Reducing Injuries During Patient Transfer Among Nurses, Radiology Technicians and Care Givers

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ABSTRACT

Nursing is one of the highest risk occupations in the United States with respect to lifting and handling-related injuries. It is the profession most associated with work-related musculoskeletal disorders and back injuries. Injury data show that nearly 12 out of 100 nurses working in hospitals and 17.3 out of 100 nurses working in nursing homes report work-related musculoskeletal injuries, including back injuries, which is about double the rate for all other industries combined. According to a United States Bureau of Labor Statistics 2000 report, six of the top 10 professions at greatest risk for back injury are: registered nurses, nurses' aides, licensed practical nurses, radiology technicians and physical therapists. The rate of injury among workers in nursing care facilities is higher than in the trucking, logging or construction industries. Approximately 40,000 back-related illnesses are reported by nurses each year. Anywhere from 35 to 80 percent of nurses sustain back injuries during their career from lifting patients, and these injuries are the single largest cause of lost workdays among nurses. As the nursing workforce ages, back injuries may well become more common.

In 2000, the Veterans Health Administration (VHA) found that nurses were injured six times more frequently than any other single occupational group; back injuries represented 19.1 percent of all injuries; and another 25.5 percent, upper extremity injuries. Back injuries resulted in the most lost workdays. Greater than one-third of back injuries among nurses are attributed to the handling of patients and the frequency with which nurses are required to manually move patients.

Nurses lift, move and turn patients who may easily weigh 250 pounds or more on an hourly basis. Ironically, Nursing is one of the only professions where they consider 100 lbs to be ***light****.*

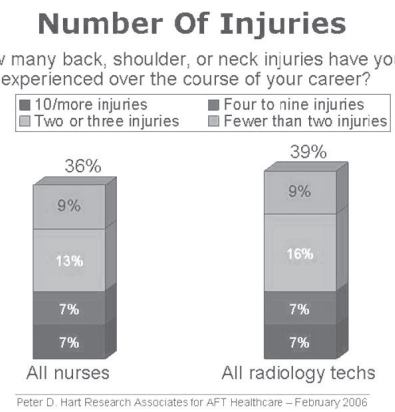
Most US Industries involved in extensive manual lifting follow the NIOSH lifting regulations to the letter by supplying lifting and handling equipment for any loads over 50 pounds or above shoulder height. The National Institute of Occupational Safety and Health (NIOSH) guideline for the maximum lifting load that anyone should routinely lift is 51 pounds. That 51-pound federal guideline applies to lifting of a stable object with handles. However, nurses must frequently lift or move patients while also cautiously handling their patients' intravenous (IV) or other tubing, casts, wound dressings, injured limbs, etc., which limits nurses' flexibility in their lifting movements and which places them at risk. Patients don't come equipped with "handles." Patient lifting and handling is significantly more difficult and more demanding than moving boxes around.

Some of the factors exacerbating the risk of work-related injuries for caregivers include those listed below. With these factors the more of these occurring at a given time, the greater the risk of injury.

- Heavy physical work
- Lifting and forceful movements
- Bending and twisting (awkward postures)
- Whole-body vibration
- Static and / or sustained work postures
- Repetition or Frequency of movement pattern

Additional risk for nurses comes from;

1. The increasing levels of obesity among the general population through the marketing by hospitals of weight loss treatments, resulting in previously relatively unseen numbers of bariatric surgery patients (who receive surgical treatment for morbid obesity).
2. The aging nurse workforce (more vulnerable to injury or repeat injury)
3. Staffing shortages with fewer staff to share in the lifting and turning of heavy patients.
4. Cumulative trauma both long term and short term related to nurses working long hours.
5. Stress due to organizational change (nurses working as temporary workers where they may be exposed to unfamiliar or completely unrecognized manual handling risks associated with unfamiliar patients or unfamiliar lifting equipment).
6. Nursing education has historically emphasized patient safety but has been lacking in emphasis on self-protection with patient safety during all patient handling and movement tasks.



An even higher proportion (42 percent) of radiology technicians has suffered an injury while working. Multiple injuries also are common among radiology technicians; 26 percent report that they have experienced more than one injury and, like nurses, 7 percent have experienced 10 or more injuries. One in five (22 percent) nurses and radiology technicians (20 percent) have lost work time due to injuries, and about half of both groups of nurses and radiology technicians have been forced to use vacation days or take unpaid leave because of injuries that they sustained on the job.

As with hospitals, Nursing homes provide a unique and complex situation whereby the home residents often require assistance to walk, bathe, or perform other normal daily activities. In some cases residents are totally dependent upon caregivers for mobility. Manual lifting and other tasks involving the repositioning of residents are associated with an increased risk of pain and injury to caregivers, particularly to the back and shoulders. These

tasks can entail high physical demands due to the large amount of weight involved, awkward postures that may result from leaning over a bed or working in a confined area, shifting of weight that may occur if a resident loses balance or strength while moving, and many other factors.

Organizational Changes

One of the first proactive measures that health care facilities should develop and implement is a health care worker back injury prevention plan to protect nurses and other caregivers, as well as patients, from injury. The plan would mandate the following:

- A systematic process in each facility for addressing ergonomics, recognizing occupational health and safety hazards and preventing injuries specific in each health care facility.

Each facility should have a written organization-wide safe lifting and handling plan containing: policy and procedures describing their safe patient handling and lifting philosophy and approach; procedures; equipment type, numbers and location; mechanism for addressing nurses' refusal to perform unsafe lifting and handling; and education and training programs conducted or utilized at their facility by qualified personnel.

Each facility should implement safe handling and lifting methods that are appropriate for their patient populations, size and scheduling needs.

- Needs assessment by facilities of patients' lift and transfer requirements and resulting handling, lift and equipment needs.

Each facility should develop needs assessments appropriate to the lifting and handling requirements of their patients, with the policy describing how the institution will manage the enforcement of policies and procedures.

- Specialized training of health care workers and lift team members by qualified personnel, with demonstration of proficiency in handling techniques and use of handling equipment.
- Protection of workers against disciplinary action for refusal to lift or handle patients due to concerns about patient and worker safety.

Solutions

Lifting Teams

Some hospitals have come to understand the risks their professionals undertake in these jobs and have established "lifting teams." In one example from Miami Valley Hospital, the patient lift team program consisted of four two-person teams who are "on call" to assist with lifting and repositioning immobile patients. Initially deployed on critical care and step-down units in the hospital (areas with a higher proportion of work-related injuries), the program was later expanded to the entire 800-bed facility.

Key elements of the program are described below:

- Patient lift teams: A set of four two-person teams work overlapping shifts and cover approximately 800 inpatient beds. Team members are physically fit adults who are full-time employees of the hospital.
- Periodic evaluation and training: Each team member must successfully complete an initial physiological fitness test and undergo an annual evaluation and competency review to make sure that they maintain their skills. Both the initial test and the annual review are conducted by the hospital's medical director of employee health. In addition, once every quarter an ergonomics expert observes the teams, offering training and advice as needed.
- Unit coverage: Teams are available during day shifts, when most nurse injuries occur. Teams initially covered the critical care and step-down units of the hospital, where many patients have significant mobility issues and thus need assistance (frequently leading to nurse injuries).
- Provider education about using the teams: The nursing staff is taught how and when to use the patient lift program effectively. Guidelines on how to access the team and schedule lifts are posted in all hospital units.
- Scheduling lifts and activating the team: When patient lift team employees arrive for work, team members begin scheduling lifts for the day, with first priority given to the medical–surgical units and critical care units that are the primary users of the service.

Results:

A pre- and post-implementation comparison found that the patient lift program significantly reduced injuries and increased productivity among the nursing staff; post-implementation surveys also show that the program is popular with both patients and nurses.

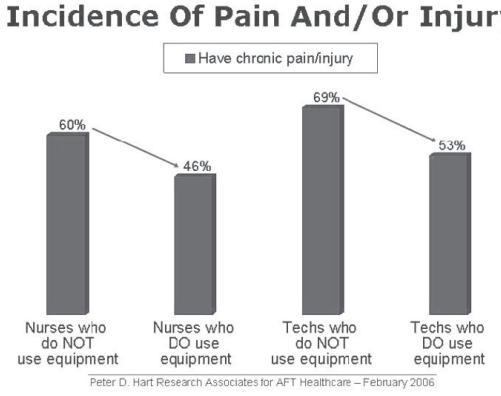
Reduced injuries: Back and shoulder injuries among nurses fell by 70 percent after introduction of the program. No injuries have occurred among nurses, aids, or team members when the lift team has been utilized.

- Enhanced productivity: Initially, the program freed up more than 800 hours of nursing staff time that was previously spent moving, lifting, or holding patients. In 2006, nearly 2,000 hours of nursing time were freed up.
- High nurse and patient satisfaction: Written testimonials from nurses, families, and patients suggest that both nurses and patients are highly satisfied with the program. Patients also report feeling "safe" when moved or assisted by the lift team.
- Program expansion: The success of the pilot program led to its expansion throughout the entire hospital.

Supportive Equipment

The use of patient-moving equipment appears to reduce the risk of injury and chronic pain, however, many professionals do not have access to such equipment, or do not use it when available. Based upon a 2006 study, mechanical equipment for use in lifting, moving, or repositioning patients is available to 64 percent of nurses, and fewer than half (46 percent) of radiology technicians; conversely, 33 percent of nurses and 53 percent of radiology technicians report that such equipment is not available in their hospital. In addition, even in hospitals where equipment is available, many hospital workers lift and move patients without mechanical assistance: 60 percent of technicians and just 37 percent of nurses in these hospitals say they generally use the equipment. Taking both factors into account, we find that just 24 percent of all nurses and 27 percent of all radiology technicians generally use equipment while moving patients.

The data from this study strongly suggest that more widespread availability and use of patient-moving equipment could help to reduce workplace injuries and chronic pain among hospital professionals. The majority (60 percent) of nurses who do not have access to or do not generally use equipment have experienced job-related chronic pain and/or injuries. However, that percentage falls to just 46 percent for nurses who have and use equipment. Similarly, 69 percent of radiology technicians who do not use equipment report chronic pain and/or injuries, versus 53 percent of technicians who use equipment when moving patients.



Equipment use is associated with a very substantial 23 percent reduction in the reported incidence of pain and injury for both professions.

Other Preventative Programs

Aside from the use of supportive equipment and Lifting Teams there are a number of additional avenues for the organization looking to reduce MSD (Musculoskeletal Disorders) in the Nursing employee population.

Ergonomic Evaluation of the worksite: This may reveal key high risk parameters that are relatively easily to adjust and or replace to minimize work stress. An example would be the design of the patient room or changing the location of the patient / nurse controls.

Job Demands Analysis: Without a proper understanding of the worksite it is difficult for the employer, employee or clinical team to best understand treatment directives and impossible to properly construct an ADA / EEOC compliant post offer pre employment screening or Fit for Duties protocol. Ensure that JDA's are completed for each Nursing position or that the general description reflects all associated high risk essential duties.

Post Offer Pre Employment Screening: This will effectively manage new hires for qualification of any pre-existing conditions that may hinder their performance and will also establish a baseline of functional abilities for the new employees. This same protocol can be used for the initial and ongoing evaluation of the abilities of the Lifting Team if a designated team exists.

Job Transfer Assessments: This will help to minimize risk of employee injury when transferring into a nursing position where patient transfer will be a regular activity.

Aging Workforce Evaluation: Looking for trends or patterns of degradation of range of motion or strength of employees allows the employer to be proactive in determining weakness and preventing potential injury.

Post Injury Programs

Job specific Rehabilitation: Implementation of work conditioning into your physical therapy program can expose the employee to the essential and critical demands of the job and will ensure a safe and most importantly "sustained" return to work.

Fit for Duties Exam: Determining a proper job match on re-entry into the field of work is an important component in the continuum of care. The protocol needs to properly reflect the work requirements and be a true measure of abilities presented.

Summary

Although no one single solution will be appropriate for all situations, it is important to first evaluate the job and the environment and then work with a risk management professional in determining the best plan for action. If the present employee population is the focus then incorporate testing of the aging workforce and compliment it with lifting teams and supportive patient transfer equipment and so forth.

"To minimize overall risk, a program containing preventative as well as post injury programs needs to be in place. That being said, it is important to ensure the services allocated in your program need to be ADA and EEOC compliant and all related to the essential and critical demands of the job." R. Gagne, VP Workers Compensation and Disability USPT/Fit2WRK

Do not under sell the value of education. A good deal of concern may be due to improper lifting techniques, poor ergonomics, inaccurate understanding of how to use patient transfer equipment and other similar issues that are easily resolved with the implementation of a structured and "repeated" education program.

The information noted above is a summary of one of the components of Fit2WRK by USPh. This integrated model is available through USPh in close to 400 facilities and 44 states nationally. For additional information on how the Fit2WRK Model could help your organization, visit; www.Fit2WRK.com or call 1-877-Fit-2WRK.

References

Ergonomics for the Prevention of Musculoskeletal Disorders Guidelines for Nursing Homes (PDF Document)
http://www.premierinc.com/safety/topics/back_injury/downloads/Final_OSHA_Guidelines_nursing_homes.pdf

A Back Injury Prevention Guide for Health Care Providers, Cal/OSHA Consultation Programs, (800) 963-9424, **www.dir.ca.gov/dosh/dosh_publications/backinj.pdf** This guide discusses the scope of the back injury problem in health care, how to analyze the workplace, how to identify and implement improvements, and how to evaluate results. It includes checklists that can assist in analyzing the work environment.

Patient Care Ergonomics Resource Guide: Safe Patient Handling and Movement, Patient Safety Center of Inquiry, Veterans Health Administration and Department of Defense, (813) 558-3902, **www.patientsafetycenter.com** This document describes a comprehensive program developed to prevent MSDs related to resident lifting and repositioning. It includes assessment criteria and flowcharts for selecting equipment and techniques for safe lifting and repositioning based on resident characteristics.

Resident Assessment Instrument, U.S. Department of Health and Human Services – Centers for Medicare and Medicaid Services (CMS), **www.cms.hhs.gov/medicaid/mds20/** This document is used by many nursing homes to evaluate resident needs and capabilities.

Elements of Ergonomics Programs, U.S. Department of Health and Human Services – National Institute for Occupational Safety and Health, (800) 356 4674, **www.cdc.gov/niosh/ephome2.html**

The Resident Assessment Instrument published by the Centers for Medicare and Medicaid Services (CMS) provides a structured, standardized approach for assessing resident capabilities and needs that results in a care plan for each resident. Caregivers can use this information to help them determine the appropriate method for lifting or repositioning residents. Many nursing homes use this system to comply with CMS requirements for nursing homes. Employers can access this information from **www.cms.hhs.gov/medicaid/mds20/**

Patient Care Ergonomics Resource Guide: Safe Patient Handling and Movement is published by the Patient Safety Center of Inquiry, Veterans Health Administration and the Department of Defense. This document provides flow charts that address relevant resident assessment factors and recommends solutions for resident lifting and repositioning problems. This material is one example of an assessment tool that has been used successfully. Employers can access this information from **www.patientsafetycenter.com**