IN THE NAME OF GOD

Delirium Management in Perioperative Geriatric Services

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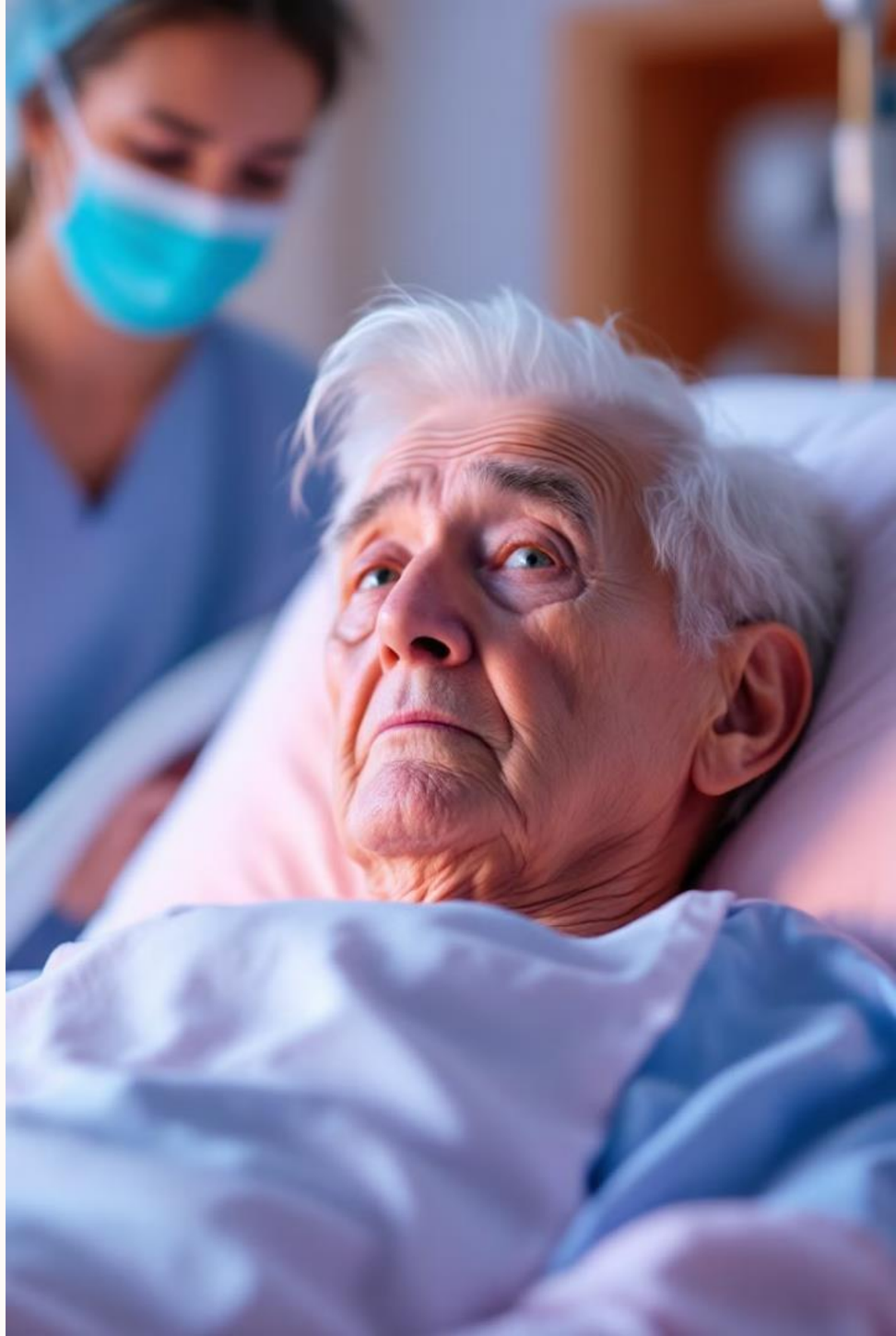


Elderly Patients and Perioperative Risks

Elevated Risk Factors

Elderly patients face an elevated risk of perioperative complications due to a combination of physiological, psychological, and social factors.

Contributing Factors

Cognitive and Neurological Factors, Mental Health, Frailty, Functional and Mobility, Cardiorespiratory and Physiological Status, Nutritional Factors, Polypharmacy

Postoperative Delirium Statistics

Reported in up to 70% of people over 60 years of age and up to 90% of people with neurodegenerative diseases.

Underdiagnosis

Post-surgical confusion underdiagnosed for an estimated 40% to 60% of hospitalized patients and for patients with pre-existing neurodegenerative disease the estimates 88%.

Definition of Delirium

DSM-V and ICD-11 Criteria

The criteria used to define delirium include impairments in attention, vigilance, and Cognition. Occurs within a few hours or days, fluctuates during the day and cannot be explained by other medical issues, intoxications, withdrawal symptoms, use of drugs or any other cause.

Cognitive Impairments

Cognition include: memory, language, perceptual disorders, disorientation, that cannot be attributed to a pre-existing neurological disease

Key Symptoms

Attention, cognitive impairment, and fluctuating course.

Types of Delirium

Hypoactive

Psychomotor slowing, introversion, decreased alertness and communication (25–50% cases). Diagnostic differentiation is crucial as treatment varies.

Hyperactive

Agitation, hallucinations, delusion (21.5–25%). Heightened behavioral disturbances and distinguishing from dementia syndromes.

Mixed

Features of both types and rapid fluctuations over less than 24 hours.(25%)

Delirium Duration and Mortality

1

Duration Differences

Hyperactive and hypoactive subtypes' median duration is one day while the mixed subtype can last up to four days

2

Mortality Risks

Multiple studies show hyperactive subtype has both the lowest duration and lowest associated mortality risk. By contrast, the hypoactive and hypoactive with mixed features syndromes were associated with significantly higher mortality risks.

3

Misdiagnosis and Long-term Impact

Delirium is frequently mistaken for dementia, depression or chronic hallucinatory psychosis, with an estimated 50% of cases remaining undiagnosed. Delirium is associated with a one year increased risk of mortality compared to patients without delirium.

4

Dementia Correlation

Yang and colleagues show mortality rates significantly depended on the presence or absence of dementia

Risk and Protective Factors

Risk Factors

- Age: 48% < patients aged of 65 years and older diagnosed with delirium; 56% for patients above 80 years

- Cognitive impairment: 90% of people with neurodegenerative diseases may exhibit delirium
- Type of surgery: Cardiac surgery 23% to 73% / orthopedic surgery 28% to 52%
- Medication
- Comorbidities
- Sleep deprivation
- Psychiatric disorders: depression may increase the risk of delirium onset by 21%

Protective Factors

- Pain management
- Hydration
- Cognitive reserve
- Early mobilization

Note: about 25% of cases, without medical causes(frailty, inadequate care)
Example: Surgery-related anesthesia is associated with increased risk of neurodegenerative diseases such as Alzheimer's and Parkinson's diseases. (not cause but may trigger cognitive reserve's decline.)

Assessment Tools

Confusion Assessment Method Method (CAM)

5-minute bedside test with high sensitivity and specificity. (94–100%)

Delirium Symptom Interview Interview (DSI)

Tracks delayed onset and symptom fluctuation

Memorial Delirium Assessment Assessment Scale (MDAS)

Measures delirium severity

Preoperative Assessments

Importance of Screening

Screening for cognitive and psychological health and interviewing patients' family and friends is crucial.

Cognitive Assessment Tools

- Mini Cog test
- Montreal Cognitive Assessment (MoCA)
- Mini Mental State Examination (MMSE)

Psychological Health Tools

- Geriatric Depression Scale (GDS)
- Beck Depression Inventory (BDI)
- Hamilton Depression Rating Scale (HDS)

Impact of Preoperative Depression

Preoperative depressive symptoms, 48 hours prior to surgery, was significantly associated with delirium's onset, duration, and increased pain perception.

Functional and Financial Impact of Delirium

Functional Burden

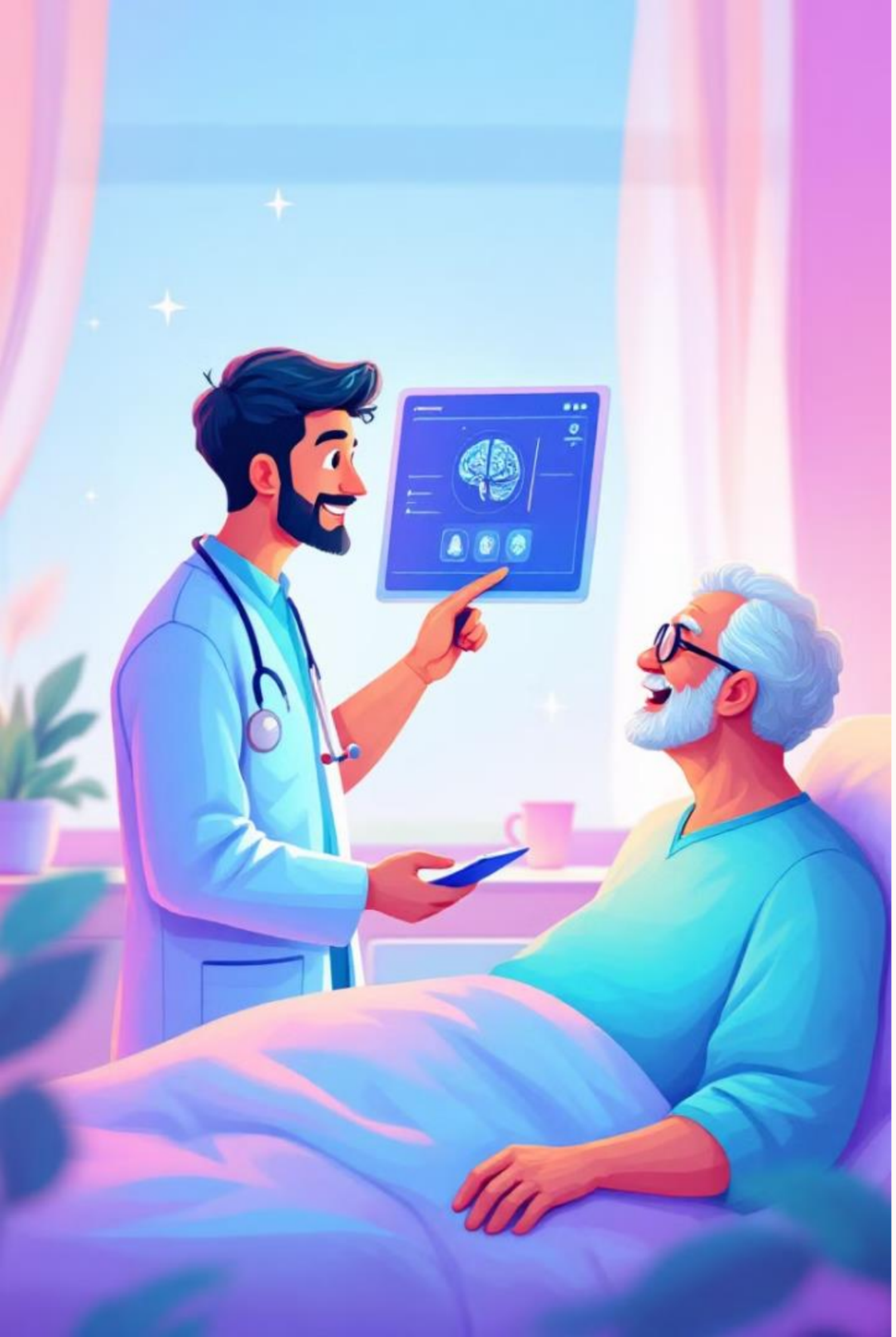
- Functional decline
- Loss of autonomy
- Increased institutionalization
- Worsened prognosis for dementia patients
- Raised mortality risk
- Hospital stays extended by 7–11 days

Financial Impact

- Healthcare costs 1.5 to 2.5 times more
- Total cost breakdown: 60% personnel, 30% medical services, 10% medication
- Cost per patient: $32.9–152 billion annually in the U.S.
- Additional 260 minutes of healthcare team time

Note : interventions proven to be effective to manage and reduce delirium reduce the total costs. For example, the cost of testing cognition (MMSE, and CAM) in hospitalized elderly people would be significantly lower than the estimated cost of managing and treating

using preventive measures: reduce time, costs and savings expenses by reducing 25% of delirium incidences



Cognitive and Psychological Burden

1

Postoperative Cognitive Dysfunction (POCD)

45% of elderly patients show persistent cognitive issues one month after surgery.
15% of patients with acute delirium are diagnosed with dementia within six months.

2

Long-Term Cognitive Impact

Delirium accelerates the onset of dementia and cognitive decline.
Neuropsychological disturbances can persist for months or years.

3

Preoperative Depression

Associated with higher rates of delirium onset, longer duration, poorer prognosis for recovery time, functional remission, and longer hospital stays.

4

Postoperative Psychological Effects

Emotional blunting due to depression can be misdiagnosed as hypoactive delirium.
Post-Fall Syndrome can lead to fear of falling, decreased mobility, and loss of self-esteem.

Strategies for Managing Perioperative Delirium

Perioperative delirium is a significant concern in healthcare, particularly for elderly patients. This presentation outlines comprehensive strategies for mitigating delirium, emphasizing non-pharmacological approaches and the crucial role of geriatricians in managing this condition.

Recommendations for Mitigation

Supportive Environment

Minimize staff and room changes, keep familiar objects in the environment. Encourage family interaction and moral support.

Psychological Counseling

Provide psychological support to address fears, low self-esteem, and emotional distress.

Holistic Management

Integrate preoperative screening for cognitive and psychological health into care protocols. Use non-pharmacological interventions like relaxation techniques, music therapy, and cognitive exercises to alleviate symptoms

Healthcare Staff Training

1

Delirium Education

Focus on understanding the causes, risk factors, and clinical features of delirium. Emphasize the distinction between delirium and other cognitive disorders

2

Risk Factor Awareness

Train staff to recognize common risk factors such as advanced age, cognitive impairment, sleep deprivation, and postoperative complications. Encourage proactive measures like optimizing hydration, nutrition, and sensory aids (glasses, hearing aids).

3

Assessment and Screening Tools

Confusion Assessment Method (CAM), DSI.

4-Step Training Program

1

Initial Training

A two-day course covering geriatrics, delirium prevention, and individualized care strategies.

2

Ongoing Education

Monthly case discussions and knowledge updates for nursing and medical staff.

3

Reorganization of Care Systems

Shift from task-based to patient-centered care for continuity and familiarity.

4

Continuous Support

On-the-job guidance and mentorship for staff to handle complex cases effectively.

Impact of Staff Training

Clinical Outcomes

- Reduced incidence of delirium through better prevention.
- Shorter hospital stays and lower mortality rates.

Institutional Benefits

- Improved patient satisfaction and reduced caregiver burden.
- Cost savings due to fewer complications and shorter hospitalizations

Geriatricians' Role in Delirium Management

Expertise

Geriatricians specialize in managing the complex medical needs of elderly patients, including multimorbidity, frailty, and cognitive disorders.

Risk Mitigation

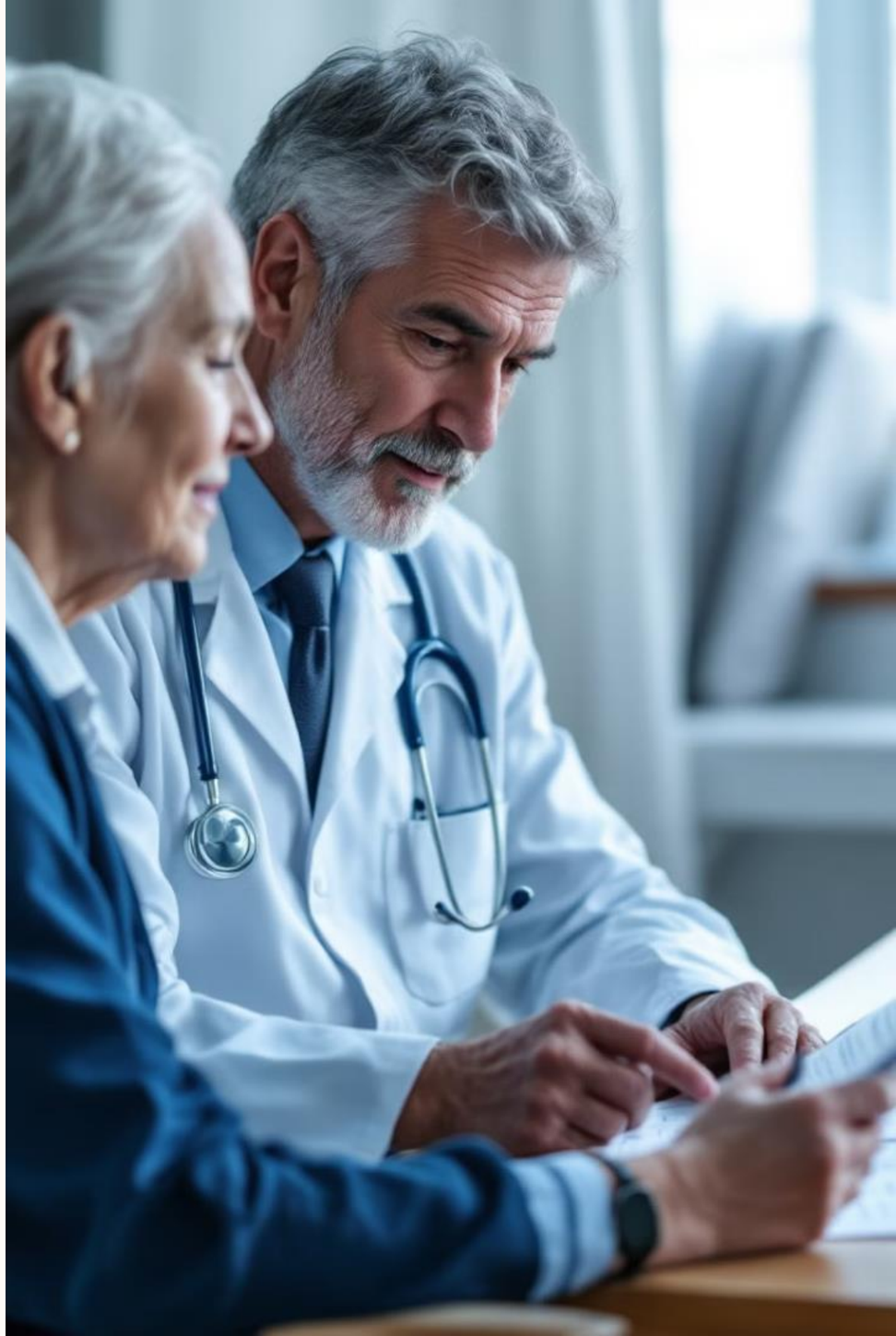
Their expertise helps mitigate the risks associated with delirium and improves postoperative outcomes.

Comprehensive Assessments

Geriatricians evaluate patients for risk factors like pre-existing cognitive disorders, comorbidities, and psychological conditions.

Tailored Recommendations

Provide individualized advice on optimizing patient health before surgery, including hydration, pain control, nutrition, and medication adjustments.



Geriatricians' Role

Delirium Prevention and Early Detection

- Implement strategies like spatio-temporal reorientation and cognitive stimulation.
- Promote family involvement to provide a familiar and supportive environment.
- Monitor for early signs of hypoactive and hyperactive delirium.

Pain and Medication Management

- Optimize pain control using non-opioid analgesics to minimize the risk of delirium.
- Adjust medication regimens to avoid iatrogenic triggers of confusion.

Rehabilitation and Recovery Support

- Encourage early mobilization to prevent complications like deep vein thrombosis and muscle wasting.

Coordinate multidisciplinary teams to address physical and cognitive recovery needs

Example:

A study on hip fracture patients found that preoperative geriatric consultation reduced delirium rates from 50% to 32%.
Improved Outcomes: Enhanced quality of life, Reduced rates of institutionalization and long-term care needs.

Non-Pharmacological Interventions

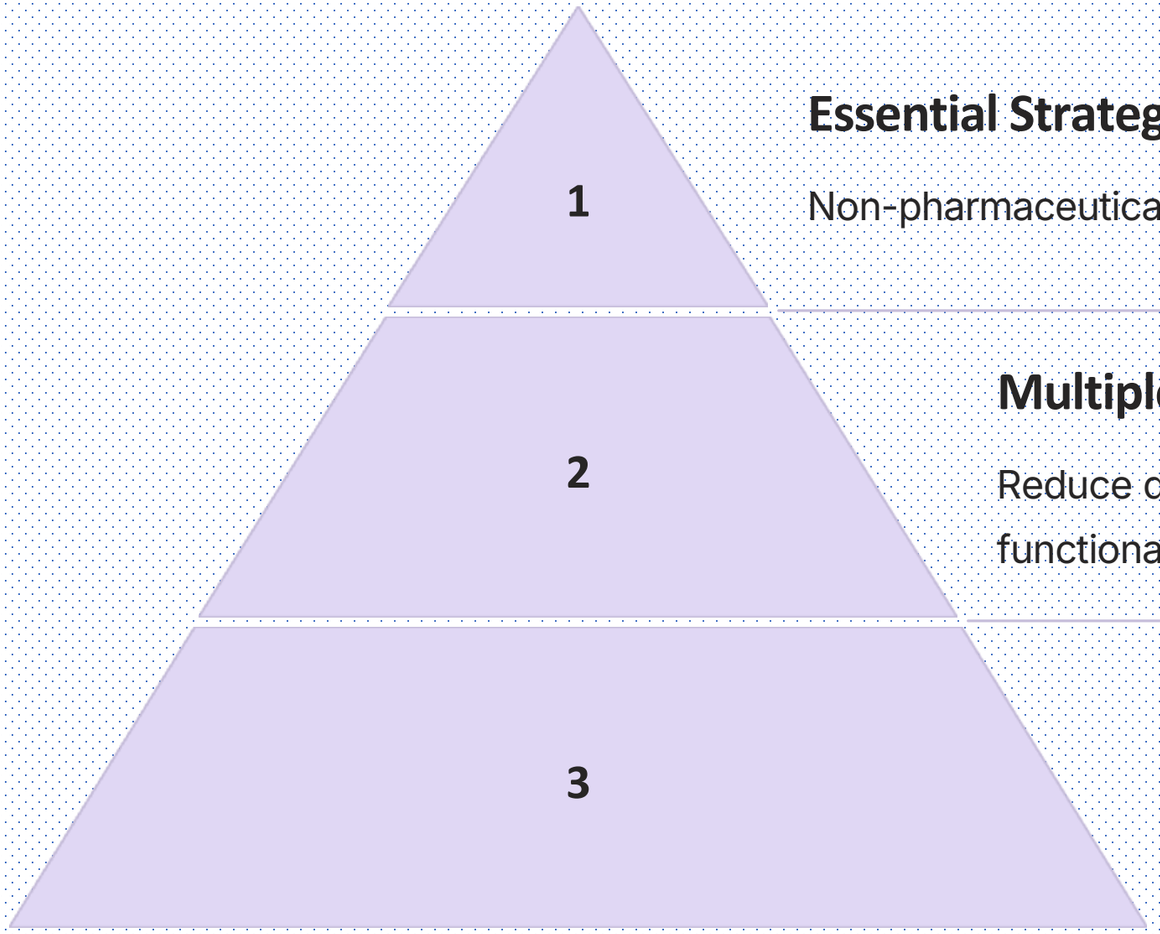
Cognitive Stimulation

Activities like puzzles, reading, and knitting reduce delirium severity. Enhances cognitive reserve and mental engagement.

Hospital Elder Life Program Program (HELP)

A comprehensive, evidence-based intervention designed to prevent delirium and cognitive decline in hospitalized elderly patients. Focuses on six risk factors: cognition, sleep, mobility, vision, hearing, hydration. Outcomes: Reduced delirium incidence (15% to 9%) and duration (161 to 105 days).

Conclusion



Essential Strategies

Non-pharmaceutical strategies are crucial for managing perioperative delirium.

Multiple Benefits

Reduce delirium duration, healthcare costs, and risk of negative functional outcomes.

Improved Outcomes

Fewer medical complications, reduced onset of cognitive impairment and dementia, shorter hospital stays.