


## Safe Patient Handling an OSHA Update

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**December 10, 2015**

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## Our Speaker

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# Safe Patient Handling

Michigan Health Care Safety Association (MHCSA) Webinar  
December 10, 2015



Mark Knezovich, MS  
Region V – Enforcement Program

## Objectives

- \* Highlight the **prevalence of patient handling related injuries in healthcare** through review of 2013 BLS injury and illness data
- \* Describe OSHA's 6/25/15 **Inpatient Healthcare Settings Memo** in terms of evaluation of MSDs related to patient handling
- \* Discuss the **limitations of manual lifting** of patients
- \* Discuss the **maximum recommended weight limit** for manual lifting of patients
- \* Bring to your attention several **resource documents** related to safe patient handling

## Musculoskeletal Disorders (MSDs)

- \* **BLS Case Characteristics “Definition” of MSDs (2011 and forward) [BLS’]**
  - \* MSDs include cases where the nature of the injury or illness is pinched nerve; herniated disc; meniscus tear; sprains, strains, tears; hernia (traumatic and nontraumatic); pain, swelling, and numbness; carpal or tarsal tunnel syndrome; Raynaud's syndrome or phenomenon; musculoskeletal system and connective tissue diseases and disorders, when the event or exposure leading to the injury or illness is overexertion and bodily reaction, unspecified; overexertion involving outside sources; repetitive motion involving microtasks; other and multiple exertions or bodily reactions; and rubbed, abraded, or jarred by vibration.

## Musculoskeletal Disorders (MSDs)

- \* **Musculoskeletal Disorder (MSD)**
  - \* a disorder or condition occurring in the musculoskeletal system (bones, muscles, joints, nerves, tendons, ligaments, cartilage, spinal discs etc.)

## BLS Data - 2013

- \* **Inpatient healthcare settings continue to have some of the highest rates of injury and illnesses amongst all industries**
  - \* The total recordable case (TRC) incidence rate for private industry healthcare and social assistance was **4.7** per 100 full-time workers in 2013 [total recordable non-fatal occupational injuries and illnesses] [BLS<sup>2</sup>]
    - \* For hospitals – **6.4** per 100
    - \* For nursing & residential care facilities – **7.3** per 100
  - \* In 2013, the U.S. private industry hospital TRC was:
    - \* **1.9x** the total TRC incidence rate for all of private industry (3.3 per 100)
    - \* **1.7x** the total TRC incidence rate for all of construction (3.8 per 100)
    - \* **1.6x** the total TRC incidence rate for all of manufacturing (4.0 per 100)
    - \* **1.4x** the total TRC incidence rate for all of transportation and warehousing (4.7 per 100)

## BLS Data - 2013

- \* The Days Away, Restricted Work Activity, and Job Transfer (DART) rates for private industry was **1.7** per 100 full-time workers in 2013 [BLS<sup>2</sup>]:
  - \* DART rate average for private industry hospitals (NAICS 622) was **2.6** per 100 full-time workers (**1.5x** higher)
  - \* DART rate average for nursing & residential care facilities (NAICS 623) was **4.5** per 100 full-time workers (**2.7x** higher)
    - \* Construction, manufacturing, and healthcare industries were **2.2** per 100 full-time workers
    - \* Transportation & warehousing industry was **3.3** per 100 full-time workers

## BLS Data - 2013

- \* The MSD incidence rate for healthcare and social assistance was **46.9** per 10,000 full-time workers in 2013 [nonfatal occupational injuries and illnesses involving days away from work] [BLS<sup>3</sup>]
  - \* For hospitals – **69.0** per 10,000
  - \* For nursing & residential care facilities – **88.4** per 10,000
- \* In 2013, U.S. private industry hospitals MSD incidence rate was:
  - \* **2.1x** the total MSD incidence rate for all of private industry (33.5 per 10,000)
  - \* **1.7x** the total MSD incidence rate for all of construction (41.9 per 10,000)
  - \* **1.9x** the total MSD incidence rate for all of manufacturing (36.1 per 10,000)
  - \* **0.86x** the total MSD incidence rate for all of transportation & warehousing (80.3 per 10,000)

## BLS Data - 2013

- \* The percentage of total overexertion injuries (lifting and repetitive motion injuries) involving days away from work, amongst all private industry, experienced by the healthcare and social assistance industry was **21%** in 2013 [BLS<sup>4</sup>]
  - \* For all of manufacturing – **13.7%**
  - \* For all of transportation & warehousing – **10.5%**
  - \* For all of construction – **7.4%**
    - \* For just hospitals – **8.4%**
    - \* For just nursing & residential care facilities – **7%**

## What has OSHA been doing? (healthcare enforcement initiatives)

- \* National Emphasis Program – Nursing and Residential Care Facilities (CPL-03-00-106), FY 2012 – FY 2015
  - \* **MSDs related to patient or resident handling (MSDs)**
    - \* Workplace violence (WPV)
    - \* Bloodborne Pathogens (BBP)
    - \* Tuberculosis (TB)
    - \* Slips, Trips, and Falls (STFs)
- \* Over 1,100 inspections conducted
  - \* Ergonomics evaluated in approximately 600 inspections
  - \* Approximately 200 Ergonomic Hazard Alert Letters (EHALs) issued
  - \* Approximately 12 general duty clause violations issued [Section 5(a)(1)]

## What is OSHA currently doing? (healthcare enforcement initiatives)

- \* In June of 2015, OSHA established Inspection Guidance for Inpatient Healthcare Settings [OSHA<sup>5</sup>]
  - \* Replaced the NEP, expanding inspection guidance to all of healthcare [NAICS 622 (hospitals) and 623 (nursing and residential care facilities)].
  - \* Healthcare inspections (programmed and unprogrammed) to include the following focus hazards: **MSDs**, WPV, BBP, TB, and STFs.

## OSHA - Evaluation of MSD Hazards Relating to Patient Handling [OSHA<sup>5</sup>]

- \* **Standard Inspection activities**
  - \* Evaluate the facility's MSD incidence and severity rates
  - \* Evaluate the extent of the employer's efforts to address MSDs associated with patient handling
    - \* OSHA Forms 300, 300A, 301 review
    - \* Employee interviews
    - \* Management interviews
    - \* Walkaround observations
    - \* Program review
    - \* Facility Data (patient census, employee turnover rates)
    - \* Medical Access Order\* *If necessary*

## OSHA - Evaluation of MSD Hazards Relating to Patient Handling

- \* **Program Management**
  - \* Is a system in place for **hazard identification and analysis**?
  - \* Is a system in place to develop strategies to **address identified hazards**?
  - \* Is **responsibility and authority of administration** inherent in the system?
  - \* Are those in charge of implementing the program **knowledgeable/experienced with the risk factors and feasible solutions of abatement**?
  - \* Were **employees** involved in the development of the lifting, transferring, or repositioning procedures?
  - \* Is a system in place for **monitoring compliance with established policies and procedures**?
  - \* Is a system in place for **following up on any noted program deficiencies**?
  - \* Is a system in place for **"management of change"**?

## OSHA - Evaluation of MSD Hazards Relating to Patient Handling

### \* Program Implementation

- \* Are there **patient functional status / mobility assessments** being performed and communicated to affected staff?
- \* Is there a **decision logic** available for the selection and use of lift, transfer, or repositioning devices?
- \* Are circumstances under which non-aided **manual lifting, transferring, or repositioning occurring reasonable**?
- \* Are there **sufficient numbers of lifting, transferring, or repositioning devices**?
- \* Are there **sufficient supplies of supplementary devices** (slings, batteries, charging stations)?
- \* Are **lifting, transferring, and positioning policies appropriate** to eliminate or significantly reduce exposure to the manual lifting, transferring, or repositioning hazards?

## OSHA - Evaluation of MSD Hazards Relating to Patient Handling

### \* Staff Training

- \* Have affected caregivers been trained in:
  - \* **the recognition of ergonomic hazards** (risk factors associated with manual lifting, transferring, or repositioning of patients)?
  - \* **the recognition of signs and symptoms associated with MSDs?** In the importance of early reporting?
  - \* the employer's **hazard abatement** process?
  - \* **Proper techniques / competencies** associated with the **implementation of control technologies**?

### \* Occupational Health Management

- \* Is there a process in place for the **early reporting & treatment of work-related MSDs**? Does the process include **restricted or accommodated work assignments**?

## OSHA - Evaluation of MSD Hazards Relating to Patient Handling

### \* Inspection Outcomes

- \* Determination that the employer's efforts to address MSD risk factors are appropriate. **Cease inspection activity in that area.**
- \* Determination that the employer's efforts to address MSD risk factors may be insufficient but the elements necessary to develop, issue, and sustain a general duty clause violation are not clear. **Ergonomic Hazard Alert Letter (EHAL).**
- \* Determination that the employer's efforts to address MSD risk factors are insufficient and the elements necessary to develop, issue, and sustain a general duty clause violation are clear. **Citation under Section 5(a)(1) of the Act.**

## OSHA's General Duty Clause

### \* Section 5(a)(1) – General Duty Clause

“Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.”

- 1) A workplace condition that constituted a hazard to employees (own
- 2) The hazard was causing or likely to cause death or serious physical harm
- 3) The employer or the employer's industry recognized that the related activity or condition was hazardous
- 4) Feasible means exists to eliminate or materially reduce the hazard

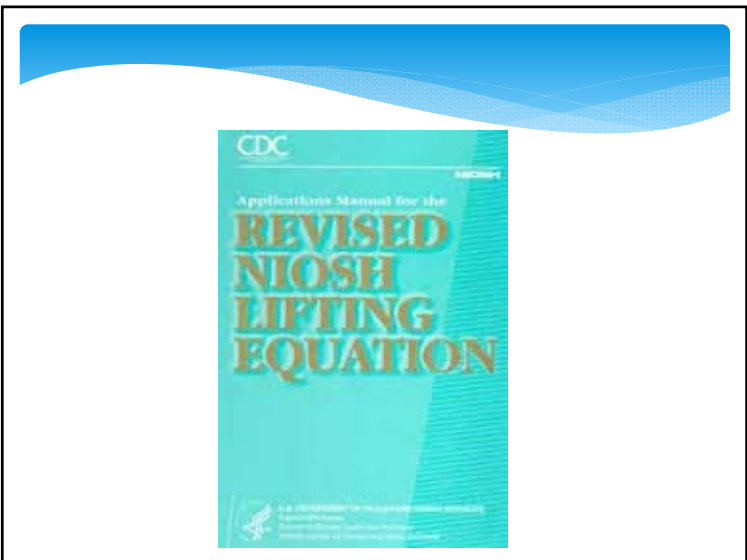


## Limitations – Manual Lifting of Patients

- \* **Research suggests that manual-lifting technique approaches are not safe [Waters<sup>6</sup>]**
  - \* “bear hug”
  - \* “hook and toss”
    - \* Many schools of nursing still train caregivers with an over-reliance on “proper body mechanics”
- \* **For nurses and other caregivers, MSDs are commonly caused by cumulative effect of repeated manual patient handling tasks, aka overexertion when handling excessive loads [Waters<sup>6</sup>]**
  - \* High-risk tasks: manually lifting, transferring, and repositioning patients
  - \* High levels of biomechanical stress: spine, shoulders, hands, and wrists

## Limitations – Manual Lifting of Patients

- \* **Many of these MSD injuries occurring during manual lifting, transferring, and repositioning of patients are preventable! [Waters<sup>6</sup>]**
  - \* Research has shown that mechanical lifting equipment, when incorporated into a Safe Patient Handling & Mobility (SPHM) Program, can significantly reduce MSD injuries among health care workers



## Maximum Recommended Weight Limit (RWL) for Manual Lifting of Patients

- \* Applications Manual for the Revised NIOSH Lifting Equation (1994) [NIOSH<sup>7</sup>]
  - \* Used to calculate a recommended weight limit for a given manual-lifting task so that nearly all healthy workers could perform that task over a substantial period without increasing their risk of developing low back pain.
  - \* Six multiplication factors (frequency, horizontal distance of load from body, vertical distance of load from the floor, vertical distance traveled by the object, asymmetry, and coupling) applied to a “load constant”
    - \* The load constant is **51 lbs** and is the maximum weight to be lifted under ideal conditions

## Maximum Recommended Weight Limit (RWL) for Manual Lifting of Patients

- \* The Revised NIOSH Lifting Equation was not originally intended to be used for estimating maximum recommended weight limits for tasks involving the lifting of humans
  - \* It does not include task factors that account for unpredictable conditions, such as unexpectedly heavy loads, slips, or falls [Waters<sup>6</sup>]
    - \* Patients can be unpredictable
    - \* Patient movements during a lift can create greater loads on the spine than caused by the slow and smooth lifting of a stable object

## Maximum Recommended Weight Limit (RWL) for Manual Lifting of Patients

- \* Despite the recommendations, the Revised NIOSH Lifting Equation can be used to calculate a maximum recommended weight limit for many patient handling tasks under the following conditions [Waters<sup>6</sup>]:
  - \* The patient can follow directions and is not combative
  - \* The amount of weight the patient handler(s) will be lifting can be estimated
  - \* The lifting is smooth and slow
  - \* The “geometry” of the lift are not subject to change

## Maximum Recommended Weight Limit (RWL) for Manual Lifting of Patients

- \* “For most patient-lifting tasks, the maximum recommended weight limit is **35 lbs.** – **but even less when the task is performed in less than ideal circumstances**, such as lifting with extended arms, lifting when near the floor, lifting when sitting or kneeling, lifting with the trunk twisted or the load off to the side of the body, lifting with one hand in a restricted space, or lifting in a shift lasting longer than eight hours.” [Waters<sup>6</sup>]
  - \* Implications: **Many of the manual patient lifting tasks health care workers perform would be unacceptable.** [Waters<sup>6</sup>]

### Example #1:

- \* A nurse is responsible for raising a patient's leg off the bed while preparing the leg for surgery
- \* The resident weighs 250 lbs
- \* A leg is approximately 16% of a patient's total body weight so lifting this patient's leg would likely exceed 35 lbs (approx. 40 lbs)

**Exceeds 35-lb weight limit**

**Solution:** Utilize a leg lift or limb positioner

### Example #2:

- \* Two (2) nurses are helping a patient stand from a chair
- \* The patient weighs 180 lbs
- \* The patient can assist partially, approximately 50% of his own weight
- \* 90 lbs shared between the two nurses, or 45 lbs per nurse

**Exceeds 35-lb weight limit**

**Solution:** Full-body lift or sit-to-stand device

### Example #3:

- \* Four (4) nurses are about to move a fully dependent patient from a bed to a wheelchair
- \* The resident weighs 200 lbs
- \* If an equal amount of weight is shared amongst the nurses, then each would need to lift 50 lbs

**Exceeds 35-lb weight limit**

**Solution:** Full-body lift

### OSHA's Guidelines for Nursing Homes [OSHA<sup>8</sup>]

- \* OSHA recommends that manual lifting of residents be minimized in all cases and eliminated where feasible





## NIOSH's Safe Lifting and Movement of Nursing Home Residents [NIOSH<sup>9</sup>]

- \* Numerous studies have shown that training caregivers how to use **proper body mechanics to lift residents is not an effective prevention measure** because lifting the weight of adult patients is intrinsically unsafe. [Nelson<sup>10</sup>]
- \* The **forward bending** required for many patient lifting and moving activities places the caregiver's spine in its most vulnerable position.
- \* Even under ideal conditions, the weight of any adult far **exceeds the lifting capacity of most caregivers**, 90% of whom are female.



## AOHP's Beyond Getting Started: A Resource Guide for Implementing a Safe Patient Handling Program in the Acute Care Setting [AOHP<sup>11</sup>]

- \* AOHP Position Statement on Patient Handling (2004)
  - \* "AOHP strongly supports the provision of a safe and healthy environment for the nurse / caregiver and patient. Back injuries and other musculoskeletal disorders related to patient handling are the leading cause of workplace disability for nurses and other direct patient care providers..."
  - \* "... In summary, AOHP believes that manual patient handling is unsafe for the caregiver and patient. Such handling is also directly responsible for disabling back injuries and musculoskeletal disorders in nurses and other direct care providers..."



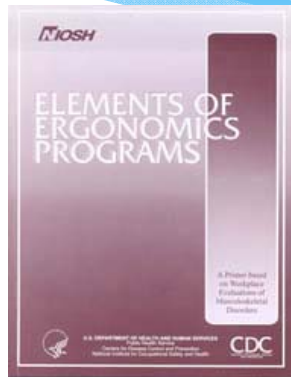
## AOHP's Beyond Getting Started: A Resource Guide for Implementing a Safe Patient Handling Program in the Acute Care Setting

- \* **Differences between Acute-Care and Long-Term Healthcare Settings**
  - \* Patients vs. residents
  - \* Varied mobility tasks vs. standardized mobility tasks
  - \* Short vs. extended stays
  - \* Variety in where "high-risk" tasks are located vs. constant "high-risk" tasks
  - \* Higher ratio of RNs to ancillary staff vs. higher ratio of ancillary staff to RNs
    - \* More complexity in implementing a SPH program in an acute care setting
    - \* **Basic steps for implementing a SPH program are the same, regardless of the setting**

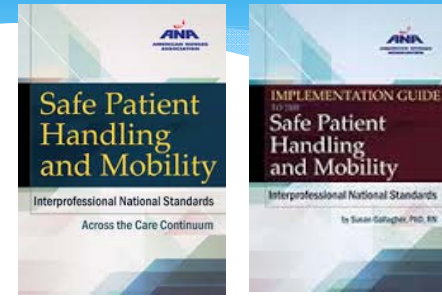
## AOHP's Beyond Getting Started: A Resource Guide for Implementing a Safe Patient Handling Program in the Acute Care Setting

- \* **Building a Foundation**
  - \* Management Leadership
  - \* Employee Participation – Team Formation
- \* **Getting Started**
  - \* Needs Assessment
  - \* Developing a Plan
- \* **Getting it Going and Keeping It Going**
  - \* Implementation
  - \* Evaluating Outcomes

## NIOSH's Elements of Ergonomics Programs [NIOSH<sup>12</sup>]



## American Nurses Association (ANA)'s Safe Patient Handling and Mobility Publications [ANA<sup>13,14</sup>]



- \* In order to establish a safe environment of care for nurses and patients, the American Nurses Association (ANA) supports actions and policies that result in the elimination of manual patient handling. - ANA position statement: 3/14/08 [ANA<sup>15</sup>]

## Algorithms for Safe Patient Handling and Movement [TVAREF<sup>16</sup>]

- \* The Patient Safety Center of Inquiry (United States Department of Veteran Affairs) & Tampa VA Research and Education Foundation, Inc. (TVAREF) are resources for safe patient handling processes and are available online at:
  - \* <http://www.tampavaref.org/safe-patient-handling.htm>
  - \* <http://www.visn8.va.gov/patientsafetycenter/safepthandling/>

## OSHA's Worker Safety in Hospitals – Safety and Health Topics [OSHA<sup>17</sup>]

- \* **Safe Patient Handling**
  - \* MSD Assessment
  - \* Management Support
  - \* Policy/Program Development
  - \* Facility & Patient Needs Assessment
  - \* Facilitating Change
  - \* Safe Patient Handling Equipment
  - \* Education & Training
  - \* Program Evaluation

## OSHA's Worker Safety in Hospitals – Safety and Health Topics

### \* MSD Assessment

- \* Self-assessment checklists (2014)
- \* OSHA roadmap for effective safety and health management systems in hospitals (2013)



## OSHA's Worker Safety in Hospitals – Safety and Health Topics

### \* Management Support

- \* AOHP resource guide for implementing a safe patient handling program (2014 rev.)
- \* OSHA Publication “Safe Patient Handling Programs: Effectiveness and Cost Savings” (2014)
- \* The Facility Guidelines Institute – Patient Handling and Movement Assessments: White Paper (2010) – Chapter 3



## OSHA's Worker Safety in Hospitals – Safety and Health Topics

### \* Policy / Program Development

- \* AOHP resource guide for implementing a safe patient handling program (2014 rev.)
- \* Patient Safety Center of Inquiry's (VA and DOD) Patient Care Ergonomics Resource Guide: Safe Patient Handling and Movement (2005 rev.)
- \* Minnesota Hospital Association (MHA) Toolkit for Hospital Staff – SAFE LIFT
- \* Safe Patient Handling Program Checklist (2014)



## OSHA's Worker Safety in Hospitals – Safety and Health Topics page

### \* Patient Needs Assessment

- \* ANA's Safe Patient and Mobility: Interprofessional National Standards (2013)
- \* The Patient Safety Center of Inquiry (United States Department of Veteran Affairs) & Tampa VA Research and Education Foundation, Inc. (TVAREF)'s – Patient Mobility Assessment and Algorithms for Patient Transfers (2008)



## OSHA's Worker Safety in Hospitals – Safety and Health Topics page

### \* Facilitating Change

- \* ANA's Safe Patient and Mobility: Interprofessional National Standards (2013)
- \* OSHA Publication "Safe Patient Handling : Busting the Myths" (2014)
- \* OSHA roadmap for effective safety and health management systems in hospitals (2013)
- \* The Joint Commissions reprint from Healthcare Executive: "The Power of Zero: Steps Toward High Reliability Healthcare" (2013)



## OSHA's Worker Safety in Hospitals – Safety and Health Topics page

### \* Safe Patient Handling Equipment

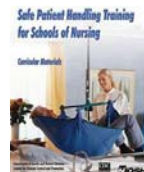
- \* OSHA e-tool: Hospital
- \* AOHP resource guide for implementing a safe patient handling program (2014 rev.)
- \* Patient Safety Center of Inquiry's (VA and DOD) Patient Care Ergonomics Resource Guide: Safe Patient Handling and Movement (2005 rev.)
- \* OSHA Publication "Guidelines for Nursing Homes, Ergonomics for the Prevention of Musculoskeletal Disorders" (2009 rev.)



## OSHA's Worker Safety in Hospitals – Safety and Health Topics page

### \* Education and Training

- \* NIOSH Publication "Safe Patient Handling Training for Schools of Nursing, Curricular Materials" (2009)
- \* Minnesota Hospital Association (MHA) Toolkit for Hospital Staff – SAFE LIFT



## OSHA's Worker Safety in Hospitals – Safety and Health Topics page

### \* Program Evaluation

- \* AOHP resource guide for implementing a safe patient handling program (2014 rev.)
- \* Patient Safety Center of Inquiry's (VA and DOD) Patient Care Ergonomics Resource Guide: Safe Patient Handling and Movement (2005 rev.) – Chapter 11
- \* OSHA Publication "Safe Patient Handling Programs: Learn from the Leaders" (2014)



## References

- \* Bureau of Labor Statistics (BLS)<sup>1</sup> website : <http://www.bls.gov/iif/oshdef.htm>
- \* BLS<sup>2</sup> – Table 1. *Incidence rates of nonfatal occupational injuries and illnesses by industry and case types, 2013.* <http://www.bls.gov/iif/oshwc/osh/os/ostb3958.pdf>
- \* BLS<sup>3</sup> – Table 1. *Number, incidence rate, median days away from work and relative standard errors of occupational injuries and illnesses involving days away from work by selected industries with musculoskeletal disorders in private industry for All United States, 2013.* (Available on request from BLS – Occupational Safety and Health Data)
- \* BLS<sup>4</sup> – Table R4. *Number of nonfatal occupational injuries and illnesses involving days away from work by industry and selected events or exposures leading to injury or illness, private industry, 2013.* <http://www.bls.gov/iif/oshwc/osh/case/ostb3985.pdf>
- \* Occupational Safety and Health Administration (OSHA)<sup>5</sup> - 6/25/15 Memorandum: "Inspection Guidance for Inpatient Healthcare Settings" [http://www.osha.gov/dep/enforcement/inpatient\\_insp\\_06252015.html](http://www.osha.gov/dep/enforcement/inpatient_insp_06252015.html)

## References

- \* Waters<sup>6</sup> - Waters, Thomas R. When Is it Safe to Manually Lift a Patient? – The Revised NIOSH Lifting Equation provides support for recommended weight limits. *American Journal of Nursing.* August 2007; 107(8): 53-58.
- \* National Institute for Occupational Safety and Health (NIOSH)<sup>7</sup> – Publication No. 94-110: Applications manual for the Revised NIOSH Lifting Equation (1994) <http://www.cdc.gov/niosh/docs/94-110/>
- \* OSHA<sup>8</sup> - Publication 3182 (2009) – Guidelines for Nursing Homes [https://www.osha.gov/ergonomics/guidelines/nursinghome/final\\_nh\\_guidelines.pdf](https://www.osha.gov/ergonomics/guidelines/nursinghome/final_nh_guidelines.pdf)
- \* NIOSH<sup>9</sup> - Publication No. 2006-117: Safe Lifting and Movement of Nursing Home Residents (2006) <http://www.cdc.gov/niosh/docs/2006-117/>
- \* Nelson A, Fragala G, Menzel N<sup>10</sup>. Myths and Facts about Back Injuries in Nursing. *American Journal of Nursing.* 2003; 103 (2): 32 – 40.
- \* Association of Occupational Health Professionals in Healthcare (AOHP)<sup>11</sup> – Beyond Getting Started: A Resource Guide for Implementing a Safe Patient Handling Program in the Acute Care Setting, 3<sup>rd</sup> Ed. (Rev. 2014) <http://www.aohp.org/aohp/TOOLSFORYOURWORK/PublicationsforYourPractice/BeyondGettingStarted.aspx>

## References

- \* NIOSH<sup>12</sup> – Publication No.97-117: Elements of Ergonomics Programs: A Primer Based on Workplace Evaluations of Musculoskeletal Disorders (1997) <http://www.cdc.gov/niosh/docs/97-117/>
- \* American Nurses Association (ANA)<sup>13</sup>– Safe Patient Handling and Mobility: Interprofessional National Standards. ANA/Nursesbooks.org (2013)
- \* ANA<sup>14</sup> – Implementation Guide to the Safe Patient Handling and Mobility Interprofessional National Standards. ANA/Nursesbooks.org (2013)
- \* ANA<sup>15</sup> website: <http://nursingworld.org/MainMenuCategories/Policy-Advocacy/Positions-and-Resolutions/ANAPositionStatements/Position-Statements-Alphabetically/Elimination-of-Manual-Patient-Handling-to-Prevent-Work-Related-Musculoskeletal-Disorders.html>
- \* Tampa VA Research and Education Foundation, Inc. (TVAREF)<sup>16</sup> website: <http://www.tampavaref.org/safe-patient-handling.htm>
- \* OSHA<sup>17</sup> website: <https://www.osha.gov/dsg/hospitals/index.html>