Indiana Patient Safety Center
of the Indiana Hospital Association

GET UP

October 10, 2017

IHAconnect.org/Quality-Patient-Safety

Indiana's Bold Aim

Indiana Patient Safety Center
of the Indiana Hospital Association

To make Indiana the safest place to receive health care in the United States…
if not the world

Agenda

Indiana Patient Safety Center
of the Indiana Hospital Association

- Welcome and Introductions
- Get UP Campaign
- Guest Speaker Dr. Cynthia Brown-Cynosure
- Resources and Support
- Get Up Webinar Series

Polling Question #1

Indiana Patient Safety Center
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What is your role within your organization?

- Infection Preventionist
- Nursing Professional
- Laboratory Professional
- Medical Staff
- Environmental Services/Housekeeping Professional
- Other

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UP Campaign

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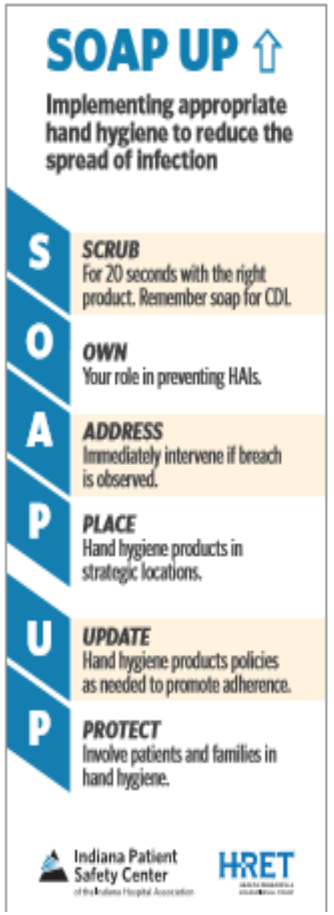
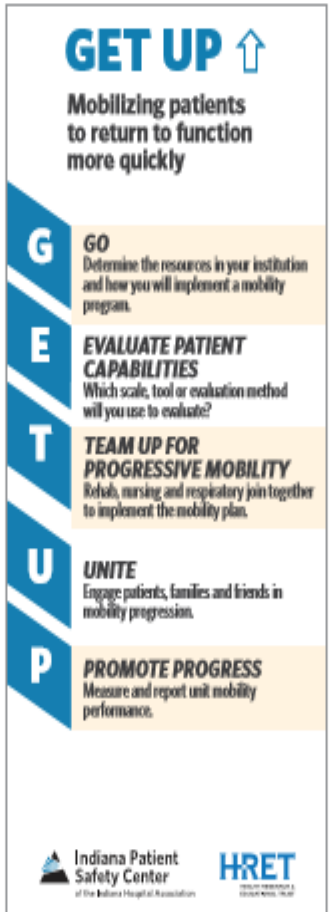
IHA Launches UP Campaign

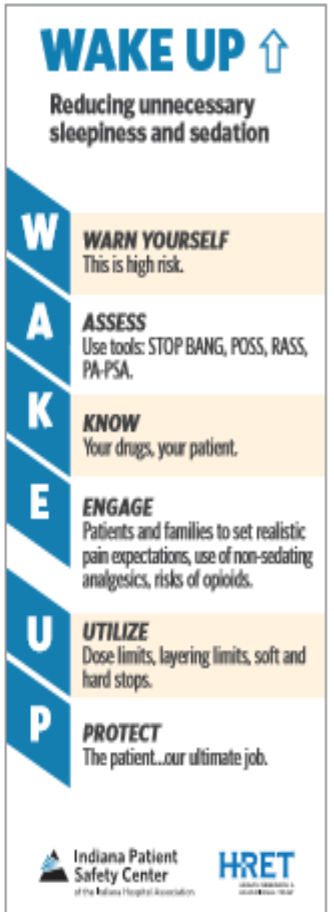
Indiana Patient Safety Center
of the Indiana Hospital Association

- Supports Hospital Improvement Innovation Network (HIIN) harm reduction efforts
- June 6 Indiana Patient Safety Summit Kick-off
- Strategic Deployment of Three Campaigns:

SOAP UP	3Q 2017
GET UP	4Q 2017
WAKE UP	1Q 2018







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UP Campaign

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Goal: Simplify safe care and streamline cross-cutting interventions to reduce the risk for multiple patient harms

Early Progressive Mobility

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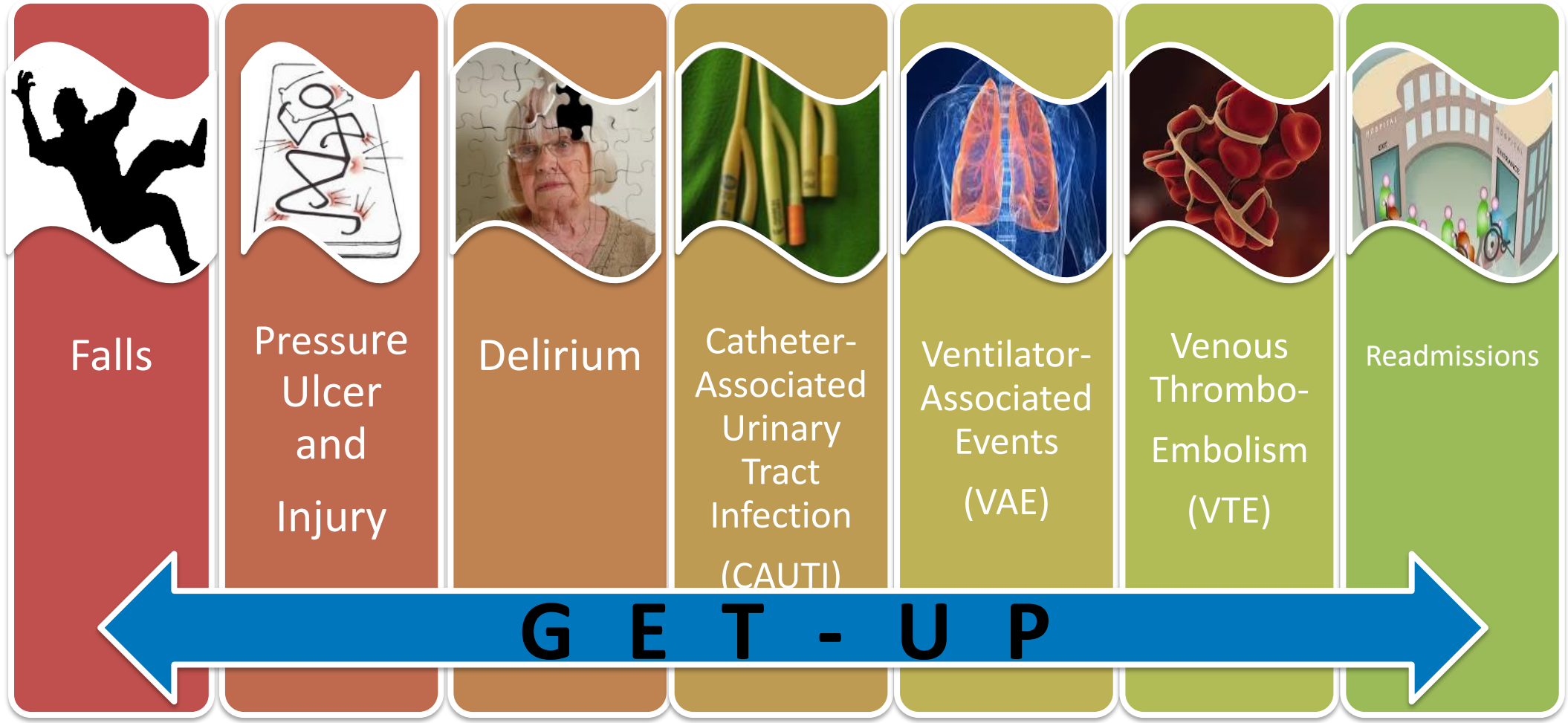

Did you know….

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Off Their Feet

Some of the effects of time in the hospital

95%-plus

Amount of time that hospital patients spend in bed or sitting in a chair

2 days

Mobility of elderly patients can begin to decline this soon after they are hospitalized

Source: Journal of the American Geriatrics Society

THE WALL STREET JOURNAL

Polling Question #2

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of the Indiana Hospital Association

From your research, what age category do most of your falls occur in?

- 18-25
- 26-45
- 46-65
- Over 65

Indiana Patient Safety Center
of the Indiana Hospital Association

Guest Speaker
Dr. Cynthia Brown

Mobility in the Hospitalized Older Adult

Cynthia J. Brown, MD, MSPH
Professor of Medicine and Director,
Division of Gerontology, Geriatrics, and Palliative Care
Comprehensive Center for Healthy Aging
University of Alabama at Birmingham
Birmingham/Atlanta VA GRECC

Funding

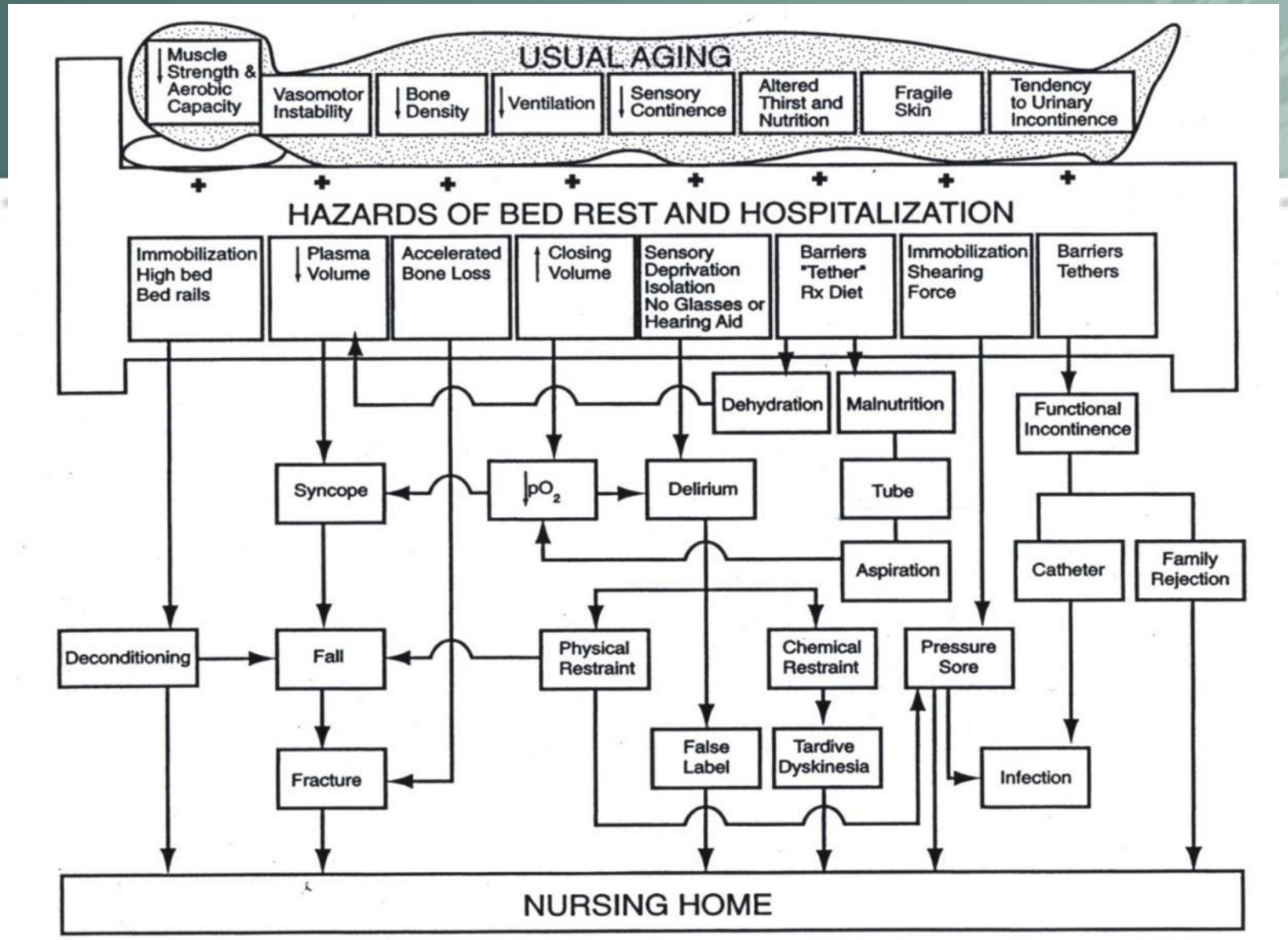
- The John A. Hartford Foundation
- Veterans Administration (VA) Rehabilitation Research and Development
- National Institutes of Health (NIH)

- Financial Disclosures: None

Determining the Scope of the Problem

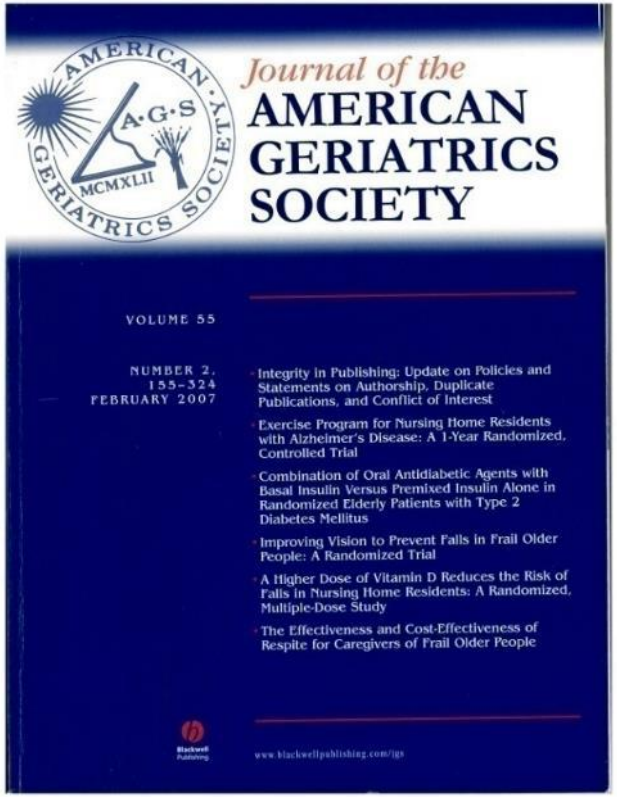
"Rest of injured body parts and of diseased bodies is probably the oldest and most valuable of all methods of treatment… Nevertheless we seem from time to time to forget that this therapeutic method like all others may lead to untoward results when utilized either injudiciously or excessively."

- Dr. Tinsley Harrison, JAMA 1944



Creditor MC Ann Intern Med 1995

Prevalence and Outcomes



Brown CJ, Friedkin RJ, Inouye SK. Prevalence and Outcomes of Low Mobility in Hospitalized Older Patients. *J Am Geriatr Soc* 52:1263-1270, 2004.

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 pre-admission 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

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This work was supported in part by grants from the National Institute on Aging (T32AG1934, R01AG12851, and K24AG00949). Dr. Brown was supported by a training grant from the National Institute on Aging (T32AG1934) and is a recipient of a John A. Hartford Foundation/American Federation for Aging Research Academic Geriatrics Fellowship Program Award (R04191). Dr. Inouye is a recipient of a Mid-career Award from the National Institute on Aging (K24AG00899) and a Donaghue Investigator Award from the Patrick and Catherine Weldon Donaghue Medical Research Foundation (D998-105).

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0002-8614/04/$15.00

Prevalence and Outcomes

- 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 mobility observations for each patient, scores trichotomized
  - Low mobility: bed rest or bed to chair
  - Intermediate mobility
  - High mobility

Prevalence of Low Mobility

- Bed rest present at some point for 33% of hospitalized older patients
- 16% patients experienced low mobility throughout hospitalization

Risk of Adverse Outcomes by Mobility Level

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 ($P < .006$)

Conclusions

- Low mobility common and associated with adverse outcomes even after controlling for illness severity and comorbidities
- However, little known about barriers to mobility

Barriers to Hospital Mobility

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.

ORIGINAL RESEARCH

Barriers to Mobility During Hospitalization from the Perspectives of Older Patients and Their Nurses and Physicians

Cynthia J. Brown, MD, MSPH[1,2,3]
Beverly R. Williams, PhD[1,2,3]
Lesa L. Woodby, PhD[1,2,4]
Linda L. Davis, PhD, RN[5,6]
Richard M. Allman, MD[1,2,3]

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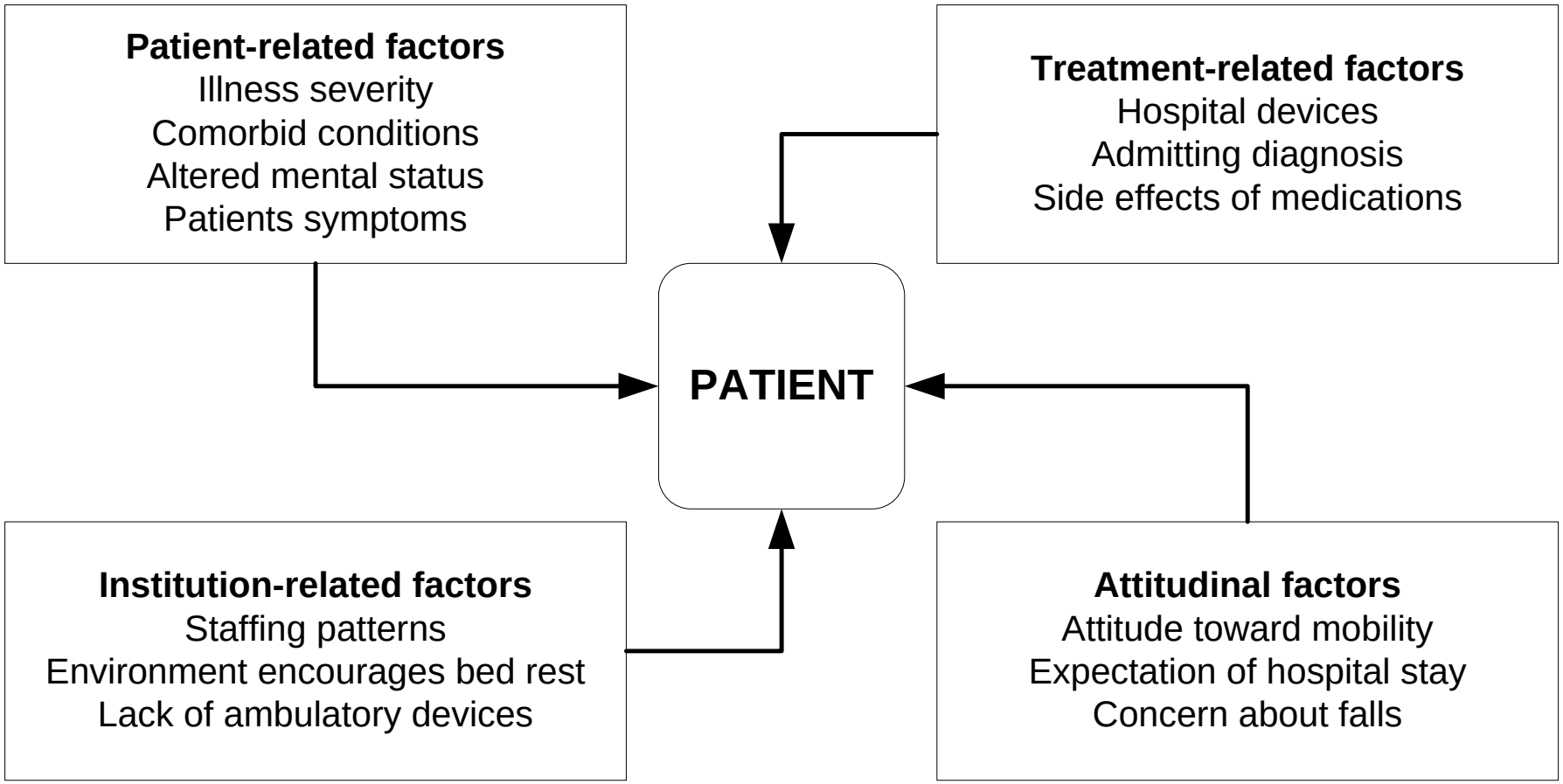
[6] Center for the Study of Aging and Human Development, Duke University, Durham, North Carolina

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;2:305–313.** *© 2007 Society of Hospital Medicine.*

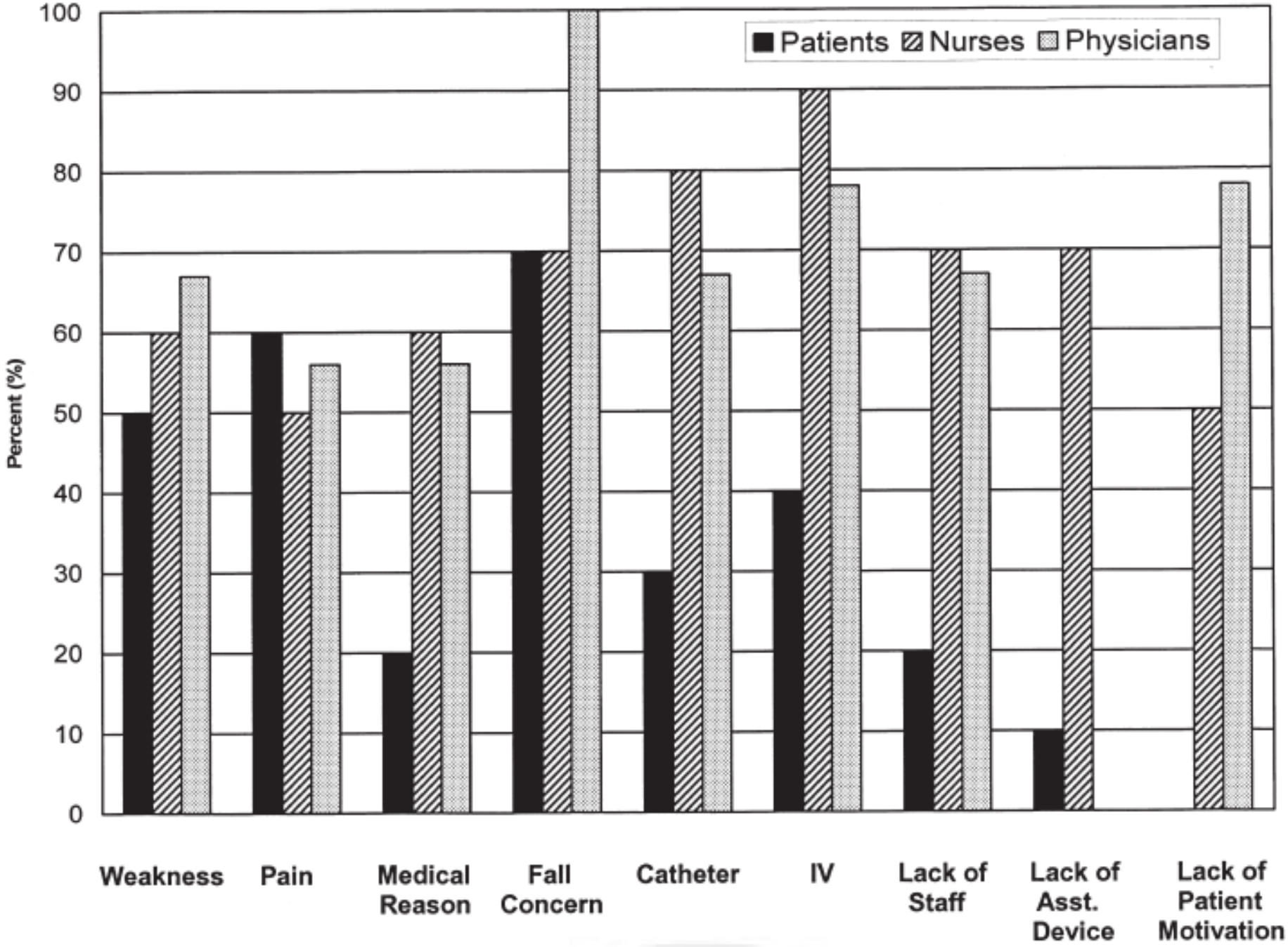
KEYWORDS: mobility limitation, accidental falls, geriatrics, hospital care, qualitative methods.

Model of Potential Barriers



Methods

- Participants:
  - 10 patients, age ≥ 75 years admitted to medical wards at UAB Hospital
  - Patient's nurse & physician also recruited (n=29)
- Questionnaire Development:
  - Semi-structured interview guide
  - New themes incorporated into interview
  - Interviews audiotaped, transcribed and examined for common themes



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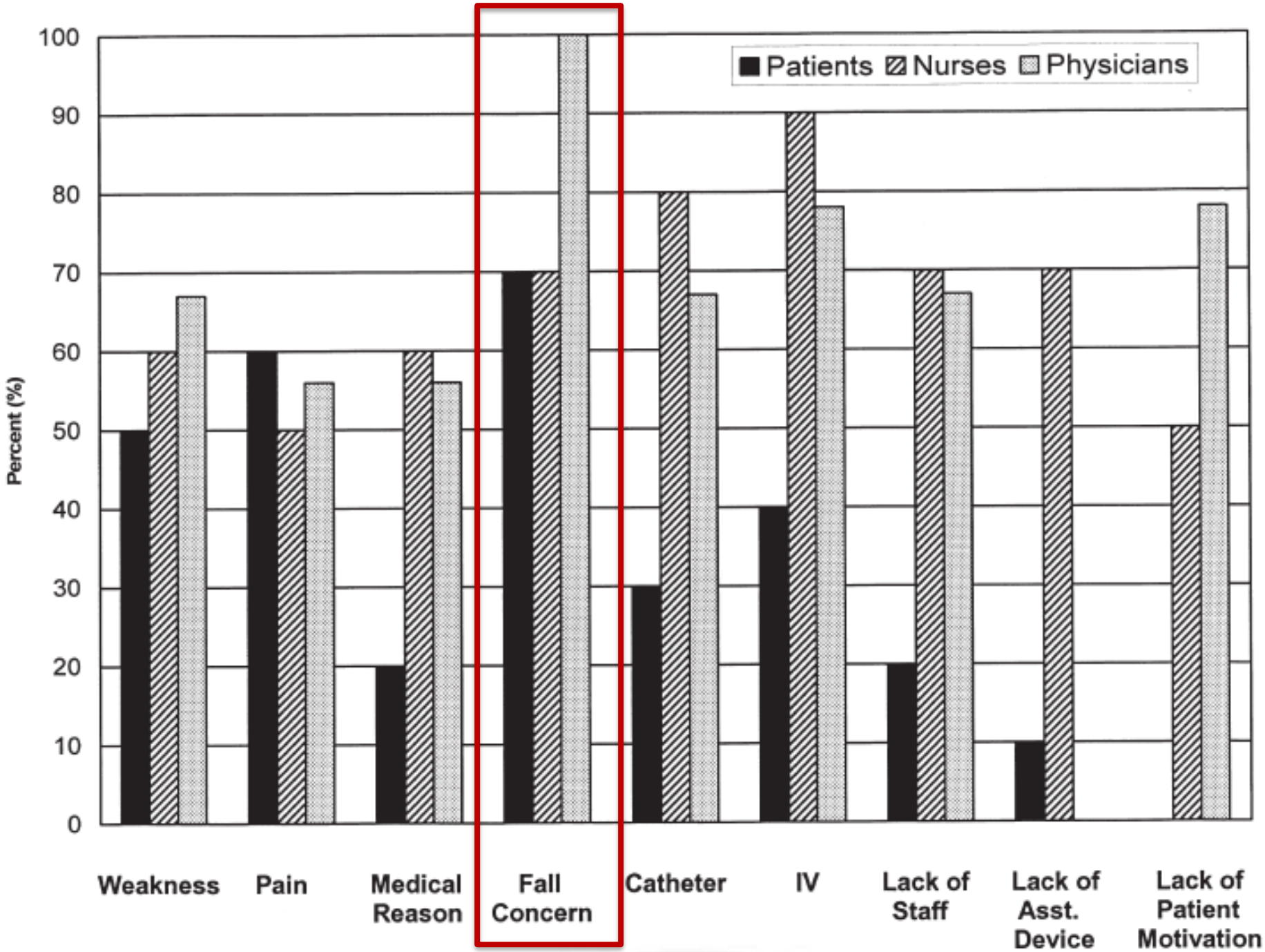

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Barrier:
Lack of Importance

"I don't believe they are going to get me out of bed while I am here. If I said I really needed to get out of bed, they try to do what you want them to do. But evidently they don't think it is that important."

- a Patient

Barrier:
Lack of Time

"We try to encourage the doctors to order physical therapy because we don't have time to ambulate patients in the hallway like the doctor expects."

- a Nurse

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."

- a Doctor

Implications

- Suggests modifiable and non-modifiable reasons for low mobility
- Important step in development of successful interventions to minimize low mobility

Beyond Functional Decline

17 March 2009 | Annals of Internal Medicine | Volume 150 Number 6

Annals of Internal Medicine

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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.

Article | Annals of Internal Medicine

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.

Ann Intern Med. 2009;150:372-378. www.annals.org
For author affiliations, see end of text.

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 incorporates 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.

See also:

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Web-Only
Appendix
Appendix Table
Conversion of graphics into slides

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

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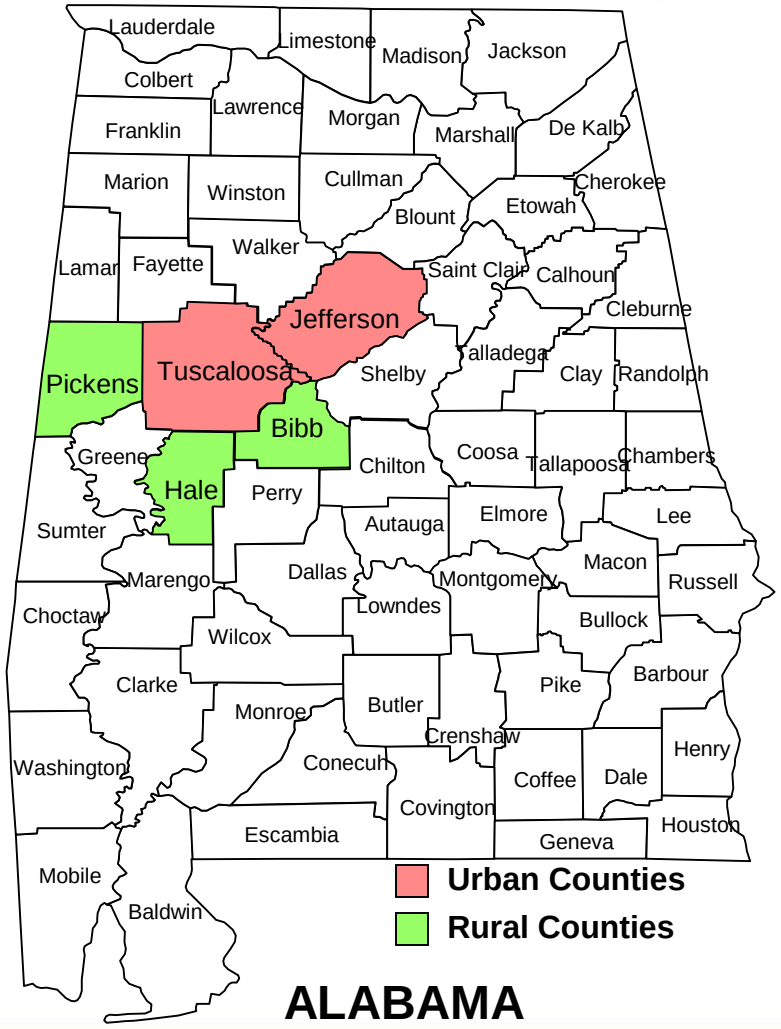
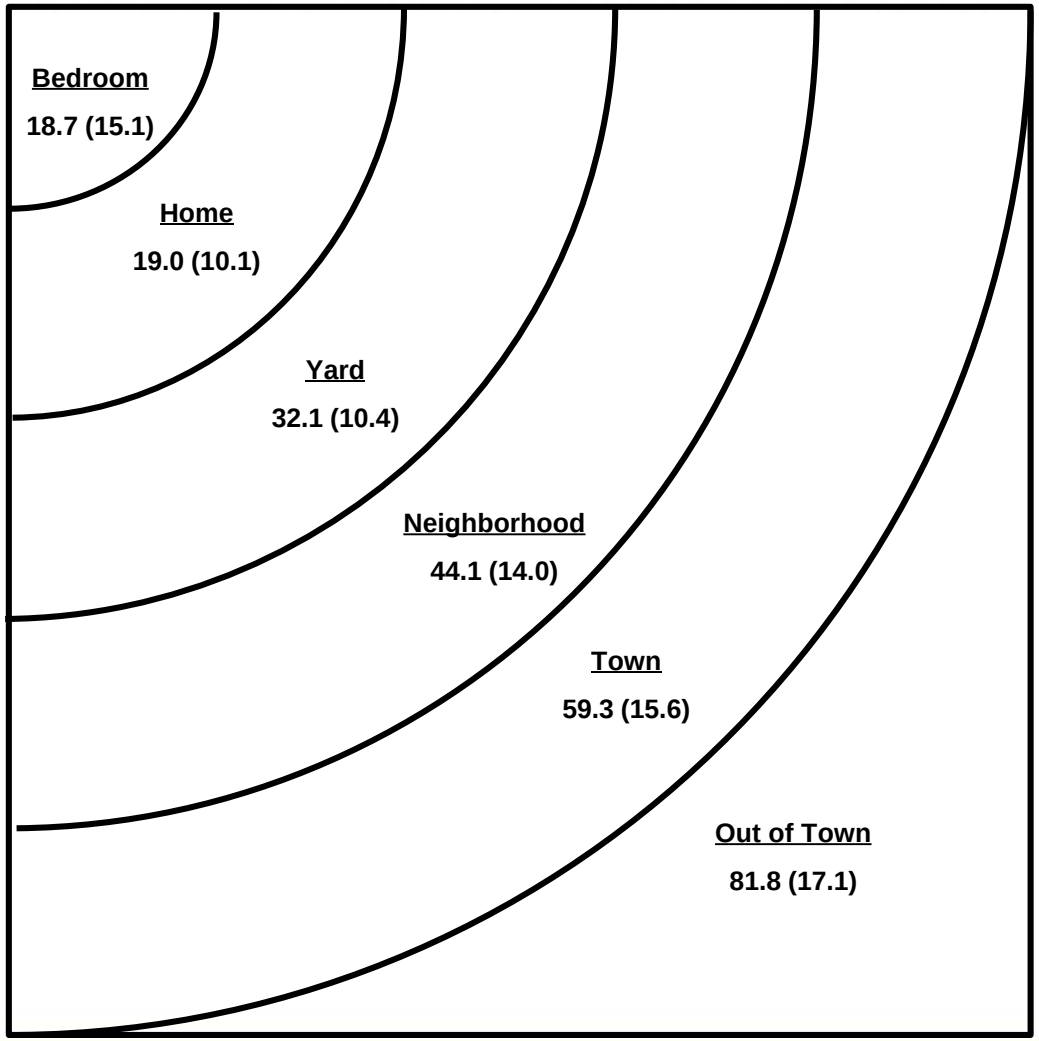
UAB Study of Aging 1999-2001



1000 Subjects, stratified, random sample of Medicare beneficiaries living in 5 counties in central Alabama

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

Measuring Life-Space

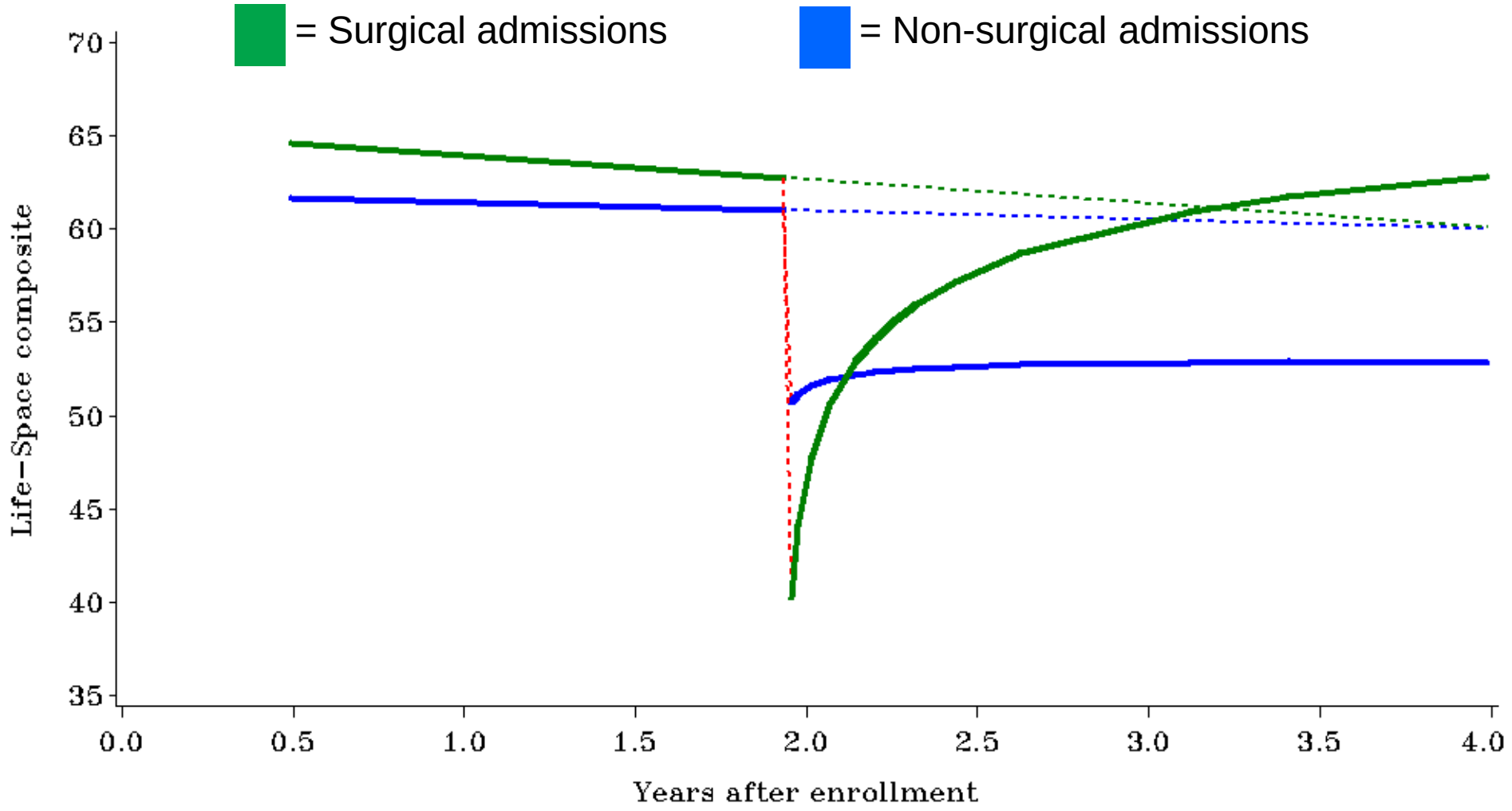


Mean (standard deviation) for baseline composite life-space score among all UAB Study of Aging participants by LSA achieved without help from another person. Scores range 0-120. Bowling CB, et al. 2013

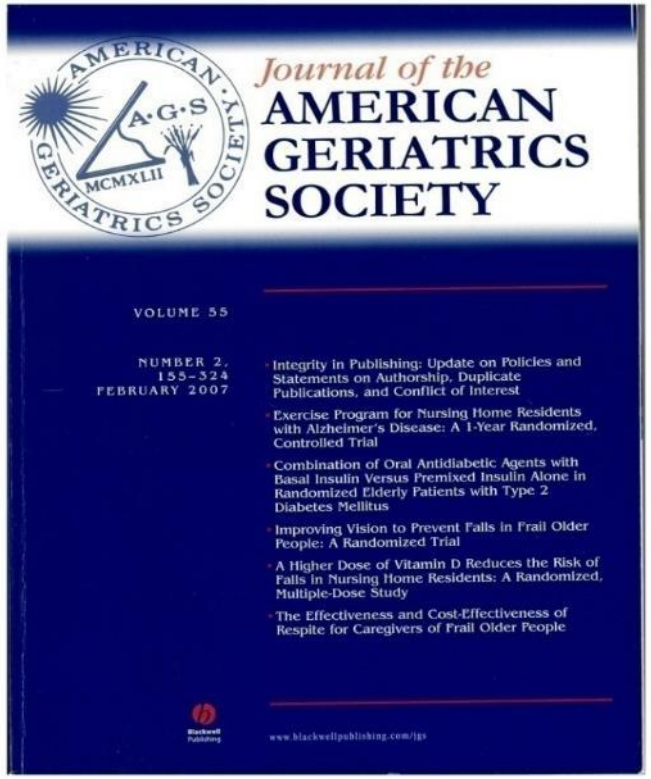
Methods

- 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



Measurement of Hospital 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.

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0002-8614/09/$15.00

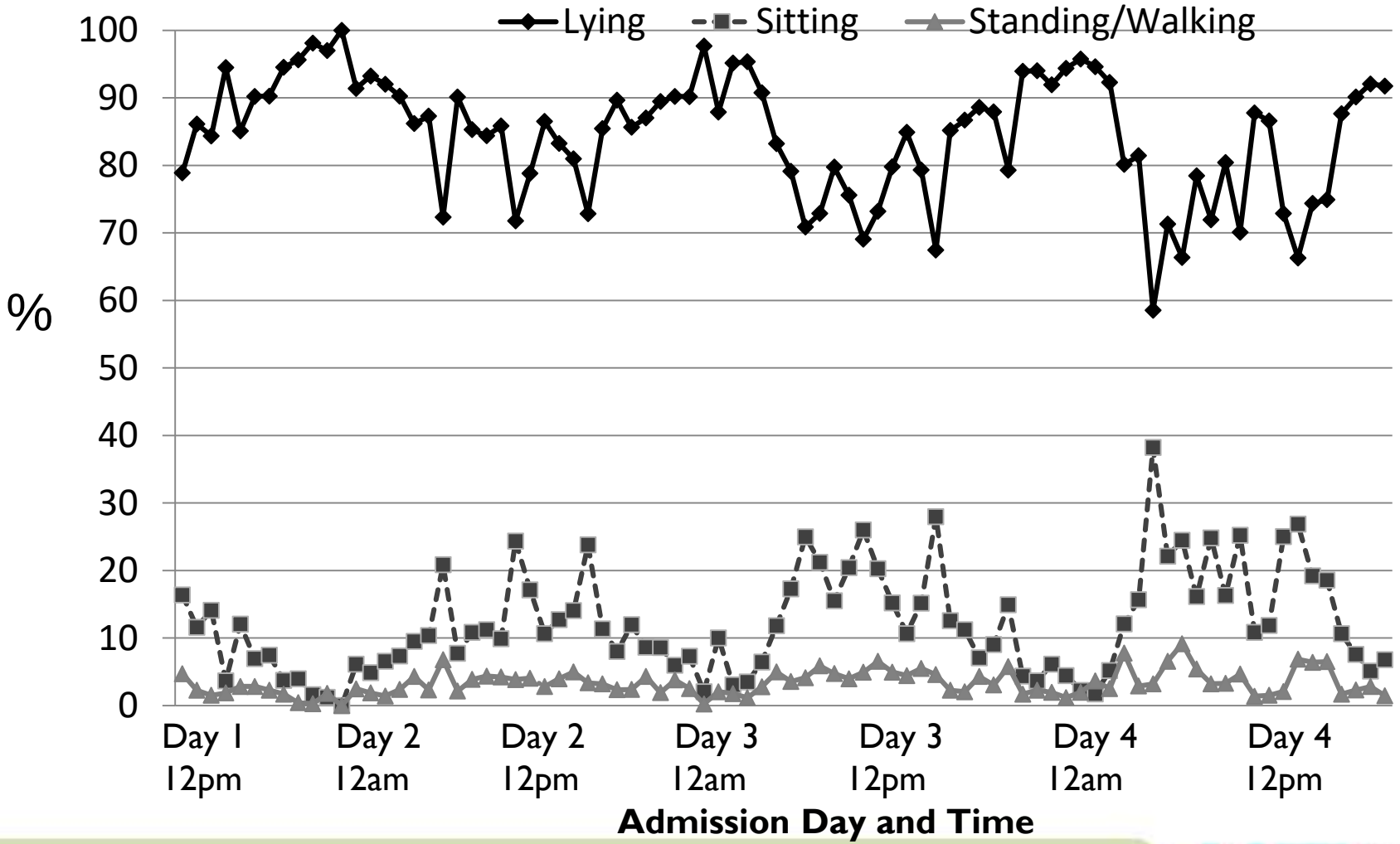
Epidemic of Low Mobility

- 45 hospitalized VA medical patients, age > 65 years admitted to medical wards
  - Ambulatory 2 weeks prior to admission
  - Cognitively intact
  - English speaking
  - Monitors attached within 48 hours of admission
- Mean proportion of time spent lying, sitting, and standing/walking determined for each hour after hospital admission

Results

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

Hourly Mobility Levels



Conclusions

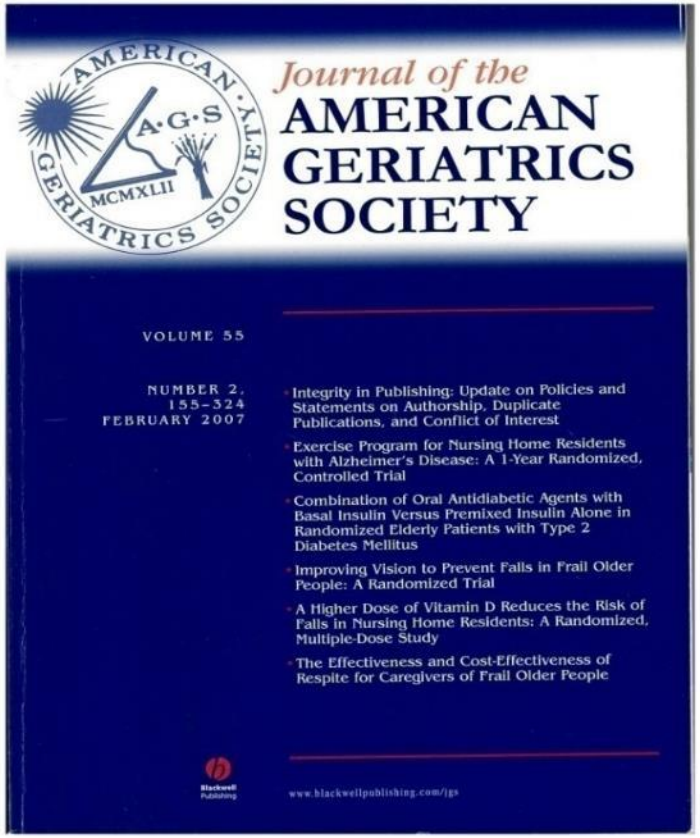
- First study to document mobility continuously over initial 7 days of hospitalization
- Found hospital patients spending at least 80% of time in bed
- On average, less than 43 minutes a day standing or walking
- Results duplicated:
  - Fisher et al. 57 minutes/day ambulatory
  - Pedersen et al. 1.1 hours/day standing/walking

Developing an Intervention

Previous Out of Bed Protocols

- Transporters used to walk patients during quiet periods, especially nights, week-ends[1]
  - Pilot study, demonstrated feasibility only
- Nurse driven protocol of progressive ambulation among patients with pneumonia[2]
  - No functional outcomes assessed

[1] Tucker, 2004 [2] Mundy, et al. Chest, 2003



King BJ, Steege LM, Winsor K, VanDenbergh S, Brown CJ.
J Am Geriatr Soc. 2016;64(10): 2088-2094.

Getting Patients Walking: A Pilot Study of Mobilizing Older Adult Patients via a Nurse-Driven Intervention

Barbara J. King, PhD, Linsey M. Steege, PhD,* Katie Winsor, MSN,† Shelly VanDenbergh, MSN,† and Cynthia J. Brown, MD, MSPH‡§*

OBJECTIVES: To develop a system-based intervention including five components that target barriers to nurse-initiated patient ambulation.

DESIGN: Pilot study of Mobilizing Older adult patients Via a Nurse-driven intervention (MOVIN).

SETTING: Twenty-six bed general medical unit.

PARTICIPANTS: Nursing staff (registered nurses and certified nursing assistants) were recruited to participate in focus groups.

MEASUREMENTS: Information on frequency and distance patients ambulated and nursing staff documentation of patient ambulation were retrieved from the electronic medical record. Regression discontinuity analysis was used to determine a difference between the preintervention and intervention periods in ambulation occurrence, ambulation distance, and percentage of numeric documentation of ambulation. Thematic analysis was used to analyze focus group interviews.

RESULTS: A statistically significant increase in number of occurrences ($t = 4.18$, $P = .001$) and total distance ($t = 2.75$, $P = .01$) and a significantly higher positive slope in percentage of numeric documentation was found during the intervention than before the intervention. Thematic analysis identified three central categories (shifting ownership, feeling supported, making ambulation visible) that describe the effect of MOVIN on nursing staff behaviors and perceptions of the intervention.

CONCLUSION: Decreasing loss of independent ambulation in hospitalized older adults requires new and innovative approaches to addressing barriers that prevent nurse-initiated patient ambulation. MOVIN is a promising system-based intervention to promoting patient ambulation and improving outcomes for hospitalized older adults. J Am Geriatr Soc 64:2088–2094, 2016.

Key words: hospitalization; mobility; older adults; healthcare systems; qualitative evaluation

Up to 65% of older adults will lose their ability to ambulate independently during a hospital stay.[1–4] Loss of independent ambulation is associated with 22% greater likelihood of new nursing home placement,[5] falls during and after the hospital stay,[6] longer hospital stay and greater likelihood of readmission,[7] and higher mortality.[8] Limited ambulation and bed rest during the hospital stay have been identified as predictable causes of loss of independent ambulation in older adults.[9] Studies have found that hospitalized older adults spend between 83% and 96% of their time in bed.[10,11]

In hospital settings, registered nurses (RNs) are primarily responsible for promoting walking independence, but nurses infrequently walk patients.[1,12] Multiple system and personal barriers prevent nurse initiation of older adult ambulation. System barriers include lack of persons to assist and walking devices; high nurse-to-patient ratio; use of catheters, restraints, and intravenous lines; inappropriate bed rest orders; pressure to decrease falls; and poor communication among RNs, certified nursing assistants (CNAs), and physical therapists (PTs) about patient ambulation needs.[9,10,14] Personal barriers for RNs include lack of confidence in being able to determine patient walking ability and in helping older adults ambulate and fear of repercussion if patients fall while walking.[14,15]

Given the high prevalence of loss of independent ambulation in hospitalized older adults and the negative consequences, there is a critical need to design innovative system approaches that will address barriers that nursing staff face when trying to engage patients in ambulation. The Institute of Medicine[16] identifies that a systems approach is essential for improving quality outcomes in healthcare organizations. Innovations that do not use a

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0002-8614/16/$15.00

Mobilizing Older adult patients Vla a Nurse-driven intervention (MOVIN)

Nurse-driven intervention with 5 components:

1. Psychomotor skills training for nurses
2. Communication tools
3. Ambulation pathways
4. Ambulation resources
5. Ambulation culture

Results

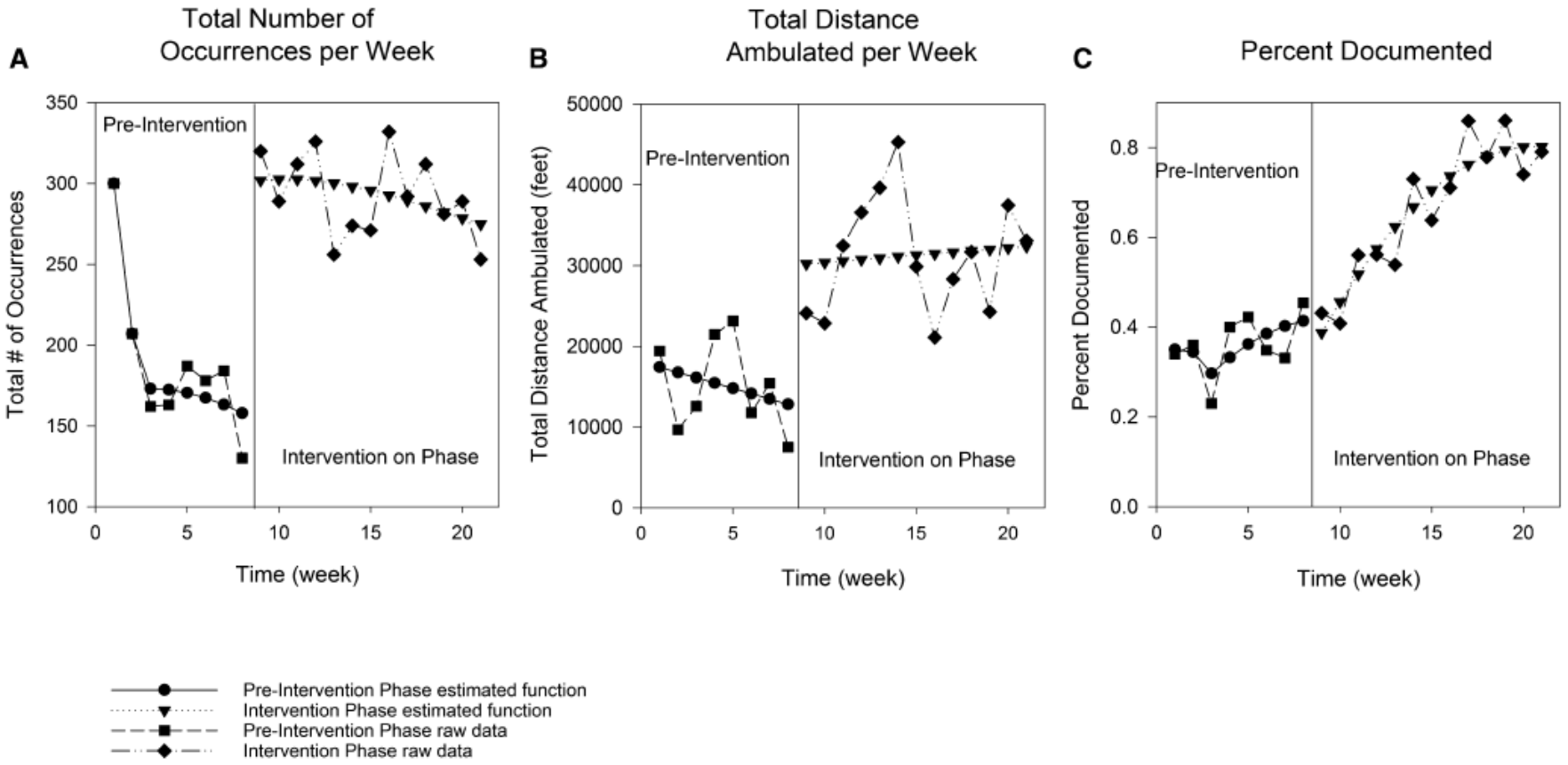

Figure 1. (A) Ambulation frequency. (B) Ambulation distance. (C) Numeric documentation.

Feasibility of progressive sit-to-stand training among older hospitalized patients

Mette Merete Pedersen[1,2], Janne Petersen[1,3], Jonathan F. Bean[4,5], Lars Damkjaer[6], Helle Gybel Juul-Larsen[1,2], Ove Andersen[1], Nina Beyer[7] and Thomas Bandholm[1,2,8]

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[2] Physical Medicine & Rehabilitation Research-Copenhagen (PMR-C); Department of Physical and Occupational Therapy, Copenhagen University Hospital, Hvidovre, Denmark
[3] Section of Biostatistics, Department of Public Health, University of Copenhagen, Copenhagen, Denmark
[4] New England GRECC, VA Boston Healthcare System, Boston, MA, United States of America
[5] Department of Physical Medicine and Rehabilitation, Harvard Medical School, Boston, MA, United States of America
[6] Department of Rehabilitation, Copenhagen Municipality Health Administration, Copenhagen, Denmark
[7] Institute of Sports Medicine & Musculoskeletal Rehabilitation Research Unit, Bispebjerg Hospital, Copenhagen, Denmark
[8] Department of Orthopaedic Surgery, Copenhagen University Hospital, Hvidovre, Denmark

ABSTRACT

Background. In older patients, hospitalization is associated with a decline in functional performance and loss of muscle strength. Loss of muscle strength and functional performance can be prevented by systematic strength training, but details are lacking regarding the optimal exercise program and dose for older patients. Therefore, our aim was to test the feasibility of a progression model for loaded sit-to-stand training among older hospitalized patients.

Methods. This is a prospective cohort study conducted as a feasibility study prior to a full-scale trial. We included twenty-four older patients (≥65 yrs) acutely admitted from their own home to the medical services of the hospital. We developed an 8-level progression model for loaded sit-to-stands, which we named STAND. We used STAND as a model to describe how to perform the sit-to-stand exercise as a strength training exercise aimed at reaching a relative load of 8–12 repetitions maximum (RM) for 8–12 repetitions. Weight could be added by the use of a weight vest when needed. The ability of the patients to reach the intended relative load (8–12 RM), while performing sit-to-stands following the STAND model, was tested once during hospitalization and once following discharge in their own homes. A structured interview including assessment of possible modifiers (cognitive status by the Short Orientation Memory test and mobility by the De Morton Mobility Index) was administered both on admission to the hospital and in the home setting. The STAND model was considered feasible if: (1) 75% of the assessed patients could perform the exercise at a given level of the model reaching 8–12 repetitions at a relative load of 8–12 RM for one set of exercise in the hospital and two sets of exercise at home; (2) no ceiling or floor effect was seen; (3) no indication of adverse events were observed.

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Academic editor
Michelle Ploughman

Additional Information and Declarations can be found on page 15

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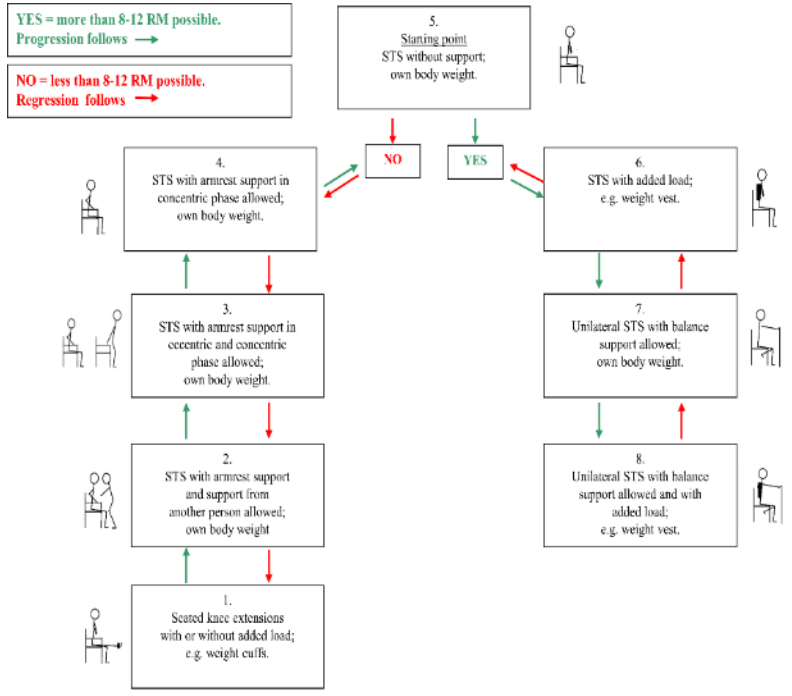
Pedersen MM, Petersen J, Bean JF, Damkjaer L, Juul-Larsen HG, Andersen O, Beyer N, Bandholm T. Feasibility of progressive sit-to-stand training among older hospitalized patients. PeerJ. 2015 Dec 17;3. PMID: 26713248

Progressive Sit-to-Stand Training

- Developed a progression model for loaded sit-to-stand exercise
- Tested feasibility in patients ≥ 65 years and found:
  - 83% could perform in hospital
  - Progression or regression possible for all patients
  - No indication of adverse events (pain)



STS: Sit-to-stand; 8-12 RM: 8-12 repetitions maximum (a zone in which muscular fatigue should be reached)

Original Investigation

Comparison of Posthospitalization Function and Community Mobility in Hospital Mobility Program and Usual Care Patients
A Randomized Clinical Trial

Cynthia J. Brown, MD, MSPH; Kathleen T. Foley, PhD, OTR/L; John D. Lowman Jr, PhD, PT; Paul A. MacLennan, PhD; Javad Razjouyan, PhD; Bijan Najafi, PhD; Julie Locher, PhD; Richard M. Allman, MD

Brown CJ, Foley KT, Lowman J, MacLennan PA, Razjouyan J, Najafi B, Locher J, Allman RM. Comparison of Posthospitalization Function and Community Mobility in Hospital Mobility Program and Usual Care Patients: A Randomized Controlled Trial. *JAMA Intern Med.* 2016;176(7):921-927.

Methods

- 100 patients from Birmingham VAMC
  - Not delirious or demented, walking 2 weeks PTA
- Randomly assigned to Mobility Program (MP) or Usual Care (UC)
- 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 needed & safe
- Provision of folder; document goals; track sitting, walking
- Daily motivational interviewing; focus on goals & barriers

Usual Care (UC)

- Twice daily friendly visits
- Provision of folders; document friendly messages and track visitors

Assessments and Analyses

In-Hospital

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

One month follow-up

- ADL ability
- Post-hospital LSA

Analyses

- Multiple imputations methods used for missing values

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%)	22 (44%)	0.30

Results

- In hospital, 3 falls in 2 patients reported – all in UC group
- 8 participants did not complete study;

  2 UC and 6 MP
  - Death (n=3; 2MP, 1UC)
  - Medical complications (n=4, 4MP)
  - Patient refusal (n=1, 1UC)

Pre-Post Hospital Function

	Usual Care	Mobility Program	P value
Baseline ADL	8.7 ± 0.33	8.4 ± 0.27	0.49
Post-Hospital ADL	8.2 ± 0.32	8.2 ± 0.30	0.99

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

Pre-Post Hospital Life-Space Assessment

	Usual Care	Mobility Program	P value
Baseline LSA	51.5 (2.99)	53.9 (4.15)	0.46
Post-Hospital LSA	**41.8 (3.15)**	**52.6 (4.39)**	**.02**

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

Take Home Points

- Older adults spend significant proportion of hospital stay in bed.
- Many barriers to hospital mobility modifiable.
- Our small RCT demonstrates feasibility, safety and efficacy of a hospital mobility program.
- Others have shown success with sit to stand training.
- Next steps include larger trials to determine best methods for improving hospital mobility.

Mobility in the Hospitalized Older Adult

Cynthia J. Brown, MD, MSPH
Professor of Medicine and Director,
Division of Gerontology, Geriatrics, and Palliative Care
Comprehensive Center for Healthy Aging
University of Alabama at Birmingham
Birmingham/Atlanta VA GRECC

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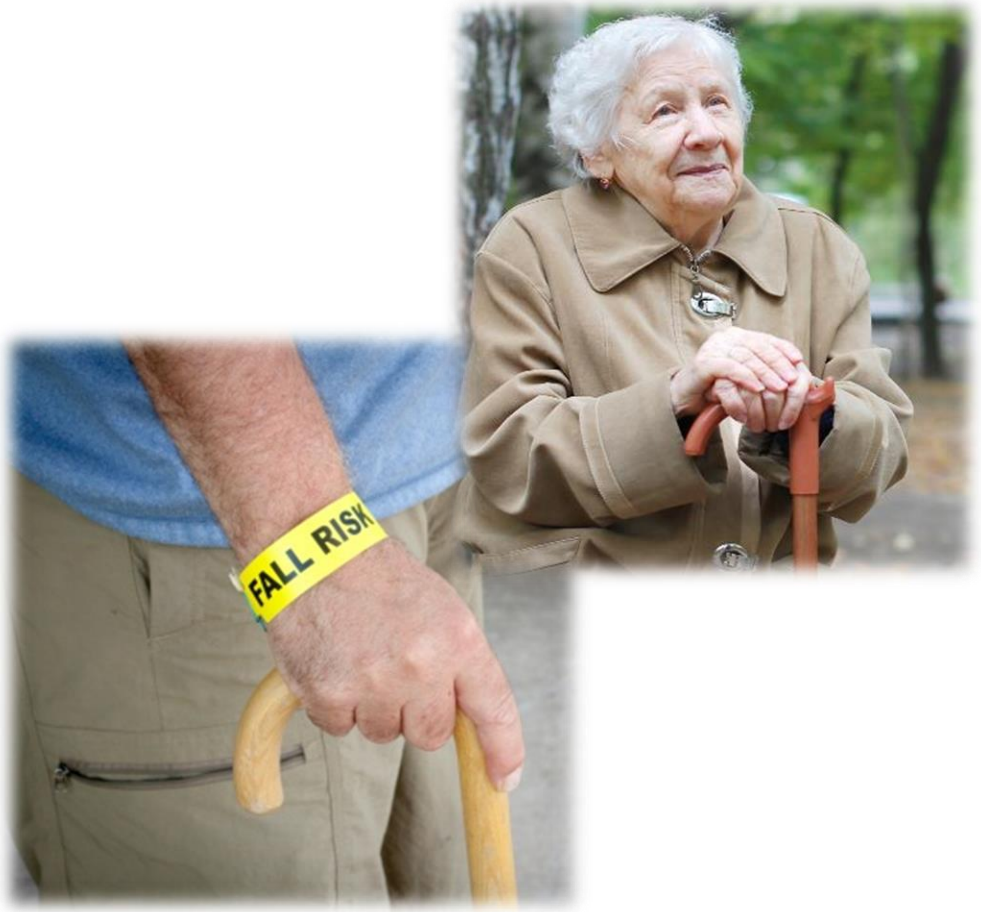
of the Indiana Hospital Association

Get Up Resources

How Can IHA Help?

Indiana Patient Safety Center
of the Indiana Hospital Association

- *What resources do you need to help with your improvement efforts?*



IHAconnect.org/Quality-Patient-Safety

IHA Resource Sheet

Indiana Patient Safety Center
of the Indiana Hospital Association

Indiana Patient Safety Center
of the Indiana Hospital Association

GET UP

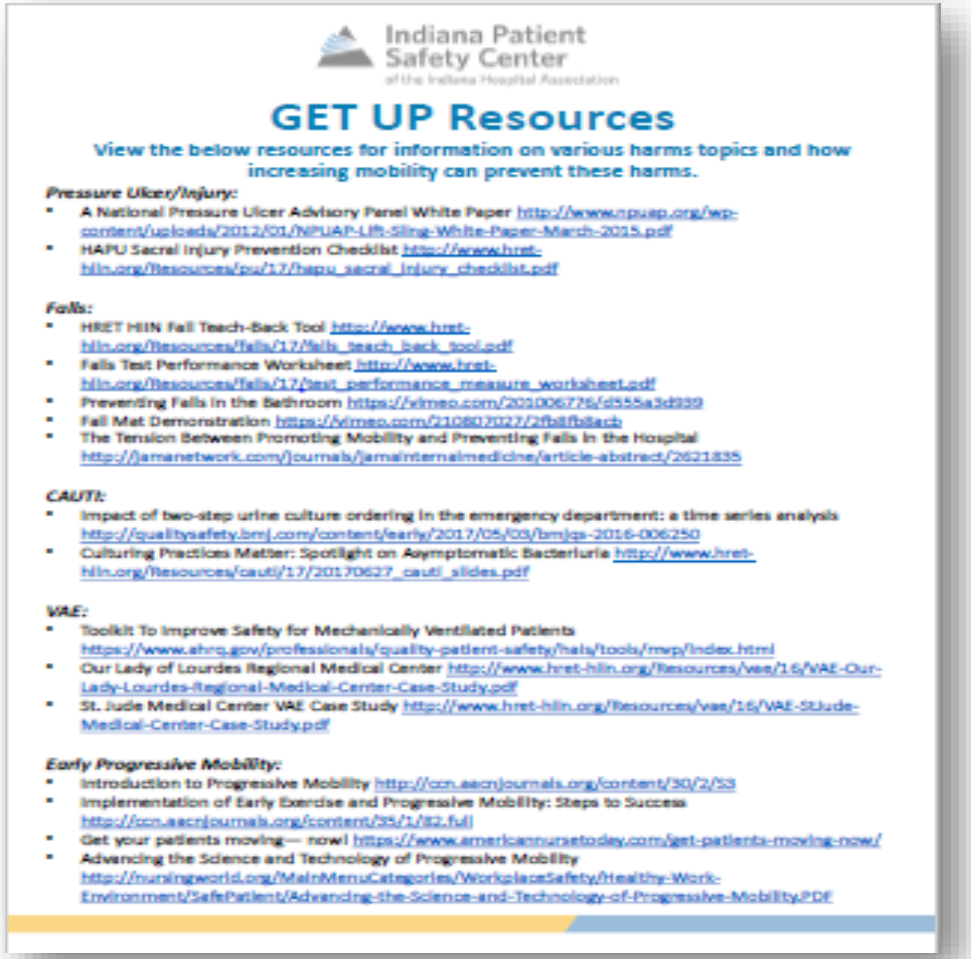
GET UP focuses on mobilizing patients to return to function more quickly.

Keeping a patient mobile is key to helping them avoid various types of harm. Maintaining a continued emphasis on mobility can assist in the prevention of several harm events, including CAUTI, delirium, falls, HAPU/I, readmissions, VAE and VTE.

There are many resources available at HRET-HIN.org, including those below, to help your organization address these harm events and engage with the UP Campaign.

GET UP Resources
Including HRET HIN topic Change Package, Checklist, past webinar recordings and additional resources

Topic	Link
Introduction to the UP Campaign	http://www.hret-hin.org/Resources/up_campaign/17/up_campaign_presentation_generic.pdf
GET UP Virtual Event - Move It Or Lose It	https://youtu.be/5j-NAKmeTI
CAUTI	http://www.hret-hin.org/topics/catheter-associated-urinary-tract-infection.shtml
Delirium	http://www.hret-hin.org/topics/iatrogenic-delirium.shtml
Falls	http://www.hret-hin.org/topics/injuries-from-falls-immobility.shtml
Pressure Ulcers/Injuries	http://www.hret-hin.org/topics/pressure-ulcers.shtml
Readmissions	http://www.hret-hin.org/topics/readmissions.shtml
VAE	http://www.hret-hin.org/topics/ventilator-associated-event.shtml
VTE	http://www.hret-hin.org/topics/venous-thromboembolism.shtml



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GET UP Resources

View the below resources for information on various harms topics and how increasing mobility can prevent these harms.

Pressure Ulcer/Injury:
- A National Pressure Ulcer Advisory Panel White Paper http://www.npuap.org/wp-content/uploads/2012/01/NPUAP-Lift-Sling-White-Paper-March-2015.pdf
- HAPU Sacral Injury Prevention Checklist http://www.hret-hin.org/Resources/pu/17/hapu_sacral_injury_checklist.pdf

Falls:
- HRET HIN Fall Teach-Back Tool http://www.hret-hin.org/Resources/falls/17/falls_teach_back_tool.pdf
- Falls Test Performance Worksheet http://www.hret-hin.org/Resources/falls/17/test_performance_measure_worksheet.pdf
- Preventing Falls in the Bathroom https://vimeo.com/201006776/d555a3d939
- Fall Mat Demonstration https://vimeo.com/210807027/2fb8fb8acb
- The Tension Between Promoting Mobility and Preventing Falls in the Hospital http://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2621835

CAUTI:
- Impact of two-step urine culture ordering in the emergency department: a time series analysis http://qualitysafety.bmj.com/content/early/2017/05/03/bmjqs-2016-006250
- Culturing Practices Matter: Spotlight on Asymptomatic Bacteriuria http://www.hret-hin.org/Resources/cauti/17/20170627_cauti_slides.pdf

VAE:
- Toolkit To Improve Safety for Mechanically Ventilated Patients https://www.ahrq.gov/professionals/quality-patient-safety/hais/tools/mvp/index.html
- Our Lady of Lourdes Regional Medical Center http://www.hret-hin.org/Resources/vae/16/VAE-Our-Lady-Lourdes-Regional-Medical-Center-Case-Study.pdf
- St. Jude Medical Center VAE Case Study http://www.hret-hin.org/Resources/vae/16/VAE-StJude-Medical-Center-Case-Study.pdf

Early Progressive Mobility:
- Introduction to Progressive Mobility http://ccn.aacnjournals.org/content/30/2/53
- Implementation of Early Exercise and Progressive Mobility: Steps to Success http://ccn.aacnjournals.org/content/35/1/82.full
- Get your patients moving— now! https://www.americannursetoday.com/get-patients-moving-now/
- Advancing the Science and Technology of Progressive Mobility http://nursingworld.org/MainMenuCategories/WorkplaceSafety/Healthy-Work-Environment/SafePatient/Advancing-the-Science-and-Technology-of-Progressive-Mobility.PDF

https://www.ihaconnect.org/patientsafety/Pages/default.aspx

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HRET Change Package/Fact Sheet

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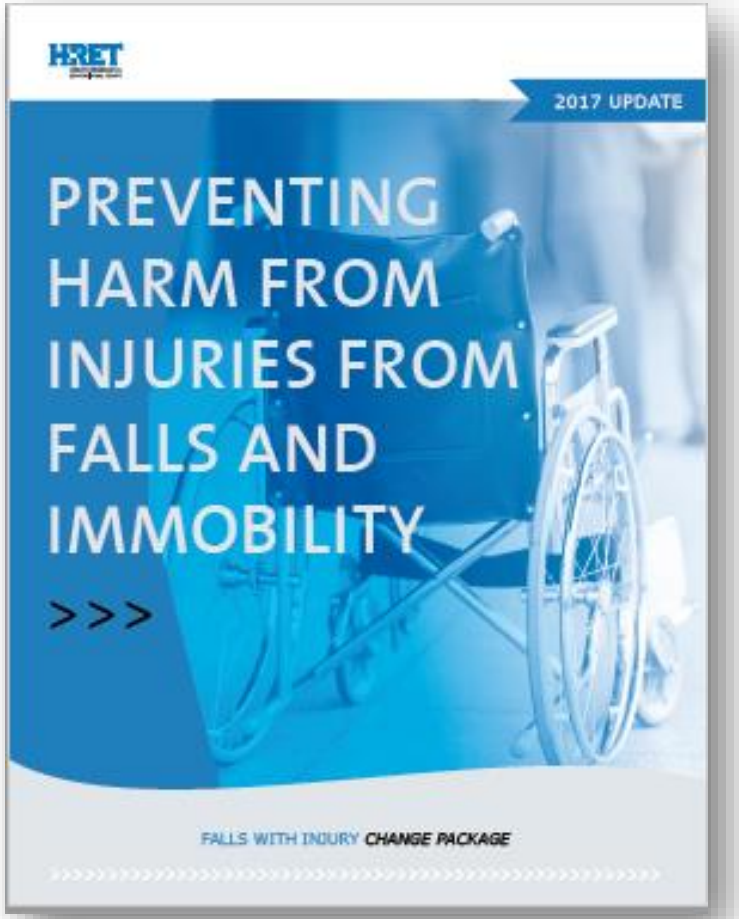
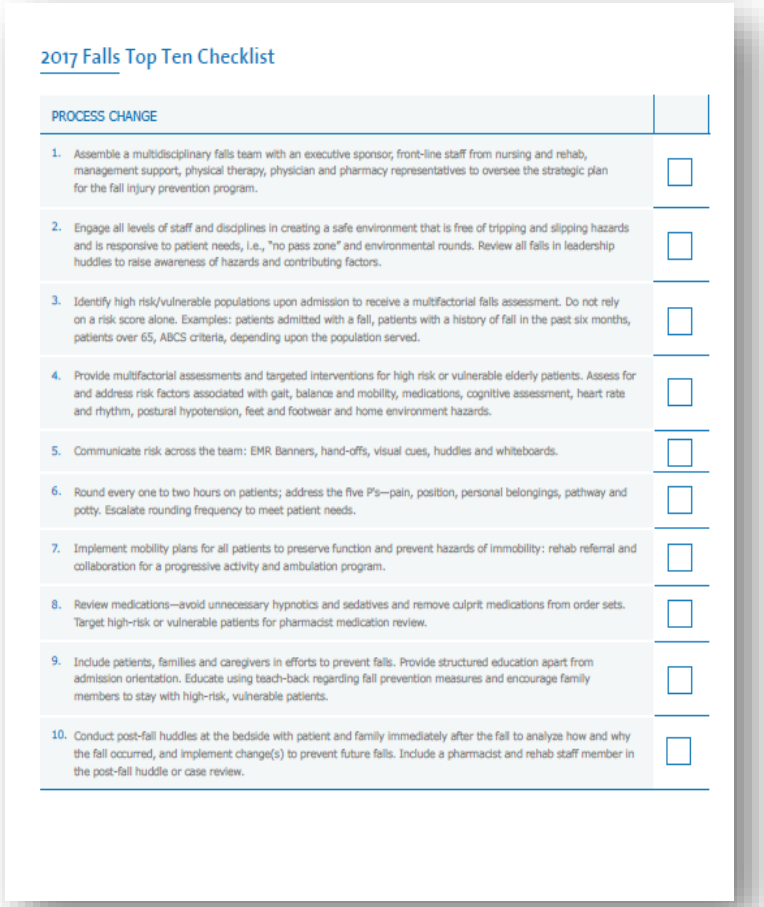
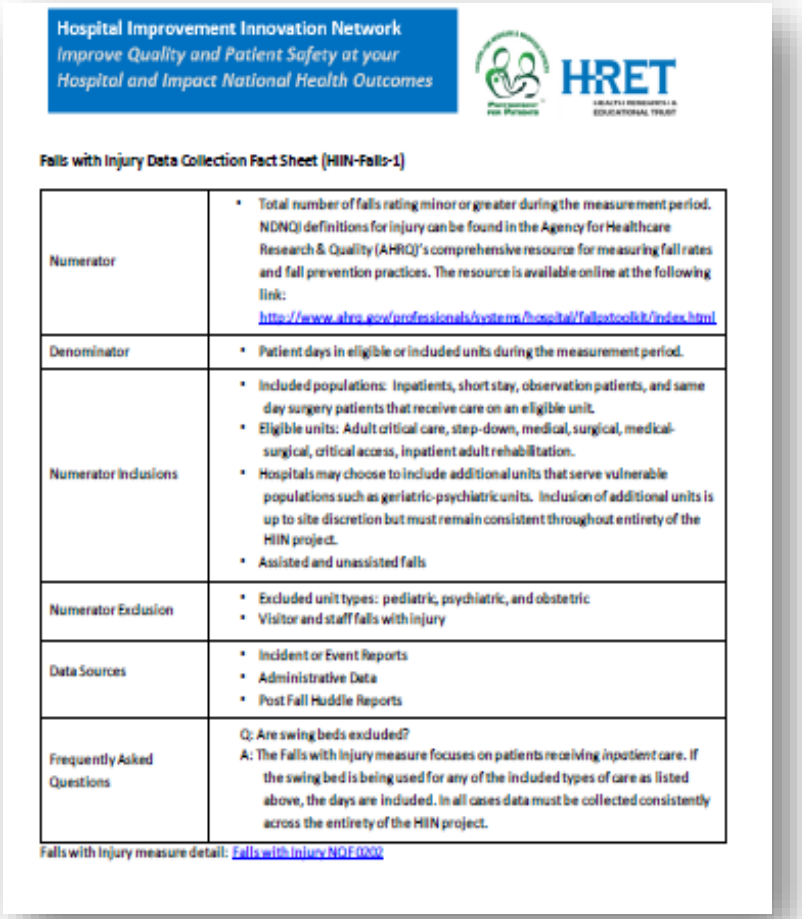




2017 Falls Top Ten Checklist

PROCESS CHANGE	
1. Assemble a multidisciplinary falls team with an executive sponsor, front-line staff from nursing and rehab, management support, physical therapy, physician and pharmacy representatives to oversee the strategic plan for the fall injury prevention program.	☐
2. Engage all levels of staff and disciplines in creating a safe environment that is free of tripping and slipping hazards and is responsive to patient needs, i.e., "no pass zone" and environmental rounds. Review all falls in leadership huddles to raise awareness of hazards and contributing factors.	☐
3. Identify high risk/vulnerable populations upon admission to receive a multifactorial falls assessment. Do not rely on a risk score alone. Examples: patients admitted with a fall, patients with a history of fall in the past six months, patients over 65, ABCS criteria, depending upon the population served.	☐
4. Provide multifactorial assessments and targeted interventions for high risk or vulnerable elderly patients. Assess for and address risk factors associated with gait, balance and mobility, medications, cognitive assessment, heart rate and rhythm, postural hypotension, feet and footwear and home environment hazards.	☐
5. Communicate risk across the team: EMR Banners, hand-offs, visual cues, huddles and whiteboards.	☐
6. Round every one to two hours on patients; address the five P's—pain, position, personal belongings, pathway and potty. Escalate rounding frequency to meet patient needs.	☐
7. Implement mobility plans for all patients to preserve function and prevent hazards of immobility: rehab referral and collaboration for a progressive activity and ambulation program.	☐
8. Review medications—avoid unnecessary hypnotics and sedatives and remove culprit medications from order sets. Target high-risk or vulnerable patients for pharmacist medication review.	☐
9. Include patients, families and caregivers in efforts to prevent falls. Provide structured education apart from admission orientation. Educate using teach-back regarding fall prevention measures and encourage family members to stay with high-risk, vulnerable patients.	☐
10. Conduct post-fall huddles at the bedside with patient and family immediately after the fall to analyze how and why the fall occurred, and implement change(s) to prevent future falls. Include a pharmacist and rehab staff member in the post-fall huddle or case review.	☐



Hospital Improvement Innovation Network
Improve Quality and Patient Safety at your Hospital and Impact National Health Outcomes

HRET

Falls with Injury Data Collection Fact Sheet (HIIN-Falls-1)

Numerator	• Total number of falls rating minor or greater during the measurement period. NDNQI definitions for injury can be found in the Agency for Healthcare Research & Quality (AHRQ)'s comprehensive resource for measuring fall rates and fall prevention practices. The resource is available online at the following link: http://www.ahrq.gov/professionals/systems/hospital/fallxtoolkit/index.html
Denominator	• Patient days in eligible or included units during the measurement period.
Numerator Inclusions	• Included populations: Inpatients, short stay, observation patients, and same day surgery patients that receive care on an eligible unit. • Eligible units: Adult critical care, step-down, medical, surgical, medical-surgical, critical access, inpatient adult rehabilitation. • Hospitals may choose to include additional units that serve vulnerable populations such as geriatric-psychiatric units. Inclusion of additional units is up to site discretion but must remain consistent throughout entirety of the HIIN project. • Assisted and unassisted falls
Numerator Exclusion	• Excluded unit types: pediatric, psychiatric, and obstetric • Visitor and staff falls with injury
Data Sources	• Incident or Event Reports • Administrative Data • Post Fall Huddle Reports
Frequently Asked Questions	Q: Are swing beds excluded? A: The Falls with Injury measure focuses on patients receiving inpatient care. If the swing bed is being used for any of the included types of care as listed above, the days are included. In all cases data must be collected consistently across the entirety of the HIIN project.

Falls with Injury measure detail: Falls with Injury NQF 0202

http://www.hret-hiin.org/topics/injuries-from-falls-immobility.shtml

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Teach-Back Tool

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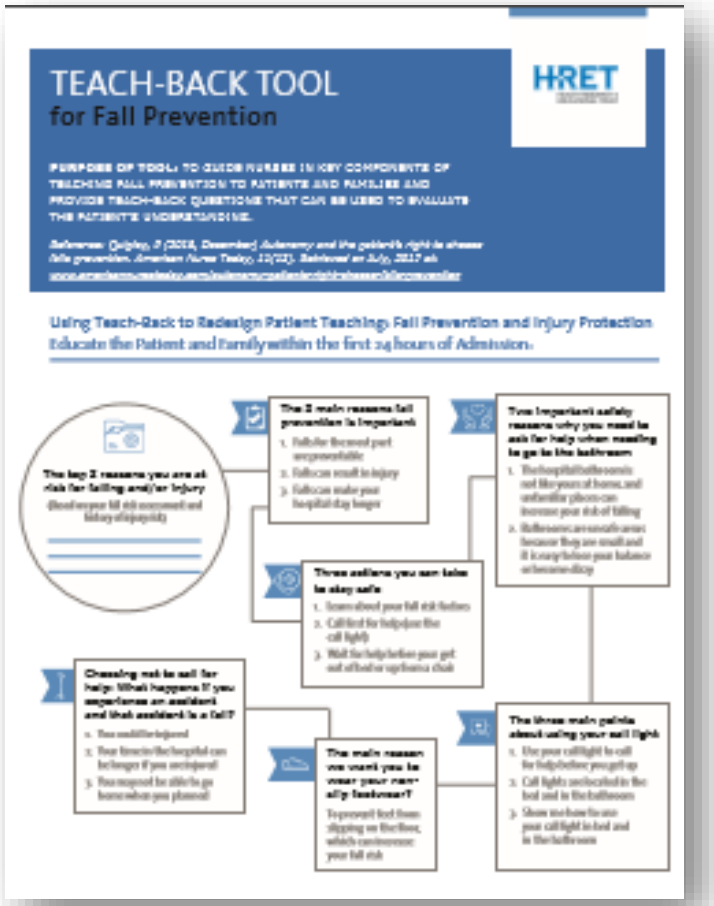
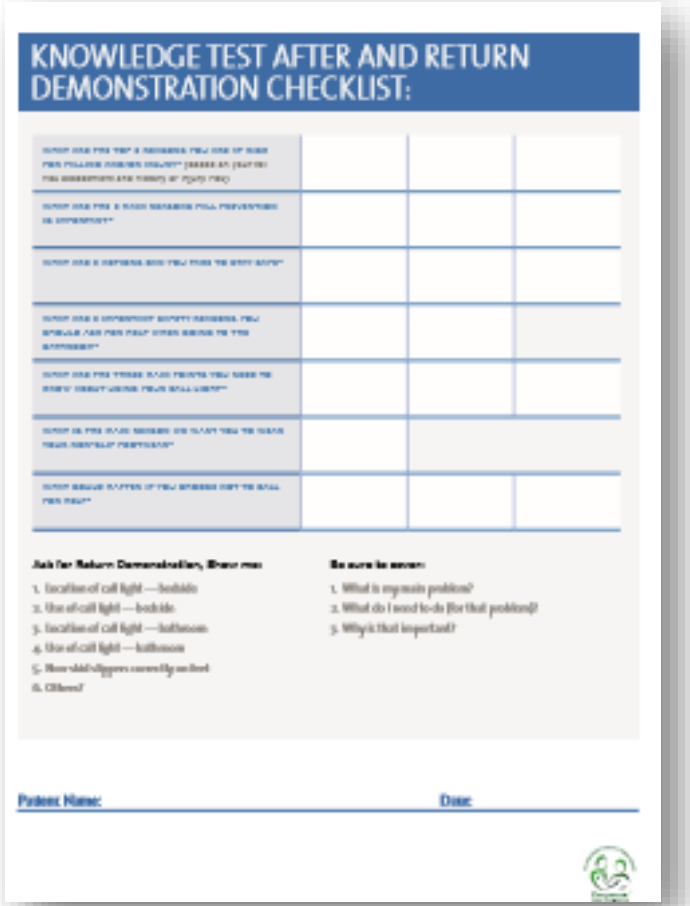


TEACH-BACK TOOL
for Fall Prevention

HRET

PURPOSE OF TOOL: TO GUIDE NURSES IN KEY COMPONENTS OF TEACHING FALL PREVENTION TO PATIENTS AND FAMILIES AND PROVIDE TEACH-BACK QUESTIONS THAT CAN BE USED TO EVALUATE THE PATIENT'S UNDERSTANDING.

Using Teach-Back to Redesign Patient Teachings Fall Prevention and Injury Protection
Educate the Patient and Family within the first 24 hours of Admission.



KNOWLEDGE TEST AFTER AND RETURN DEMONSTRATION CHECKLIST:

Patient Name: Date:

http://www.hret-hiin.org/resources/display/hret-hiin-teachback-tool-for-falls-prevention

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AHRQ Toolkit

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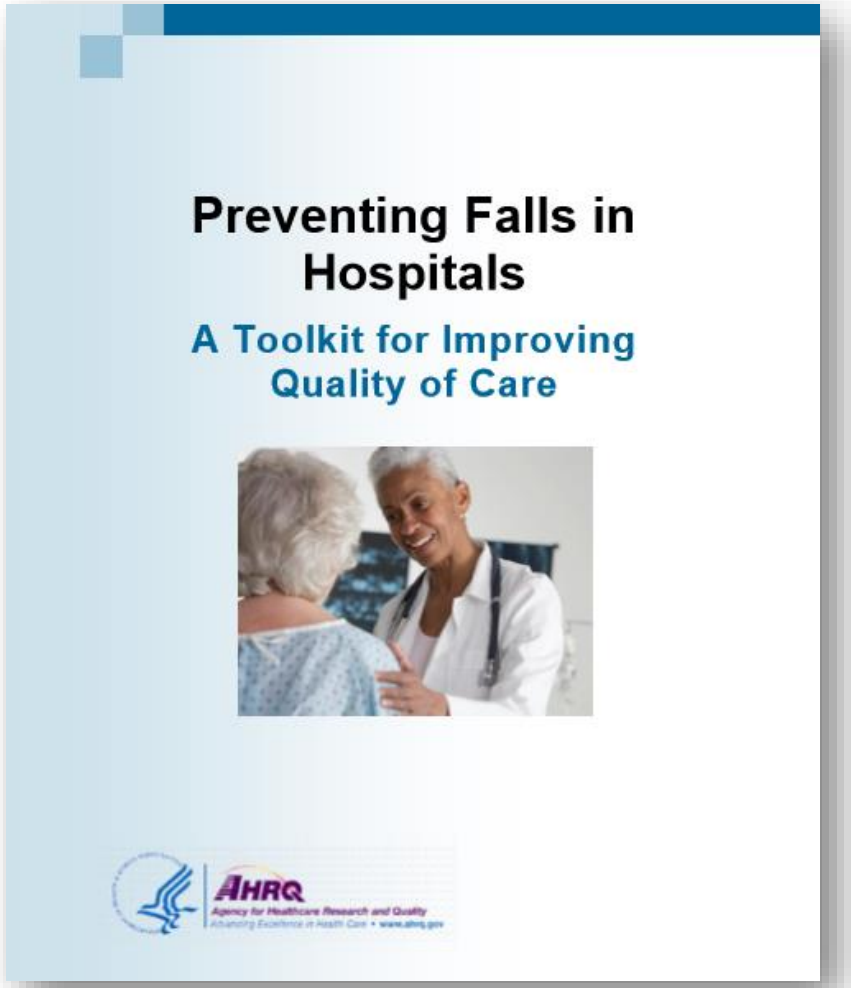


AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

https://www.ahrq.gov/professionals/systems/hospital/fallpxtoolkit/index.html

Social Media Messaging

Indiana Patient Safety Center
of the Indiana Hospital Association

- IHA has created messaging for both general public, health care providers

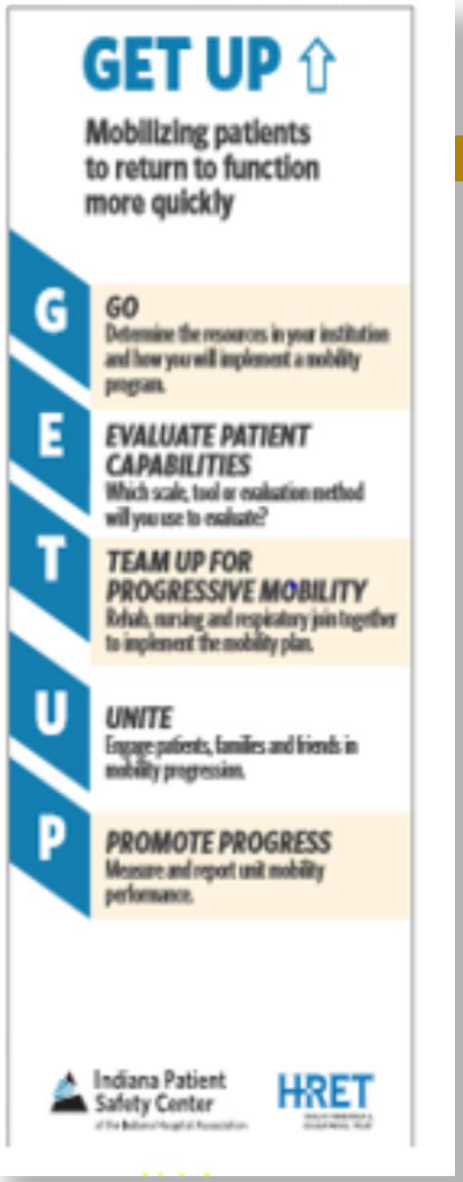
- Messaging provided for formats:

Twitter

Facebook

LinkedIn

IHAconnect.org/Quality-Patient-Safety



How are you incorporating GET UP within your organization?

http://www.hret-hiin.org/engage/up-campaign.shtml

GET UP Webinar Series

Indiana Patient Safety Center
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Oct. 31-Early Progressive Mobility in the ICU
Performance Improvement in a High Risk Unit

Nov. 14-HAPU Prevention with Early Mobility

Dec. 12-Multi-disciplinary Approach to Early Progressive Mobility

Our IPSC Team

Indiana Patient Safety Center
of the Indiana Hospital Association

Karin Kennedy
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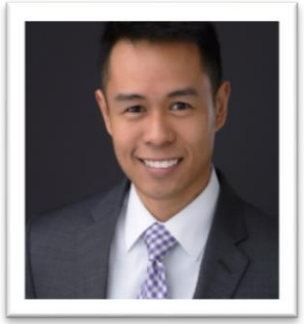

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