Hazards of Hospitalization in the Older Patient

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Old age ain't no place for sissies.  ~Bette Davis
(and neither is the hospital)
Goals for Today

• To Be Familiar with Top Three Hazards for Hospitalized Older Adults
• To Understand why Elders Have Increased Risks
• Discuss How to Decrease the Hazards
  – Delirium
  – Loss of Function / Mobility
  – Medication Errors
• To be Familiar with Basic Management Principles in Elderly Patients

• No conflict of interest disclosures
Seniors in the Hospital

• Over half of all hospital days are spent by patients over 65 yrs old

• In 2000, pts > 65 yrs had 4X the hospital days, majority of hospital expenditures

• By 2027, admissions of pts > 65 yrs old projected to increase by 78%

Landefeld, S. Annals of Long-Term Care, Aug 2004
Fed Interagency Forum on Aging-Related Statistics, 2000
www.solucient.com/forms/demochange/shtmll
Impact Of Hospitalization

• Hospitalization … a pivotal event in the life of an older person

• “Hospital stay may yield functional decline despite cure or repair of condition for which they were admitted.” Creditor, *Ann Int Med* 1993
Incidence of Top 3 Complications of Hospitalization for Seniors

- Delirium 25-60%
- Functional decline 34-50%
- Adverse drug events 54%

Source: Inouye 2000
Complications After Hospitalization

Unplanned readmissions cost -$17 billion (2004)
Est 20-25% of discharges with adverse events
Rare communication hospital to PCP (3-20%)
Why Are Elders So Vulnerable?
Higher Variability with Age

• All Older People Are Not Alike!
  – Functional Status is Most Critical
  – Don’t Base Judgments On Age Alone
  – Predicting Prognosis
    • Functional Status
    • Comorbidities
Visualize a patient who is 80 years old. What does he or she look like?
Why Is There So Much Variance In Older Adults?

• Genetic Differences
• Environmental Stresses Differ
  – Tobacco
  – Alcohol
  – Exercise
• Aging Dependant Diseases
(Old) “Age is not different from earlier life as long as you're sitting down”

In Aging, we lose ability to compensate for stressors, lose your backup or physiologic reserves.

Malcolm Crowley, age 80, quoted in Richard Restak's *The Mind* (Slide: Taffet, 2010)
Aging = Homeostenosis

- Def’n: the progressive constriction of each organ system’s homeostatic reserve
- Begins in 3rd decade
- Gradual and progressive
- Rate and extent vary among individuals

– Slide – Marcantonio 2007
Implications of Homeostenosis

• Higher Baseline Vulnerability requires Less Illness to cause inability to Recover

• Elders with Cognitive and Functional Impairment are more Vulnerable

• Decreasing Iatrogenic Complications & Trying to Help Compensatory Mechanisms will tilt the scales toward Recovery!

(Source: Marcantonio, 2007)
What happens in the hospital?

- Medications & Interventions
- Bed Rest and Immobility
- Restraints & Risks for Falls
  - Urinary catheter, IV poles, High beds with rails, Lack of assistive devices for walking
- Malnutrition & Dehydration
  - Insufficient help with meals, restrictive diets
- Lack of stimuli (hearing aids, glasses, dentures)
Effects of Bed Rest

- Reduces strength & aerobic capacity
- Decreases ability to regulate blood pressure
- Lowers oxygen levels
- Accelerates bone loss
- Increases urinary incontinence
- Increases pressure ulcers
- Increases sensory deprivation

Creditor, Ann Int Med 1993
Prevention of Delirium

The Most Common Complication of Hospitalization
What is Delirium?

• ACUTE change in thinking or mental status with a fluctuating course

• Characteristics: Poor Attention, Disorganized Thinking, may be Sleepy or Hypervigilant

• Cause: Illness and/or Medications
  – Ex. Infections, Sedatives, Anesthesia, Brain Injury (stroke or bleeding)
  – Improves with Treatment of Underlying Illness
Aging and Cognitive Impairment

- Up to 45% of 85 yr olds - cognitive impairment
- Dementia increases risk of delirium, and many other adverse events in hospital
- Increased adverse effects of psychoactive meds, & anti-cholinergics
- Sensory Deprivation
  - Frequent aging decline in hearing and vision
  - Adds to Risk of Delirium / Difficulty with Assessment
  - **Bed Rest** – increased sensory deprivation
## Delirium vs. Dementia

<table>
<thead>
<tr>
<th>Delirium</th>
<th>Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute onset</td>
<td>Gradual onset</td>
</tr>
<tr>
<td>Inattention</td>
<td>Memory disturbance</td>
</tr>
<tr>
<td>May change level of alertness</td>
<td>Usually does not change alertness</td>
</tr>
<tr>
<td>Fluctuating: minutes to hours</td>
<td>Fluctuating: none or days to weeks</td>
</tr>
<tr>
<td>REVERSIBLE</td>
<td>Irreversible</td>
</tr>
</tbody>
</table>

**Common:** Delirium superimposed on Dementia
Delirium is Dangerous

• Short term:
  – 2-5X Higher In-Hospital Complications
  – Higher In-hospital death
  – Increased nursing home placement

• Long term:
  – Associated with loss of independence
  – Increased long term cognitive decline
  – Increased mortality for up to 2 years
Delirium is Costly

• Acute hospitalization:
  – Increased Costs / Patient $2,000-4,000
    • Increased Tests & Length of Stay

• Long term:
  – Increased short term NH placement

• Estimated Total Medicare cost: exceeds $10 billion per year!
Delirium is Not Inevitable!

It is under recognized yet preventable using a proactive, multi-factorial approach.
Prevention of Delirium

• Hospital Elder Life Program (HELP)

• Simple Interventions Decreased Delirium by 40% in Elderly Medical Patients

• Volunteer Based Program!

• Studied in 852 Medical Patients over age 70 in Hospital – New England Journal of Med

Inouye SK. NEJM.1999; 340:669-76
Delirium Prevention Interventions

• Avoid Sleep Aids
  • There is NO Good Sleep Drug for Seniors
  • Especially diphenhydramine (Benadryl)
  • Warm Milk, Light Music, ?Ear plugs

• Avoid Dehydration
  • Offer and Help to Drink Fluids

• Keep Day / Night Cycles
  • Lights ON in daytime, Busy in Day
  • Quiet at Night
Delirium Prevention Interventions

• HAVE Glasses and Hearing Aids
  – Consider Low Price Hearing Amplifier

• Get Patients Moving (sitting or walking)
  – Walk 2-3 Times per Day

• Frequent Re-orientation
  – Help read the Newspaper, Remind of what has been done and will be done next
Prevention of Functional Decline

Interventions to Prevent Loss of Independence in Hospitalized Elders
Functional Decline in Hospital

• 1/3 of patients over 70 yrs old discharged with decreased ability for basic self-care activities

• Risk Factors for Failure to Recover:
  – Older Age (esp over 85)
  – Delirium
  – Dementia
  – Depression
  – Malnutrition

Covinsky, JAGS 2003
Prevent Loss of Function

• Goal = movement & function
• Get Moving!!!!
  – NO BED REST!
  – Every Day in Bed = 3-5 of Recovery
  – Ask WHEN can you be helped out of bed?
• ASK for Evaluation by Physical and Occupational Therapy
  – Ask to Keep Cane / Walker at Bedside
Prevent Loss of Function

• Encourage Oral Intake
  – Ask about a more liberal diet
  – Remind to drink and eat frequently
  – Ask for nutrition consult
  – Ask if family can bring in food, bring dentures, ask to help with feeding

• Avoid Urinary Catheters
  – Urinary Catheters Cause Infection
  – Ask for help / bedside commode
Early Mobility Matters!

• Early Mobilization Program for Community Acquired Pneumonia.
  • Sitting Up or Walking for > 20 Minutes in 1st 24 hrs
  • Progressive Mobilization Each Day
  • Decreased Length of Stay in Hospital
    » by 1 day!
  • Better than ANY Drug!

Mundy LM. Chest. 2003; 124:883-889
Prevent Medication Errors

http://www.flickr.com/people/mediterrate/
Prevent Medication Errors

• Institute of Medicine estimates that 1.5 million Americans are harmed by preventable adverse drug events / year

• Hospitalized patients estimated average of 1 medication error per day.

• Transitions of Care: *Critical Times for Medication Errors to Occur*
Pharmacology & Aging

• Medications are Dangerous in Older Adults
  – Start Low, Go Slow
  – Avoid all Medications, if Possible
  – Drug-drug Interactions with more Meds
  – Adverse Drug Reactions not Tolerated

• Avoid Certain Medications
  – Beers Criteria – Potentially Inappropriate Medications for Older Adults

Beers, MA Archives IM Vol. 163 No. 22, December 8, 2003
Commonly Used Drugs That Should Be Avoided In Older People

- Propoxyphene (Darvon, Darvocet)
- Meperidine (Demerol)
- NSAID’s – (Indocin, Toradol)
- Diphenhydramine (Benadryl)
- Muscle Relaxants (Flexeril, Robaxin)
- Benzo’s -especially long acting

Beers, MA Archives IM Vol. 163 No. 2, 2003
Prevent Medication Errors

• Patients and Families MUST list what is REALLY being taken with dates
  – Update Frequently
  – Include ALL Non-Prescription Meds!
  – List Medications that Gave Bad Effects
  – Make Sure Every Site of Care Keeps Copy
  – Ask to Review List of Medications

• Use Only One Pharmacy
Prevent Medication Errors

• If NEW symptoms, before giving a new medication:
  – ASK could it be a medication side-effect?
  – Avoid the cycle of treating side-effects
  – A trial of decreasing or changing medications may be worthwhile
Summary: What Can You Do?

• Anticipate / Prevent Delirium
  – Avoid Sleep Aids
  – Help Communication (Glasses/Hearing Aids)
  – Keep Day/Night Cycles
  – Avoid Dehydration
  – Frequent Re-Orientation

• If Delirium Occurs, Same Management!
Summary: What Can You Do?

• Prevent Loss of Function
  – NO Bed Rest
  – Get Patients Out of Bed
  – Ask for Physical and Occupational Therapy
  – Avoid Urinary Catheters
  – Liberalize Diet – Family Assist with Meals
  – Ask for Nutrition Consult
Summary: What Can You Do?

• Prevent Medication Errors
  – Know Beer’s Criteria Medications
  – Check Medication Lists Carefully
  – SHARE Updated List of ALL Medications
  – Keep List of Medications Not Tolerated Well

• Don’t Think New Drug, Think What to Decrease!
Resources

- Huffington Center on Aging / Baylor Geriatrics
  http://www.bcm.edu/hcoa/

- Harford Institute for Geriatric Nursing
  www.hign.org

- Hospital Elder Life Program
  http://elderlife.med.yale.edu

- kagarwal@bcm.edu
Wise Words

“Teach us to live so that we may dread Unnecessary time in bed
Get people up and we may save Our patients from an early grave.”

Dr. Richard Asher