Generalized Hospital Medicine Pearls for Optimal Inpatient Care

Definition and Overview

Prevalence Inpatient complications are common: delirium affects 20-50% of elderly inpatients, constipation ~30-40%, sleep disturbances ~50%, and delayed mobility increases length of stay (LOS) by 1-2 days. Falls occur in 3-5% of admissions, and 30% of discharges face readmission within 30 days. Risk Factors Advanced age, polypharmacy, comorbidities (e.g., dementia, CHF), prolonged hospitalization, immobility. Rare Demographics Pediatric inpatients (e.g., post-surgical), bariatric patients, culturally diverse groups with unique needs.

Pathophysiology

- **Mechanisms:**
  - **Poor sleep** disrupts circadian rhythms, increasing delirium risk via melatonin dysregulation.
  - **Constipation** results from opioid use, dehydration, and immobility, altering gut motility.
  - **Delirium** stems from neuroinflammation (IL-6, TNF-α) and cholinergic deficiency.
  - **Immobility** causes muscle atrophy, VTE, and deconditioning.
  - I**nadequate discharge** planning leads to medication errors and readmissions.

Effects These issues prolong LOS, increase morbidity (e.g., delirium mortality 10-20%), and reduce quality of life. Falls cause fractures in 1-2% of cases, and malnutrition worsens recovery.

- **Molecular Pathways**
  - **Sleep:** Reduced melatonin impairs GABA signaling.
  - **Constipation**: Opioid μ-receptor activation slows peristalsis.
  - **Delirium**: IL-6 upregulates microglial activation.
  - **Mobility**: Myostatin inhibits muscle protein synthesis.
  - **Nutrition**: Low albumin reflects NLRP3 inflammasome activation.
  - **Key Pathway:** Inpatient stressors → Physiological disruption (inflammation, immobility) → Complications → Prolonged recovery.

Hospital Medicine Pearls

Issue	Strategy	Implementation	Notes
Inpatient Sleep Medicine	Optimize sleep hygiene	Dim lights post-8 PM, minimize noise (earplugs), avoid non-urgent vitals 11 PM-5 AM. Melatonin 3-5 mg . Trazodone 50mg	Avoid sedatives (e.g., zolpidem); improves delirium risk by 20%
Constipation Prevention	Proactive bowel regimen	Dulcolax 5mg PO daily, senna 8.6 mg PO qHS, polyethylene glycol 17 g PO daily. movement, hydration	Start with opioids; monitor BMs q24h; avoid in C. diff
Delirium Avoidance	Non-pharmacologic interventions	CAM-ICU q12h, reorient q4h, family presence, avoid restraints. Haloperidol 0.5 mg IV q6h PRN (severe)	Reduce anticholinergics (e.g., diphenhydramine); 4AT score for screening
Early Mobility	Promote ambulation	PT/OT consult if appropriate, ambulate 3x/day, chair positioning. Goal: 200-300 ft/day	Reduces LOS by 1-2 days, VTE risk by 30%; use walkers if fall risk
Discharge Planning	Structured process	START criteria day 1, med reconciliation, teach-back, follow-up within 7 days. Social work consult	Reduces 30-day readmissions by 15%; include caregiver education
Nutrition Optimization	Address malnutrition	Dietitian consult, high-protein diet (1.2-1.5 g/kg/day), oral supplements (Ensure 240 mL BID). NG if NPO >3 days	Malnutrition Universal Screening Tool (MUST); reduces complications by 20%
Fall Prevention	Risk assessment, mitigation	Morse Fall Scale on admission, bed alarms, non-slip socks, lower bed height. Trazodone 25 mg PO qHS if insomnia	Avoid benzodiazepines; 50% of falls in elderly occur at night
Pain Management	Multimodal approach	Acetaminophen 650 mg PO q6h, lidocaine patches, gabapentin 300 mg PO qHS. Opioids (morphine 2 mg IV PRN) if severe	Non-opioid first; reduces delirium, constipation risk

Clinical Presentation

- **Symptoms**
  - **Sleep** Disturbances Insomnia, frequent waking, daytime fatigue
  - **Constipation** Abdominal discomfort, infrequent BMs (<3/week)
  - **Delirium** Confusion, agitation, inattention
  - **Immobility** Weakness, orthostasis, pressure ulcers
  - **Discharge** Issues Medication non-adherence, missed follow-ups

    - **Rare**: Hallucinations (delirium), fecal impaction (constipation), aspiration (malnutrition)
- **Exam**
    - **Sleep** Fatigue, irritability
    - **Constipation** Distended abdomen, hypoactive bowel sounds
    - **Delirium** Waxing/waning consciousness, CAM-ICU positive
    - **Immobility** Muscle atrophy, DVT signs
    - **Discharge** Poor teach-back, social barriers
    - **Rare** Trousseau's sign (delirium hypocalcemia), skin breakdown (immobility)
- **Red Flags** Delirium: (CAM-ICU positive), no BM >3 days, Morse score >45, MUST >2, readmission risk

Labs and Studies

- **Labs**
    - CMP Na+ (delirium), Cr (renal function), glucose (hypoglycemia)
    - CBC Anemia (malnutrition), leukocytosis (infection)
    - Electrolytes K+, Ca2+, Mg2+ (delirium, constipation)
    - Advanced Albumin (<3 g/dL, malnutrition), prealbumin (nutrition status), CRP (inflammation)
- **Imaging**
    - CXR Pneumonia (delirium trigger), aspiration (malnutrition)
    - CT Head Rule out stroke, ICH in delirium
    - abdominal X-ray (constipation impaction)

Management Strategies

General Principles Implement proactive, multidisciplinary strategies to prevent complications, enhance recovery, and ensure smooth transitions, involving medicine, nursing, PT/OT, and social work.

- Supportive Care
    - Monitoring Vitals q4h, daily weights, BM log
- Environment
    - Quiet rooms, low lighting, family involvement
- Patient Education
    - Teach-back for discharge, mobility goals
- Specific Interventions
    - Sleep Earplugs, melatonin, avoid caffeine post-noon
    - Constipation Bowel regimen with opioids, hydration

- Delirium Reorient, remove catheters, avoid restraints Mobility PT/OT, ambulation goals, fall precautions
- Discharge Med reconciliation, follow-up appointments
- Nutrition High-protein diet, supplements, NG if needed
- Falls Bed alarms, assist devices, night rounds
- Pain Non-opioids, regional blocks, minimize opioids
- Weekly nutrition labs (albumin, prealbumin) Discharge readiness (START criteria)

Complications

- **Acute**
  - **Delirium**: Prolonged LOS, mortality 10-20%
  - **Constipation**: Impaction, obstruction (<1%)
  - **Falls:** Fractures (1-2%), head injury
  - **Immobility** VTE (2-5%), pressure ulcers (5-10%), ICU myopathy
    - Rare
      - Aspiration pneumonia (malnutrition),
      - torsades (delirium drugs)
- Long-Term
  - Readmission 30% within 30 days without planning
  - Functional Decline 20-30% post-immobility
  - Malnutrition Chronic wounds, infections

Clinical Scenarios

Case 1 Delirium in Elderly

Presentation 80 y/o F with CHF, admitted for pneumonia, develops confusion. Vitals BP 130/80, HR 90, SpO2 94%, RR 18. Exam Disoriented, CAM-ICU positive.

Labs/Studies Na+ 132 mEq/L, Cr 1.5 mg/dL, WBC 12K. CXR RLL infiltrate. I

nterpretation Delirium, infection-triggered.

Management Reorient q4h, family presence, haloperidol 0.5 mg IV PRN, ceftriaxone 2 g IV q24h. Delirium resolves by day 4.

Case 2 Constipation Post-Surgery

- **Presentation** 55 y/o M post-colectomy, no BM x 3 days, abdominal pain. Vitals BP 120/80, HR 85, SpO2 96%, RR 16.
- **Exam** Distended abdomen.

- **Labs/Studies** Normal CMP, K+ 4 mEq/L. Abdominal X-ray Air-fluid levels.
- **Interpretation** Opioid-induced constipation.
- **Management** Dulcolax 5mg daily, senna 8.6 mg PO qHS, polyethylene glycol 17 g PO. BM by day 2, pain improves.
    - NOTE: Colace ineffective for constipation, do not use

Case 3 Delayed Discharge

- **Presentation** 70 y/o M with COPD, ready for discharge but no follow-up plan. Vitals BP 140/80, HR 80, SpO2 95%, RR 14.
- **Exam** Stable, poor teach-back.
- **Labs/Studies** Normal CMP, O2 sat 95% on RA. CXR Stable emphysema.
- **Interpretation** High readmission risk, poor planning.
- **Management** Social work consult, med reconciliation, pulmonology follow-up in 7 days. Discharge day 6, no readmission.

Expert Tips

- Screen for delirium with CAM-ICU q12h; avoid benzodiazepines
- Start bowel regimen with opioids; polyethylene glycol for refractory constipation
- Ambulate within 24h of admission; PT/OT consult day 1
- Use START criteria for discharge; teach-back reduces errors by 20%
- Assess MUST score on admission; high-protein diet prevents deconditioning
- Pitfall Missing delirium triggers; check infections, electrolytes
- Advanced Actigraphy for sleep optimization; wearable sensors for mobility tracking

Key Pearls

Delirium prevention: Reorient, minimize sedatives, CAM-ICU q12h

Constipation: Proactive bowel regimen, hydrate, monitor BMs

Early mobility: Ambulate 3x/day, reduces LOS, VTE risk

Discharge planning: START criteria, follow-up within 7 days

Nutrition, falls, pain: MUST score, Morse scale, non-opioid analgesia

References

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