Creating & Maintaining a Culture of Safety: Safe Patient Handling in Acute Care

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Objectives

• Comprehend quality improvement efforts for creating and maintaining culture change for safe patient handling and analyze applicability to your work environment

• Understand importance of infrastructure for safe patient handling programs to engage all stakeholders in creating a safe working environment

• Identify ways to use safe patient handling equipment to achieve rehabilitation goals
Disclosure Statement

• Disclosure of Interest
  • No members of this presentation or the institutions we work for have received remuneration or have a financial arrangement with any product discussed

• Written consent was obtained from all patients or their HCPs for video and photos
Overview

• Evidence Supporting Safe Patient Handling

• Safe Patient Handling at BIDMC

• Achieving Culture Change

• Safe Patient Handling for Rehabilitation

• Future goals
Evidence Supporting Safe Patient Handling
What is Safe Patient Handling (SPH)?

• “The use of assistive devices to ensure that patients can be mobilized safely and that care providers avoid performing high-risk manual patient handling tasks. Using the devices reduces a care provider’s risk of injury and improves the safety and quality of patient care” (VA, 2016)

• Body mechanics

• Thinking BEFORE doing (OSHA, 2016)
Why is SPH Important?
Cumulative Effects of Manual Patient Handling

• Research done by NIOSH revealed that healthcare providers develop microfractures to their vertebral endplates when lifting more than 35 lbs (Waters 2007)
NIOSH Recommendations

• Recommend a 35lb maximum weight limit for handling patients when:
  • Patient follows commands
  • Patient is not combative
  • Amount of weight lifted can be estimated
  • Lifting is smooth and slow
  • Relatively constant position of caregiver’s body and hands in relation to the patient

• Recommended lifting limit should be LESS than 35lbs if these conditions are not met
Cumulative Effects of Manual Patient Handling

• “93% men, heavily tattooed, macho workforce, Harley-Davidson rider type guys. And they were prohibited from lifting over 35 pounds through the course of their work.”

(Zwerdling, 2015)
Injuries

America's Most Dangerous Jobs 2015
(Distribution of Nonfatal Injuries by Industry)

Number of cases in thousands

- Mining, quarrying, & oil & gas extraction
- Agriculture, forestry, fishing, & hunting
- Transportation and warehousing
- Construction
- Retail trade
- Manufacturing
- Health care & social assistance

(BLS 2014)
Injuries

• Most research on health care workers has focused on nurses
  • Nurses lift an average of 1.8 tons per 8 hour shift (Tuohy-Main, 1997)
  • 12-18% of nurses leave the profession due to chronic back pain (Moses, 1992; Owen, 1989)
Injuries

- 47% of nurses considered leaving due to required physical demands (MADPH, 2014)
Injuries: PT specific

• Campo et al 2008
  • Incidence rate of work related musculoskeletal injuries in PTs
  • Specific risks

• Results
  • 1 year incidence rate = 20.7%
  • Specific risk factors
    • Transfers
    • Repositioning
    • Bending/twisting postures
    • Joint mobilizations
    • Soft tissue work
    • Job strain
High Risk Tasks: Rehab Specific

- Manual Therapy: 27%
- Transfer/Lift: 26%
- Environment/Equipment: 11%
- Multiple Activities: 6%
- Patient Fall: 6%
- Therapeutic Exercise: 2%
- Floor Work: 3%
- Patient Aggression or Restraint: 3%
- Functional Activities: 4%
- Other: 12%

(Darragh, 2012)
Cost of Injuries

• Difficult to fully understand costs associated with injuries related to patient handling due to lack of data reported

• Direct and indirect costs

  • In Massachusetts

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<tr>
<td>Average cost/injury</td>
<td>$14,710</td>
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<tr>
<td>Median number lost work days/injury</td>
<td>13 days</td>
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<td>Total lost work time</td>
<td>21,485 days</td>
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• Cost associated with hiring and training replacement staff (MADPH, 2014)
Obesity Epidemic

• More than 1/3 U.S. adults are obese (CDC, 2016)
Medically Complex Patients

Chart 10: Percent of Medicare Discharges Involving Intensive Care, FY 2000–2011

Aging Work Force

**Year Labor Force Distribution Change**

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<td>55+</td>
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(BLS, 2016)
Legislation

- Currently 11 states have enacted laws or rules/regulations (ANA, 2016)
Effectively Reducing Injuries

• Strong evidence that interventions including body mechanics and transfer training classes have no impact on working practices or injury rates (Hignett 2003)

• Evidence that use of lifting devices minimizes risk
  • Require some patient repositioning
  • Place different forces on the caregiver
Effectively Reducing Injuries

FORETHOUGHT

LIFT EQUIPMENT

BODY MECHANICS

(OSHA, 2016)
Safe Patient Handling at Beth Israel Deaconess Medical Center
Beth Israel Deaconess Medical Center

• Academic medical center in Boston, MA
• Level 1 Trauma Center
• 672 licensed beds
  • 463 med/surg beds
  • 77 critical care beds
  • 60 OB/GYN beds

• 12,000 employees
  • 8,400 employees with patient contact
The Origin of SPH at BIDMC

• 2006: Rise in patient handling injuries led to formation of a group to look at:
  • SPH options
  • Analyze data about employee injuries

• 2007: Vendor selected after intensive evaluation process

• 2008: Pilot program on one med/surg unit
  • 6 ceiling lifts installed over 8 inpatient beds
  • 3 portable lifts available on the unit
## Pilot Program

### Workers Compensation Claims Data

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<td>Days of work lost</td>
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<td>Days of modified duty</td>
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<td>Cost of claims</td>
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<td>$11,260</td>
<td>$14,075</td>
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* Pilot Program
Unit Renovation

• Different med/surg unit was renovated in July 2008

• Chief Nursing Officer championed SPH
  • All future renovations should include ceiling lifts

• Lifts installed over 100% of patient beds
  • 16 ceiling lifts over 24 patient beds
Improving Buy-In: Involving Front Line Staff

• Organized and hosted an Employee Equipment Fair

• July 2009: trial in ICU to compare ceiling lifts to ErgoRN
  • 100% of surveys indicated that ceiling lifts:
    • Make it easier to mobilize patients
    • Are easy to use
    • Help to prevent staff injuries
    • Require fewer staff to reposition patients

• Decision was made to install ceiling lifts over 100% of ICU beds once funding available
ICU Installations

• Capital funding for safe patient handling approved every year since FY-10
  • Support from
    • Chief Nursing Officer
    • Associate Chief Nurse of Quality and Safety

• Installed ceiling lifts on one ICU at a time
  • Dec 2009 and April 2011

• 9 ICUs, 77 critical care beds
Hospital Wide Installations

- June 2011: Installs began on med/surg units
- Units evaluated based on
  - Patient population
  - Number of employee injuries
  - Cost of employee injuries
  - Culture of the unit/likelihood of acceptance
Where the Program is Now: Ceiling Lifts

• **615 inpatient beds / bays**
  • 99.3% of med/surg and ICU beds
  • **Partial coverage in:**
    • Radiology areas
    • Emergency Department
    • Bone Density
    • PACU
    • Autopsy
Where the Program is Now: Portable Lifts

- Golvo® lift (dependent mobile lift)
  - All inpatient units
  - Radiology
  - Ambulatory clinic
Where the Program is Now: Portable Lifts

• Sabina® lift (sit to stand device)
  • Available on 4 inpatient units
  • Available in 3 ambulatory clinics
Where the Program is Now: Portable Lifts

- Stedy® lift (manual standing aid)
  - Available in the PACU
Where the Program is Now: Portable Lifts

- LiftMate™ (low high patient lift)
  - Available in 4 radiology areas
Where the Program is Now: Other Equipment

- HoverJack® (air-assisted lifting device)
- 4 are available for patient falls
Where the Program is Now: Other Equipment

• HoverMatt® (air-assisted transfer device)
  • Reusable and disposable used in the OR
  • Reusable used on Bariatric Surgery unit and Labor & Delivery unit
  • Additional rentals available
Where the Program is Now:
Other Equipment

- Rollboard
  - Available in the OR and in Radiology
Where the Program is Now:
Other Equipment

• Stretcher chairs
  • Available in all ICUs, ortho/trauma unit and for rental
Training

- Training occurred after every installation of ceiling lifts or any time portable equipment was purchased

- Initial training done by vendor or SPH team

- Employees signed off on skill sheets
SPH Program Infrastructure

• SPH Policies

• SPH Steering Committee

• SPH Team

• Champions and Lead Champions
SPH Policies

• Ceiling Lift and Golvo Lift Policies
  • “Safe patient handling equipment and/or other patient handling aids will be used, where available, to limit the manual lifting and handling of patients to less than or equal to thirty-five pounds of force, in accordance with NIOSH guidelines for health care workers, except in the case of a medical emergency or other life threatening situation.”

• Patient Rights Policy
  • “Be considerate and respectful of other patients and medical center personnel. Your rights may be restricted if you are not respecting others' rights or putting at risk the health and/or safety of other patients and medical center personnel.”
SPH Steering Committee

• Established 2009

• Purpose
  • Oversight of the SPH program
  • Provide updates on SPH program and installations
  • Problem-solve issues

• Meets quarterly

• Comprised of
  
  o SPH Clinical Coordinator
  o Inpatient Rehab Manager
  o Associate Chief of Nurses
  o Director of Employee Occupational Health Services
  o Clinical Engineering

  o Facilities
  o Radiology
  o Contracting
  o Linen Services
  o Infection Control
  o Wound Care
SPH Team

• Established March 2015
• Purpose
  • Separate SPH from PT
  • Gain insight into front-line issues
  • Create hospital-wide culture change
• Meets quarterly
• Comprised of
  • SPH Clinical Coordinator
  • Two inpatient physical therapists
  • Two nurses / unit-based educators
• Responds to email inquiries and issues regularly
Annual Goals

• As the program has grown, there was a need to focus attention of the SPH team
• Identified set written goals
• Assess these goals at quarterly SPH team meetings
• Example of goals
  • Root cause employee injuries
  • Create a better infrastructure for SPH
  • Install SPH equipment throughout Radiology and PACU
  • Create unique bi annual refreshers
Champions and Lead Champions

• Unit-based employees who attend a 4 hour off-site training offered by the vendor

• Chosen by unit managers who are given selection criteria
  • Engaged with SPH
  • Outgoing
  • Resourceful
  • Proactive
  • Seen as leaders
Other Components of SPH Program

• Maintaining Equipment

• Sling Management

• Laundering Slings

• Monitoring Employee Injuries
Maintaining Equipment

• Initially all preventative maintenance and lift servicing was contracted out

• March 2012: Clinical Engineering department took over servicing lift equipment
  • Takes service calls 7 days/week

• April 2013: Clinical Engineering took over all preventative maintenance (PM)
  • Monthly schedule of lifts that require PM
  • Challenging to complete PM in a timely manner given high census
Sling Management

• Initially used disposable slings

• July 2010: Switched to reusable slings
  • Staff resistance due to the size of the RepoSheet®
  • Significant loss of slings after switching to reusable
    • Slings being thrown out

• Budget for 10-20% replacement annually
Laundering Slings

• Slings are stocked on each unit daily

• Par levels have been established for each type of sling on each unit

• Difficulty with sling laundering
  • All slings look similar
  • Low frequency items
  • Bariatric slings
  • Walking slings
  • Shortages
Monitoring Employee Injuries

• Receive monthly report of patient handling injuries from Employee Occupational Health Services (EOHS)
  • Minimal information available
  • EOHS system limits report to 85 characters

• Try to determine if injury could have been prevented
  • Follow up with managers for additional information

• Partnering with EOHS to root-cause injuries in the ED
Hospital-Wide Patient Handling Injuries Over Time
Achieving Culture Change
Creating Culture Change

• Changing culture for SPH takes time and continuous attention for sustainability (Stevens, 2013)

• Solutions for controlling risk need to incorporate
  • Engineering
  • Administrative
  • Behavioral controls
SPH Champion Program

• Unit-based peer leaders are a major component of sustainability (Stevens, 2013)
SPH Champion Program

• As a SPH Champion, you should
  • Be proficient in the use of SPH equipment and techniques
  • Act as unit expert and resource on patient care ergonomics, equipment use, and SPH techniques
  • Know where SPH equipment is located on your unit
  • Problem solve patient handling issues
  • Motivate/coach peers
  • Participate in bi-annual SPH refreshers
  • Know how to contact the SPH Team if you need help answering a question
SPH Champion Program

• As a SPH Lead Champion, you should
  • Perform all listed duties of SPH Champions
  • Attend bi-monthly Lead Champion meeting
  • Notify SPH Clinical Coordinator when patient handling problems/incidents arise.
  • Identify competency needs and provide refresher training for unit staff on use of equipment
SPH Champion Program

• Lead Champion Meeting
  • Held bi-monthly for 45 minutes
  • Led by two members of the SPH Team
• Goals
  • Discuss ideas
  • Disseminate new information
  • Problem solve issues
  • Develop programming
SPH Portal

• Part of facility intranet

• SPH has access to edit at any time

• Post recent news and pictures

• Practical information
SPH Portal

- How to contact SPH team
- Equipment information
- Lists of champions
- Laundry information
- Monthly tips
- Patient education
- Policies and algorithms
Biannual Refreshers

• Staff require training every six months due to a drop off in usage of SPH equipment and techniques (Nelson, 2006)

• Goal to engage staff to think about SPH
Biannual Refreshers

• Active
  • Practicing skills
  • Sample weight
  • Jeopardy
  • Fastest lift time

• Passive
  • SPH story
  • Survey
  • Peer observation and reward
Monthly Tips

• Includes
  • Injury Report
  • Quote
  • Monthly Topic

• Topics
  • Troubleshooting
  • Proper use
  • Reminders
  • Recent issues

• Ask for ideas at lead champion meetings
Sample Monthly Tip

Monthly Injury Report

- There were 3 patient handling injuries for the month of January.
  - Total cost of these injuries was $11,098.
- Thank you to those of you who are true champions of safe patient handling equipment and techniques to keep yourself and your patients safe.

Good News from Patient Care Staff

Any time you have feedback about safe patient handling, we want to hear it!

Here is some positive feedback we received from Lisa Demanche, RN, who recently attended champion training.

‘I was definitely a skeptic and one to complain about how long it takes to use the lifts. Well it turns out I was using it wrong and clearly did not know how to use them effectively because I had not received this training before. The instructor was able to answer all of my questions and show me that all of the arguments that I had for not using the lifts, were totally invalid!’

How Much Weight Am I Boosting?

Still need to make a New Year’s resolution? How about resolving to stop boosting patients to help protect yourself and your co-workers from injury?

Evidence shows that manually lifting more than 35lbs even with good body mechanics causes microfractures in your vertebrae which puts you at high risk for injury with repetitive trauma.

BIDMC policy: Safe patient handling equipment and/or other patient handling aids will be used, where available, to limit the manual lifting and handling of patients to less than or equal to thirty-five pounds of force, in accordance with NIOSH guidelines for health care workers, except in the
Sample Monthly Tip

Using the Repositioning Sheet to Roll and Place a Clean One

1. Use repositioning sheet to boost patient towards the head of the bed and as far to one side of the bed as possible. Place a clean repositioning sheet and chucks on the bed, under the repositioning sheet you are using, while the patient is raised for boosting.

2. Attach all straps from one side of the repositioning sheet onto the sling bar using the loops that are closest to the repositioning sheet.

3. For patients of size who are in a double lift room: It is helpful to place a multi-strap under the leg and connect to the other lift bar. **If you are not in a double lift room, skip this step.**
myPATH

• Goal to reach all patient care staff with access to SPH equipment

• Objectives
  • Demonstrate benefits of SPH
  • Introduce equipment available
  • Educate on when to use equipment

• Content was developed to both introduce and annually review the SPH program
myPATH

• myPATH is a hospital wide online Performance and Training Hub

• Approval
  • Learning Council

• Programming
  • Senior Learning Specialist
  • Software

• Upload to server and users
myPATH

- myPATH content includes
  - Importance of SPH
  - Best practice with equipment
  - Equipment available in the hospital
  - Weight limits for lifts and slings
  - Methods to obtain regular and bariatric RepoSheets® and slings
  - Purpose of each sling
  - Methods to lift a patient from the floor
  - Provide patient privacy while using the lifts
  - Multiple choice quiz at end of session
myPATH

• Other utilization of myPATH
  • Observation Checklists
  • Instructor Led Training
Culture Change

• PTs perception of SPH equipment
  • Injuries can be prevented with correct lifting techniques
• Quality of physical therapy is diminished
  • Reduced active patient participation
  • Reduced ability of therapist to provide training
  • Reduced intervention time
  • Negative patient perceptions
Safe Patient Handling for Rehabilitation
SPH Equipment in Rehabilitation

• SPH supported by APTA, Veteran’s Health Administration and Rehabilitation Nursing Association (Waters, 2010)

• Improved outcomes with SPH
  • Arnold, 2011
  • Nelson, 2008

• No difference between outcomes
  • Campo, 2013
  • Darragh, 2013
  • Darragh, 2014
RepoSheet®

- Explanation
  - Lift sheet
  - Bed sheet placed under patient
  - Straps attach to sling bar of an overhead lift
Indications & Considerations

• Indications
  • Any patient who is not independent with bed mobility
    • Roll
    • Boost
    • Transfer
  • Hygiene
  • Patients of size
  • Reduces shear forces
  • Falls to floor
  • Placing a patient prone

• Considerations
  • Patient weight <1,100 lbs
Examination & Treatment

• Examination
  • Integumentary examination
  • Auscultation of breath sounds

• Treatment
  • Assisted rolling
  • Positioning in bed
  • Transfer to stretcher/shuttle chair
  • CPT

• Progression of treatment
  • Decreased angle of assistance
  • Progress to independent rolling
MultiStraps™

• Explanation
  • Lift aide
  • Assisting with ROM and therex
  • Strap attached to sling bar of an overhead or portable lift
Indications & Considerations

• Indications
  • Strength <3/5
  • Stretching
  • Therex
  • Other uses
    • Performing ADLs
    • Wound care
    • Placing a patient on a bedpan
    • Rolling

• Considerations
  • Skin breakdown
  • ROM restrictions
# Lifting and Holding Limits for Limbs

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<thead>
<tr>
<th>Patient Weight (lbs)</th>
<th>Limb</th>
<th>Limb Weight (lbs)</th>
<th>Lift</th>
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<tr>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td>Arm</td>
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Waters, 2009
Examination & Treatment

ROM

• Hip abduction
• Hip flexion
• Knee flexion
• Knee extension
• Elbow extension
• Shoulder abduction

Strength

• Gravity eliminated
  • Hip abduction/adduction
  • Elbow flexion/extension
  • Shoulder abduction/adduction
  • Shoulder horizontal abduction/adduction (sitting)

• Against gravity
  • Short arc quads
  • Hip flexion (modified heel slide)
High Back Sling

• Explanation
  • Whole body sling
  • Sling places patient in seated position
  • Attached to sling bar of an overhead or portable lift
Indications & Considerations

• Indications
  • Bed mobility requiring significant manual assistance
  • Decreased postural control
  • Inability to stand step transfer

• Considerations
  • Hemodynamic stability
  • Respiratory status
  • Patient weight < 1100lbs
  • Skin breakdown
  • Sling discomfort
Examination & Treatment

• Examination
  • Postural control
  • Dix Hallpike test

• Treatment
  • Postural control
  • Epley maneuver

• Progression of treatment
  • Decreased assistance with edge of bed balance from lift
  • Supported reaching activities
  • Supported therex
  • Supported performance of ADLs
• Explanation
  • Sit-to-stand device
  • Supported weight-bearing through the lower extremities

• Indications
  • Significant assistance required for sit to stand transfers
  • Significant assistance required for static or dynamic standing balance
Considerations

- Patient weight < 440 lbs
- Lower extremity injury
- Level of seated postural control
- Level of arousal/participation
- Hemodynamic stability
- Skin Integrity
- Bracing
Examination & Treatment

• Examination
  • Standing tolerance
  • Orthostatic vital signs
  • LE strength

• Treatment
  • Pre-gait activities
  • Standing tolerance
  • ADLs
  • Sit to stand transfer
  • Therex
    • Mini-squats
Evidence

• Effects of sit-to-stand devices
  • Atypical movement patterns (Burnfield, 2013; Ruszala, 2005)
  • Lower overall muscle activation (Burnfield, 2013; Ruszala, 2005)
  • Preferable to incorrectly performed manual transfers (Ruszala, 2005)
  • Potential for increasing muscle strength and improving joint flexibility (Boyne, 2011; Burnfield, 2012)
Walking Slings

LiftPants™

MasterVest™
Walking Slings

• Explanation
  • Slings that allow for increased patient support in standing
  • Can allow for body weight support (BWS) training

• Indications
  • LE weakness
  • Impaired gait mechanics
  • Balance impairments
  • WB restrictions
  • Patients of size
Walking Slings

• Considerations
  • Skin integrity
  • Hemodynamic stability
  • Level of arousal/participation
  • Anatomy
  • Pregnancy

• Examination
  • Static and dynamic standing balance
  • Gait
Treatment

• Standing tolerance
• Endurance training
• Static/dynamic standing balance
• Gait training
  • Body weight support (BWS)
  • WB status
  • With or without an AD
• ADL training
Evidence

• BWS has shown positive effect in patient populations:
  • Stroke
  • Spinal cord injury
  • Parkinson’s disease
  • Cerebral palsy

• Over ground vs treadmill training for BWS
Challenges

• Met with unexpected resistance
• Changing rehab culture
• A few recent injuries
• Many new graduates
  • Taught in school to perform maxA transfers
  • Not introduced during clinical experience
Future Goals at BIDMC
Future Goals at BIDMC

• Expand SPH program to all hospital areas
  • Emergency Department
  • Procedural areas
  • Ambulatory Care
  • Off-sites
• Improve accessibility of slings
• Improve diversity of equipment
• Strengthen SPH policy
• Mandatory retraining
• And ultimately...
Achieve Culture Change!

• It takes a long time to achieve culture change

• Advocate for yourselves and for your patients

• Be persistent
Questions
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