Considerations in Caring for the Geriatric Patient in your Observation Unit

Sharon E. Mace MD, FACEP, FAAP
Professor, Cleveland Clinic Lerner College of Medicine at Case Western Reserve University
Director, Research Cleveland Clinic
Former Director, Observation Unit
Former Chair, ACEP Section of Observation Medicine
Faculty, EM Residency, MetroHealth Medical Center/Cleveland Clinic

“Observation Medicine Principles and Protocols”

- Cambridge Medical Publishers
- Cambridge.org
- Mace2016
- Research
- No COE
- CDU - CCF
- 1994- 2018
- 25 year experience
Objectives

• Advantages of OU vs. inpatient bed or prolonged ED stay →
• Risks of hospital admission and the elderly
• What is the same and what is different for the geriatric vs. non-geriatric OU patient? (evidenced based)
• Unique aspects of geriatric observation
• New diagnoses or conditions for the elderly in the OU
• Protocols for the geriatric patient
• New types of consults → the geriatric assessment
• Complex or extended observation for the elderly
• Best practices, new developments
• The future

Why Observation Medicine

• ↑ referrals, contracts, new product line
• Clinical pathways (↓ cost, improved care)
• ↑ patient satisfaction, better public relations
• Fast, efficient, less expensive workup
• Improved flow (ED efficiency), ↑ patient volume, easiest way to build beds
• Financial: ↓ denials, ↓ penalties, ↑ revenue
• ↓ liability / malpractice, ↓ exposure to risk
• Better use of services at lower cost, ROI
• Quality, cost containment, value
• Improved patient outcome, ↓ outliers, safety
• Avoids inpatient admission, ↓ inpatient LOS
Risks of Hospital Admission in the Elderly

- There is a widespread and usually false assumption that admitting an elderly patient to a busy, large, overcrowded, noisy, brightly lit, hectic, often chaotic hospital is somehow a safe and good option.
- The same can be said about being in the ED environment.
- The observation unit is more pleasant, quieter, more peaceful, less hectic, more “patient friendly” than the inpatient floor or the ED.
- A shorter stay means less exposure to the risks of hospitalization.
- Patients, even the elderly, prefer not to be in the hospital.

Risks of Hospital Admission in the Elderly

- Nosocomial infections, such as HAP - hospital acquired pneumonia, UTI (from foley), staph skin infections.
- Exposure to drug resistant pathogens: MRSA, VRE.
- Falls, “sundowning”, sleep deprivation, pressure sores.
- Unfamiliar, noisy, hectic hospital inpatient (or ED) environment triggers delirium.
- Interactions, side effects, adverse events from multiple medications.
- DVT, pulmonary emboli.
- Rapid de-conditioning.
- Unhelpful, potentially harmful interventions with side effects/adverse effects.
- Medical mistakes.
Hospital Admission in the Elderly

• One-third of patients over 70 years old and
• more than half of patients > 80 years old are more disabled at hospital discharge than when they entered the hospital

• Literature: the type of unit: SSU, OU, EDOU, AMU?
• Who is included: patient types, ages, diagnoses, etc.?
• “Traditional” vs “complex (extended)” (Mace)
• Optimal type OU; designated location (cohort OU patients together and defined protocols = type 4 (Graff), type 4 (Ross)
• Wisc. studies, others: poor results → not optimal OU type

How Do the Elderly Compare with Nongeriatric Patients in OU?

• Diagnoses, LOS (hours), LOS > 24 hours
• Testing, Consults, Admission rates
• Recidivism (returns to ED, readmissions)
• Inclusion/Exclusion
• Protocols, Order sets, specific for the elderly
• Geriatric assessment

* Metrics: % ED patients hospital admits 20-25%, placed in OU: 10% adults, 5% pediatric, LOS 14-16 hr, % admit from OU 20% (Mace)
Geriatric Patients in the OU

• Retrospective study: 5% sample of Medicare patients age ≥ 65 years who presented to ED in 2013, N = 537,455 (Gabayan)
• Observation 10.5%, discharged 48%, hospital admission 41.5% (higher than national average – all ED patients)
• Top diagnoses for hospital admits: ischemic heart disease, renal disease; for obs: chest pain, dizziness
• Most common diagnoses for obs placement were symptom-based, for admissions was disease-based
• Geriatric: higher inpatient admission rates, same OU placement rates

Geriatric vs. Nongeriatric Patients in the OU

• Retrospective study: G (N=219) + NG (N=740) = 959 patients (Gruenberg)
• CP pathway, median LOS: G 22.1, NG 20.6, p< 0.01
• % LOS > 24 hours: G 42%, NG 29.1%
• 30 day ED returns: G 15.3%, NG 18.5%, p =0.31
• Stress tests: G 39.7%, NG 51.4%, p < 0.01
• If stress test done, % nuclear stress test: G 78.2%, NG 39.5%, p < 0.01
• Geriatric: ↑ LOS, no difference in recidivism
Geriatric vs. Nongeriatric Patients in the OU

- Retrospective: N = 22,530 (Ross)
- Elderly: higher admission rates G 26.1%, NG 18.5%
- 30 day returns were similar G 9.4%, NG 7.6%
- Common dx: chest pain 24%, dehydration 11.7%, syncope 8.5%, back pain 4.6%, COPD 3.6%
- Odds ratio for inpatient admission was highest for back pain (2.10, 95% CI 1.62 - 2.73), pyelonephritis (1.78, 95%CI 1.16 – 2.71), chest pain (1.65, 95%CI 1.44 -1.89)
  * Geriatric: ↑ LOS, same top diagnoses but other differences

Geriatric vs. Nongeriatric Patients in the OU

- Retrospective study: (Madsen)
- G (N=134) + NG (N=394) = 528 OU patients
- Inpatient admission rates from OU:
  - All patients: G 17%, NG 10.7%, p = 0.048
  - If history of coronary artery disease (CAD): G 12%, NG 7.7%, p = 0.2
  - If CAD history: G 31.3%, NG 20.8%, p =0.013
  * Clinical factors: history of CAD is important factor in admission from OU
  * Age is not the only factor
## Predictors of Increased LOS in Patients Admitted to Hospital

<table>
<thead>
<tr>
<th>Predictors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients Admitted from ED</td>
</tr>
<tr>
<td>High ESR</td>
</tr>
<tr>
<td>Low hemoglobin</td>
</tr>
<tr>
<td>Excessive polypharmacy ≥ 10 meds during admission</td>
</tr>
<tr>
<td>Multicenter study N =1123 (Vetrano)</td>
</tr>
<tr>
<td>ED admits ↓ LOS, p &lt;0.001</td>
</tr>
<tr>
<td>ED patients: older, higher BMI/Charlson score/foleys, fever, ↑ d/c to LTC, ↑ mortality</td>
</tr>
<tr>
<td>Elective Admissions</td>
</tr>
<tr>
<td>Chronic alcohol use</td>
</tr>
<tr>
<td>Impaired walking speed</td>
</tr>
<tr>
<td>Pressure ulcers</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
</tr>
<tr>
<td>Dementia</td>
</tr>
<tr>
<td>Excessive polypharmacy ≥ 10 meds during admission</td>
</tr>
<tr>
<td>Greater prevalence of chronic pain</td>
</tr>
<tr>
<td>Risk factors: inability to ambulate or do ADLs, many comorbidities</td>
</tr>
</tbody>
</table>

## Who is Likely to be Admitted from the OU?

<table>
<thead>
<tr>
<th>Predictors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospective study: N= 300 (Caterino)</td>
</tr>
<tr>
<td>Elderly: higher comorbidity score, more likely on a cardiac protocol, higher admission rates from OU12.1% vs 2.9% (lower than national average)</td>
</tr>
<tr>
<td>Predictors of admission</td>
</tr>
<tr>
<td>- Systolic BP ≥ 180,</td>
</tr>
<tr>
<td>- WBC ≥ 14,000</td>
</tr>
<tr>
<td>- Log Charlson comorbidity score</td>
</tr>
<tr>
<td>Who is likely to be discharged home or admitted?</td>
</tr>
<tr>
<td>* Who do we place in OU? Inclusion/Exclusion criteria</td>
</tr>
</tbody>
</table>
What Factors Impact Hospital Admission from OU?

- Compare OU discharged (82%) vs admitted (18)
- 2 groups had same demographics: age, gender, race, weight, BMI, marital status, medical/surgical diagnosis (Zdradzinski)
- What is impact of frailty (ADLs), sociodemographic factors?
- College graduation, current employment predicted discharge
  - Substance abuse, hypercalcemia, high WBC also predicted admission but not comorbidity or age
  - Frailty, disability insurance, lower education predicted admission

Geriatric ED Patients

- More complex, more meds (med reconciliation)
- Requires more ED resources
- Have longer ED and OU length of stay (LOS)
- Many of conditions managed in OU are more common in elderly: chest pain, syncope, CHF, TIA, COPD, VTE, atrial fibrillation
- “Complex/extended” obs < 48 vs < 24 hr “traditional” obs
- “Simple” 1 condition/dx, 1 problem vs multiple problems
Complex or Extended Observation

- Resource-intensive units
- Complex patients with multiple problems:
  - Febrile diabetic with hyperglycemia or DKA and UTI
  - LOS up to 48 hours
- Combine or modify several protocols
- Comprehensive team approach
  - Allows time for a geriatric assessment: PT, OT, pharmacy, case management, geriatric consult, others)
- Traditional, noncomplex, simple observation
- Dealing with 1 straightforward diagnosis or condition:
  - Chest pain rule out, or acute asthma

Can Geriatric Assessments be Done in OU?

- N= 221, LOS 14.7 (SD±6.5) hours, (Southerland)
- 74.3% discharged, 25.7% admitted, 72 hr recidivism 3.6%
- Geriatric team: physical therapy, pharmacist, case management, geriatrician, was made available
- Geriatric assessment was an option for Obs patients
- 94.6% of patients were not put in obs for assessment
- 40.3% of time, geriatric consult team was requested (? ascertainment bias)
  * Additional services recommended by: PT 80% (32/40), case management 38% (21/71), pharmacy 100% (5/5)
Should Geriatric Assessments be Done in the EDOU?

- EDOU care: standard care (SC) (N= 172) vs. SC + geriatric assessment/intervention (GAI) (N= 315) (Foo)
- Follow-up at 3, 6, 9, 12 months
- 71.1% of GAI had hidden needs that needed intervention
- ED revisits: adjusted incidence rate ratio (IRR) 0.59 (95% CI 0.48 – 0.71)
- Hospital admissions adjusted IRR 0.64 (95% CI 0.51 – 0.79)
- Conclusion: at 1 year GAI group had significantly less ED revisits and hospital admission rates

What patients can be placed in an Extended or Complex OU?

- Admit rate 29%, discharge 71%, usually < 24 hours
- Short stay unit in UK (Khan)
- Most common diagnoses: falls/injuries 45%, infections 11%, constipation 5%, stroke/TIA 3%, social 2%, other 34%
- Elderly ED patients (ESI 2 or 3) with nonspecific complaints (NSC): “weak”, “dizzy”, “tired”, “not feeling well” or HCP described lack of support, self care not working (Misch), after geriatric obs the accuracy ↑ from 53% to 68%
- 3 groups: admit if acute problem (pneumonia, UTI, etc), NSC → geriatric eval, or discharge
- 15% of NSC had acute illness that was initially missed
Falls with Subsequent Injury

• Difficulty with mobility - from pain, underlying precipitating cause dizzy, etc. (Hustey)
• All older patients considered for ED discharge should be observed arising and ambulating unless contraindicated (hip fx)
• 74 yo F, fall, hip pain, plain Xray: no fx, OU
• Analgesia: IV opioids initially, switch to po
• Additional resources: SW consult, PT assessment & training, ambulatory assistance: walker, home health arranged

Falls with Subsequent Injury
OU Exclusions

• Preexisting impaired mobility: already walker dependent
• Limited home assistance: lives alone & no home health care
• Persistent severe uncontrolled pain after ED pain management
• OU interventions: MRI, analgesia (IV to po), SW, PT, arrange home health care, geriatric consult, f/u
Altered Mental Status
Mild Delirium

- Identify, confirm the cause
- Initiate treatment
- Potentially correctable causes during brief OU stay: 1 (or 2) simple etiology
- Drug side effect (new med, med interactions), dehydration, drug/alcohol intoxication/OD, uncomplicated infection (UTI, cellulitis, pneumonia)

Altered Mental Status
Mild Delirium

- Causes: fever ± UTI ± dehydration ± mild AKI ± mild electrolyte abnormality
- Bradycardia, low BP, syncope: overmedicated from β blocker
- Establish baseline mental status: call/interview family/friends/caregivers
- Resolution of AMS or delirium or at baseline → d/c, if not: admit
- CAM = confusion assessment method
Geriatric Abdominal Pain

- Abdominal pain most common ED chief complaint (all patients)
- Elderly: vague history & exam findings, “unimpressive” lab results, delayed presentation, no leukocytosis
- Usually, not chronic abdominal pain
- 1 of 5 elderly, initial ED dx is inaccurate
- 14% elderly discharged from ED bounceback within 2 weeks
- High volume, high risk, complexity

Geriatric Abdominal Pain

OU Inclusion

- Inclusion: no diagnosis, poor pain control, unable to take po
- Lack significant history/exam findings concerning lab (↑ wbc)
- Cholecystitis – often missed
- Stable, US nondiagnostic, suspected,
- Interventions: supportive care, symptomatic treatment, HIDA scan
Geriatric Abdominal Pain
OU Exclusion

- Hemodynamically unstable
- Serious acute metabolic derangements
- Uncontrolled pain after ED treatment
- High suspicion for
  - for acute surgical process: exam - guarding, rigidity
  - mesenteric ischemia: nondiagnostic abdominal CT with elevated lactate

Geriatric Protocol
OU Exclusions

- Safety concern/behavioral issues: severely agitated, combative, SI, HI
- Severe CNS depression: obtunded → hypoactive delirium
- Severe metabolic abnormalities
- Potentially life threatening withdrawal syndromes: alcohol, barbiturates, benzodiazepines
- New focal neurologic deficits
- Suspected CNS infection
OU Geriatric Exclusions

- Placement for SNF – maybe not (new pilot program)
- Failure to thrive
- New inability to ambulate, pressure ulcers
- Excessive polypharmacy > 10 medications
- Walking speed > 0.8 m/s inversely related
- Altered mental status: delirium, dementia - maybe not – if simple, potentially correctable condition in short time frame
- Frailty

3 Day Rule for SNF Placement
Direct EDOU to SNF Program

- Pilot program to directly admit to SNF from ED/OU without 3 day hospital admission, CCF – 2018
- Waiver from payors: ACO, Medicare, Medicaid, 3 party payors (Aetna, UHC, Anthem, others)
- One case manager: weekdays only
- 6 months in 2017: 41 placements: ED/OU to SNF, community to SNF, 5 ECF, 3 respite, 2 hospice, 1 acute rehab
- Main campus, community hospital Medicare savings: Jan $19,188 (2); Feb $67,158 (7), Mar $28,782 (3)
- 2018 results Jan to Sept: 81 placements: 41 main campus, 40 one community hospital
Summary: Geriatric Observation

- The elderly are more complex, have more comorbidities & medications, more complaints or problems
- The OU is an ideal place to evaluate geriatric patients
- Many benefits including ↓ risks of hospital admission: ↓ LOS
- Complex/extended vs traditional observation: 24 vs 48 hr
- New “geriatric” protocols: new inclusion/exclusion criteria
- Some differences - geriatric vs nongeriatric: dx, tx, testing, consults, ↑ LOS, ↑ admissions from OU but still acceptable
- Geriatric assessments can and should be done in the OU
- Consults - same and different: PT, OT, case management, pharmacy, geriatrics
- Future: predict who to place in OU, age is not only factor

Contact Information

- maces@ccf.org
- (216) 445-4598 office
- (216) 339-6393 (work I phone)