Promoting Functional Independence in the Context of an Acute Illness

Cynthia J. Brown, MD, MSPH
Associate Professor of Medicine,
Director, Geriatric Medicine Section
University of Alabama at Birmingham
Birmingham/Atlanta VA GRECC

Objectives

1. Describe the prevalence of risk factors for functional decline among older persons who become acutely ill.
2. Explain potential barriers to hospital mobility for older adults.
3. Describe interventions to promote mobility among hospitalized elders.

Delirium

- Present on admission in 10-15% of older patients
- Occurs during admission for additional 10-30% of patients
- Predictor of prolonged hospital stay
- Associated with increased rates of hospital death and nursing home placement
- Demonstrated prevention measure:
    - **Avoidance of low mobility (bed rest or bed to chair transfers)**

Inouye SK, et al. N Engl J Med, 2006

Falls

- Average of 2.2 – 9.4 falls per1000 bed days
- After controlling for age, rates vary depending on hospital service
- Major Risk factor:
  - **Muscle weakness/ Deconditioning**

Schwendimann R, et al. BMC Nursing 2005

Pressure Ulcers

- Annual incidence of hospital-acquired pressure ulcers 2.9 to 29%.

- ICUs; 33% incidence and 41% prevalence.

- Older patients admitted for non-elective orthopedic procedures, 66% incidence.

- Stage III-IV pressure ulcers considered a "never event" by CMS.

- Primary risk factor: **bed rest/low mobility**

Salcido R, Popescu A. Pressure Ulcers and Wound Care. 2012

Functional Decline

- Decline in ability to perform one or more basic Activities of Daily Living (ADL).

- Rates range from 15-35% during hospitalization.

- Only 10% recover prior to discharge.

- 15% not at pre-hospital level at 3 months.

- Major risk factor is **bed rest/ low mobility**

Boyd CM, J Am Geriatr Soc, 2009

Brown CJ, Roth DL, Allman RM, Sawyer P, Ritchie CS, Roseman JM. Trajectories of Life-Space Mobility after Hospitalization. *Ann Intern Med* 150(6):372-378, 2009.

Trajectories of Life-Space Mobility After Hospitalization

Cynthia J. Brown, MD, MSPH; David L. Roth, PhD; Richard M. Allman, MD; Patricia Sawyer, PhD; Christine S. Ritchie, MD, MSPH; and Jeffrey M. Roseman, MD, PhD, MPH

Background: Life space is a measure of where a person goes, the frequency of going there, and the dependency in getting there. It may be a more accurate measure of mobility in older adults because it reflects participation in society as well as physical ability.

Objective: To assess effects of hospitalization on life space in older adults, and to compare life-space trajectories associated with surgical and nonsurgical hospitalizations.

Design: Prospective observational study.

Setting: Central Alabama.

Participants: 687 community-dwelling Medicare beneficiaries at least 65 years of age with surgical ($n = 44$), nonsurgical ($n = 167$), or no ($n = 476$) hospitalizations.

Measurements: Life-Space Assessment (LSA) scores before and after hospitalization (range, 0 to 120; higher scores reflect greater mobility).

Results: Mean age of participants was 74.6 years (SD, 6.3). Fifty percent were black, and 46% were male. Before hospitalization, adjusted LSA scores were similar in participants with surgical and nonsurgical admissions. Life-space assessment scores decreased in both groups immediately after hospitalization; however, participants with surgical hospitalizations had a greater decrease in scores (12.1 more points [95% CI, 3.6 to 20.7 points]; $P = 0.005$) than those with nonsurgical hospitalizations. However, participants with surgical hospitalizations recovered more rapidly over time (gain of 4.7 more points [CI, 2.0 to 7.4 points] per ln [week after discharge]; $P < 0.001$). Score recovery for participants with nonsurgical hospitalizations did not significantly differ from the null (average recovery, 0.7 points [CI, −0.6 to 1.9 points] per ln [week after discharge]).

Limitation: Life space immediately before and after hospitalization was self-reported, often after hospital discharge.

Conclusion: Hospitalization decreases life space in older adults. Surgical hospitalizations are associated with immediate marked life-space declines followed by rapid recovery, in contrast to nonsurgical hospitalizations, which are associated with more modest immediate declines and little evidence of recovery after several years of follow-up.

Primary Funding Source: National Institute on Aging.

Hospitalization leads to functional decline or loss of independence in about one third of older adults (1–7). An accurate measure of postdischarge physical function requires more than an assessment of a person's specific activities of daily living (ADLs), however, because physical function also encompasses their broader participation in the activities of society (8–10). The University of Alabama at Birmingham (UAB) Study of Aging Life-Space Assessment (LSA) provides such a measure of participation.

The LSA is a validated tool that measures mobility and reflects participation in society on the basis of the distance through which a person reports moving during the 4 weeks preceding the assessment (11–14). Life-space levels range from within one's dwelling to beyond one's town. A life-space composite score is calculated on the basis of life-space level, degree of independence in achieving each level, and the frequency of attaining each level. The LSA, which in-

corporates where a person goes, the frequency that he or she goes there, and the use of equipment or help from another person, could be used to explicitly define the full continuum and changes in mobility among community-dwelling older adults after hospitalization (11–14). Limitations in life space, as measured by the LSA, reflect lifestyle as well as physical ability and may be a useful measure of global functional decline for recently hospitalized older patients, especially because life space specifically relates to mobility and a person's participation in society.

Our objectives were to assess the initial and extended effects of hospitalization on life space and identify differences in life-space trajectories associated with surgical and nonsurgical hospitalizations.
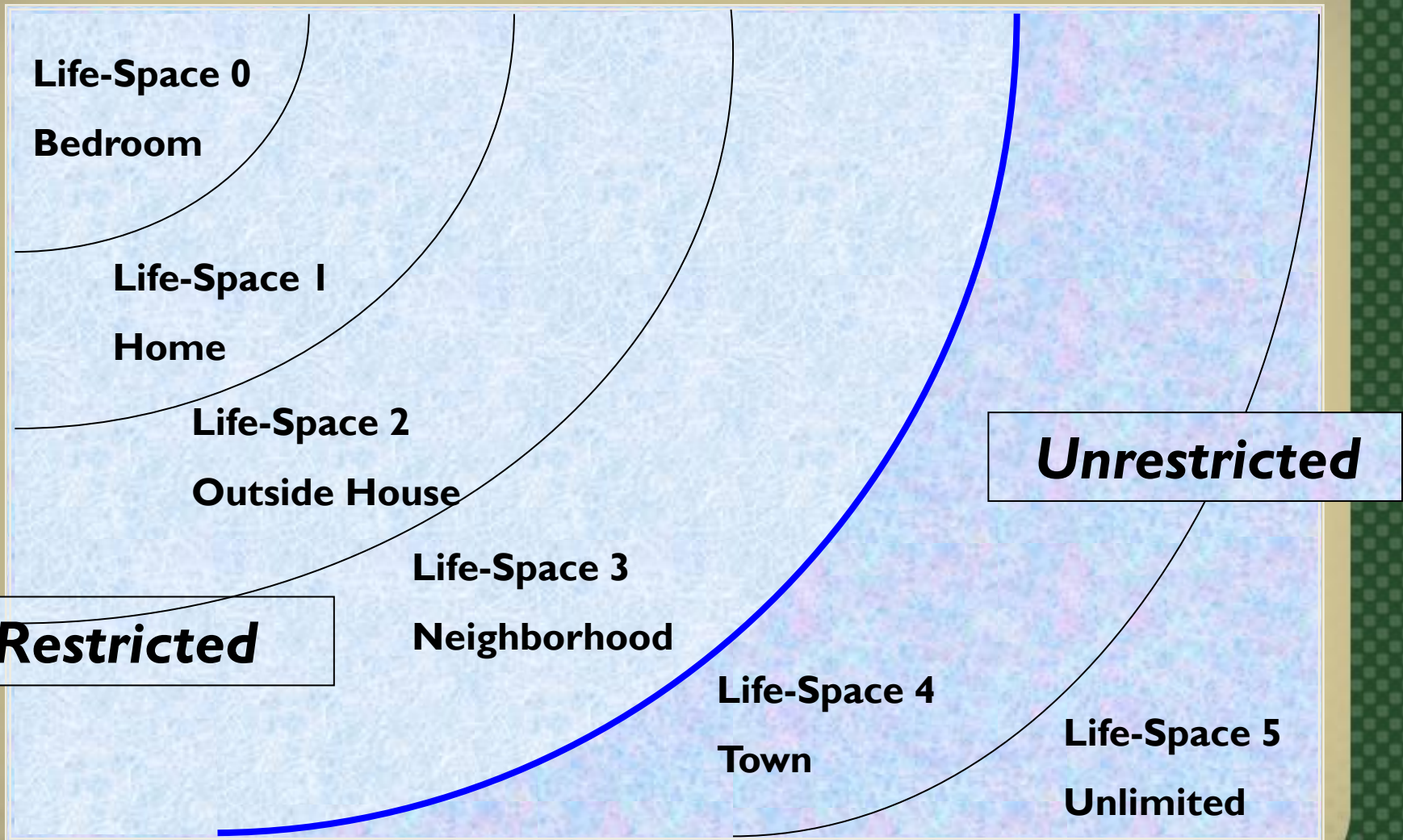
METHODS

Setting and Participants

The UAB Study of Aging is designed to understand person-specific factors that predispose older adults to mobility decline and racial differences in mobility changes associated with aging. Participants were a random sample of Medicare beneficiaries at least 65 years of age who lived in central Alabama, stratified by county, race, and sex (11). Investigators classified counties as urban or rural on the basis of population at the time of baseline interviews (15) and set recruitment to achieve a balanced sample in terms of race, sex, and rural or urban residence. After obtaining

See also:

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Web-Only
Appendix
Appendix Table
Conversion of graphics into slides

Measuring Life-Space

Life-Space 0

Bedroom

Life-Space 1

Home

Life-Space 2

Outside House

Life-Space 3

Neighborhood

Restricted

Unrestricted
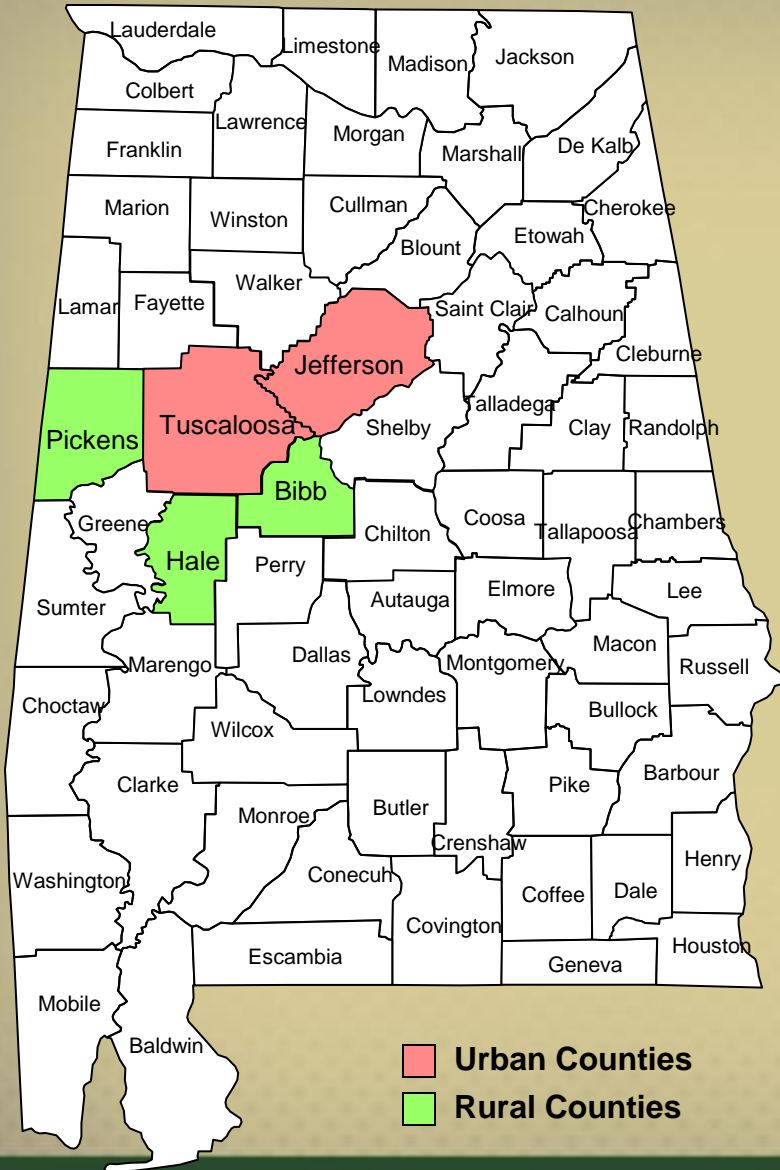
Life-Space 4

Town

Life-Space 5

Unlimited

Scores range from 0 – 120 with higher scores reflecting greater mobility

UAB Study of Aging 1999-2001

Subjects stratified, random sample of Medicare beneficiaries living in 5 counties in central Alabama.

Study over-sampled males, African Americans, and rural residents.

Methods

- 211 hospitalizations among 687 participants over 4 years
  - Surgical admissions = 44;
  - Non-surgical admissions = 167
- Life-Space Assessment every 6 months
- Using multilevel change model to determined trajectory of Life-Space before and after hospitalization.

Life-Space Trajectories after Hospitalization
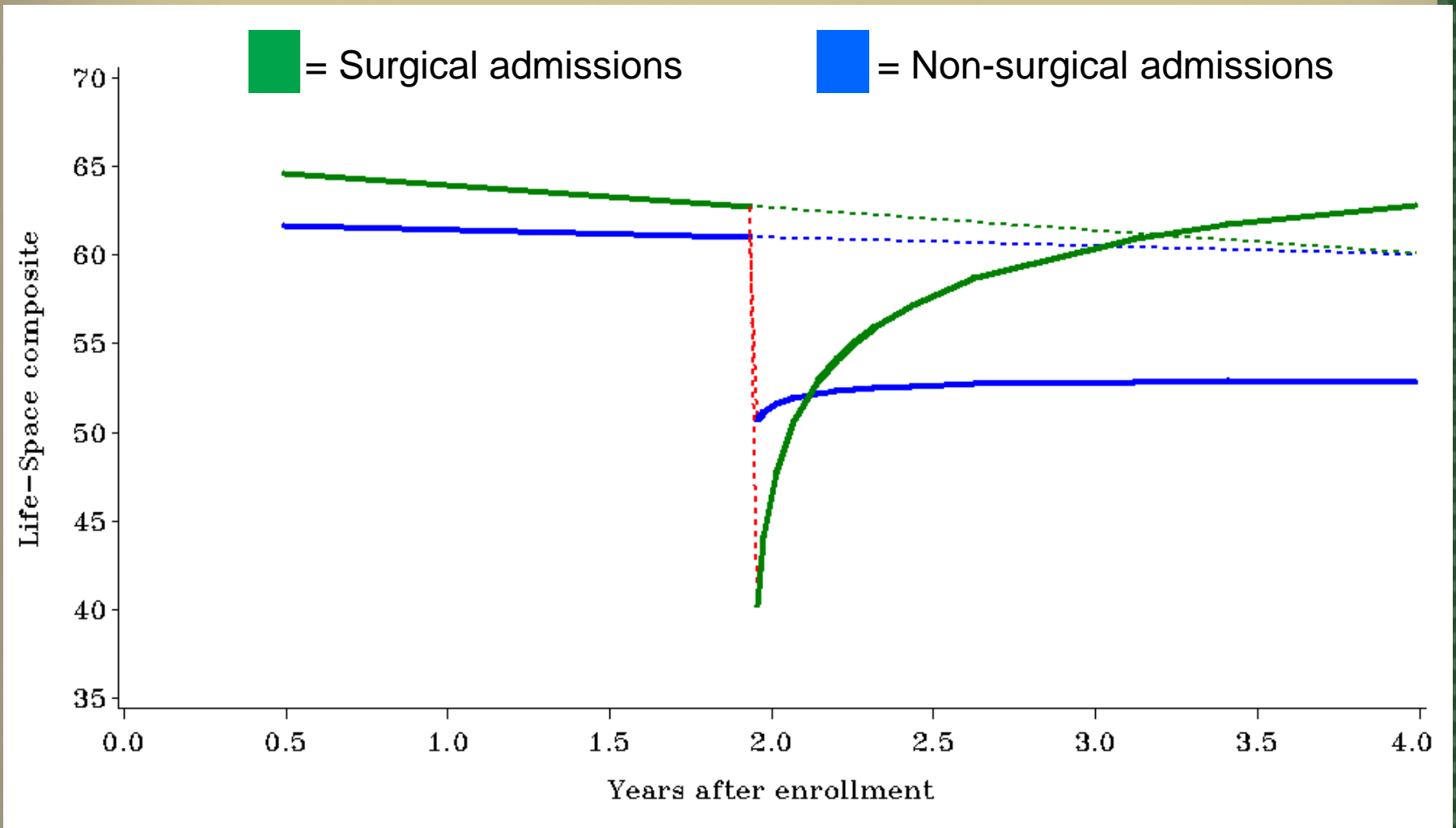
Key Point Regarding Hospital Hazards

- Many hospital hazards described share two predisposing factors:
  - Older age
  - Low mobility, defined as being limited to bed or chair
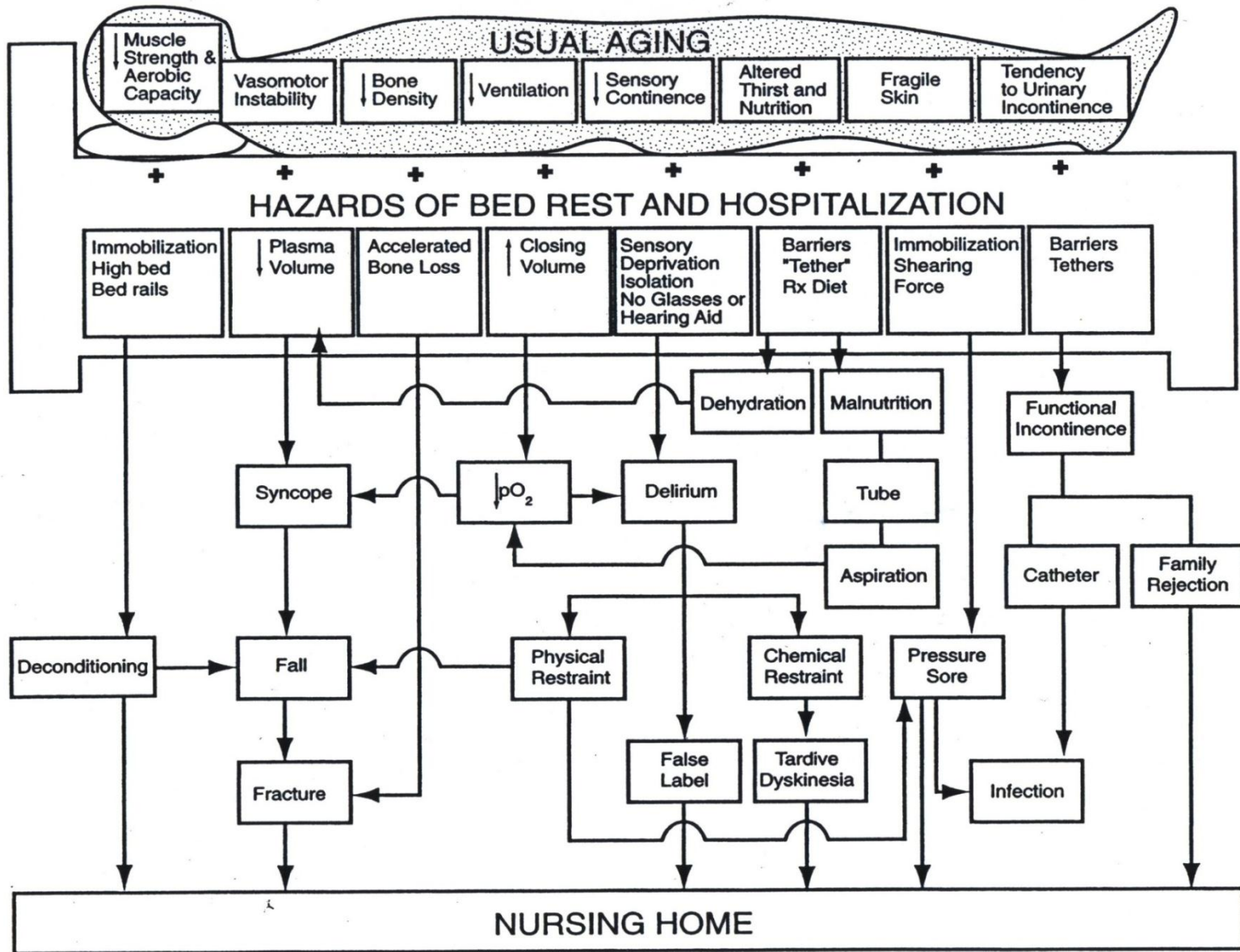
Creditor MC Ann Intern Med 1995

Brown CJ, Williams BR, Woodby LL, Davis LL, Allman RM.
Barriers to mobility during hospitalization from the perspective of older patients, their nurses and physicians.
J Hosp Med 2(5):305-313, 2007.

BACKGROUND: Low mobility is common during hospitalization and is associated with adverse outcomes. Understanding barriers to the maintenance or improvement of mobility is important to the development of successful interventions.

OBJECTIVES: To identify barriers to mobility during hospitalization from the perspectives of older patients and their primary nurses and physicians, to compare and contrast the perceived barriers among these groups, and to make a conceptual model.

DESIGN: Qualitative interviews analyzed and interpreted using a grounded theory approach.

SETTING: Medical wards of a university hospital.

PARTICIPANTS: Twenty-nine participants—10 patients ≥ 75 years, 10 nurses, and 9 resident physicians.

MEASUREMENTS: Participants were interviewed using a semistructured interview guide, with similar questions for patients and health care providers. Interviews were audiotaped, transcribed, and reviewed for common themes by independent reviewers. Perceived barriers to mobility were identified, and their nature and frequency were examined for each respondent group.

RESULTS: Content analysis identified 31 perceived barriers to increased mobility during hospitalization. Barriers most frequently described by all 3 groups were: having symptoms (97%), especially weakness (59%), pain (55%), and fatigue (34%); having an intravenous line (69%) or urinary catheter (59%); and being concerned about falls (79%). Lack of staff to assist with out-of-bed activity was mentioned by patients (20%), nurses (70%), and physicians (67%). Unlike patients, health care providers attributed low mobility among hospitalized older adults to lack of patient motivation and lack of ambulatory devices.

CONCLUSIONS: Recognizing and understanding perceived barriers to mobility during hospitalization of older patients is an important first step toward developing successful interventions to minimize low mobility. *Journal of Hospital Medicine* 2007;2:000–000. © 2007 Society of Hospital Medicine.

KEYWORDS: PLEASE SUPPLY

The adverse outcomes associated with hospitalization of older patients, such as functional decline and increased nursing home placement, have been well documented.[1-9] Low mobility, defined as being limited to a bed or chair, has also been associated with these adverse outcomes, even after controlling for severity of illness.[10] Early ambulation has been a common practice for years following many types of orthopedic operations, including hip fracture repair and total joint replacement.[11,12] A recent study demonstrated that time to ambulation

Potential Barriers to Hospital Mobility

Patient-related factors
Illness severity
Comorbid conditions
Altered mental status
Patients symptoms

Treatment-related factors
Hospital devices
Admitting diagnosis
Side effects of medications

PATIENT

Institution-related factors
Staffing patterns
Environment encourages bed rest
Lack of ambulatory devices

Attitudinal factors
Attitude toward mobility
Expectation of hospital stay
Concern about falls

Methods

- <u>Participants</u>:
    - 10 patients, age $\geq$ 75 years admitted to medical wards at UAB Hospital
    - Patient's nurse & physician also recruited (n=29)

- <u>Questionnaire Development</u>:
    - Semi-structured interview guide
    - New themes incorporated into interview
    - Interviews audiotaped, transcribed and examined for common themes
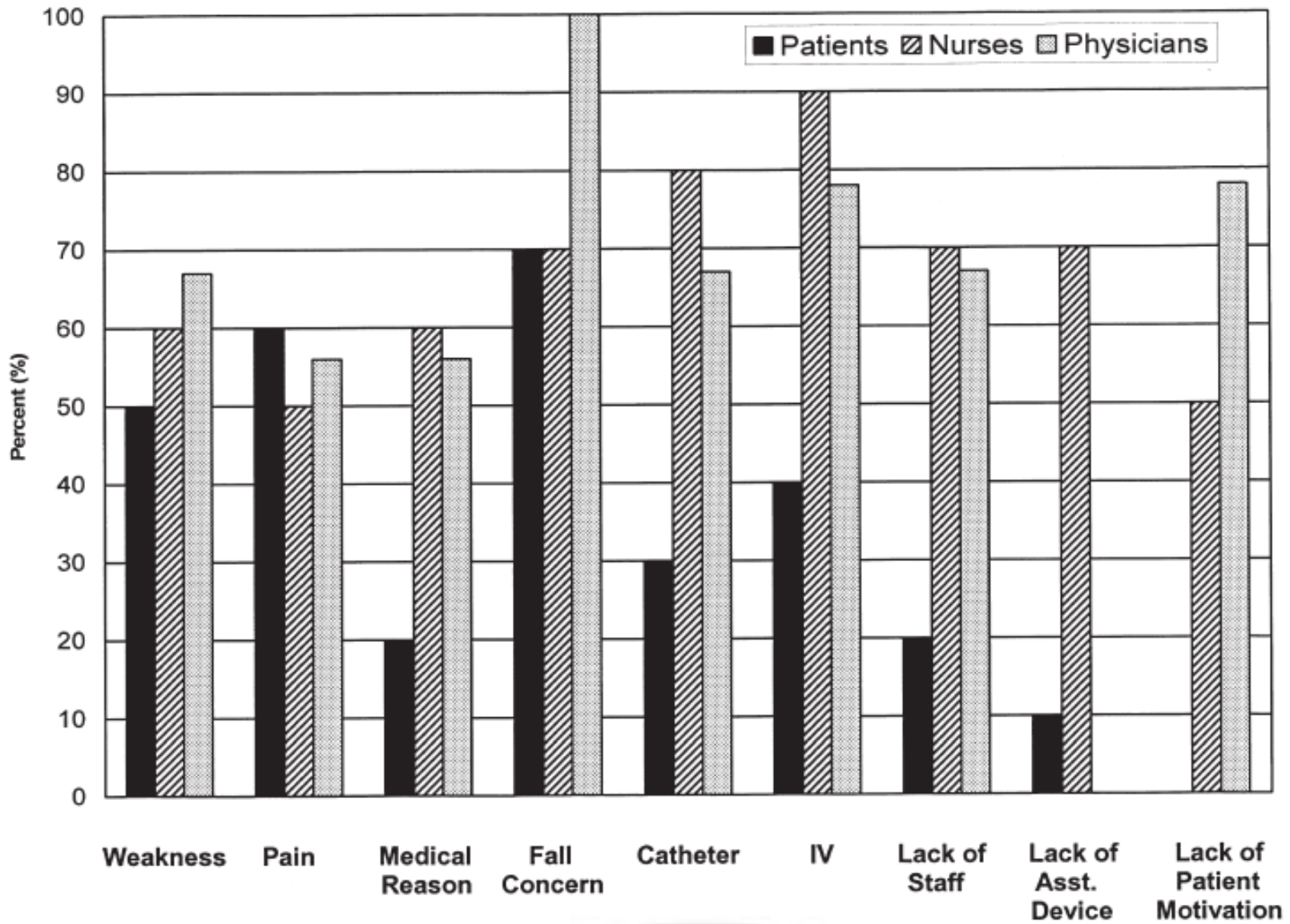
Barrier: Lack of Importance

"I think nurses in general would prefer the patient to stay in bed. I believe they perceive it as a risk for falls and a risk for pulling out their IVs or any other medical device and it is probably not viewed as an important factor in someone who is recovering from an illness."

Barrier: Environment

"I think it is just that patients, when they are in the hospital, they feel they are supposed to be in bed. And they are more comfortable there and a lot of times they can see the TV better."

Implications

- Study an important step in development of successful interventions to minimize low mobility.

- Suggests there are modifiable and non-modifiable reasons for low mobility.

- Does not address the potential that illness severity and comorbid illness are key reasons for low mobility.
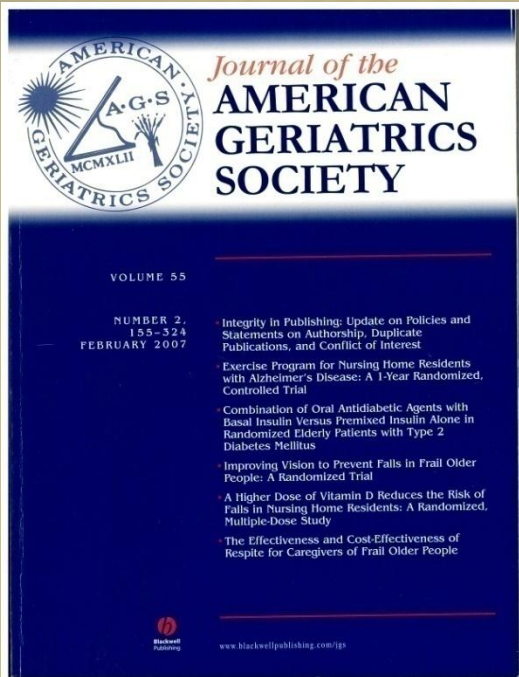
Brown CJ, Friedkin RJ, Inouye SK. Prevalence and Outcomes of Low Mobility in Hospitalized Older Patients. *J Am Geriatr Soc* 52:1263-1270, 2004.

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- Integrity in Publishing: Update on Policies and Statements on Authorship, Duplicate Publications, and Conflict of Interest
- Exercise Program for Nursing Home Residents with Alzheimer's Disease: A 1-Year Randomized, Controlled Trial
- Combination of Oral Antidiabetic Agents with Basal Insulin Versus Premixed Insulin Alone in Randomized Elderly Patients with Type 2 Diabetes Mellitus
- Improving Vision to Prevent Falls in Frail Older People: A Randomized Trial
- A Higher Dose of Vitamin D Reduces the Risk of Falls in Nursing Home Residents: A Randomized, Multiple-Dose Study
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Prevalence and Outcomes of Low Mobility in Hospitalized Older Patients

Cynthia J. Brown, MD,*† Rebecca J. Friedkin, PhD,‡ and Sharon K. Inouye, MD, MPH,‡

OBJECTIVES: To estimate the prevalence of different levels of mobility in a hospitalized older cohort, to measure the degree and rate of adverse outcomes associated with different mobility levels, and to examine the physician activity orders and documented reasons for bedrest in the lowest mobility group.

DESIGN: A prospective cohort study.

SETTING: An 800-bed university teaching hospital.

PARTICIPANTS: Four hundred ninety-eight hospitalized medical patients, aged 70 and older.

MEASUREMENTS: Using average mobility level, scored from 0 to 12, the low-mobility group was defined as having a score of 4 or less, intermediate as a score of higher than 4 to 8, and high as higher than 8. Outcomes were functional decline, new institutionalization, death, and death or new institutionalization.

RESULTS: Low and intermediate levels of mobility were common, accounting for 80 (16%) and 157 (32%) study patients, respectively. Overall, any activity of daily living (ADL) decline occurred in 29%, new institutionalization in 13%, death in 7%, and death or new institutionalization in 22% of patients in this cohort. When compared with the high mobility group, the low and intermediate groups were associated with the adverse outcomes in a graded fashion, even after controlling for multiple confounders. The low-mobility group had an adjusted odds ratio (OR) of 5.6 (95% confidence interval (CI) = 2.9–11.0) for ADL decline, 6.0 (95% CI = 2.5–14.8) for new institutionalization, 34.3 (95% CI = 6.3–185.9) for death, and 7.2 (95% CI = 3.6–14.4) for death or new institutionalization. The intermediate group had adjusted ORs of 2.5 (95% CI = 1.5–4.1), 2.9 (95% CI = 1.4–6.0), 10.1 (95% CI = 1.9–52.9), and 3.3 (95% CI = 1.8–5.9) for ADL decline, new institutionalization, death, and death or new institutionalization, respectively. Bedrest was ordered at some point during hospitalization in 165 (33%) patients. For most patients, mobility was limited involuntarily (bedrest orders), and almost 60% of bedrest episodes in the lowest mobility group had no documented medical indication.

CONCLUSION: Low mobility and bedrest are common in hospitalized older patients and are important predictors of adverse outcomes. This study demonstrated that the adverse outcomes associated with low mobility and bedrest may be viewed as iatrogenic events leading to complications, such as functional decline. J Am Geriatr Soc 52:1263–1270, 2004.

Key words: mobility; bedrest; hospital complications; geriatrics; iatrogenesis

Low mobility and bedrest are common occurrences during hospitalization. One study found that older patients were documented to be on bedrest for 23% of 3,500 patient-days studied.[1] Another study found that 33% of older hospitalized patients were confined to bed or chair during three separate survey days.[2] One report noted that 65% of patients experienced a decline in mobility from their preadmission baseline to the second hospital day, with most patients failing to improve by discharge.[3] These studies constitute the body of literature on the prevalence of low mobility and bedrest in hospitalized patients, yet none of the studies have examined mobility and associated adverse outcomes throughout the entire hospital course.

Hospitalization has been shown to be associated with adverse outcomes such as high rates of functional disability, increased lengths of stay, and increased likelihood of nursing home placement upon discharge.[4,5] One study found older patients to be more at risk for medical and iatrogenic complications during hospitalization,[6] which may contribute to these adverse outcomes. It has also been suggested that use of bedrest during hospitalization may be more

Prevalence and Outcomes of Low Mobility in Hospitalized Older Patients

- 498 hospitalized medical patients, age ≥ 70 years

- Mobility scale based on nurse report:
    - degree of assistance needed
    - number of times transferred and ambulated

- Average of all mobility observations for each patient, scores trichotomized.
    - 0-4: low mobility
    - 4.1-8: intermediate mobility
    - 8.1-12: high mobility

Prevalence of Low Mobility

- Bed rest present at some point during hospitalization for 33% of older patients

- 16% patients experienced low mobility, defined as bed or bed to chair activity, throughout hospitalization

Increased Risk of Adverse Outcomes by Mobility

Outcomes	Low Mobility	Intermediate Mobility
Any decline in ADLs	5.6	2.5
New Institutionalization at Discharge	6.0	2.9
Death	34.3	10.1
Death or New Institutionalization	7.2	3.3

Adjusted for ADLs, Demographics, APACHE II, Charlson and ICU/CCU stay; Odds Ratio compared to High mobility group ($P < .006$)

Graded Relationship Between Mobility Level and Adverse Outcome
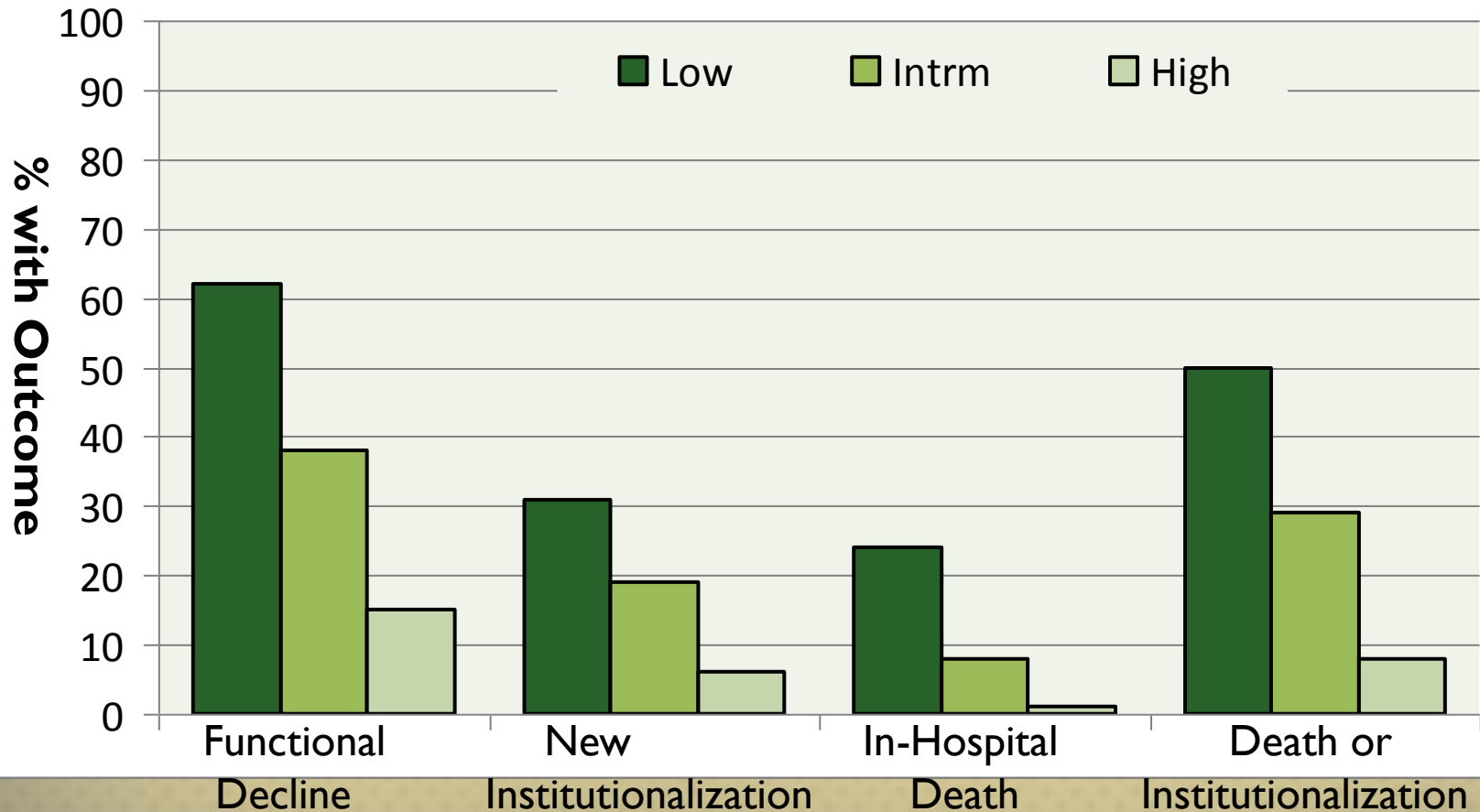
Documented Reasons for Bed Rest in Low Mobility Patients (176 obs in 66 pts)

Diagnosis or Procedure	N (%)
No indication documented	102 (58)
Imminently terminal condition	18 (10.2)
Rule-out myocardial infarction	17 (9.7)
Hypoxemia with exertion	8 (4.5)
Acute post-operative period	6 (3.4)
Acute deep vein thrombosis	5 (2.8)

Conclusions

- Low mobility was associated with adverse outcomes after controlling for illness severity and comorbidities.

- Reasons for bed rest were frequently not documented.

- However, still lack a validated measure of mobility.

Brown CJ, Redden DT, Flood KL, Allman RM. The underrecognized epidemic of low mobility during hospitalization of older adults. *J Am Geriatr Soc* 57(9):1660-1665, 2009

BRIEF REPORTS

The Underrecognized Epidemic of Low Mobility During Hospitalization of Older Adults

Cynthia J. Brown, MD, MSPH,*† David T. Redden, PhD,*‡ Kellie L. Flood, MD,† and Richard M. Allman, MD*†

OBJECTIVES: To examine the proportion of time spent in three levels of mobility (lying, sitting, and standing or walking) by a cohort of hospitalized older veterans as measured by validated wireless accelerometers.

DESIGN: A prospective, observational cohort study.

SETTING: One hundred fifty–bed Department of Veterans Affairs hospital.

PARTICIPANTS: Forty-five hospitalized medical patients, aged 65 and older who were not delirious, did not have dementia, and were able to walk in the 2 weeks before admission were eligible.

MEASUREMENTS: Wireless accelerometers were attached to the thigh and ankle of patients for the first 7 days after admission or until hospital discharge, whichever came first. The mean proportion of time spent lying, sitting, and standing or walking was determined for each hour after hospital admission using a previously validated algorithm.

RESULTS: Forty-five male patients (mean age 74.2) with a mean length of stay of 5.1 days generated 2,592 one-hour periods of data. A baseline functional assessment indicated that 35 (77.8%) study patients were willing and able to walk a short distance independently. No patient remained in bed the entire measured hospital stay, but on average, 83% of the measured hospital stay was spent lying in bed. The average amount of time that any one individual spent standing or walking ranged from a low of 0.2% to a high of 21%, with a median of 3%, or 43 minutes per day.

CONCLUSION: This is the first study to continuously monitor mobility levels early during a hospital stay. On average, older hospitalized patients spent most of their time lying in bed, despite an ability to walk independently. *J Am Geriatr Soc* 2009.

Key words: geriatrics; aged; frail elderly; hospitalization; rehabilitation

During hospitalization for acute illness, an estimated 23% to 33% of older adults experience low mobility, defined as being limited to a bed or chair.[1-3] Ambulation occurs infrequently, with only 27% of patients walking in the hallways during hospitalization.[4] Low mobility is associated with adverse outcomes, including functional decline and need for new nursing home placement, even after controlling for illness severity and comorbidity.[1] Bedrest studies of young adults demonstrate low plasma volume, orthostatic intolerance, and a loss of muscle mass within 24 hours of assuming the supine position.[5] For older adults, the effects of bed rest are even more profound. One study found a significant decrease in muscle protein synthesis, strength, and lower extremity and whole-body mass in a group of healthy older adults placed on bed rest for 10 days.[6]

Previous studies examining the prevalence of different levels of mobility have been based on chart review of physician activity orders, brief surveys of patient location, periodic nursing reports, or direct observation of hallways.[1-4] These methods of measuring hospital mobility have several limitations. Chart documentation of mobility may be missing. Mobility, particularly transferring or walking, may be a brief activity easily missed by nursing staff or brief surveys of location. This is particularly true if the patient is independent with the activity. Although direct observation of hallways is an excellent method for assessing hallway ambulation, it misses any mobility that occurs within a patient's room.

Accelerometers have been extensively used in research to measure mobility, physical activity, and gait parameters in older adults.[7] For example, studies have examined changes in gait pattern associated with aging and with falls in older adults.[7] In the community, levels of physical activity have been measured for up to 7 days using wearable

From the *Birmingham/Atlanta Veterans Affairs Geriatric Research, Education and Clinical Center, Birmingham, Alabama; and Departments of †Medicine and ‡Biostatistics, University of Alabama at Birmingham, Birmingham, Alabama.

An abstract of this research was presented at the annual meeting of the American Geriatrics Society, May 2007, Seattle, Washington.

Address correspondence to Cynthia J. Brown, Birmingham/Atlanta VA GRECC, VAMC GRECC 11-G Room 8225, 1530 3rd Avenue South, Birmingham, AL 35294. E-mail: cbrown@aging.uab.edu

Epidemic of Low Mobility

- 45 hospitalized VA medical patients
  - age ≥ 65 years
  - not delirious or demented
  - able to walk in the 2 weeks prior to admission
- Mean proportion of time spent lying, sitting, and standing/walking determined for each hour after hospital admission using wireless monitors and previously validated algorithm.
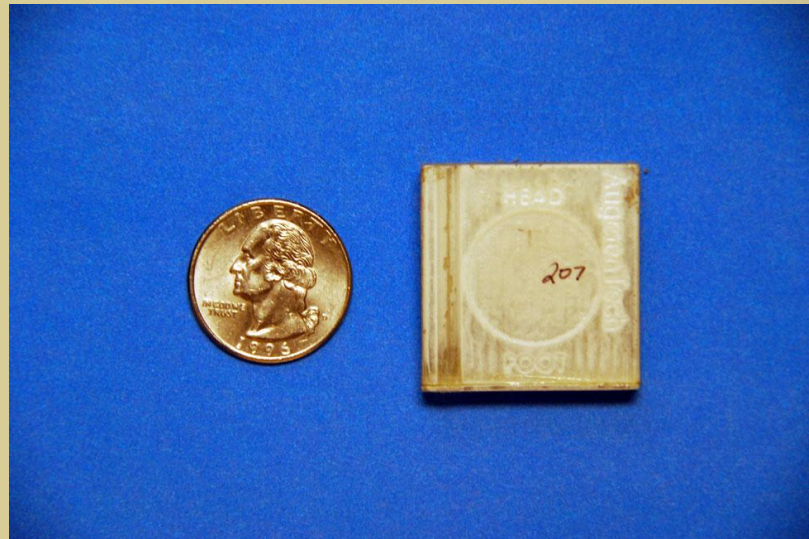
Results

- Mean length of stay 5.1 days
- Generated 2592 one-hour periods of data
- No patient remained in bed entire measured hospital stay
- **83% of measured hospital stay spent lying in bed.**
- Time spent standing/walking
  - Ranged from 0.2% to 21%
  - Median time was 3% or <u>43 minutes/day</u>.

Conclusions

- Wireless monitors are a valid method of measuring mobility.

- Hospital patients are spending at least 80% of their time in bed.

- On average, less than 5% of time spent standing or walking.

Potential Interventions to Improve Mobility During Hospitalization

- Consult Physical Therapy

- Hospital Elder Life Program (HELP)

- Graduated Walking Programs
  - Specially trained transporters
  - Enhanced mobility program

Solution: Consult Physical Therapy

- In one 1000 bed hospital, PT receives 45-50 new referrals daily
- Patients seen once a day
- Average missed visit rate: 22%
- 8% patients referred day of discharge
- 10-12% of new PT referrals, no skilled need (i.e. inappropriate referrals)

Solution: Hospital Elder Life Program (HELP)

- Target six risk factors for delirium:
  - Cognitive Impairment
  - Sleep deprivation
  - Visual impairment
  - Hearing Impairment
  - Dehydration
  - Immobility
    - Early mobilization protocol; ambulation or ROM
    - Minimize use of immobilizing equipment

Solution: Early Ambulation with Trained Transporters

- Pilot study in community-based hospital using specially trained transporters to walk ward patients during slow periods.

- Included nights and week-ends

- Participants spent 2.4 days in program, with average of 5.6 walks per patient.

- Program feasible, but too small to demonstrate changes in outcomes.

Tucker D, Geriatr Nursing 2004

Safety and Efficacy of a Hospital Mobility Program

Specific Aim

- To examine the impact of a hospital mobility program on activities of daily living (ADL) and community mobility as measured by the Life-Space Assessment (LSA) compared to usual care.

Methods

- 100 patients from Birmingham VAMC
  - Not delirious or demented, walking 2 weeks PTA
- Randomly assigned to Mobility Program (MP) or Usual Care (UC).
- Daily assessments by blinded assessors.
- One month telephone follow-up.
- Physicians blinded to assure no change in usual care (e.g. activity orders, PT consults).

Methods (cont.)

Mobility Program (MP)

- Twice daily walks with assistance.

- Provision of rolling walker, if safe.

- Daily motivational interviewing.

- Provision of folder; document goals, barriers.

Usual Care (UC)

- Twice daily friendly visits.

- Provision of folders with friendly messages.

Assessments

In-Hospital

- ADL ability
- Baseline LSA
- Depression
- APACHE II
- Charlson Comorbidity index
- Chart review for LOS, PT consults

One month follow-up

- ADL ability
- Post-hospital LSA

Baseline Characteristics (N = 100)

	Usual Care	Walking Program	P value
Age	73.4 ± 7.0	74.4 ± 6.9	0.48
Gender, male	49 (98%)	48 (96%)	0.56
Race, black	8 (16%)	11 (22%)	0.44
LOS, mean	3.6 ± 2.4	4.6 ± 4.0	0.13
median	3.0	3.0	
GDS	5.0 ± 3.0	4.7 ± 3.2	0.63
Charleson Comorbidity	4.1 ± 2.6	4.4 ± 2.4	0.55
APACHE	15.3 ± 11.8	14.3 ± 10.6	0.67
PT Ordered	17 (34%)	24 (48%)	0.15

Results

- In-hospital, 3 falls in 2 patients reported – all in UC group

- 8 participants did not complete study;

  2 UC and 6 WP

  - Death (n=3; 2WP, 1UC)

  - Medical complications (n=4, 4WP)

  - Patient refusal (n=1, 1UC)

- Missing ADL and LSA scores imputed

Pre-Post Hospital Function

	Usual Care	Mobility Program	P value
Baseline ADL	8.8 ± 2.3	8.4 ± 1.9	0.4
Post-Hospital ADL	8.2 ± 2.2	8.1 ± 2.0	0.7

P-values for group differences between pre and post hospital outcomes adjusted for baseline, age, gender, race

Pre-Post Life-Space Assessment

	Usual Care	Mobility Program	P value
Baseline LSA	51.5 (21.1)	53.9 (29.4)	0.4
Post-Hospital LSA	**41.6 (21.5)**	**52.5 (29.0)**	.0096

P-values for group differences between pre and post hospital outcomes adjusted for baseline, age, gender, race

Independent Predictors of Post-Hospital LSA

- Independent predictors of post-hospital LSA using linear regression:
  - Baseline LSA (p<.0001)
  - Length of stay (p=.012)
  - Group assignment; MP or UC (p=.017)
- Model controlled for: Demographics, Depression, Illness Severity, Comorbidy score, LOS, Group Assignment (WP or UC) and baseline LSA.

Conclusions

- Participants in UC group experienced a mean 10-point decline in LSA scores, while those in MP group experienced a 1-point decline.

- Among survivors, being assigned to MP group was independently associated with a higher one-month post-hospitalization LSA.

Take Home Points

- Interventions designed to address modifiable barriers and provide a safe environment can increase mobility.

- Adverse outcomes (i.e. delirium, pressure ulcers, falls, and functional decline) probably can be prevented with increased mobility.

Exercising in the Park

Beijing, China 2007