ejaypee.com, for detailed information on emergency medicine books, visit our website www.ejaypee.com, for detailed information on emergency medicine books

GERIATRIC EMERGENCY PROTOCOL BOOK

A COMPREHENSIVE GUIDE

Evidence-Based Emergency Care for the Elderly with Special Emphasis on the Indian Clinical Context



Editor-in-Chief
Lokendra Gupta

Editors
Meenaxi Sharda
Nayan Sriramula

Foreword
Padmashri Dr VS Natarajan

JAYPEE

JAYPEE BROTHERS

CONTENTS

1. **Foundations of Geriatric Emergency Medicine** 1
   Utsav Anand Mani, D Thangam, Lokendra Gupta

2. **The Indian Context: Demographics, Policy, and Healthcare Delivery** 16
   OP Sanjeev

3. **Delirium, Dementia, and Depression: The 3Ds** 25
   Lokendra Gupta, Pratibha Pereira

4. **Falls and Frailty (Aligned with World Guidelines for Falls Prevention 2022)** 37
   Gaurav Sharma, Arunansu Talukdar, Subhankar Paul

5. **Polypharmacy and Pharmacology in the Elderly** 53
   Nayan Sriramula, Shambo Samrat Samajdar

6. **Cardiovascular Emergencies in the Elderly** 65
   Sindhura Reddy Baleed, Minakshi Dhar

7. **Respiratory and Infectious Emergencies** 78
   Sreekrishnan TP, Shailaja V Rao

8. **Trauma and Orthogeriatrics** 92
   Angeline Radjou, Anish S

9. **Pain, Palliative Care, and End-of-Life Decisions** 105
   Sarat Chandra Uppaluri, Yamini Ramkrishna

10. **Neurological and Psychiatric Emergencies** 117
    Gunaseelan Rajendran, Ashish Goel, BS Gopal Krishna

11. **Oncologic Emergencies in Older Adults** 127
    Imran Shareef, Naganath Narasimhan Prem

JAYPEE BROTHERS

12. Metabolic and Environmental Emergencies 139
Lakshmi Nalini Kopalle, Mangala Suresh Borkar

13. Toxicology in the Elderly 149
Jobin Jose Maprani, Shikhar Bajpai

14. Nutritional Deficiencies and Anemia in Older Adults 159
Keshava Murthy MR, Vivek Aggarwal

15. Discharge Planning, Transfers and Care Transitions 168
Siddharth Marda

16. Nonspecific Complaints and Missed Diagnoses 177
Subhankar Paul, Meenaxi Sharda, Subhadip Mukhopadhyay

17. Annexures: Reference Tools and Quick-Reference Charts 184
Jitendra Agrawal, Raj Bahadur Singh, Avinav Luthra

Index 195

JAYPEE BROTHERS

CHAPTER 3

Delirium, Dementia, and Depression: The 3Ds

Lokendra Gupta, Pratibha Pereira

JAYPEE BROTHERS

INTRODUCTION

Every emergency physician knows this patient. An older woman, brought in by family because she is "not herself"—quieter than usual, eating less, sleeping more. Nothing on the monitor looks alarming. It would be easy to write "elderly, drowsy, baseline dementia" and move on. It would also, quite often, be wrong.

Delirium, dementia, and depression—the 3Ds—are the great masqueraders of geriatric emergency medicine. They overlap, mimic, and hide behind one another, yet each demands a very different response. Delirium is a medical emergency: it signals an acute insult—sepsis, a drug, a metabolic derangement, an intracranial bleed—and doubles 6-month mortality, yet it is detected in barely a third of cases. The hypoactive form, which makes up about half of all delirium, is the easiest to miss precisely because the patient causes no trouble. Dementia, by contrast, is chronic and progressive, and shapes how an older adult experiences and communicates every other emergency. Depression is common and eminently treatable, but in the elderly it hides behind fatigue, poor appetite, and vague pain—and in India, most of it goes undiagnosed.

The stakes here are not abstract. LASI-DAD data suggest around 8–9 million Indians over 60 live with dementia, and in our EDs the usual delirium precipitants include tuberculosis, scrub typhus, dengue, and enteric fever—infections that frequently arrive without fever. This chapter offers a practical bedside approach to telling the 3Ds apart and managing them: the 4AT at triage, the DELIRIUMS mnemonic for cause-hunting, and a firm rule that nonpharmacological care comes first.

THE 3DS AT A GLANCE

- **Delirium:** Medical emergency. Acute + fluctuating. Affects 8–17% of older ED patients; detected in only ~1/3 of cases
- **Dementia:** Chronic, progressive. ~7.4% prevalence in Indian ≥60 years (LASI-DAD); ~8–9 million Indians affected
- **Depression:** Common, treatable, commonly missed. Up to 60% undiagnosed in Indian elderly (NMHS)
- **Frequent overlap:** Delirium superimposed on dementia (DSD) carries worst outcomes.

- **Hypoactive delirium:** The quiet killer—accounts for ~50% of cases, most frequently missed
- **Independent mortality predictor:** Delirium doubles 6-month mortality and predicts accelerated cognitive decline.

Do not Miss in the Older Adult

- **Acute confusion in an older adult:** Delirium until proven otherwise—not "just dementia"
- **Quiet, withdrawn elder:** Screen for hypoactive delirium—do not assume fatigue or depression
- **No fever ≠ no infection—**sepsis is the one of the most common precipitant and often afebrile in older adults.
- **Anticoagulant + confusion:** CT head, even without head trauma history
- **Benzodiazepines cause delirium—**never use them to "calm" an elder (except alcohol/benzo withdrawal)
- **Visual hallucinations + Parkinsonism:** Think Lewy body dementia, *not* neuroleptic-sensitive

PATHOPHYSIOLOGY AND CLINICAL SUBTYPES

Delirium arises from the interaction between a **vulnerable brain** (age, dementia, and sensory impairment) and an **acute precipitant** (infection, medication, and metabolic). Four mechanisms converge—neurotransmitter imbalance (↓ACh, ↑dopamine), neuroinflammation [interleukin-1 (IL-1), IL-6, and tumor necrosis factor-alpha (TNF-α)], oxidative/metabolic stress, and disrupted sleep–wake cycles **(Table 1)**.

Clinical Subtypes

TABLE 1: Clinical subtypes of delirium.

Subtype	*Key features*	*Clinical implication*
Hyperactive (~25%)	Agitation, restlessness, aggression, hypervigilance, hallucinations, and sleep–wake reversal	Easily recognized; high self-harm and fall risk; inappropriate restraint risk; better prognosis than hypoactive
Hypoactive (~50%)	Lethargy, psychomotor slowing, withdrawal, reduced speech, flat affect—mimics depression	*Most commonly missed; mistaken for fatigue; higher mortality; requires active screening*
Mixed (~25%)	Alternating hyper-/hypoactive features; fluctuating within hours	Most diagnostically challenging; serial assessments essential

Hypoactive delirium is the silent killer—any unusually quiet, lethargic, or withdrawn older adult needs a 4AT.

RISK FACTORS AND PRECIPITATING CAUSES

Predisposing Factors

- **Strongest:** Pre-existing dementia, frailty (CFS ≥5), advanced age (≥80 years)
- **High risk:** Polypharmacy (≥5 meds), Beers criteria drugs, and sensory impairment (vision/hearing)
- **Add-on risk:** Previous delirium or stroke, chronic kidney disease (CKD)/liver disease/heart failure, malnutrition, dehydration, and immobility

Precipitating Causes: DELIRIUMS Mnemonic

Delirium is **frequently multifactorial**—identify *all* contributing causes, not just the most obvious.

JAYPEE BROTHERS

Delirium sits at the intersection of several rows (acute confusion, new agitation, and functional decline) and the "commonly missed" column should be reviewed before discharging any patient with new confusion ***(Table 2)***.

TABLE 2: DELIRIUMS mnemonic.

	Category	***Specific causes***
D	*Drugs*	Anticholinergics, benzodiazepines, opioids, corticosteroids, H2-blockers, digoxin, levetiracetam, and recent changes
E	*Electrolytes*	Na (often drug-induced), Ca, Mg, glucose (hypo-/hyper→ HHS and DKA)
L	*Lack of drugs*	Alcohol, benzodiazepine, or opioid withdrawal; abrupt discontinuation of chronic medications
I	*Infection**	*UTI, pneumonia (often afebrile), bacteremia, cholangitis, cellulitis, meningitis—ED precipitant*
R	*Reduced sensory input*	Absent hearing aids or glasses; unfamiliar environment; sleep deprivation
I	*Intracranial*	Stroke, SDH (especially anticoagulated), seizures, meningoencephalitis, space-occupying lesion
U	*Urinary/Fecal*	Urinary retention (cystocerebral syndrome), severe constipation, fecal impaction
M	*Metabolic*	Hypoxia, hypercapnia, uremia, hepatic encephalopathy, thyroid dysfunction, and B12/thiamine deficiency
S	*Systemic/Cardiac*	Acute MI, heart failure, arrhythmia, shock, sepsis, pain, recent procedures, and urinary catheter

**Most common in Indian ED cohorts.*

(DKA: diabetic ketoacidosis; HHS: hyperosmolar hyperglycemic state; MI: myocardial infarction; SDH: subdural hematoma; UTI: urinary tract infection)

Indian context: TB (pulmonary and extrapulmonary), scrub typhus, dengue, and enteric fever are common sources of delirium-precipitating sepsis—consider seasonally and by region **(Table 3)**.

DIFFERENTIATING THE 3Ds

TABLE 3: Differentiating the 3Ds.

Feature	***Delirium***	***Dementia***	***Depression***
Onset	*Acute (hours–days)*	Gradual (month–year)	Subacute (week–month)
Course	Fluctuating (sundowning)	Progressive	Diurnal variation
Consciousness	*Altered*	Normal until late	Normal
Attention	*Severely impaired**	Preserved early	May be poor
Memory	Short-term + immediate	Short-term early, long-term later	Patchy; "don't know" answers
Hallucinations	Common (visual > auditory)	Absent (except Lewy body)	Rare
Reversibility	*Reversible*	Irreversible	*Reversible*

**The single best discriminator for delirium.*

JAYPEE BROTHERS

Key Clinical Discriminators

- Acute onset + impaired attention = delirium (not dementia, not depression)
- Visual hallucinations + Parkinsonism = consider Lewy body dementia; avoid high-potency antipsychotics
- "Pseudodementia" of depression can mimic dementia—responds to treatment.
- Delirium superimposed on dementia (DSD) is common and has the worst prognosis.

INITIAL ED ASSESSMENT

Protocol: Older Adult with Altered Mental Status

When to suspect:

- Acute change from baseline (hours–days)—confirm with informant
- Fluctuating course or "sundowning"
- Impaired attention—cannot recite months backwards, distracted, inattentive
- New agitation, withdrawal, or "not themselves"
- Falls, anorexia, and functional decline without other cause

What to do:

✓ ABC + full vitals *including* temperature (rectal if needed to detect hypothermia)
✓ POC glucose in *every* patient—rapidly reversible
✓ *Focused neurological examination*: GCS, pupils, gaze, motor, gross sensory, and gait if safe
✓ Targeted history from patient *and* informant—establish *baseline* cognition
✓ *Complete medication reconciliation*: Rx + OTC + AYUSH + supplements + recent changes
✓ Review AGS Beers® 2023—stop any offending agents
✓ Head-to-toe examination—identify occult injury, infection source, and skin
✓ 4AT at triage

What to avoid:

✗ Physical restraints—worsen agitation, cause injury, and prolong delirium
✗ Benzodiazepines—contraindicated per Beers® 2023 (except alcohol/benzo withdrawal or seizure)
✗ Anticholinergics (diphenhydramine, hydroxyzine, and promethazine)—worsen delirium
✗ Meperidine (pethidine)—neurotoxic metabolite
✗ High-potency typical antipsychotics in Parkinson/Lewy body—severe EPS and neuroleptic sensitivity

Disposition:

- *Admit*: Unidentified cause, serious illness, persistent agitation, inadequate support, CFS ≥6, and failed ED treatment
- *Discharge*: Reversible cause identified + treated, mental status returning to baseline, reliable caregiver, follow-up <72 hours
- *Observation*: Uncertain—4 to 12 hours with serial 4AT and vital reassessment

SCREENING: 4AT, Mini-Cog

4AT (Delirium Screen: <2 Minutes, No Training) (Table 4)

TABLE 4: 4AT items and interpretation.

Item	*Assessment*	*Score*
Alertness	Observe. Abnormally sleepy, agitated, or hyperalert?	Normal = 0 | Abnormal = 4
AMT-4	Age? DOB? Place (hospital name)? Year?	0 err = 0 | 1 err = 1 | ≥2 err = 2

Continued

JAYPEE BROTHERS

Continued

Item	*Assessment*	*Score*
Attention	Months of year backwards from December	Reaches July = 0 | <7 = 1 | Untestable = 2
Acute change	Significant acute change or fluctuation?	No = 0 | Yes = 4
0	Delirium unlikely—standard care, reassess if suspicion persists	
1–3	Possible cognitive impairment—screen with Mini-Cog once delirium excluded	
≥4	*Possible delirium—high acuity. Full deliriums workup, nonpharmacological bundle, find and treat cause*	

Mini-Cog (Dementia Screen—3 Minutes)

- **Step 1:** 3-item registration—"Banana, Sunrise, Chair" (repeat until learned)
- **Step 2:** Clock Drawing Test—draw a clock showing 11:10
- **Step 3:** 3-item recall
- **Score:** Recall 0 *or* recall 1–2 + abnormal clock = dementia likely

***Never* screen for dementia during active delirium—delirium globally impairs attention and produces false-positive dementia screens.**

CLINICAL CASE

CASE: The Quiet Grandmother

Clinical vignette:
A **78-year-old woman** is brought to the ED by her daughter-in-law because she has been "not eating" for 2 days and "sleeping too much." She is a known hypertensive and type 2 diabetic on amlodipine, glimepiride, metformin, and a recently added amitriptyline for "sleep" (started 5 days ago by a relative who is a physician). On arrival, she is drowsy but rouses to voice, afebrile, BP 128/78 mm Hg, HR 88 beats/min, SpO_2 96%, and RBS 142 mg/dL. The triage nurse notes her as *"drowsy—family says baseline dementia"* and she is placed in a low-acuity zone. 4 hours later she is found to be more obtunded, with a systolic BP of 96 mm Hg and a fingerstick lactate of 3.8 mmol/L. A urinalysis sent at that point is positive; blood cultures ultimately grow *Escherichia coli*.

✕ **What went wrong/pitfall:**
Multiple anchoring errors. The drowsiness was labeled *"baseline dementia"* without confirming baseline with the informant—the daughter-in-law would have confirmed that grandmother was independent and conversational 3 days ago. Amitriptyline (highly anticholinergic, Beers® 2023) was missed on medication review. **Hypoactive delirium** was mistaken for tiredness, and **sepsis without fever** was not considered until hemodynamic deterioration. The combination of afebrile presentation, quiet patient, and busy triage produced a classic miss.

✔ **What should be done:**
At triage: Informant-confirmed baseline, **4AT** would likely have scored ≥4 (alertness abnormal + acute change). Initial workup should have included **FBC, U and E, LFT, glucose, urinalysis, lactate, blood cultures, CXR, and ECG**. Medication reconciliation would have flagged amitriptyline for immediate cessation. Empirical antibiotics within 1 hour for suspected urosepsis. Nonpharmacological bundle (glasses, family at bedside, and orientation). Admit to geriatric/acute medical unit for ongoing evaluation. Deprescribe the amitriptyline, switch to a safer sleep strategy, and treat urosepsis. *Outcome*: Fully reversible delirium with 72-hour cognitive recovery.

JAYPEE BROTHERS

MANAGEMENT: STEP-BY-STEP (TABLE 5)

Stepwise Management: The Older Adult with Delirium/Agitation	
Step 1	**Stabilize and screen:** • ABC + full vitals *including* temperature (rectal if needed) • POC glucose in *every* patient—rapidly reversible • SpO_2; IV access; correct immediately dangerous hypoxia, hypoglycaemia, and hypotension • 4AT at triage—document score and acute change • Informant at bedside to establish *baseline* cognition
Step 2	**Find the cause—apply DELIRIUMS mnemonic:** • FBC, U and E, LFT, Ca, Mg, glucose, TFT; urinalysis + urine culture; CXR; ECG • Lactate and blood cultures ×2 if sepsis suspected • Medication reconciliation (Rx + OTC + AYUSH)—STOP Beers® 2023 offenders and any new drug started in past 2 weeks • CT head if focal deficit, head trauma, anticoagulant + fall, seizure, or cause unclear • Screen for urinary retention (bladder scan) and fecal impaction (PR examination)
Step 3	**Nonpharmacological bundle—always first-line:** • Quiet, well-lit room; glasses + hearing aids + dentures in place • Clock and calendar visible; regular verbal orientation • Family/familiar carer at the bedside • Early mobilization; avoid unnecessary bed rest and restraints • Normal sleep–wake cycle; dim at night, open curtains by day • Adequate hydration, nutrition, nonopioid analgesia; remove unnecessary tethers
Step 4	**Treat the underlying cause:** • Antibiotics for infection—within 1 hour if shock or high suspicion, within 3 hours if unclear source • Fluid resuscitation for volume depletion or sepsis (balanced crystalloid) • Correct electrolytes (Na, Ca, Mg, and glucose); oxygen for hypoxia • Analgesia for pain (nonopioid first • Reverse anticoagulant if intracranial bleed
Step 5	**Pharmacological sedation—only if severe agitation with harm risk:** • *Goal*: Calming, *not* sedation. Re-evaluate after every dose • Haloperidol 0.25–0.5 mg PO/IM/IV—check QTc; avoid in Parkinson/Lewy body • Quetiapine 12.5–25 mg PO—preferred in Parkinson/Lewy body; lowest adverse-event rate (GED 2.0 2025) • Olanzapine 2.5–5 mg PO/IM—watch orthostatic hypotension • *Avoid*: Benzodiazepines (except alcohol/benzo withdrawal), anticholinergics, pethidine, and physical restraints
Step 6	**Monitor, reassess, and disposition:** • Repeat 4AT every 4–6 hours to track trajectory • Monitor vitals, glucose, SpO_2, ECG for QTc if antipsychotic given • Daily review of medications—deprescribe as cause resolves • **Admit if:** Unidentified cause, serious illness, persistent agitation, inadequate support, CFS ≥6, and failed ED treatment • **Discharge only if:** Reversible cause treated, mental status returning to baseline, reliable caregiver, follow-up <72 hours, medication reconciliation complete

JAYPEE BROTHERS

Drug Dose Reference (Table 5)

TABLE 5: First-line antipsychotics for severe agitated delirium.

Drug	*Starting dose*	*Route*	*Key caution*
Haloperidol	0.25–0.5 mg	PO/IM/IV	• QTc on ECG • EPS • Avoid in Parkinson/Lewy body
Olanzapine	2.5–5 mg	PO/IM/ODT	• Orthostatic hypotension • Minimal QTc effect • Useful IM
*Quetiapine**	12.5–25 mg	PO	• Lowest adverse event rate (GED 2.0 2025) • *Preferred* in Parkinson/Lewy body
Risperidone	0.25–0.5 mg	PO/ODT	• Orthostatic hypotension • EPS at higher doses

**Preferred per GED 2.0 systematic review. "Start low, go slow"; re-evaluate after every dose.*

(GED: Geriatric Emergency Department)

Antipsychotic Safety Cautions

- All atypical antipsychotics carry an FDA black-box warning of increased mortality in older adults with dementia-related psychosis.
- Lowest effective dose, shortest duration; document indication and response.
- Baseline ECG to assess QTc when feasible.
- Midazolam has *significantly higher* adverse event rates versus haloperidol in older adults (GED 2.0 2025).
- Reassess daily—stop when agitation resolves.

Severe Agitation: Emergency Sedation Pathway

When nonpharmacological measures fail and agitation threatens the patient, staff, or essential diagnostic/therapeutic procedures, a structured sedation pathway is required. The pathway below operationalizes the principle: **De-escalate first, sedate only when necessary, start low, reassess constantly**.

Protocol: Severe Agitated Delirium—Emergency Sedation

When to suspect:

- Agitation causing imminent risk to patient, staff, or disruption of life-saving care
- Failure of verbal de-escalation and the nonpharmacological bundle (Step 3—see **Box 1**)
- Inability to complete essential diagnostics (imaging, IV access, and cannulation)
- Pulling lines, catheters, oxygen, or risk of self-harm

What to do:

✓ **First line—haloperidol 0.25–0.5 mg** PO/IM/IV. Onset 15–30 minutes PO, 10–20 minutes IM. May repeat once after 30 minutes if inadequate response; maximum 2 mg in the first hour in an older adult

✓ **Alternative—quetiapine 12.5–25 mg PO** if the patient is cooperative with oral medication and in Parkinson's or Lewy body dementia (preferred per GED 2.0 systematic review 2025; lowest adverse-event rate)

✓ **Alternative—olanzapine 2.5–5 mg** PO/IM/ODT where haloperidol is contraindicated by QTc or the patient prefers a nonhaloperidol option; watch orthostatic hypotension

✓ **Alternative—risperidone 0.25–0.5 mg** PO/ODT; extra-pyramidal side effects at higher doses

✓ **Baseline monitoring:** ECG for QTc (where feasible) before any antipsychotic; continuous SpO_2; vital signs every 15 minutes for the first hour, then 30-minute to hourly

✓ **Re-evaluate after every dose.** Document indication, dose, time, response. Stop as soon as agitation resolves—these are short-term not maintenance, medications

Continued

JAYPEE BROTHERS

Continued

✓ **Specific situations:** Alcohol/benzodiazepine withdrawal → lorazepam 0.5–1 mg PO/IM/IV or diazepam (CIWA-guided). Severe agitation refractory to a first agent → combination of haloperidol + low-dose lorazepam is *not* first-line in older adults; escalate to senior review

What to avoid:

× **Benzodiazepines as first-line sedation** (except alcohol/benzodiazepine withdrawal, catatonia, or severe refractory agitation with senior oversight). They worsen delirium and are contraindicated per AGS Beers® 2023 for delirium management.
× **Midazolam:** Significantly higher adverse-event rate versus haloperidol in older adults (GED 2.0 2025)
× **Anticholinergics** (diphenhydramine, promethazine, and hydroxyzine)—worsen delirium; on the AGS Beers list
× **Pethidine/meperidine:** Neurotoxic metabolite; avoid entirely
× **High-potency typicals in Parkinson/Lewy body:** Severe extrapyramidal side effects and neuroleptic sensitivity; use quetiapine instead
× **Physical restraints:** Worsen agitation, cause injury, prolong delirium; use only as absolute last resort with continuous one-to-one observation and documented review

Disposition:

- Admit to a monitored bed after any pharmacological sedation; continue delirium workup, nonpharmacological bundle, and cause-directed treatment.
- Re-evaluate need for ongoing sedation at least daily—most patients do not need prolonged antipsychotic use.
- *Document*: Indication, agent, dose, response, side effects, and plan for discontinuation
- *If severe refractory agitation persists*: Senior review, consider alternative diagnosis (e.g., evolving intracranial pathology, withdrawal, serotonin syndrome, NMS, and thyroid storm), and geriatric/psychiatric consultation

Nonpharmacological Bundle: Standalone Bedside Checklist

Apply at every ED encounter with an agitated or confused older adult—before, during, and after any drug **(Box 1)**.

BOX 1: Nonpharmacological delirium prevention and management bundle—ABCDEF principles adapted for Indian ED settings.

Nonpharmacological delirium bundle:

✓ Quiet, well-lit cubicle; away from alarms and corridor noise
✓ Glasses on, hearing aids in, dentures in place
✓ Clock and calendar visible; verbal orientation every interaction ("you are in the emergency department, it is Tuesday afternoon")
✓ Family member or familiar carer at the bedside—especially important in the first hour
✓ Adequate hydration, nutrition, and nonopioid analgesia; check for urinary retention (bladder scan) and fecal impaction (PR examination)
✓ *Remove unnecessary tethers*: IV line, urinary catheter, telemetry, SpO_2 probe on the disturbed-arm side
✓ Address toileting, hunger, thirst, warmth, pain *before* any sedation
✓ *Normal sleep–wake cycle*: Dim lights at night, open curtains by day; earplugs and eye-mask if noise cannot be reduced
✓ *Verbal de-escalation*: Low calm voice, open stance, simple short sentences, one person speaking at a time
✓ Early mobilization; avoid bed rest unless clinically required

COMMON ERRORS

Common Errors

× Labeling acute confusion as *"baseline dementia"* without informant confirmation of baseline
× Missing hypoactive delirium because the patient is "quiet" and "not causing trouble"

Continued

JAYPEE BROTHERS

Continued

× Skipping temperature measurement (or using only axillary) in a drowsy elder
× Screening for dementia during active delirium—produces false-positive results
× Using benzodiazepines to "calm" an agitated elder (cause worsening delirium, Beers-prohibited)
× Using diphenhydramine, hydroxyzine, or promethazine for sleep or agitation (anticholinergic burden)
× Not reviewing recently added medications—the "new prescription in past 2 weeks" is often the answer
× Attributing visual hallucinations to psychosis in a patient with Parkinsonism (consider Lewy body dementia)
× Discharging a patient with delirium because "nothing was found"—delirium always has a cause
× Forgetting to ask about suicidal ideation in depressed older men—the highest-risk group

ED ORDERS TEMPLATE

ED Orders—Delirium/Altered Mental Status in the Older Adult
✓ Full blood count, U and E, creatinine, LFT, calcium, and magnesium ✓ Glucose (POC + laboratory), HbA1c if not recent ✓ Thyroid function (TSH); B12 and folate if nutritional concern ✓ Urinalysis + urine culture ✓ Blood cultures × 2 sets if sepsis suspected
✓ Serum lactate if sepsis suspected or obtunded ✓ ECG (12-lead)—rhythm, QTc, ischemia, and electrolyte signs ✓ Chest X-ray—pneumonia and heart failure ✓ ABG if hypoxia, acidosis, or altered mental status unexplained ✓ CT head—if focal deficit, head trauma, anticoagulated + fall, new seizure, or cause unclear ✓ Medication reconciliation including OTC and AYUSH—STOP Beers® 2023 offenders ✓ Nonpharmacological delirium bundle ✓ 4AT repeat q4–6h to track trajectory ✓ *If severe agitation with harm risk*: Haloperidol 0.25–0.5 mg *or* quetiapine 12.5–25 mg (preferred in PD/LBD)

WHEN TO IMAGE THE BRAIN

Routine head CT is ***not*** indicated in all delirium. Obtain urgently when *any* of the following is present:

- New focal neurological deficit
- Recent head trauma or fall, especially with LOC
- *Any* anticoagulant use with new confusion or fall (delayed ICH possible without external signs)
- New seizures or unexplained postictal state
- New or severe headache with mental-status change
- Signs of raised ICP (papilledema, vomiting, and Cushing response)
- Reduced level of consciousness without metabolic/toxic cause
- Delirium persisting despite treatment of identified causes

Do *not* delay treatment of reversible causes (glucose, oxygen, infection, and electrolytes) to await imaging.

DEPRESSION IN THE OLDER ED PATIENT

- **Somatic presentation dominates:** Fatigue, weight loss, sleep disturbance, poor appetite, vague pain, and GI complaints
- **Cognitive mimicry:** Poor concentration, memory complaints—"pseudodementia" responds to antidepressant treatment
- **Safety is paramount:** Elderly men have among the highest suicide rates globally; ask directly.

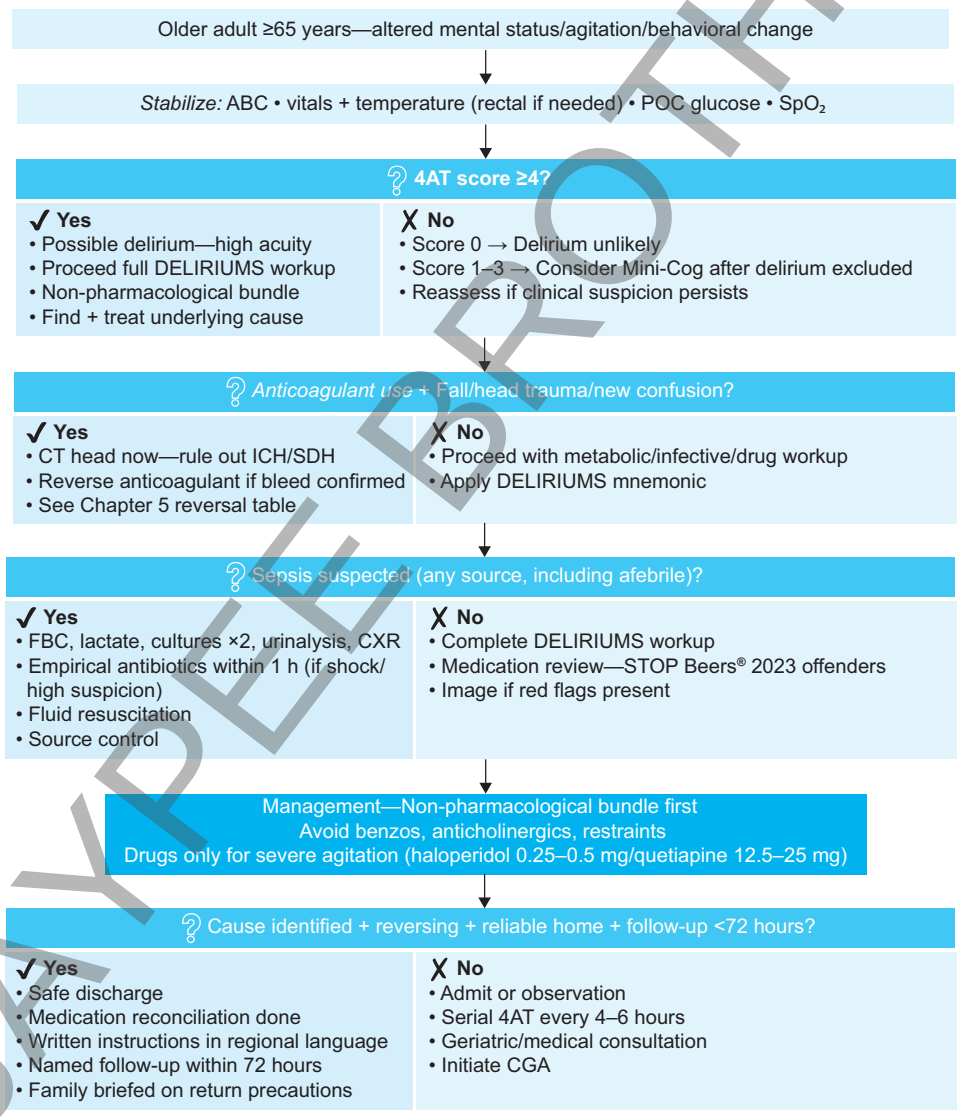
JAYPEE BROTHERS

- **Screening:** GDS-4/GDS-15 or PHQ-2. Positive screen → full evaluation + suicidal ideation assessment **(Flowchart 1)**

Do Not Miss—Depression + Suicide Risk

- **Every older adult with new depression or somatic symptoms should be asked** directly about suicidal thoughts.
- **Rural Indian elderly men with access to** organophosphate pesticides are particularly high risk
- **Asking does *not* increase risk—**it opens the door to help

ED APPROACH: DELIRIUM DECISION FLOW



Flowchart 1: Delirium decision flow—ED assessment and management algorithm.

(CXR: chest X-ray; FBC: full blood count; ICH: intracranial hemorrhage; SDH: subdural hematoma)

JAYPEE BROTHERS

30-SECOND CHAPTER SNAPSHOT (TABLE 6)

TABLE 6: 30-second chapter snapshot.

Most common causes	• Infection • Drugs • Metabolic • Pain/retention/constipation
Most dangerous causes	• Sepsis (afebrile) • Stroke/SDH • Silent MI • Hypoxia/hypoglycemia
Most missed subtype	Hypoactive delirium (~50%)—quiet, withdrawn, mistaken for depression
First tests	• POC glucose • Temperature • ECG • Urinalysis • FBC, U and E, Ca, and Mg • Medication reconciliation
First drugs to stop	• Anticholinergics • Benzodiazepines • Opioids • New prescriptions in past 2 weeks
Screen with	4AT (<2 minutes, score ≥4 = possible delirium) then Mini-Cog after delirium resolves
Treat with	• Nonpharmacological bundle FIRST • Drugs only for severe agitation (haloperidol/quetiapine)
Disposition	• Admit most • Discharge only if cause treated + reliable support + follow-up <72 hours

(MI: myocardial infarction; POC: point-of-care; SDH: subdural hematoma)

CHAPTER SUMMARY—KEY POINTS FOR EMERGENCY CARE

TOP 10 TAKE-HOME POINTS

- ❑ Delirium is a medical emergency—search urgently for the cause (DELIRIUMS)
- ❑ Use the 4AT at triage—≥4 = possible delirium, *high* acuity
- ❑ Hypoactive subtype is the most commonly missed—actively screen quiet elders
- ❑ Single distinguishing feature: *Acute onset* with *impaired attention*
- ❑ Never screen for dementia during active delirium.
- ❑ Non-pharmacological interventions are first-line.
- ❑ *Avoid* benzodiazepines, anticholinergics, pethidine, and physical restraints.
- ❑ If pharmacological: haloperidol 0.25–0.5 mg *or* quetiapine 12.5–25 mg (preferred in PD/LBD).
- ❑ CT head for focal deficit, head trauma, anticoagulant + fall, seizure, refractory delirium
- ❑ Always ask directly about suicidal ideation in depressed older adults.

JAYPEE BROTHERS

SUGGESTED READINGS

1. Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. Lancet. 2014;383(9920):911-22.
2. Han JH, Zimmerman EE, Cutler N, Schnelle J, Morandi A, Dittus RS, et al. Delirium in older emergency department patients: recognition, risk factors, and psychomotor subtypes. Acad Emerg Med. 2009;16(3):193-200.
3. Hustey FM, Meldon SW. The prevalence and documentation of impaired mental status in elderly emergency department patients. Ann Emerg Med. 2002;39(3):248-53.
4. Han JH, Shintani A, Eden S, Morandi A, Solberg LM, Schnelle J, et al. Delirium in the emergency department: an independent predictor of death within 6 months. Ann Emerg Med. 2010;56(3):244-52.
5. Kakuma R, du Fort GG, Arsenault L, Perrault A, Platt RW, Monette J, et al. Delirium in older ED patients discharged home: effect on survival. J Am Geriatr Soc. 2003;51(4):443-50.
6. Lee S, Khoujah D, Eagles D, Kennedy M, Lo AX, Nickel CH, et al. GRADE-based clinical practice guidelines for emergency department delirium risk stratification, screening, and brain imaging in older patients with suspected delirium (GED Guidelines 2.0). Acad Emerg Med. 2026;33(2):e70167.
7. Shenvi C, Kennedy M, Austin CA, Wilson MP, Gerardi M, Schneider S. Managing delirium and agitation in the older emergency department patient: the ADEPT tool. Ann Emerg Med. 2020;75(2):136-45.
8. Bellelli G, Morandi A, Davis DH, Mazzola P, Turco R, Gentile S, et al. Validation of the 4AT, a new instrument for rapid delirium screening: a study in 234 hospitalised older people. Age Ageing. 2014;43(4):496-502.
9. Carpenter CR, Lee S, Kennedy M, Arendts G, Schnitker L, Eagles D, et al. Delirium detection in emergency medicine: a diagnostic accuracy meta-analysis for the GED Guidelines 2.0. Acad Emerg Med. 2024;31(10):1014-36.
10. 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. AGS 2023 updated Beers Criteria®. J Am Geriatr Soc. 2023;71(7):2052-81.
11. Casey MF, Elder NM, Fenn A, Niznik J, Khoujah D, Cole JB, et al. Comparative safety of medications for severe agitation: a GED 2.0 systematic review. J Am Geriatr Soc. 2025;73(7):2156-67.
12. Borson S, Scanlan JM, Chen P, Ganguli M. The Mini-Cog as a screen for dementia. J Am Geriatr Soc. 2003;51(10):1451-4.
13. Marcantonio ER. Delirium in hospitalized older adults. N Engl J Med. 2017;377(15):1456-66.
14. Fick DM, Agostini JV, Inouye SK. Delirium superimposed on dementia: a systematic review. J Am Geriatr Soc. 2002;50(10):1723-32.
15. Lee S, Howard MA, Han JH. Delirium and delirium prevention in the emergency department. Clin Geriatr Med. 2023;39(4):535-51.
16. Cole MG, Ciampi A, Belzile E, Zhong L. Persistent delirium in older hospital patients: a systematic review of frequency and prognosis. Age Ageing. 2009;38(1):19-26.
17. Israni J, Lesser A, Kent T, Ko K. Delirium as a predictor of mortality in US Medicare beneficiaries. BMJ Open. 2018;8(5):e021258.
18. Seidenfeld J, Lee S, Ragsdale L, Nickel CH, Liu SW, Kennedy M. Risk factors and risk stratification approaches for delirium screening: a Geriatric Emergency Department Guidelines 2.0 systematic review. Acad Emerg Med. 2024;31(10):969-84.
19. LASI Investigators. Longitudinal Ageing Study in India — Diagnostic Assessment of Dementia (LASI-DAD). J Am Geriatr Soc. 2020;68(Suppl 3):S5-S10.
20. Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, Adey M, et al. Development and validation of a geriatric depression screening scale (GDS). J Psychiatr Res. 1982;17(1):37-49.

JAYPEE BROTHERS

for detailed information on emergency medicine books, visit our website www.ejaypee.com, for detailed information on emergency medicine books, visit our web

GERIATRIC EMERGENCY PROTOCOL BOOK
A COMPREHENSIVE GUIDE

"Geriatric Emergency Protocol Book: A Comprehensive Guide" is a practical, protocol-driven guide to the emergency care of older adults, written for the realities of Indian emergency departments. Older patients present atypically, deteriorate silently, and rarely fit adult algorithms designed for the young. This book bridges that gap with stepwise, bedside-ready protocols spanning triage, resuscitation, trauma and orthogeriatrics, toxicology, nutrition and anemia, nonspecific complaints, and discharge planning. Each chapter distils current evidence into clear, actionable pathways that can be applied under pressure. Designed for Emergency Physicians, Residents, Nurses, and Paramedics, it aims to make geriatric emergency care structured, safe, and dignified. Equally relevant to intensivists, geriatricians, family physicians, and hospital administrators, the book serves every clinician who cares for older adults in acute settings. As India's population ages rapidly, it offers a timely national framework for delivering world-class geriatric emergency care in hospitals of every size and resource level.



Lokendra Gupta MD(Anaesthesiology) DNB(Critical Care) MRCEM(UK) PGDHQM(TISS) is Director in Department of Emergency Medicine and Trauma Care at Medanta Hospital, Lucknow, Uttar Pradesh, India, and Founder and National President of SACTEM. A clinician, educator, and author, he works extensively in emergency care systems, medical education, and health policy across India. He leads national consensus guideline initiatives, multicenter research studies, and structured training programs that are shaping emergency medicine practice across the country. Through his work with government bodies, academic institutions, and professional societies, he is driving the standardization and advancement of emergency and trauma care at the national level.



Meenaxi Sharda MD(Medicine) DCH FICP FIAE is Professor at Sudha Medical College, Kota, Rajasthan, India, and former Senior Professor and Head, Department of Medicine and Geriatric Medicine at Government Medical College, Kota. With extensive experience in clinical medicine, teaching, research, and comprehensive care of older adults, she is actively involved in academic and professional work. She is Chairman, Research Wing, Indian Academy of Geriatrics (IAG). This book reflects her commitment to bringing evidence-based, practical, and age-sensitive protocols to the bedside, helping clinicians and postgraduate residents navigate the complexities of older adults in emergency.



Nayan Sriramula MD DNB(Emergency Medicine) MRCEM(UK) PG Diploma in Medical Law(NLSIU) Postgraduate Certificate in Disaster Medicine, PGCMDM(IGNOU) is Head of the Department of Emergency Medicine and Trauma Care, Medicover Hospitals, Hyderabad, Telangana, India. He is an Emergency Physician with expertise in trauma, emergency care, resuscitation, toxicology, disaster medicine, and emergency department administration. Dr Sriramula has contributed extensively to undergraduate and postgraduate medical education through teaching, academic programs, clinical research, and editorial work. His interests include emergency medicine education, simulation-based training, disaster preparedness, quality improvement, and affordable innovations in emergency and trauma care. As the Editor of this book, he has collaborated with leading emergency medicine faculty from across India to create a comprehensive, evidence-based resource for postgraduate trainees and practicing clinicians.

Buy from ejaypee

JAYPEE BROTHERS

Shelving Recommendation
EMERGENCY MEDICINE

ISBN 978-81-6799-549-0