

## WHEN THE PATIENT HANDLERS BECOME PATIENTS

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A hospital is no place for a sick person, so the saying goes. The same could be said of healthcare workers, who face an unusual set of occupational hazards. Despite the obvious threat of infectious disease, musculoskeletal disorders are the leading occupational health problem plaguing healthcare workers, especially nurses. This is because of the difficulties inherent in the physical handling of patients.

Most patient handling tasks are performed manually, often with outstretched arms or in awkward postures that increase the risk for injury. While back injuries predominate, musculoskeletal injuries involving the neck, shoulders, wrists and knees are common as well. Nurses suffer these disorders disproportionately because of the cumulative effect of repeated patient handling.

Awareness of the problem is growing. More than a dozen states have passed or introduced legislation addressing safe patient handling. At the federal level, John Conyers (D-Michigan) last year introduced the Nurse and Patient Safety and Protection Act of 2007 (HR 378). This bill would direct the Occupational Safety and Health Administration (OSHA) to establish a patient handling standard.

The state programs mandate healthcare facilities to take various preventative steps.

- Establish lifting committees
- Conduct hazard assessments of job tasks
- Develop written patient handling programs with detailed protocols and procedures
- Purchase lifting equipment
- Establish lift teams
- Incorporate ergonomic design into new construction or renovations



**The proposed federal legislation would create standards requiring healthcare facilities to identify patient handling problems and propose solutions. Regular evaluations of programs would be required and OSHA would conduct unscheduled audits of healthcare facilities.**

**For the nursing workforce, relief cannot come too soon.**

# LIFTING 1.8 TONS PER DAY

It is little wonder that nurses suffer a disproportionate number of injuries when one considers this stunning statistic: the cumulative weight lifted by a nurse in one typical eight-hour shift is approximately 1.8 tons.<sup>1</sup> Patient handling is not only physically demanding, but it is often performed under unfavorable and unpredictable conditions. Patients present multiple challenges because of variations in size, physical disabilities, cognitive function, medical condition and level of cooperation. As a load to be lifted, patients lack the convenience of handles and even distribution of weight. They may become combative during lifting. While direct-care providers have historically been trained in proper lifting techniques, the risk of injury remains high.

Traditional body mechanics do not translate well to actual nursing practice. Early studies on body mechanics were based on static loads, such as boxes with handles, and were focused on men. Lifting techniques focused on avoiding lower back strain in relatively simple tasks. In nursing, women are frequently required to handle patients of considerable size. For men and women alike, patient lifts are frequently accomplished in awkward positions such as bending or reaching over beds or chairs while the nurse's back is flexed.<sup>2</sup> Activities themselves can also be awkward, such as lateral transfers from gurney to bed. Limited workspace is another issue. The presence of other hospital staff, furniture and equipment can force nurses into injury-prone postures and movements.

## MUSCULOSKELETAL DISORDERS BY OCCUPATION

The table below shows the impact of work-related musculoskeletal disorders in various occupations. Nurses are a close second to movers.

	Number	Median Days Away From Work
<b>Total Musculoskeletal Disorders</b>	<b>375,540</b>	<b>9</b>
Laborers and freight, stock, material movers	32,100	9
<b>Nursing aides, orderlies and attendants</b>	<b>28,920</b>	<b>5</b>
Truck drivers, heavy and tractor-trailer	18,330	14
Truck drivers, light or delivery services	11,760	10
Janitors and cleaners, except maids & housekeepers	10,470	9
Retail salespersons	9,800	9
Stock clerks and order fillers	9,600	7
<b>Registered nurses</b>	<b>9,060</b>	<b>7</b>
Construction laborers	8,540	10
Maintenance and repair workers, general	6,870	7

Source: Bureau of Labor Statistics, 2005

## The risks of manual patient handling are found in all areas of patient care, inpatient, outpatient and specialty practices, but the risks vary by clinical setting.

For example, in geriatric long-term care settings, more than 19 stressful tasks have been identified. These include vertical transfers of patients, repositioning patients in bed and chairs, and toileting tasks.<sup>3</sup> Many of these same tasks are found in acute care settings: transferring patients on and off stretchers, repositioning a patient in bed, and patient transport in a bed or stretcher.<sup>4</sup> In the operating room, high-risk tasks include standing for long periods, lifting and holding patient extremities, reaching, horizontal transfer of patient from bed to stretcher or operating room table, and lifting and moving equipment.<sup>5</sup> In rehabilitation/spinal cord injury units, high-risk tasks include vertical patient transfers, repositioning a patient in bed or wheelchair, and applying anti-embolism stockings.<sup>6</sup> Less information is available on trauma and emergency settings, but evidence indicates that ambulance work can put healthcare workers in harmful postures during the transportation of patients and equipment.<sup>7</sup>

Patient characteristics (such as height, weight, body shape and condition) also vary in different settings, as do patients' ability to assist in moving themselves.

Communicability is another variable factor; a patient's inability to understand instructions may complicate the process of moving them. In many situations, patients will become agitated or combative, most commonly because they experience pain during the action. An increasingly elderly and obese population adds significantly to the risk of musculoskeletal injury faced by the nursing workforce.



## FEELING THE PAIN IN RECRUITMENT AND RETENTION

Although there has been a significant increase in state legislative activity to tackle the problem, and several proposals have been made on the national level, the outcome remains uncertain. Moreover, without significant federal financial support, state efforts to enact broad reforms will be hindered by numerous obstacles – particularly in terms of financing. Some healthcare experts are concerned that with all the attention centered on health coverage access, presidential candidates and legislators may miss another fundamental issue – healthcare cost. Although millions do not have health insurance, a majority of voters do, and numerous surveys reveal that voters with health insurance are most concerned about curbing skyrocketing medical costs.

The impact of musculoskeletal injury is broad. Injuries result in absenteeism, lost work time, burnout, decreased retention, high turnover and recruitment problems. Given an aging general workforce and an ongoing nursing shortage, the risk of injury poses a serious staffing issue.

**Each year, approximately 12% of nursing personnel will consider a job transfer to decrease their risk of injury, and another 12% to 18% will actually leave the nursing profession due to chronic back pain.<sup>8</sup>**

Work-related musculoskeletal disorders in nursing are expensive and include indirect costs associated with:

- Temporary hires for replacement personnel
- Overtime to absorb the duties of an injured worker
- Legal fees
- Time loss costs for claim processing and witness appearances
- Decreased output following a traumatic event
- Training temporary and/or replacement personnel

Direct costs associated with occupational back injuries of healthcare workers average \$37,000, while indirect costs can range from \$147,000 to \$300,000.<sup>9</sup>

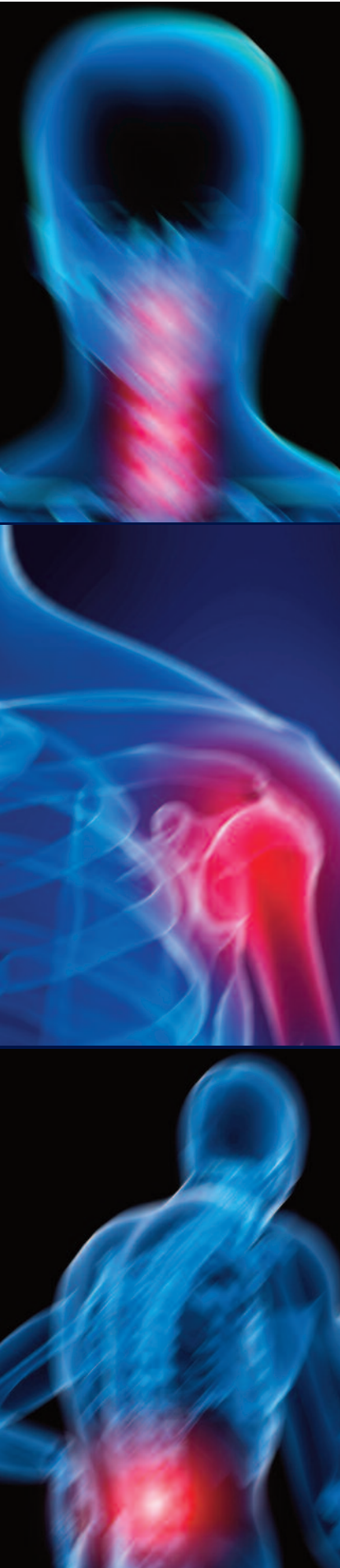
## LOOKING FOR A CURE – OR A TREATMENT

The National Institute of Occupational Safety and Health (NIOSH) recommends that a typical worker should not lift more than 51 pounds under controlled and limited circumstances. This limit is hard to follow in healthcare settings given the ergonomic hazards of manual patient handling. The healthcare industry needs solutions, and several are emerging.

The first step is for management to assess the types of tasks performed and determine the degree of risk associated with them. Such assessment involves an examination of duration, frequency and magnitude of exposure to ergonomic stressors such as force, repetition, awkward postures, vibration and contact stress to determine if employees are at risk of pain or injury.

The next step is to implement some of the controls available to reduce high-risk patient handling tasks. Controls can be divided into three categories: engineering, administrative and behavioral.

**Engineering controls** are changes made to the work environment. These may involve changes to workspace layout, changes or additions to equipment used on the job, or changes in the way patients are handled.<sup>10</sup> These controls are generally the most effective solution because they create permanent changes that eliminate risks at the source; for example, using patient handling technology, such as lateral transfer aids or improvements in hospital bed design.



Patient handling devices are widely seen as necessary for safety, but there are several barriers against their use.

- Patient aversion to the equipment
- Equipment unstable, operationally difficult to use or difficult to install
- Storage issues: equipment inconveniently located
- Poor maintenance and cleaning of equipment
- Time constraints
- Inadequate number of available lifts
- Insufficient training, especially on floors with high turnover levels
- Space restrictions
- Incompatibility with existing equipment
- Equipment lifting capacity limitations
- Building age and design

**Administrative controls** are management-dictated work practices and policies that reduce or prevent exposures to ergonomic risks. Such strategies include:

- Modification of job rules and procedures (scheduling more rest breaks)
- Job rotation or modified duties or length of shifts
- Training workers to recognize ergonomic risk factors so they can adopt stress reduction techniques.<sup>11</sup>

Examples of administrative controls include no-lift policies, patient care assessment protocols and use of clinical tools such as algorithms.

In some countries, specific high-risk manual handling techniques have been banned. In Canada, the one-person low-pivot manual transfer and two-person side-by-side transfer is banned. In England, hazardous manual lifts such as the drag lift, cradle lift and shoulder lift have been banned. The concept of no-lift policies has been slow to be accepted in the U.S., in part because there is little consensus on how to address patient handling. None of the legislative initiatives in the U.S. include such policies.

**Behavioral or work practice controls** involve training of staff in body mechanics or other joint protection principles.<sup>12</sup> Training programs typically teach proper manual patient lifting and proper use of lifting equipment/devices, and some employ unit-based peer leaders.

The Duke University Health System in North Carolina has implemented a model ergonomics program. In place since 1993, the program includes a staff of five ergonomists and serves 30,000 employees in 600 buildings. The program incorporates each type of control into the daily operations of university employees. The team recently established an ergonomics blog site to encourage the exchange of ergonomic knowledge within the healthcare industry. Interested parties can contact the program director Tamara James at [tamara.james@duke.edu](mailto:tamara.james@duke.edu).

# SUCCESS OF CONTROL TYPES: YES, NO OR MAYBE

Not every control employed by healthcare organizations has proven effective. Evidence points to superior results for certain activities, as indicated in the table below.<sup>13</sup>

TYPE OF CONTROL	LEVEL OF SUCCESS		
	INEFFECTIVE	EFFECTIVE	PROMISING: UNDER STUDY
ENGINEERING	<ul style="list-style-type: none"> <li>• Back belts</li> </ul>	<ul style="list-style-type: none"> <li>• Use of patient handling equipment and devices</li> </ul>	
ADMINISTRATIVE		<ul style="list-style-type: none"> <li>• Patient care ergonomic assessment protocols</li> <li>• No-lift policies</li> <li>• Patient lift teams</li> </ul>	<ul style="list-style-type: none"> <li>• Clinical tools, such as algorithms and patient assessment protocols</li> </ul>
BEHAVIORAL	<ul style="list-style-type: none"> <li>• Training in safe lifting techniques</li> <li>• Manual patient lifting hazard recognition training</li> <li>• Classes in body mechanics</li> </ul>	<ul style="list-style-type: none"> <li>• Training in proper use of lifting equipment and devices</li> </ul>	<ul style="list-style-type: none"> <li>• Unit-based peer leaders</li> </ul>

## THE NURSE AND PATIENT SAFETY AND PROTECTION ACT OF 2007

John Conyers’s proposed legislation would direct OSHA to establish a Federal Safe Patient Handling Standard, which is highlighted below.

- All healthcare facilities to comply with the standard
- Healthcare facilities to purchase, use and maintain safe lift mechanical devices
- Input required from direct-care registered nurses and organizations representing such nurses in implementing the standard
- Facilities to develop a program to identify problems and solutions regarding safe patient handling
- Facilities to develop a system to report, track and analyze trends in injuries, as well as to make injury data available to the public

- Annual (or more frequent) training for staff on safe patient handling policies, including hazard identification, assessment and control of musculoskeletal hazards in patient care areas, plus interactive classroom-based and hands-on training by a knowledgeable person or staff
- Annual evaluations of safe patient handling efforts, as well as new technology, handling procedures and engineering controls

**Safe Patient Handling Plan** – Not later than six months after the standard is published, healthcare facilities shall develop and implement a safe patient handling plan that:

- Provides adequate, appropriate and quality delivery of healthcare services that maintains patient safety and prevents musculoskeletal disorders for direct-care registered nurses and other healthcare providers



- Is consistent with the requirements of the standard
- Provides for input by direct-care registered nurses and organizations representing direct-care registered nurses in implementing the plan
- Ensures that safe lifting mechanical devices shall only be used by direct-care registered nurses and other healthcare providers

**Posting Requirements** – Not later than six months after the standard is published, healthcare facilities shall post a form that:

- Explains the standard
- Includes information regarding safe patient handling polices and training
- Explains procedures for reporting patient handling-related injuries

**Audits** – The Secretary of Labor shall require OSHA to conduct unscheduled audits to ensure:

- Implementation of the safe patient handling program
- Compliance with reporting requirements
- Reviewing of findings with the goal of making continual improvements to the safe patient handling plan

**Refusal of Assignment** – A direct-care registered nurse or other healthcare provider may refuse to accept an assignment in a healthcare facility if:

- The assignment would violate the standard
- The provider is not sufficiently educated, trained or experienced to fulfill the assignment without compromising the safety of any patient or jeopardizing themselves

**No Discharge, Discrimination or Retaliation** – No healthcare facility shall discharge, discriminate, or retaliate in any manner with respect to any aspect of employment, including discharge, promotion, compensation, or terms, conditions, or privileges of employment, against a direct-care registered nurse or other healthcare provider based on his or her refusal of a work assignment under these rules.

**No Filing of Complaint** – No healthcare facility shall file a complaint or a report against a direct-care registered nurse or other healthcare provider with the appropriate professional disciplinary agency because of his or her refusal of a work assignment under these rules.

## STEPS TO TAKE NOW

Whether or not federal standards are enacted, healthcare organizations have multiple incentives for addressing this issue now. To begin, we suggest they work with risk control professionals who can help to:

- Identify the hazards inherent in their facilities and address those tasks impacting the cost of risk
- Properly engineer new or modified operations
- Develop parameters for evaluations and assist in training in-house personnel to monitor a safety program's progress
- Address recommendations to assure compliance with regulatory requirements

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