HOW TO DESCRIBE US

OHIOHEALTH IS A NATIONALLY recognized, not-for-profit, charitable, healthcare organization with Methodist roots. Based in Columbus, Ohio, OhioHealth is currently recognized as one of the top five large health systems in America by Truven Health Analytics and is also recognized by FORTUNE Magazine as one of the “100 Best Companies to Work For.” Serving its communities since 1891, it is a family of 28,000 associates, physicians and volunteers, and a network of 11 hospitals, 50+ ambulatory sites, hospice, home-health, medical equipment and other health services spanning a 40-county area.
WE are a faith-based, not-for-profit healthcare system.

- 28,000+ STRONG
- 21,000 ASSOCIATES
- 3,600 PHYSICIANS
- 350+ RESIDENTS & FELLOWS
- 3,500 VOLUNTEERS

- 2.5m OUTPATIENT VISITS
- 496,805 ED VISITS
- 158,317 ADMISSIONS & OBSERVATIONS
- 103,012 SURGERIES
- 600+ CLINICAL TRIALS

Represents Fiscal Year 2015 Data
Objectives

1. Identify risk factors for Patient Handling Injuries.
2. Identify strategies and equipment for safe patient handling.
3. Discuss evidence that supports recommendations for safe patient handling.
What are Ergonomic Risk Factors for Patient Handling Injuries?

- Force
- Duration of Exposure
- Posture
- Repetition

(Ergonomics) (Fragala et al., 2016)
Work-Related Musculoskeletal Disorders (WMSDs)

- Injuries to muscles, nerves, tendons, joints, cartilage and intervertebral discs
- Work environment contributes to the condition
- Condition made worse or persists due to work condition
- WMSDs are not slips, trips or falls

Work-Related Musculoskeletal Disorders (WMSDs)

- Neck - cervical strain
- Shoulder - rotator cuff strain
- Elbow - epicondylitis
- Wrist - carpal tunnel syndrome
- Hand/thumb - DeQuervains
- Back - lumbar strain

- 112 US facilities reported 10,680 OSHA recordable injuries
- 4,674 injuries from patient handling and movement
- Rate of patient handling injuries 11.3 per 10,000 worker months
- Patient handling injuries highest among nurse assistants and nurses
- Most frequent injury task were positioning/repositioning in bed followed by lifting/transferring to bed or chair

(Gomaa et al., 2015)
Injury Statistics

• Healthcare workers are one of the most at risk occupations for musculoskeletal injuries (BLS, 2013)

• Patient handling tasks - boosts/turns/repositions are leading causes of injury (BLS, 2013)

• 2013 Bureau of Labor and Statistics – the rate of musculoskeletal disorders for health care workers was 56% higher then the rate for all private industries (BLS, 2013)

• More than 1/3 of back injuries in nurses are associated with manual patient handling (ANA website, Nursing World, July 2008)
Epidemiology

- Evidence of musculoskeletal disorder beginning when a future healthcare provider is in school and aggravated in 1st year of practice (Smith & Leggatt, 2004)

- Hospital employees with direct patient contact are at a high risk of injury
  - OTs and PTs are among these employees
  - Others include: nurses, nurse’s aides, and radiology technicians (Pompeii, et al., 2009)
Contributing Factors to Injury

- Health care is the only industry that considers 100 pounds to be a ‘light’ weight
- Other professions use assistive equipment when moving heavy items
- On average, nurses and assistants lift 1.8 tons per shift (ANA, n.d.)
- Nursing assistants had the 2nd highest and RNs had the 6th highest number of musculoskeletal disorders in the U.S. (BLS, 2014)


Oh, My Aching Back!

Back Pain Incidence in Nursing:

- 8 out of 10 nurses work despite experiencing musculoskeletal pain (ANA, 2013)
- 62% of nurses report concern regarding developing a disabling musculoskeletal injury (ANA, 2013)
- 56% of nurses report musculoskeletal pain is made worse by their job (ANA, 2013)
- Nursing assistants and RNs experience the highest rate of non-fatal occupational injuries and illnesses of ANY industry sector (including manufacturing and construction) (BLS, 2014)

Safe Patient Handling Behaviors in Critical Care Nurses

- Patient handling is a major risk factor for musculoskeletal injury
- Cross-sectional study of 361 critical care nurses
- More than 50% of participants had no SPHM technology
- 74% reported they manually performed patient lifts/transfers/repositions
- Study conclusions: safety of work behaviors in critical care nurses is shaped by organizational safety culture and psychosocial work environment

(Lee et al., 2010)
Contributing Factors to Injury: Persons of Size

- 2014- 67%-80% of people in the US were morbidly obese, obese or overweight (Flegal et al., 2014)
- Overweight: Body mass index (BMI) of 25.0 to 29.9
- Obesity: BMI of 30.0 to 39
- Morbid Obesity: BMI 40 or higher
Prevalence of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2014

† Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.

*Sample size <50 or the relative standard error (dividing the standard error by the prevalence) ≥ 30%.
Development of Low Back Disorders (LBD)

- Biomechanical Forces
- Microfractures
- Scar Tissue
- Nutrient Deficiency
- Disc Degeneration
- Decreased Tolerance/Capacity

(Chaffin and Anderson, 1984)
Vertebral Structures

• Vertebral body

• Intervertebral disc
  – Nucleus pulposus
  – Annulus fibrosis

• Ligaments

• Joints
Examples of Disc Problems

- Normal Disc
- Degenerated Disc
- Bulging Disc
- Herniated Disc
- Thinning Disc
- Disc Degeneration with Osteophyte Formation
Types of Force

Compression

Shear

(Marras, 2012)
Spine Force Limits

Compression
3400-6400 N Limit

Anterior/Posterior (A/P) Shear
1000 N Limit

Lateral Shear
1000 N Limit

(Marras, 2012)
NIOSH Equation

- Formulated in 1981
  - Revised in 1994
  - Industrial workers
  - Not applicable to patient care
NIOSH (National Institute of Occupational Safety and Health) Recommendations for Safe Patient Handling

- Maximum recommended weight limit set for patient handling conditions
  - The weight being lifted can be estimated
  - When patient is cooperative
  - The lift is smooth and slow

- Maximum recommended limits set for patient push/pull activity

- Proper body mechanics alone **will not** prevent patient handling injury (Hignett, 2003)

- **IT IS NOT SAFE** TO MANUALLY MOVE PATIENTS

(Waters, 2007)
SPHM and its Impact on Retention in the Nursing Profession

- The nation is facing an impending shortage of nurses, which is expected to peak by 2020
- Average age of nurses in the US is 46
- We must improve our ergonomic environment to accommodate older nurses (Buerhaus, 2004)
Musculoskeletal Injuries From Patient Handling Tasks By Hospital Employees

- Purpose of study to investigate rates of WMSDs prior to implementing a minimal lift policy

- One third of all WMSDs (n=876) over an 7 year period were from patient handling tasks

- 83% of injuries were sustained by nurses, nurse aides, and radiology technicians

- 40% of injuries may have been prevented by use of mechanical lifting equipment

(Pompeii et al., 2009)
Industry vs. Healthcare: How do we compare?

(Kelly, 2015)
What is Safe Patient Handling?

Manual Patient Handling

- The transporting or supporting of a patient by hand or bodily force, including pushing, pulling, carrying, holding, and supporting of the patient or a body part. (Nelson & Baptiste, 2006)

Safe Patient Handling

- Evidence-based approach to reducing risk to caregivers. Includes risk assessment, use of equipment, patient assessment, algorithms, peer safety leaders, and after-action reviews. (Nelson et al., 2009)
Why SPHM?

Potential Patient Benefits:

- Improved quality of care
- Improved mobility
- Reduced risk of falls
- Reduced risk of pressure ulcers
- Increased satisfaction

(The Facility Guidelines Institute, 2012)
Why SPHM?

Potential Healthcare Worker Benefits:

- Improves the quality of work life for healthcare staff by decreasing the risk of musculoskeletal injury
- Reduces injury rates among healthcare staff
- Retain healthcare staff at the bedside
- Decrease workers’ compensation costs

(The Facility Guidelines Institute, 2012)
LEADERSHIP

Safe Patient Handling

Culture of Safety!

Prevention of Pressure Injury

Patient Early Mobility

LEADERSHIP

LEADERSHIP
Evidence Based Strategies for a Comprehensive SPHM Program

1. Ergonomic Assessment Protocol
2. Patient Handling Assessment Criteria and Decision Algorithms
3. Peer Leaders
4. State-of-the-art Equipment
5. After Action Reviews
6. No Lift Policy

(Nelson, et al., 2006)
ANA Interprofessional Standards:

https://www.youtube.com/watch?v=gk9kiM4-h5k
Interprofessional Standards of SPHM

1. Establish a Culture of Safety
2. Implement and Sustain a Safe Patient Handling and Mobility (SPHM) Program
3. Incorporate Ergonomic Design Principles to Provide a Safe Environment of Care
4. Select, Install, and Maintain SPHM Technology
5. Establish a System for Education, Training and Maintaining Competence

(ANA, 2013)
Interprofessional Standards of SPHM

6. Integrate Patient-Centered SPHM Assessment, Plan of Care, and Use of SPHM Technology
7. Include SPHM in Reasonable Accommodation and Post-Injury Return to Work
8. Establish a Comprehensive Evaluation System

(ANA, 2013)
A Multifaceted Approach for Safe Patient Handling

System SPHM

Administrative Controls:
Leadership Support, Budget, Campus Representative, Policy

Engineering Controls:
Equipment, Maintenance, and Storage

Behavioral Controls:
Education, Peer Coaching, White Board Communication
Patient Handling Assessment

- Factors affecting patient handling
  - Level of assistance
  - Weight bearing capacity
  - BMI
  - Patient cooperation
  - Patient’s ability to assist

Patient Handling Algorithms

- Formulated by the VA
  - Standardize tasks

- Step by step decision map

- Help determine technology, equipment

- Should be used in conjunction with clinical reasoning

(www.patientsafetycenter.com)
This is not a one person task: DO NOT PULL FROM HEAD OF BED.

When pulling a patient up in bed, the bed should be flat or in a Trendelenburg position (when tolerated) to aid in gravity, with the side rail down.

For patients with Stage III or IV pressure ulcers, care should be taken to avoid shearing force.

The height of the bed should be appropriate for staff safety (at the elbows).

If the patient can assist when repositioning “up in bed,” ask the patient to flex the knees and push on the count of three.

During any patient handling task, if the caregiver is required to lift more than 35 lbs of a patient’s weight, then the patient should be considered to be fully dependent and assistive devices should be used.

(Waters, T. [2007]. When is it safe to manually lift a patient? American Journal of Nursing, 107[8], 53-59.)

Algorithm 4: Reposition in Bed: Side-to-Side, Up in Bed

Start Here

Can patient assist?

- Fully able
  - Caregiver assistance not needed; patient may/may not use a supine repositioning device.

- Partially able
  - Encourage patient to assist using a repositioning device (supine).

- No
  - Use ceiling lift with supine sling or floor-based lift and 2 or more caregivers.

< 200 Pounds: Use a friction-reducing device and 2-3 caregivers.

> 200 Pounds: Use a friction-reducing device and at least 3 caregivers.
Essential Task Elements

- Maintain the patient’s body alignment & airway & support extremities during transfer to protect the patient from a positioning injury

Task Recommendations

- General Lateral Transfer
  - Use lateral transfer device that extends the length of the patient (e.g., slider board)
  - Destination surface should be slightly lower

Supine

- Anesthesiologist supports head and neck
  - Weight < 157 lb.
    - Use lateral transfer device & 4 caregivers
  - Weight > 157 lb.
    - Use mechanical lift with supine sling, mechanical lateral transfer device, or air-assisted lateral transfer device & 3 to 4 caregivers
Interprofessional Communication

Daily Activities:
Recommended Activity
4/23 2 person assist using floor based lift
Interprofessional SPHM Committees
SPHM Peer Coaching
Skills Days or Unit Based
SAFE MOBILITY AND RESPONSIBLE TRANSFER

AVOID INJURY! USE SMART MOVES WHEN LIFTING AND TRANSFERRING PATIENTS.
Ask about available SMART Moves equipment to protect yourself from strains, sprains and other injury.
Incentives

4 Orange
Lighten Your Load Pass
Punch Card

- Initiate the use of safe patient handling technology 10 times.
- The orange float pass is able to be used even if another float pass has already been used that day.
Patient Handling Technologies & SPHM Equipment
Patient Handling Devices and the Mobility Continuum

Dependent
Passive

Cueing & Training

Independent
Active

Dependent/Passive Lifts

Gait-Assist/Fall Arrest Systems

Crutches

No Device; No assist

Stand & Raising Aids

Walker

Cane

Friction Reducing Devices

(Arnold & Rich, 2012)
Ceiling Lifts

- Ceiling lifts require 50-75% less force to push or pull than floor based lifts (Rice et al., 2009)

- Torque required to move floor based lifts were 10x more than ceiling lifts (Rice et al., 2009)

- Forces to move ceiling lifts generally safe (Marras et al. 2009)
In-Bed Mobility
Out of Bed - Progressive Mobility
Stand Assist Devices

- Powered Stand Assist Device
- Non-Powered Stand Aid
- Gait Belt
Friction reducing device (FRD)

Lateral Transfer Board (Smooth Mover)

Reusable Air Assisted Lateral Transfer Device

Single Patient Air Assisted Lateral Transfer Device
Floor Based Lifts

- Dependent patients
- Usually 2 staff assist
- Can lift and weigh
- Variety of slings
- Foley insertion
You now know the risks...
What’s the Solution?
Thank you!

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