

Lift that Patient, Spare that Back



SIZEWise Rentals, L.L.C.

Health care workers use the SIZEWise Air Transfer, which helps safely move or transfer patients up to 1000 pounds.

Barbara Silverstein
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Thirty years ago, when three nurses were lifting a 280-pound patient with a full leg cast from a high bed to a wheel chair, the other two let go and Barbara ended up under the patient. She was off work for three years and in pain for 17 years. This ended her career in acute care nursing. Stories like Barbara's are still common today, but thanks to the efforts of workers, hospitals, legislators, and the Governor, recent legislation in Washington State may finally begin to make patient handling safe for the patient and for the staff.

Washington State's population is becoming increasingly older and heavier. The incidence and cost of patient lifting-related injuries among health care workers is high—nursing staff have among the highest back and shoulder injury rates of any occupational group. For example, the incidence rate for compensable back injuries in 2003 among health care employers in the state fund workers compensation system was 162.5 claims/10,000 fulltime equivalent (FTE) employees compared to 41.4 claims/10,000 FTEs for all other state fund employers. For the self-insured employers, the compensable back injury claim rate for health care employers was 98.6/10,000 FTEs compared to 64.0/10,000 FTEs for other employers.

Task force findings

Washington's effort to address the problem of lifting injuries began with a task force of labor and industry representatives to assess the magnitude of the problem, and the successes in and barriers to improving injury rates related to lifting in the health care arena. The task force, convened by the Department of Labor and Industries at the request of the Washington State House of Representatives Commerce and Labor Committee, looked at hospitals, nursing homes, home sector (home care, home health care, and hospice), and pre-hospital medical services (emergency medical and ambulance services). The task force reviewed the literature (epidemiologic studies, intervention and case studies, policy and legislative) and conducted interviews and site visits to the different types of health care settings. (*Find a summary of the findings at <http://lni.wa.gov/Safety/Research/Wmsdl/PatientHandle/>*)

Hospitals and Nursing Homes. Nursing homes reported that one of the biggest barriers to attracting and retaining staff is the heavy physical work. All the hospital and nursing homes visited by the task force had made some attempts to reduce the manual handling of patients and residents. The sites that had made the most progress in reducing the physical load on staff reported improvements in lost-time injury rates and costs. Some hospitals had implemented ceiling lifts, and their staff seemed enthusiastic about the lifts, but none of the nursing homes had ceiling lifts. The cost of appropriate lifting equipment was seen, especially by the nursing homes, as a huge barrier.

Home Sector. Home health care, home care, and hospice care have unique challenges in that the home is often not structured for ease of client-

Ways to Reduce Lifting Injuries

- Assess transfer needs of patients every shift
- Never manually lift or transfer a totally dependent adult patient, or a patient off the floor, alone
- Have the right equipment at the right place at the right time, including sufficient auxiliary supplies (enough slings of different sizes)
- Use mechanical devices such as total body floor lifts or ceiling mounted lifts for patients who cannot bear any weight
- Use sit-to-stand mechanical lifts for those who can bear some weight but are very unsteady
- Use chair walkers for those who can ambulate but are unsteady
- Use slip sheets or ceiling lifts to reposition patients in bed
- Use air lift mats or slide boards to move from bed to stretcher
- Use adjustable easy-to-roll beds to avoid stretchers

assisted transfers, and the need for home health care is often temporary, making the expense of lifting equipment even more of a barrier. Employees were more likely to see the benefit of equipment use than the agency administrators. Home sector workers often work alone, which adds to their difficulty in lifting and moving patients.

Employees and employers both thought the most useful equipment would be powered lifts rather than manual lifts, stair lifts, sliding sheets, pull up straps for getting up in bed, or sit-stand devices. Ironically, some of the, so called, luxury items (for example, sit-stand assist devices and mechanical total body lifts) might be the very thing that enables family members to continue assisting homebound individuals, allowing them to remain at home.

Pre-Hospital Medical Services. In municipalities, pre-hospital medical services (paramedic, ambulance service, firefighter, and emergency medical technician) are provided by professionals, but crews in rural areas may be made up entirely of volunteers. Interviewees reported that lifting patients during medical calls was likely or very likely to cause serious injury at some point in a career. They were most concerned with back and shoulder injuries, particularly when handling heavy medical equipment and when there is no control over the facilities where they picked up patients.

The greatest physical loads in manual handling come from very obese patients, automobile extrications, lifting in tight spaces and from the floor, carrying down stairwells, and lifting a patient and gurney together, especially outdoors. Some ambulance companies have developed a bariatric-specific transport unit, with a ramp and winch system for pulling gurneys into a wider-than-typical bay or with modified suspension so the vehicle can be pneumatically lowered to make loading easier. As with the other sectors, cost is the biggest barrier these services face in reducing lifting hazards.

Findings result in changes

In response to the task force's findings, the Safe Patient Handling legislation (ESHB 1672), focusing on hospitals and supported by both labor and the hospital association, became effective June 6, 2006, with staggered program implementation dates leading to full implementation by December 2010. Some of the most important features of the legislation include:

- A safe patient handling committee (with at least 50 percent of the committee consisting of direct care staff) that conducts assessments, has input on equipment purchases, and evaluates the program annually
- Required staff training in safe patient handling
- An established minimum amount of handling equipment, with financial incentives (business and occupations tax credits) for equipment purchase
- A reduction in the workers compensation premium risk class for fully implemented programs for state fund hospitals
- An analysis of statewide workers compensation data after full implementation

Washington State's commitment to safe patient handling is good for patients and good for staff. With full implementation of the new legislation, health care staff will no longer need to fear back injuries and lost wages. ■

Authors

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Resources

VA Sunshine Healthcare Network. www.visn8.med.va.gov/patientsafetycenter/.

Measuring Back Strain

by Kathy Hall

Most backaches are cumulative, the result of thousands of movements that add up to overuse and strain. Old diagnostic tools made it hard—or expensive—to identify which movements pushed the back beyond its limits. In particular, the continuous assessment of physical exposures was too costly and too time consuming, but with advances in technology “a new age in exposure assessment is developing,” according to Peter Johnson, whose ergonomics lab in the Department of Environmental and Occupational Health Sciences in the UW School of Public Health and Community Medicine specializes in measuring occupation-related physical exposures.

Observation alone, even by a trained ergonomist, cannot capture all events, particularly infrequent isolated events, and direct measurement methods such as muscle electromyography (EMG) and lumbar motion monitors can be somewhat invasive and cost up to \$20,000. What has been needed is a simple and relatively inexpensive device to measure a worker's posture and torso movements over the course of a whole work shift.

Johnson helped develop just such an instrument, the Virtual Corset™. This pager-sized unit, strapped to a worker's back, arms, or chest, can collect a continuous record of the worker's posture, which should help researchers better understand work-related musculoskeletal disorders. Johnson collaborated with Vermont-based Microstrain, Inc., to develop the system, which costs less than \$1,000 and is small enough to be used in the field. Its two megabytes of memory can collect a day's data, opening up new avenues for ambulatory exposure assessment. Ambulatory measurement can help researchers better understand the relationship between cumulative postural exposures, load patterns, and musculoskeletal disorders.

Johnson's team developed the device for the Pacific Northwest Agricultural Safety and Health center as part of a project to create tools to measure physical exposures during agricultural and forestry work. In cooperation with the Field Research and Consultation Group, in the same department, the team wants to assess and compare two tree fruit harvesting methods—traditional ladders and mobile platforms. Mobile platforms are four-wheel, self-guided, all-terrain vehicles with one or two elevated platforms that move slowly down a row of fruit trees and can carry up to six workers.

The Washington tree fruit industry is experimenting with the introduction of mobile platforms as a way to improve harvesting productivity and fruit quality, while reducing ladder-related injuries. The Virtual Corset will allow researchers to track how the mobile platform affects the physical loads on the upper arms, shoulders, and back. ■

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