Geriatric Assessment in the Hospitalized Older Adult

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Geriatrics Research, Education & Clinical Center (GRECC)
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The Aging Population, US (60+)

Majority of care is provided by non-geriatricians

All facts and figures from the US Census Bureau; Texas Department of Aging and Disability Services
DISPROPORTIONATE NEED FOR HOSPITAL CARE OF THE ELDERLY

% of US population

- General Population
- Acute Care Admissions
- Hospital Spending by Adults

65 and older
Under 65

AGS GRS 6th Edition
Why is Assessment Important?

• “Usual” care may not meet elders’ needs
• The 80+ survey:
  – 75% said MD unaware of social needs
  – 37% said MD unaware of physical needs
  – 42% said MD was unaware of their emotional needs
  – 50% said Medical Care could be improved

  Patterson 1998

• Assessment of baseline status and preferences allows development of care plan

  CB Johnston, UCSF, 2001
Heterogeneity with Aging

- Independent
  - Few health problems, active and robust
- Some health problems
- Multiple medical problems
- Frail, vulnerable

J Walston
SYSTEMATIC APPROACH TO ASSESSMENT

• Reduces the risk, and consequences, of common hazards of hospitalization, such as deteriorating functional status and adverse drug reactions

• Should include evaluation of function at the level of the organ system, the whole person, and the person’s environment

• Can identify need for targeted interventions
OBJECTIVES

Know and understand:

• Elements of geriatric assessment

• Opportunities for management of common geriatric problems during a hospital stay

• How to incorporate assessment of those problems into a routine hospital H & P

• How to plan for transitions from the hospital
CASE

– An 81-year-old female resident of an assisted-living facility comes to the ED with complaints of fatigue, nausea, and frequent urination

– The patient has a history of hypertension, osteoporosis with spine compression fractures, osteoarthritis, and macular degeneration

– She was previously independent in IADLs, except for medications, and she uses a walker for ambulation

– She is admitted to the hospital with urosepsis

What issues should be evaluated/addressed by admitting physician?
Determinants of Outcome

Baseline Frailty

Hospitalization Outcome

Acute illness

Hazards of the Hospitalization

This slide adapted from work by P.M. Paudrazik, M.D.
Concerns

• Prevention/treatment of delirium
• Maintaining functional status
• Falls assessment/prevention
• Polypharmacy
  – Inappropriate medications
• Comprehensive discharge planning
GERIATRIC ASSESSMENT

- DEFINITION:
- Is a multidimensional, often interdisciplinary, diagnostic process intended to determine a frail elderly person’s medical, psychological and functional capabilities and problems with the objective of developing and overall plan for treatment and long term follow up.

Geriatric Assessment

- History & Physical
- Functional Status
  - Activities of Daily Living
  - Instrumental Activities of Daily Living
  - Mobility
  - Gait
  - Falls
- Cognition
- Affect

- Psychosocial assessment
  - Living environment, social contacts
- Caregiver burden
- Advance directives
- Hearing & vision
- Social work evaluation
- Nutritional evaluation
- Preventive care
### SYSTEMATIC ASSESSMENT AT ADMISSION (1 of 2)

<table>
<thead>
<tr>
<th>Step</th>
<th>Assessments to Include</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past medical history</td>
<td>▪ Chronic diseases</td>
</tr>
<tr>
<td></td>
<td>▪ Vaccination history</td>
</tr>
<tr>
<td>Medications review</td>
<td>▪ Assess indications for each drug, appropriateness of dosing, potential interactions</td>
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<tr>
<td></td>
<td>▪ Determine patient’s or caregiver’s method for ensuring adherence (e.g., pill boxes)</td>
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<tr>
<td>Social history</td>
<td>▪ Ask about help needed (and who provides help) for ADLs and IADLs</td>
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<tr>
<td></td>
<td>▪ Ask about social support</td>
</tr>
<tr>
<td></td>
<td>▪ Ask if patient feels free and safe</td>
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</tbody>
</table>
### SYSTEMATIC ASSESSMENT AT ADMISSION (2 of 2)

<table>
<thead>
<tr>
<th>Step</th>
<th>Assessments to Include</th>
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</thead>
<tbody>
<tr>
<td>Review of systems</td>
<td>- Ask about weight loss in preceding 6 months</td>
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<tr>
<td></td>
<td>- Ask about dietary change</td>
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<tr>
<td></td>
<td>- Ask about anorexia, nausea, vomiting, diarrhea</td>
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<tr>
<td></td>
<td>- Ask about problems with memory or confusion</td>
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<tr>
<td></td>
<td>- Ask about falls or difficulty with walking</td>
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<tr>
<td></td>
<td>- Ask about difficulties with vision or hearing</td>
</tr>
<tr>
<td>Physical examination</td>
<td>- Take pulse (confirm arrhythmias with ECG)</td>
</tr>
<tr>
<td></td>
<td>- Assess for loss of subcutaneous fat, muscle wasting, edema, ascites</td>
</tr>
<tr>
<td></td>
<td>- Screen with Mini-Cog or MMSE</td>
</tr>
<tr>
<td></td>
<td>- Assess vision and hearing</td>
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<tr>
<td></td>
<td>- Use a depression screen</td>
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</table>
FUNCTIONAL STATUS
ACTIVITIES OF DAILY LIVING (ADLs)

- Eating
- Bathing
- Toileting
- Dressing
- Transferring
- Continence
INSTRUMENTAL ACTIVITIES OF DAILY LIVING (IADLs)

- Housework
- Shopping
- Transportation
- Managing finances
- Taking medications
- Telephone usage
Prevalence of ADL and IADL Disability

Age (yr) | None | IADL only | 1-2 ADLs | 3-6 ADLs
---|---|---|---|---
65-74 | 69 | 11 | 15 | 6
75-84 | 55 | 15 | 21 | 9
85+ | 34 | 17 | 31 | 17

Percent of Medicare beneficiaries
FUNCTIONAL IMPAIRMENTS in HOSPITALIZED OLDER PATIENT

• ~15% of patients ≥70 years decline during hospitalization in ability to perform ADLs

• Another 20% leave the hospital without recovering pre-hospitalization abilities

• Optimal hospital care includes promotion or maintenance of independent functioning

• Function at DC affects disposition
Risk for Functional Decline

• Independent Risk Factors
  1) Pressure ulcer?
  2) Baseline cognitive deficits?
  3) Baseline functional impairments?
  4) Baseline low social activity level?

Score risk for functional decline:
• no to all = 8% risk
• yes to 1-2 questions = 28% risk
• yes to > 2 questions=63% risk

What to Do?

- Promote activity while in the hospital
  - Out of bed to chair
  - Ambulate, with assistance if needed
- Consider physical therapy if obvious decline, gait abnormality
- Consider occupational therapy for dressing, bathing, feeding

This slide adapted from work by P.M. Paudrazik, M.D.
FALLS

- *Definition: coming to rest inadvertently on the ground or at a lower level*

- One of the most common geriatric syndromes

- Most falls are not associated with syncope
Each year 30%–40% of community-dwelling persons aged ≥65, and about 50% of residents of long-term-care facilities, experience falls.
SEQUELAE OF FALLS

• Associated with:
  - Decline in functional status
  - Nursing home placement
  - Increased use of medical services
  - Fear of falling

• Half of those who fall are unable to get up without help ("long lie")

• A "long lie" predicts lasting functional decline
IMMOBILITY AND FALLS

• During initial H & P, assess gait, balance, lower-extremity strength, ability to get up from bed

• Also inquire about history of falls and perform a careful musculoskeletal and neurologic exam

• Hospitalized older patients should walk at least several times daily, with assistance if needed

• Physical therapy may benefit patients with weakness or gait abnormalities

• Avoid restraints and tethers

AGS GRS, 6TH EDITION
THE GET UP AND GO TEST (1 of 2)

• Record the time it takes a person to:
  1. Rise from a hard-backed chair with arms
  2. Walk 10 feet (3 meters)
  3. Turn
  4. Return to the chair
  5. Sit down
THE GET UP AND GO TEST (2 of 2)

• Most adults can complete in 10 sec
• Most frail elderly adults can complete in 11 to 20 sec
• ≥14 sec = ↑ falls risk
• >20 sec → comprehensive evaluation
• Results are strongly associated with functional independence in ADLs
Simply Ask Patient to Walk

• Briefly, things to look for:
  – Sitting posture
  – Ability to stand up (use of arms)
  – Immediate balance after standing
  – Standing balance
  – Provocation – nudge, eyes closed
  – Gait characteristics – shuffling, wide, step continuity
  – Turning
  – Sitting down
Possible Falls Interventions

- Minimize medications
- Individually-tailored exercise program
- Treatment of vision impairment
- Manage postural hypotension
- Manage heart rate, rhythm abnormalities
- Supplement Vitamin D
- Manage foot/footwear issues
- Modify environment
- Education of patient/family
## OPPORTUNITIES FOR INTERVENTION DURING HOSPITAL STAY

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional impairments</td>
<td><strong>Out of bed to chair, ambulate orders</strong></td>
</tr>
<tr>
<td></td>
<td>Physical therapy; occupational therapy; assessment of social environment</td>
</tr>
<tr>
<td>Immobility and falls</td>
<td>Avoidance of restraints; encouragement of ambulation in hospital; physical therapy</td>
</tr>
</tbody>
</table>
Delirium addressed by Dr. Dahm

COGNITION & AFFECT
WHAT IS DEMENTIA?

• An acquired syndrome of decline in memory and other cognitive functions sufficient to affect daily life in an alert patient

• Progressive and disabling

• *Not* an inherent aspect of aging

• Different from normal cognitive lapses
THE EPIDEMIOLOGY OF ALZHEIMER’S DISEASE (AD) (1 of 2)

• 4 million in U.S. currently—14 million in U.S. by 2050
• Life expectancy of 8–10 years after symptoms begin

![Bar chart showing the comparison between present and estimated by 2050 numbers of people with Alzheimer's disease.](chart.png)
THE EPIDEMIOLOGY OF ALZHEIMER’S DISEASE (AD) (2 of 2)

- 1 in 10 persons aged 65+
  - have AD

- Nearly half of those aged 85+ have AD

AGS GRS 6TH EDITION
1. Instruct the patient to listen carefully and repeat the following:

APPLE  WATCH  PENNY

**Instructions**
Inside the circle draw the hours of a clock as if a child would draw them.
Place the hands of the clock to represent the time “forty five minutes past ten o’clock”

3. Ask the patient to repeat the three words given previously:

_______   _______   _______  

---

Diagram:
- **MINI-COG**
  - **Recall = 0**
    - DEMENTED
  - **Recall = 1-2**
    - Clock Abnormal
    - DEMENTED
  - **Recall = 3**
    - Clock Normal
    - NONDEMENTED
Cognitive Impairment

- Present on admission in 20% to 40% of hospitalized older patients, but frequently goes undetected.
- Risk factor for delirium, falls, use of restraints, and nonadherence with therapy.
- Can be assessed using the Mini–Mental State Examination (MMSE), the Mini-Cog, or other established test.
- When dementia is a possibility, exclude reversible causes and identify patients for whom drug therapy or family-oriented interventions are warranted.
• Major or minor depression occurs in ~33% of hospitalized patients ≥65 years but is often undiagnosed

• Depression is associated with increased risk of dependence in ADLs, increased risk of nursing-home placement, and shorter survival
Routinely ask patients if they feel down, depressed, or hopeless, or whether they have lost interest or pleasure in doing things.

A positive response can be followed up by a formal assessment for an affective disorder (Geriatric Depression Scale).

Psychotherapeutic interventions are often effective in initial management.

Drug therapy is rarely necessary during hospitalization for a nonpsychiatric condition, but follow-up shortly after discharge is critical.
DEPRESSION vs DEMENTIA (1 of 2)

- The symptoms of depression and dementia often overlap:
  - Impaired concentration
  - Lack of motivation, loss of interest, apathy
  - Psychomotor retardation
  - Sleep disturbance
DEPRESSION vs DEMENTIA (2 of 2)

• Patients with primary depression are generally unlike those with dementia in that they:
  
  ➢ Demonstrate ↓ motivation during cognitive testing
  
  ➢ Express cognitive complaints that exceed measured deficits
  
  ➢ Maintain language and motor skills

• Effective treatment of depressive symptoms may improve cognition
# OPPORTUNITIES FOR INTERVENTION DURING HOSPITAL STAY

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<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>Pharmacotherapy, cognitive therapy, or both</td>
</tr>
<tr>
<td>Delirium or cognitive impairment</td>
<td>Evaluation of delirium or dementia; assessment of social environment</td>
</tr>
</tbody>
</table>
SENSORY IMPAIRMENT

• Impaired vision and hearing are risk factors for falls, incontinence, delirium, and functional dependence

• Routinely ask older patients if they have difficulty with seeing or hearing

• Evaluate visual acuity (eg, with a pocket card of the Jaeger eye test)

• Evaluate hearing by whispering a short, easily answered question in each ear
## OPPORTUNITIES FOR INTERVENTION DURING HOSPITAL STAY

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<tbody>
<tr>
<td>Sensory impairment</td>
<td>Eyeglasses; hearing aids – use them!</td>
</tr>
<tr>
<td></td>
<td>Arrange for follow-up as outpatient for further evaluations as needed</td>
</tr>
</tbody>
</table>
POLYPHARMACY

Slides in this section adapted from work by Dr. RD Laird, U Kansas
http://coa.kumc.edu/GEC/password/PowerPointPresentations/Polyphar.ppt
Polypharmacy

• The use of more medication than is clinically indicated or warranted

• The problem:
  – Advanced age leads to more chronic problems
  – More chronic problems leads to more drug therapy

• The pro/con of every medication must be weighed very carefully
Polypharmacy Leads To...

- More adverse drug reactions
- Drug interactions
- Other symptoms (caused by the drug)
- Decreased adherence/compliance
- Poorer quality of life
- Unnecessary drug expense
(Potentially) Inappropriate Medications for Older Adults *

- First generation anti-histamines (Benadryl)
- Tri-cyclic anti-depressants
- Benzodiazepines
- Amiodarone
- Nitrofurantoin, particularly for chronic use
- Digoxin > 0.125 mg per day
- Spironolactone > 25mg per day

Discharge planning starts on Day 1 and begins with geriatric assessment.

**DISCHARGE:**
**TRANSITIONS FROM THE HOSPITAL**
Comprehensive Discharge Plan

• Assessment of functional status
  – Declined?
  – If so, able to return home?
  – Fall risk at home?
  – Needs PT/OT at home or as outpatient?

• Medication review
  – Can we D/C any meds?
  – Remove meds that are dangerous

• Social situation appropriate? Caregiver burn-out?
• Appropriate follow-up for medical conditions

• COMMUNICATION!!!!
TRANSITIONS FROM THE HOSPITAL

• Should aim to maximize the chance that patients will maintain the benefits of hospitalization

• Can reduce the risk of early readmission and the use of emergency services

• Ideally begins at admission, with a projection of medical, nursing, rehabilitative, and functional support required at the time of discharge
TRANSITION TO HOME

Communicate the following to patients or their caregivers:

- Follow-up appointments
- Warning symptoms or signs to watch for, with instructions on whom to contact
- Clinical disciplines (e.g., nursing, physical therapy) contracted for care in the home
- Reconciled medication list, with clarification of which pre-hospital medications are to be continued
TRANSITION TO ANOTHER INSTITUTION

• Orient the patient to the nature of the institution, the identity of the new attending physician, and the expected frequency of physician visits

• Promptly send a discharge summary that includes:

  ➢ Summary of hospital course with care provided
  ➢ List of problems and diagnoses
  ➢ Baseline physical functional status
  ➢ Baseline cognitive status
  ➢ Medication list (with termination dates for time-limited drugs)
  ➢ Allergies
  ➢ Test results still outstanding
  ➢ Follow-up appointment
  ➢ Goals and preferences
  ➢ Advance directives
VACCINATIONS

• At admission, routinely ask patients $\geq 65$ years whether they have received influenza or pneumococcal vaccination

• During the fall and winter months, influenza vaccination can be administered to those who have not already received it

• Pneumococcal vaccination can be administered to hospitalized older patients who do not recall having received it in the past 10 years
Take Home Points

• Geriatric assessment helps the clinician and the patient /family to establish appropriate interventions toward recovery of functionality.

• Geriatric assessment improves patient care and helps to target specific treatment goals

• Our goals with therapy and interventions should have function as the primary goal.
SUMMARY

• Irrespective of the patient’s age, the best guides to hospital care are the clinical circumstances and the patients’ preferences.

• Hospitalized older patients should be routinely assessed for certain common geriatric problems, regardless of admission diagnosis.

• Novel systems for providing hospital care have improved outcomes for older patients.
QUESTIONS?

Photo courtesy of L Oakes, MD
APPENDIX
SUBOPTIMAL PHARMACOTHERAPY

During hospitalization and at discharge, a medication review is useful to identify prescribing errors in 6 common categories:

- Inappropriate choice of therapy
- Incorrect dosage
- Incorrect schedule
- Drug-drug interactions
- Therapeutic duplication
- Allergy
ELDER MISTREATMENT (1 of 2)

- Includes physical or psychologic abuse, neglect, self-neglect, exploitation, and abandonment

- Sometimes precipitates hospitalization – most older persons referred to protective services because of physical abuse have been seen in hospital EDs

- Affects 700,000 to 1.2 million Americans annually
ELDER MISTREATMENT (2 of 2)

• Universal screening is recommended and can be implemented by routinely asking, “Do you feel safe returning to where you live?”

• Consider this diagnosis when there are physical or psychologic stigmata, eg, unexplained injury, dehydration, malnutrition, social withdrawal, or recalcitrant depression or anxiety.

• When mistreatment is suspected, most states require that Adult Protective Services be contacted.
On admission, severe protein-calorie malnutrition is present in approximately 15% of patients ≥70 years, and moderate malnutrition is present in another 25%.

25% of older patients suffer further nutritional depletion during hospitalization.

Malnutrition is associated with increased risk of death, dependence, and institutionalization.

Clinicians should assess malnourished patients for remediable factors such as difficulty with chewing, or insufficient time or encouragement to eat.
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OLDER PATIENTS VARY IN PREFERENCES ABOUT CARE

• Compared with younger patients, fewer older patients prefer aggressive measures

• Still, many older patients want cardiopulmonary resuscitation and care focused on life extension

• Families and physicians often underestimate older patients’ desires for aggressive care

• Physicians should determine individual preferences for site of care and goals of care
FALLS ASSESSMENT: HISTORY

– Ask all older adults about falls in past year
– Single fall: check for balance or gait disturbance
– Recurrent falls or gait or balance disturbance: perform complete falls evaluation

- History
- Medications
- Vision
- Gait and balance
- Lower limb joints
- Neurologic
- Cardiovascular
THE GET UP AND GO TEST

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- Most frail elderly adults will complete in 11 to 20 sec
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- Results are strongly associated with functional independence in ADLs
DELIRIUM (VERY BRIEFLY)
DELIRIUM (1 of 2)

- Predictor of prolonged hospital stay if it arises during hospitalization
- Associated with in-hospital death and nursing-home placement
- Consider if the patient exhibits:
  - Fluctuation in mental status or behavior
  - Inattention
  - Disorganized thinking
  - Altered consciousness

10% to 15% of older adults on admission

30% of older adults during hospital stay

AGS GRS 6TH EDITION
• ~33% of delirium cases can be prevented by managing:
  - Cognitive impairment
  - Sleep deprivation
  - Immobility
  - Visual impairment
  - Hearing impairment
  - Dehydration

• To prevent or ameliorate delirium:
  - Avoid medicines associated with delirium
  - Treat infection and fever
  - Detect and correct metabolic abnormalities
  - Frequently orient patients with cognitive or sensory impairment
  - Avoid excessive bed rest, room changes, and restraints
### U.S. Population

- U.S. aging at high rate
- Majority of care is provided by non-geriatricians

<table>
<thead>
<tr>
<th>Age group</th>
<th>2000</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-54</td>
<td>37 million</td>
<td>43 million</td>
</tr>
<tr>
<td>55-64</td>
<td>24 million</td>
<td>42 million</td>
</tr>
</tbody>
</table>
| 65-74     | 18 million | 35 million | DOUBLE
| 75-84     | 12 million | 26 million | DOUBLE
| 85+       | 4 million  | 18 million | QUADRUPLE