Safe Patient Handling:
The Hazards of Immobility
Learning Objectives

• Discuss the opportunity for quality improvement using SPHM practices
• Discuss expected positive patient outcomes using SPHM practices
• Discuss the role of SPHM practices in patient care initiatives
• Discuss how a mobility assessment is able to meet individualized needs
Hospital Acquired Disability

Hazards of immobility include:

♦ accelerated bone loss
♦ delirium
♦ malnutrition
♦ sensory deprivation
♦ isolation
♦ musculoskeletal weakness
♦ decreased cardiopulmonary function
Early Mobility

Avoid the effects of immobility which include:

- functional decline
- increased morbidity
- increased mortality
- increased cost of care
- increased length of stay
Expected Practice

- Bed mobility
- Out of bed mobility
- Ambulation
- Toileting
- Boosting/repositioning/turning
- Transfers
- Others
Benefits

- Comfort, safety and dignity for patient
- Accelerated patient mobility, independence and rehabilitation
- Fall prevention
- Improved skin integrity
- Positive patient outcomes
- Reduced hospital associated disability
Example: Clinical Application

Certification in hip fracture management

- High volume of hip fractures
- Orthopedic focus
- Target population
- Key metrics
- ED to OR < 24 hours
- < Hospital-acquired conditions
- < LOS
- < Readmissions
Positive Patient Outcomes

SPHM supports early patient mobility

- delirium prevention
- post-op knee initiatives
- small bowel initiatives
- HA pressure ulcer prevention
- HA pneumonia prevention
Positive Patient Outcomes (continued)

SPHM benefits patient satisfaction
- increased movement and activity
- toileting and hygiene dignity and privacy
- improved response time
Revised NIOSH Lifting Equation
Summary of the Evidence

• Confirms risks associated with manual patient handling
• Shows tasks cannot be performed safely manually
• Demonstrates the result of cumulative trauma
2007 NIOSH Revision

• Maximum weight a caregiver should lift = 35 lbs (single leg of 200 lb patient)
• Lateral transfer guidelines: >157 lbs, use mechanical device or air-assisted device
Excessive Biomechanical Force

Disc compression forces (DCF): one person, two person; shear force (SF): one person, two person

Marras et al., 1999
Evaluating Risk Factors

- Lifting heavy, awkward loads
- Supporting the patient’s body weight
- Working in small and/or tight spaces
- Maintaining awkward postures
- Reaching away from the body
- Pushing and pulling forces
Classifying Risk

- High risk activity
- High frequency task
- High probability for injury
Risk Assessment and Ergonomic Analysis

• How many *patients* are you caring for today?
• What physical tasks are the most frequent and *difficult*?
• How many *people* are typically needed to accomplish the following patient handling task?
Boosting with Draw Sheet

Moving up in bed

(Photo from Griffin AG, Potter PA: Clinical nursing skills & techniques, ed 17, St. Louis, Mo, 2010, Elsevier Mosby)
Stand and Pivot Transfer

(Photo from Perry AG, Potter PA: Clinical nursing skills & techniques, ed 7, St. Louis, 2010, Mosby)
Slide Board Transfer

(Photo from Perry AG, Potter PA: Clinical nursing skills & techniques, ed 7, St. Louis, 2010, Mosby)
Risk Assessment and Ergonomic Analysis (continued)

- How do you define the **dependency** level of your patients?
- How do you define the **mobility** level of your patients?
- How do you make **decisions** about how to do tasks and how many people are needed to perform them safely?
Hospitalization-Associated Disability
“She Was Probably Able to Ambulate, but I’m Not Sure”

Kenneth E. Covinsky, MD, MPH
Edgar Pierluissi, MD
C. Bree Johnston, MD, MPH

THE PATIENT’S STORY

Ms N is a 70-year-old woman admitted to the medical service of an urban public hospital. She reported experiencing left labial pain and hematuria for 3 days. In the emergency department, she was in acute renal failure (serum creatinine, 10.8 mg/dL; potassium, 8.3 mEq/L).

She had a long history of type 2 diabetes mellitus, hypertension, chronic kidney disease (baseline creatinine, 3.5 mg/dL), coronary artery disease, peripheral vascular disease, and...
Clinical Application

• Define the root cause of exposure
• Develop common language—consistency
• Standardize decision making
• Customize solutions for routine procedures
• Select appropriate equipment
## Banner Mobility Assessment Tool

### BMAT (Banner Mobility Assessment Tool for Nurses)

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>Pass</th>
<th>Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Sit &amp; Shake</strong></td>
<td>From a semi-reclined position, ask the patient to sit upright and rotate to a seated position at the side of the bed. Ask patient to reach across midline to shake your hand.</td>
<td><strong>Pass</strong> Proceed to Step 2</td>
<td><strong>Fail</strong> Mobility Level 1</td>
</tr>
<tr>
<td><strong>2 Stretch &amp; Point</strong></td>
<td>Ask patient to extend leg forward until it is straight at the knee. Ask the patient to point and flex his foot. Repeat with other leg.</td>
<td><strong>Pass</strong> Proceed to Step 3</td>
<td><strong>Fail</strong> Mobility Level 2</td>
</tr>
<tr>
<td><strong>3 Stand</strong></td>
<td>Ask the patient to elevate off the bed or chair using an assistive device if needed. Patient should be able to raise buttocks off bed and hold for a count of five.</td>
<td><strong>Pass</strong> No assistive equipment needed - See Mobility Level 4 below.</td>
<td><strong>Fail</strong> Patient is able to perform task but requires some assistive devices. Mobility Level 3</td>
</tr>
<tr>
<td><strong>4 Walk</strong></td>
<td>Ask the patient to march in place at bedside. Then ask to the patient to advance step and return each foot.</td>
<td><strong>Pass</strong> Mobility Level 4 Modified Independence</td>
<td><strong>Fail</strong> Mobility Level 3</td>
</tr>
</tbody>
</table>

**Mobility Level 1**
- Total lift equipment should be used.
- Consider a total lift, friction reducing slide sheets or repositioning sheets.

**Mobility Level 2**
- Powered stand-aids or total lift should be used. Total lift may be needed. Lateral transfer aids like roll board or slide sheet for bed mobility.

**Mobility Level 3**
- Non-powered stand-aids. Walker, gait belt, cane or crutches or ambulation equipment may be used. Encourage independent bed mobility.

**Mobility Level 4**
- Use your best clinical judgement to determine whether supervision for ambulation is needed.
Clinical Application

- Risk assessment tool for nurses
- Solutions for “Good, Better, Best, and Avoid”
- Linkage with clinical outcomes
- Developed and mentored champions
- Integration with shared-leadership councils
Mobility is Linked with Solutions

<table>
<thead>
<tr>
<th>Mobility Level 1:</th>
<th>Total lift, rollboards, air-assistive device, slide-sheets or slide-tubes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility Level 2:</td>
<td>Total lift or powered sit-to-stand lift</td>
</tr>
<tr>
<td>Mobility Level 3:</td>
<td>Non-powered stand aid, gait belt, cane, crutches, walker or ambulation equipment</td>
</tr>
<tr>
<td>Modified Independence</td>
<td>No equipment required however, supervision is needed to promote safety</td>
</tr>
</tbody>
</table>

Always default to the safest method (total lift) if there is any doubt in the patient’s ability to perform the task.
SPHM Equipment
Equipment Solutions

- Roller Board
- Slider Sheets
- Ambulation Pants
- Sit-to-Stand
- Ambulation Vest
- Sitting Upright
- Transfer Device
-Convertible Chair
- Range of Motion
Why Safe Patient Handling?

• Essential skill set for patient outcomes
• Rethink how we provide care
• Innovative practices
• Technology and equipment
• Clinical tools, protocols and procedures
• Work design changes
• Results—better, safer and more reliable
Bariatric Considerations

- Provide rooms with overhead/ceiling-mounted lifts
- Evaluate weight capacity of lift system
- Propose minimum room dimensions
- Measure bathroom door width
- Measure shower stall width
- Evaluate shower bench weight capacity
Bariatric Considerations
(continued)

• Evaluate toilet weight capacity
  ♦ floor mounted toilet
  ♦ wall mounted toilet
  ♦ toilet jack installation

• Consider proximity to nurses’ station
Create a Bariatric Suite

- Bariatric bed with pressure reducing mattress
- Extended capacity patient lift(s)
- Extended capacity wheelchair
- Extended capacity and extra wide wide walker
- Extended capacity shower chair or shower stretcher
- Extended capacity standing aids
Create a Bariatric Suite (continued)

- Extended capacity floor-based toilet
- Extended capacity bedside commode
- Bariatric patient recliner
- Bariatric size friction reducing devices (air-assisted and/or slide sheets or tube sheets)
- Bariatric rollboard
- Optimal space in room and bathroom
- Doors that are wide enough for egress
Results of a Pilot Program

• Program milestone metrics
• Workers’ compensation data
  ♦ frequency
  ♦ severity
  ♦ task specificity
Frequency of Injury

Pilot Project Light Duty Days
(2010–2012)
Pilot Project

Cause of Injury

- Repositioning in bed: 54% decrease
- Lateral transfer: 65% decrease
- Assistance with falling patient: 40% decrease
- Vehicle transfer: 66% decrease
Implementation Success

• Dedicate an SPHM coordinator
• Encourage interdisciplinary involvement
• Partner with facility leadership
• Integrate with system initiatives and projects
• Create opportunities to share the need and shape vision
Safe Patient Handling and Movement

Safe for staff and patients:

- process driven (continuous improvement)
- evidence-based
- behavior based:
  - assessment and critical thinking
  - competent selection of proper equipment
  - proficient execution of task
- tool for achieving objectives
If you have questions or would like a copy of this presentation, please contact:

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