Frailty and Rehabilitation: How We Utilized FIM® Data to Develop Risk Models

User Groups 2015

Orlando, Florida • March 19, 2015
Las Vegas, Nevada • May 7, 2015

Pam Roberts, PhD, OTR/L, SCFES, FAOTA, CPHQ, FNAP
Richard Riggs, MD

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Cedars-Sinai Health System Service Area

- Primary service area includes 3.3 million people
- Major languages include English, Russian, Spanish, Farsi
- Other languages Korean and Armenian
• No Disclosures
Objectives

- Identify predictors of frailty in the context of inpatient rehabilitation
- Define the process for identification of frailty in the rehabilitation population
- Discuss strategies for implementing frailty risk models in rehabilitation
Frailty
Frailty Population

- What do you think about when you think of “Frailty?”
Background

• In general, the elderly are at risk for adverse outcomes during hospitalization
  • Rates of adverse events during hospital stays increases with age\textsuperscript{1}
  • Rates of adverse events due to negligence were markedly higher in the elderly
Older age is a significant risk factor for the development of delirium, which is associated with higher rates of death, medical complications and prolongation of hospital stay.
Background

Older age is a significant risk factor for the greater risk of re-hospitalization and institutionalization

• Approximately 12% of patients 70 years and older lost independence in one or more activities of daily living (ADL) during hospitalization
• Permanent loss in ADL function was associated with older ages

Background

- Unmet need for new ADL disabilities after return home from the hospital is particularly vulnerable to readmissions
- Patients’ functional needs after discharge should be evaluated and addressed

Background

- Frailty is a nonspecific state of increasing risk which reflects multisystem physiological change that increases in prevalence with age.
- Frailty results from the accumulation of multiple stressors which reduce the ability to cope with and recover from new challenges:
  - Acute and chronic disease
  - Subclinical conditions
  - Behavioral and social risk factors

• Frail adults are at risk of poor outcomes during/after hospitalization (e.g. falls, HAPUs, excess length of stay, fragmented transitions, unplanned readmissions, etc.)
• Frailty is multi-dimensional and cross cuts specific diagnoses
• Frailty is associated with older age, but younger people with disabilities/high burden of chronic illness are also at risk
• Inpatient rehabilitation patients may have different risks than the acute care patients
• Specific risks associated with frailty can be identified and prevented, reduced, managed, or accommodated with plans of care and targeted interventions
Background

- Both functional and medical aspects of frailty are relevant to clinical outcomes and health care expenditures
- Cost for inpatient services increases with greater number of comorbidities
No widely accepted tool for recognition of frailty in hospitalized patients
Fried and colleagues identified risks associated with weight loss, reduced physical strength and loss of endurance
**Background**

**Fulmer SPICES: An Overall Assessment Tool for Older Adults**

*By: Terry Fulmer, PhD, APRN, GNP, FAAN, Bouve College of Health Sciences, Northeastern University and Meredith Wallace, PhD, APRN, CS, Fairfield University School of Nursing*

**WHY:** Normal aging brings about inevitable and irreversible changes. These normal aging changes are partially responsible for the increased risk of developing health-related problems within the elderly population. Prevalent problems experienced by older adults include: sleep disorders, problems with eating or feeding, incontinence, confusion, evidence of falls, and skin breakdown. Familiarity with these commonly-occurring disorders helps the nurse prevent unnecessary iatrogenesis and promote optimal function of the aging patient. Flagging conditions for further assessment allows the nurse to implement preventative and therapeutic interventions (Fulmer, 1991; Fulmer, 1991).

**BEST TOOL:** Fulmer SPICES is an efficient and effective instrument for obtaining the information necessary to prevent health alterations in the older adult patient (Fulmer, 1991; Fulmer, 1991; Fulmer, 2001). SPICES is an acronym for the common syndromes of the elderly requiring nursing intervention:

- S is for Sleep Disorders
- P is for Problems with Eating or Feeding
- I is for Incontinence
- C is for Confusion
- E is for Evidence of Falls
- S is for Skin Breakdown
Frailty

- Frailty has a significant effect on health outcomes and costs
- Identification of patients is challenging especially in rehabilitation
- Function is important
Follow Our Lead
Purpose

- To define the predictors of frailty in the context of inpatient rehabilitation
- To determine if early identification of frailty improves care and prevents readmissions
• Adverse events: complications, fall(s), HAPUs while on the inpatient rehabilitation unit
  • Complications (n = 151)
  • Falls (n = 43)
  • HAPU (n = 2)
  • ANY Adverse Event = 179 (23.3%)

• 30 day readmissions after completion of an inpatient rehabilitation program (n = 63, 8.2%)
Methods

- Design: Retrospective analysis
- Participants: All patients admitted and discharged from the inpatient rehabilitation unit from January 1, 2012 - December 31, 2012
- N=768
Data from the UDSPRO Central™ Website
Results: Unadjusted Relationships of Admission “Risk” Variables with Negative Outcomes
Adverse Outcome Significant Variables in the Model
Risk Screening Variables and Cut-offs
Risk Model for Adverse Events
Results: Unadjusted Relationships of Admission “Risk” Variables with 30 Day Readmission
30-Day Readmission Significant Variables in the Model
Risk Screening Variables and Cut-offs
30 Day Readmission Significant Variables in the Model
Integration of Frailty Risk Factors in Inpatient Rehabilitation Operations
Identification of Frailty Risk Factors

• Identify inpatient rehabilitation patients at risk for frailty

• Prospective Payment System (PPS) coordinator identifies patients who meet frailty risk factors and enters data into custom fields in the UDS-PROi® software
<table>
<thead>
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<tr>
<td><strong>Total (2/3)=+</strong></td>
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Integrated into UDS-PRO® rehabilitation database (links with functional data during IRF and at 180-day follow-up)
**Frailty Risk Factors - Team Conference**

- Patients identified with Frailty Risk Factors noted on team conference schedule

### TEAM CONFERENCE AGENDA

<table>
<thead>
<tr>
<th>TIME</th>
<th>PATIENT NAME</th>
<th>RM</th>
<th>INSURANCE</th>
<th>ADMIT DATE</th>
<th>T-LOS</th>
<th>LAST DAY</th>
<th>D/C DATE</th>
<th>PHYSICIAN</th>
<th>TM</th>
<th>BLK</th>
<th>HIS</th>
<th>&gt;9</th>
<th>B/B</th>
<th>ONSET</th>
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<td>2/17/15</td>
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<td>X</td>
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*Patients highlighted in blue are flagged for frailty.
BLK = race Black/African American
Onset = Onset > 7 days
HIS = race Hispanic
TF = tube feeding
Name in red indicates diabetes*
Interventions
Frailty Inpatient Rehabilitation Checklist

If patient is Frailty Positive, consider the following as appropriate:

[ ] Consider length of stay for entire Case Mix Group (CMG)

[ ] Home visit
  • Pre-Home Visit
  • Home Visit by Rehabilitation Staff
  • Home Health Follow-up including Home Visit within 3 days of Rehabilitation Discharge

[ ] Fall Education Handout

[ ] Comorbidity Education
  • Diabetics Group or 1:1 Education
  • 1:1 Education with Diabetic Educator
  • CHF Discharge Handout
  • Wound Education Handout
  • Tube Cleaning Handout

[ ] Bladder Program

[ ] Bowel Program

[ ] Obesity Education/Community Resources
Transitions of Care
Post-Acute Discharge Settings
Electronic Medical Record Strategy
Transitions of Care
Practical Strategy Considerations

- **Standardized** IRF “SBAR” hand-off
- Lack of standardization of hand-off for:
  - Bladder and bowel function/management
  - Pain management
  - Completion of acute Care Plans
  - Lines/Drains/Airways
  - Tests/procedures completed prior to admission
  - Skin/Pressure Ulcers
  - Out of bed/activity level
  - Transfer level, use of special equipment/technique
Multidisciplinary Information and Personal Assistance Diary (MiPAD)

- Goal: Improve information and education throughout the continuum of care
- Tool used to have all education in one place including triggers to include certain information
MiPAD Table of Contents

1. Introduction
   A) Handbook
   B) Group Therapy
   C) Team Members
   D) Survey

2. My Condition
   A) Diagnosis Specific Packet
   B) Health and Well-Being
   C) Medications

3. My Safety
   A) Precautions
   B) Safety in the Home
   C) Disaster Preparedness

4. My Discharge
   a) Home Exercise Program
   b) Equipment
   c) Training
   d) Family Conference

5. My Contacts
   a) Medical Passport
   b) Support Services
   c) Business Card Holder

MiPad
(Multidisciplinary information and Personal Assistance Diary)
Medical Passport is an educational intervention that focuses therapeutic inputs from the interdisciplinary care team on the transition from hospital to home and promotes patient and caregiver self-management.
**Medical Passport/Portable Profile**

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**IMMUNIZATIONS**

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<tr>
<td>HIB</td>
<td>Flu</td>
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<tr>
<td>Pneumovax</td>
<td>Other</td>
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**MEDICAL RISK FACTORS**

- Hypertension
- Diarrhea
- Pressure Ulcer
- Orthostasis
- Autonomic Dysreflexia
- Respiratory
- Cardiac
- Seizures

**EQUIPMENT / PROSTHETICS / ORTHOTICS**

Vendor: Apquard  
Phone number: 818-340-6027  
Home Medix  
Phone number: 562-595-1153

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<td>Commode</td>
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<td>Shower chair</td>
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<tr>
<td>Tub bench</td>
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</tr>
<tr>
<td>Wheelchair</td>
<td></td>
</tr>
<tr>
<td>Other</td>
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</table>

**FUNCTIONAL STATUS**

- **Self-Care:**
  - No help needed
  - Needs help with:
    - Eating
    - Grooming
    - Dressing
    - Bathing
    - Toileting
    - On/Off Toilet
    - Helpful tips

- **Mobility:**
  - No help needed
  - Needs help with:
    - Walking in community/home
    - Stairs
    - Wheelchair
    - Sit to stand
    - In/out of car
    - Helpful tips

- **Swallowing:**
  - No help needed
  - Needs help with:
    - Regular texture
    - Modified texture
    - Strategies
    - Helpful tips

- **Vision:**
  - No help needed
  - Needs help with:
    - Refer to vision exercises
    - Helpful tips

- **Hearing:**
  - No help needed
  - Needs help with:
    - Hard of hearing
    - Hearing aid
    - Helpful tips

- **Communication:**
  - No help needed
  - Needs help with:
    - Helpful tips

**FUNCTIONAL RISK FACTORS**

- Fall
- Cognition
- Vision
- Swallowing
- Spinal precautions
- Hip precautions
- Craniospinal precautions
- Weight bearing precautions
- Overstimulation precautions
- Sternal precautions
- Seizures
- Advanced Directive
- Cardiac
- Cognition
- Craniospinal
- Diabetes
- Hypertension
- Orthostatic
- Orthotic
- Precautions
- Pressure ulcer
- Prosthetic
- Respiratory
- Seizure
- Weight-bearing

**GLOSSARY**

- **Advanced Directive** (also known as “Living will”) – a set of written instructions on a person’s choices about what is to happen if that person is unable to make decisions.
- **Autonomic dysreflexia** – a condition that takes place for people with a spinal cord injury above T6, a nerve reacts from a stimulus that is not pleasant (for example, being unable to empty the bladder of urine) and causes high blood pressure. This is considered an emergency.
- **Cardiac** – of the heart.
- **Cognition** – ability to think, learn, and grasp ideas.
- **Craniospinal** – a procedure in which part of the skull is taken off.
- **Diabetes** – disease of high or out of control blood sugar.
- **Hypertension** – High blood pressure.
- **Orthostatic** – high or low blood pressure from sitting up or standing.
- **Orthotic** – a support made for a body part (ex. wrist, hand, leg, and ankle) to help a patient do things or prevent deformity.
- **Overstimulation** – a condition which results from too much activity which affects a person’s ability.
- **Precautions** – things you are NOT supposed to do.
- **Pressure ulcer** – a wound in the skin caused by staying in the same position for too long.
- **Prosthetic** – a body part that has been reproduced to replace what is missing (ex. arm or leg).
- **Respiratory** – breathing.
- **Seizure** – a condition of the nervous system that results in sudden sleepiness, or convulsions, as in epilepsy.
- **Weight-bearing** – amount of weight a person can place on leg or arm while using it (ex. in standing).

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**NOTES**

This personal health profile is for your convenience to help you keep track of certain aspects of your medical history. This profile is not an official medical record of Cedars-Sinai Medical Center or of any other healthcare provider, and is not necessarily a complete record of your medical history as it will be your responsibility to update it from time to time as your medical profile changes.
• **Care Coordination**
  • Discharge Risk Assessment Tools
  • Assess if patient’s family members are competent caregivers
  • Assess patient’s home environment (e.g. prevention of falls and injuries)

• **Patient Engagement**
  • Transition between hospital and home
  • Coordinate appointments
  • Diet/nutrition and exercise/activity plan

• **Referral Network**
  • Referrals for post-acute care
  • Referrals for physician follow-up

• **Technology (e.g. Telehealth)**
Communication with Physicians

• Direct e-mails to physicians about readmissions
• Transition of Care Checklist should include:
  • Reconciled medications
  • Feeding/eating instructions
  • Weight parameters
  • Recommended exercises/activities
  • Report on the patient’s functional/communication/cognitive status
  • Contact information for the patient’s most recent care provider
  • Follow-up appointments
  • Follow-up on outstanding tests
  • Information of what to do if problem arises
  • Personal Health Record
  • Educate patients and assess understanding
  • Send discharge summary to primary care physician
  • Reinforce the discharge plan via telephone
Summary: Interventions to Reduce 30-Day Readmissions

**Interventions to Reduce 30-Day Rehospitalization: A Systematic Review**

Luke O. Hansen, MD, MHS; Robert S. Young, MD, MS; Keiko Hinami, MD, MS; Alicia Leung, MD; and Mark V. Williams, MD

**Pre-Discharge**
- Patient Education
- Discharge Planning
- Medication Reconciliation
- F/U Appt scheduling

**Post-Discharge**
- Timely Follow-up
- Timely PCP Communication
- F/U Phone Call
- Patient Hotline
- Home Visit

**Bridging Interventions**
- Transition Coach
- Patient-centered Discharge Instructions
- Provider Continuity
Harriet Aronow, PhD assisted with the development of the Frailty Risk Model in Rehabilitation
Pamela Roberts, PhD, OTR/L, SCFES, FAOTA, CPHQ, FNAP
Program Director-Physical Medicine and Rehabilitation and Neuropsychology
310-423-6660
pamela.roberts@cshs.org

Richard Riggs, MD
Chairman, Medical Director, and Chief Medical Information Officer
310-423-3148
richard.riggs@cshs.org
Questions