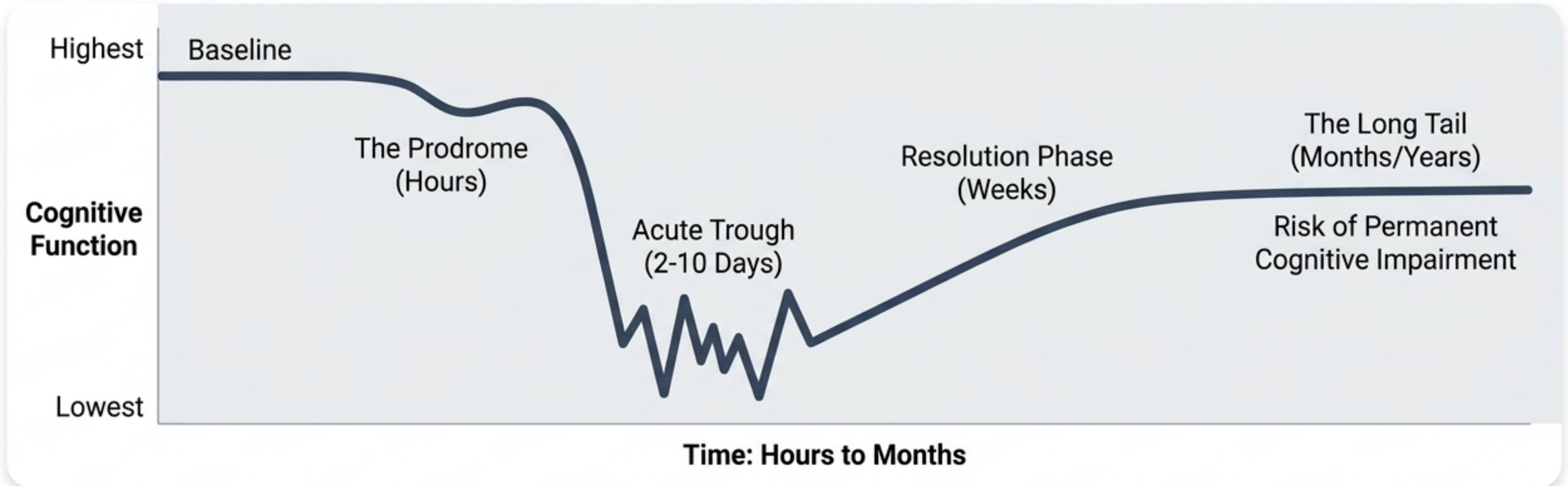
Delirium Diagnosed



Pharmacological Toolkit Matrix

Agent	Starting Dose	Typical Dosing	Clinical Guardrails
Haloperidol	0.5-1 mg IV/IM	2-5 mg IV/IM q4-6h	Rapid onset. First-line in critical care. Strict QT monitoring essential.
Olanzapine	2.5-5 mg PO/IM	5-10 mg daily divided	Longer half-life. Metabolic effects. Use in medically stable patients.
Quetiapine	25 mg BID	50-200 mg daily divided	Lower extrapyramidal side effects. Less QT risk. PO (Oral) administration only.
Dexmedetomidine	ICU Titration	ICU Titration	Alpha-2 agonist. Provides sedation with preserved cognition. Favorable ICU data.
Physostigmine	1-2 mg IV	1-2 mg IV	Cholinesterase inhibitor. Specific use: Rapid reversal of purely anticholinergic delirium.

The Temporal Trajectory & Prognostic Horizon



Favorable Factors

Single precipitant, rapid treatment, good baseline, early mobility.

Unfavorable Factors

Age >80, hypoactive subtype, profound sepsis, pre-existing dementia. Long-term risks include accelerated dementia and PTSD-like symptoms.

Prevention & Risk Stratification Framework

Intensive Prevention (ICU & Critical Care)

- Daily sedation interruption trials (Awakening & Breathing coordination). Aggressive infection prevention and continuous pulse oximetry.
- Early mobilization despite mechanical ventilation.

Targeted Prevention (High-Risk Identification)

- Targets: Age >70, severe underlying illness, pre-existing cognitive/sensory impairment, substance abuse history.
- Action: Proactive family involvement, aggressive deprescribing, and perioperative cognitive planning.

Universal Prevention (All Inpatients)

- Daily CAM screening.
- Universal application of the HELP bundle (Sleep, Mobility, Reorientation, Hydration).

Synthesis: The 10 Essential Clinical Pearls

- 1. High Prevalence, Low Recognition:** Most common psychiatric complication of hospitalization but frequently missed.
- 2. Inattention is Cardinal:** Disturbed attention is the pathognomonic feature separating it from other cognitive disorders.
- 3. It is an Emergency:** Acute onset confusion demands an urgent search for a systemic physiological etiology.
- 4. Non-Pharm First:** HELP protocol interventions reduce incident delirium by 30-40%.
- 5. Meds are for Safety:** Antipsychotics do not treat the delirium itself; reserve strictly for dangerous agitation or active psychosis.
- 6. Deprescribing is Treatment:** Anticholinergics, benzos, and opioids are prime culprits. Stop them.
- 7. Hypoactive is Deadliest:** The quiet, withdrawn presentation is easily missed but carries higher mortality.
- 8. Lasting Consequences:** Delirium can cause permanent cognitive decline and PTSD. Not always fully reversible.
- 9. Prevention > Treatment:** Risk stratify older adults and apply preventive bundles universally.
- 10. Family is a Therapeutic Tool:** Involving family in reorientation and care dramatically optimizes clinical outcomes.