Increasing patient mobility through an individualized, goal-centered, hospital mobility program

A Quasi-Experimental Quality Improvement Project

Presented by: Lisa Klein, MSN, RN, AGCNS-BC, CNRN on behalf of the Mobility Workgroup: Dr. Erik Hoyer, Annette Lavezza, & Stephalie Hiser

November 29, 2017
Disclosure

• No relevant financial or nonfinancial relationships to disclose.
Learning Objectives

- Verbalize the clinical benefits of mobilizing hospitalized patients.
- Demonstrate the use of the mobility goal calculator.
- Describe 3 necessary steps to initiate a nurse-led mobility program.
Importance of Mobility in the Hospital

DECREASED MOBILITY

- Pressure Injuries
- Pneumonia
- Delirium
- Venous thromboembolism
- Falls
- Prolonged hospitalization
- Rehabilitation needs

November 29, 2017
Mobility Workgroup

- Lisa Klein
  - Clinical Nurse Specialist (CNS)/Zayed 12 East/West
- Dr. Erik Hoyer
  - Assistant Professor/PM&R
- Annette Lavezza
  - Inpatient Rehab Supervisor
- Stephanie Hiser
  - Physical Therapy Resident
QI Study Settings

**Intervention Unit**
- Zayed 12 West
  - 26 bed acute care neuroscience medical/surgical unit
  - 6 bed telemetry stroke unit

**Control Unit**
- Zayed 12 East
  - 26 bed acute care neuroscience medical/surgical unit
  - 6 bed epilepsy unit (EXCLUDED)
## Demographic Characteristics (Baseline)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Control Unit (n=1836)</th>
<th>Project Unit (n=2294)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, y, $\bar{X}$ (SD)</td>
<td>49.0 (18.3)</td>
<td>55.2 (16.2)</td>
</tr>
<tr>
<td>Sex (female), n (%)</td>
<td>430 (55.6)</td>
<td>419 (54.2)</td>
</tr>
<tr>
<td>Race (Caucasian), n (%)</td>
<td>535 (69.1)</td>
<td>478 (61.8)</td>
</tr>
<tr>
<td>Medicare insurance, n (%)</td>
<td>235 (30.4)</td>
<td>246 (31.8)</td>
</tr>
<tr>
<td>Discharged Home, n (%)</td>
<td>531 (68.6)</td>
<td>446 (57.7)</td>
</tr>
<tr>
<td>Length of Stay, days, $\bar{X}$ (SD)</td>
<td>6.0 (8.0)</td>
<td>6.6 (8.7)</td>
</tr>
<tr>
<td>AHRQ Comorbidity Index, $\bar{X}$ (SD)</td>
<td>2.1 (1.1)</td>
<td>2.3 (1.3)</td>
</tr>
</tbody>
</table>
What was happening for patient mobility in 2015?

- Order: Out of bed with assistance/as tolerated
Johns Hopkins Highest Level of Mobility (JH-HLM) Scale

<table>
<thead>
<tr>
<th>MOBILITY LEVEL</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALK</td>
<td></td>
</tr>
<tr>
<td>250+ FEET</td>
<td>8</td>
</tr>
<tr>
<td>25+ FEET</td>
<td>7</td>
</tr>
<tr>
<td>10+ STEPS</td>
<td>6</td>
</tr>
<tr>
<td>STAND</td>
<td></td>
</tr>
<tr>
<td>&gt;1 MINUTE</td>
<td>5</td>
</tr>
<tr>
<td>CHAIR</td>
<td></td>
</tr>
<tr>
<td>TRANSFER to CHAIR</td>
<td>4</td>
</tr>
<tr>
<td>SIT AT EDGE OF BED</td>
<td>3</td>
</tr>
<tr>
<td>BED</td>
<td></td>
</tr>
<tr>
<td>TURN SELF/ BED ACTIVITY*</td>
<td>2</td>
</tr>
<tr>
<td>ONLY LYING</td>
<td>1</td>
</tr>
</tbody>
</table>

*Bed activity includes passive or active range of motion, movement of arms or legs, and bed exercises (e.g., cycle ergometry, neuromuscular electrical stimulation).
Boston University Activity Measure for Post-Acute Care

“6-Clicks” Mobility Short Form

- How much help...
Reliability Study

• Spring/Summer 2015 Research Study
• Collaboration between nurses on Zayed 12 East & West and Physical Medicine and Rehabilitation (PM&R) therapists
• Validation of the AM-PAC “6-clicks” Short Forms
• Mobilize patient to ascertain JH-HLM achievement
Reliability Study Results

• The test-retest reliability values (intraclass correlation coefficients) for PT and RNs were:
  • 0.91 and 0.97 (respectively) for AM-PAC.
  • 0.94 and 0.95 (respectively) for JH-HLM.

• Interrater reliability values (intraclass correlation coefficients) between PT and RNs were 0.96 for AM-PAC and 0.99 for JH-HLM.

• A correlation between AM-PAC and JH-HLM was established.
How to come up with a Mobility Program?

1. Agreement on mobility goal calculator.
2. Other approaches to measuring mobility.
3. Create mobility goal signs.
4. Agree on documentation of mobility goals.
5. Create educational plan.
6. Implementation, Audit, & Updates
## Johns Hopkins Mobility Goal Calculator

<table>
<thead>
<tr>
<th>AM-PAC Score</th>
<th>JH-HLM Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td>22-23</td>
<td>≥ 7</td>
</tr>
<tr>
<td>18-21</td>
<td>≥ 6</td>
</tr>
<tr>
<td>13-17</td>
<td>≥ 5</td>
</tr>
<tr>
<td>6-12</td>
<td>≥ 4</td>
</tr>
</tbody>
</table>
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November 29, 2017
“My Highest Level of Mobility (HLM)”

<table>
<thead>
<tr>
<th>MOBILITY LEVEL</th>
<th>Score</th>
<th>Yesterday</th>
<th>Today</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALK</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>250+ FEET</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25+ FEET</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10+ STEPS</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAND</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MINUTE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHAIR/COMMODE</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRANSFER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BED</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIT AT EDGE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOBILITY AIDSES</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TURN SELF/ACTIVITY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LYING</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Yesterday:  
Today:  

BASELINE SCORE:  
ADMISSION SCORE:  
TODAY’S GOAL:  
MOBILITY AIDSES:  

HOWARD COUNTY GENERAL HOSPITAL
JOHNS HOPKINS MEDICINE
How to come up with a Mobility Program?

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## Mobility Goal Signs

**Goal:** To Maximize Mobility Every Day

<table>
<thead>
<tr>
<th>HIGHEST LEVEL OF MOBILITY (JH-HLM)</th>
<th>✓ YESTERDAY’S JH-HLM SCORE</th>
<th>✓ TODAY’S GOAL</th>
<th># OF TIMES JH-HLM MET TODAY (e.g., ≥ 2x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Lying in Bed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Turn self in bed/bed activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Sit at edge of bed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Transfer to chair/commode</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Static standing (1 or more minutes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Walk 10 steps or more</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Walk 25 feet or more</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Walk 250 feet or more</td>
<td></td>
<td>2+ TIMES</td>
<td></td>
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**November 29, 2017**
How to come up with a Mobility Program?

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Daily Goals Documentation

Goal/ Progress Toward Goal/Outcome
- Pain
  - Progress Toward Goal/ Outcome
  - Plan
  - Response to Plan

Activity / Mobility
- Progress Toward Goal/ Outcome
  - Plan
  - Response to plan

Safety
- Progress Toward Goal/ Outcome
  - Plan
  - Response to plan

Multidisciplinary Discharge Plan

Interdisciplinary Plan - VIEW ONLY

Activity/Mobility Plan
- Filter To:
  - Increase mobility level by at least one level
  - Maintain current level of mobility on the mobility scale
  - Increase ambulation
  - PT/OT consult
  - Continue current plan

Today’s JH HLM goal is 8 or greater, 2+ times daily
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Plan for Staff Education

- **When:** December, 2015
  - 12 West Professional Practice Model Meeting
  - Clinical Technician Meeting
  - Change of Shift Small Group Meetings

- **What:** PowerPoint Presentation
  - Review current documentation
  - Mobility goal calculator/Poster
  - Documentation
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6. Implementation, Audit, & Updates
Implementation
• January 2016—
  – 2 PM nurses audited each chart for documentation of individualized mobility goals in the Daily Goals flowsheet.

• January-April 2016—
  – CNS audited utilization of bedside posters & rounded with staff discussing patient progress towards achieving daily mobility goals.

• April 2016—
  – Monitor mobility levels & goal achievement through a mobility dashboard.
Updates to the Mobility Program

1. July 2016—
   ➢ EPIC required a change in documenting individualized mobility goals.

2. Addition of door placards (May 2016)
   ➢ Updated every morning by the PM Clinical Customer Service Representative.

3. Ongoing program maintenance.
Updates to the Mobility Program

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Door Placards

HLM GOAL = 2
TODAY’S GOAL = TURN & POSITION

HLM GOAL = 6
TODAY’S GOAL = WALK 10 STEPS

HLM GOAL = 4
TODAY’S GOAL = GET TO CHAIR/COMMODE

HLM GOAL = 7
TODAY’S GOAL = WALK 25 FEET

HLM GOAL = 5
TODAY’S GOAL = STAND FOR AT LEAST 1 MINUTE

HLM GOAL = 8
TODAY’S GOAL = WALK 250 FEET
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## Patient Demographics (Intervention Period)

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Mean JH-HLM score
(baseline vs. 6 months post-implementation)
Percent of Days JH-HLM Goal Met (baseline vs. 6 months post-implementation)

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Percent of days JH-HLM Goal Exceeded (baseline vs. 6 months post-implementation)
Probability of patients reaching varying maximum JH-HLM scores during hospitalization

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Future Plans…

• February 2017—Zayed 12 East implemented this program.
• New mobility dashboard in production.
• Submitted an article to Nursing Outlook.
• Further study of the effect of this study and patient outcomes.
• DEL grant—early stroke recovery project to study barriers & outcomes of early mobility in stroke patients.
Acknowledgements

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Johns Hopkins University

Daniel Young, PT, DPT, PhD
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Johns Hopkins University

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Johns Hopkins Hospital
References

Any Questions?