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Patient Lifting:
handle with care

Since organized care of the ill and infirm began, patient lifting has been recognized as one of the most physically demanding tasks required of health care workers. Changing demographics and health care policies though, are escalating workers' risk of injuries related to musculoskeletal disorders (MSDs) and in particular, back injuries. An aging population, increases in the average weight of patients, a rise in debilitating disease, an emphasis on treatment and cure rather than prevention, de-institutionalization of the mentally ill and homecare, to name a few, are placing even greater demands on the health care system and care providers. As a result, patients in health care facilities across Ontario, indeed Canada, now require more care rather than less. And typically, these patients are sicker and thus unable to assist with their care. Health care funding changes and nursing shortages only serve to make matters worse.

How big is the problem?

Research conducted over the past three decades points to frequent and manual movement of patients, regardless of the circumstances, as one of the main risk factors associated with back injuries in nurses.

In fact, in the United States, nursing is considered the riskiest occupation for an injury to the back. An American Nurses Association's Health and Safety Survey found, 83 per cent of nurses responding experience back pain at work with most relating the pain to patient lifting tasks.

In Ontario, MSDs comprised more than 50 per cent of lost-time claim injuries experienced by health care workers. About half of these are related to patient handling.

How does the back work?

The human spine is comprised of 33 bones called vertebrae, stacked on top of each other to form the spinal column. Twenty-four of the 33 are moveable. Between each vertebra is a disc that helps absorb pressure and prevents the bones from rubbing against each other. Ligaments hold the vertebrae together.

The spine itself is divided into three regions: the cervical or neck region, the thoracic or back region and the lumbar or lower back region. The cervical region includes seven vertebrae at the top of the spine. The thoracic region is located in the middle of the spine and consists of 12 vertebrae. The lower portion of the spine is called the lumbar region and is comprised of five vertebrae. The normal human spine is curved like an "S". The cervical region curves inward while the thoracic region curves outward and the lumbar region curves inward. This S configuration is critical to ensuring an even distribution of body weight and the ability to respond to different physical forces. And while the spine supports most of the body's weight and movement, each segment relies upon the strength and flexibility of the others in order to function properly.

What are the risks?

While most postures produce a change in the alignment of the spine, certain postures place the spine and associated muscles at greater risk of injury. Moving from a position of standing up to bending down or vice versa, during which the spine changes shape, increases the risks of an injury to the back.

When this movement is combined with moving a load, as is the case when lifting a patient from a chair to a bed or from a bathtub to a wheelchair, there is an even greater risk for low back pain and/or injury. Bending at the waist and extending the upper body changes the spine's alignment and shifts the abdominal centre of balance, forcing the spine to support both the weight of the caregiver's body and the weight of the patient being lifted or lowered.

Injuries to the back can either result from an isolated incident or from a series of events over a period of time. And while neither situation is unusual in the health care sector, it may take years of repetitive patient lifting or carrying to weaken the back to such a point where a single event results in worker pain and/or injury.

What legislation is available?

Many jurisdictions worldwide have recognized the need for legislation and /or guidelines pertaining to patient lifting.

The United Kingdom's Health Services Advisory Committee (HSAC) established one of the first guides on manual lifting for the health care sector in 1984. An updated version, *Manual Handling of Loads in the Health Services*, produced in 1998, incorporates existing legislation and provides directives on preventing risk through ergonomics.

The HSAC guideline also recommends worker training that includes assessment of the lift and use of lifting devices.

In the United States several jurisdictions have enacted safe patient handling legislation. These include California, Texas, Washington, Hawaii, Rhode Island, Ohio and New York. A recent study on the effect of the California legislation found many positive outcomes. Eighty-seven per cent of nurses reported their hospitals now had Safe Patient Handling (SPH) policies – a four-fold increase since the introduction of the legislation. Over sixty per cent reported their hospital had a SPH committee and provided patient handling protocols. More nurses also had access to mechanical lifts on their units – up almost 20 per cent, from 61 per cent to 80 per cent. Most important, significant decreases were observed for four major musculoskeletal symptoms suffered by nurses, specifically, injuries of the lower back, neck, hands and wrists. Unfortunately, the frequency of patient lift use showed little change. Researchers attributed this to reported increases in physical workload and psychological job demands and called for further measures to remove these barriers to safe patient handling.

Federal legislation

Here in Canada regulatory action has progressed. Amendments in 2007 to Part XIX of the *Canada Occupational Health and Safety Regulations* (COHS) call on employers to incorporate ergonomic-related hazards responsible for the development of MSDs into their legally mandated Workplace Hazard Prevention Program (Section 125(1) z.03, Part II, *Canada Labour Code.* These amendments outline the details employers must incorporate in the prevention program including a hazard identification and assessment process, development of preventive measures along with ergonomics training. Employers are also required to develop, implement and monitor such a program in consultation with and with the participation of the policy committee, or, if there is no policy committee, the workplace committee or health and safety representative. As well employers are required to submit, at least every three years, an evaluation report of effectiveness to the Ministry of Labour.

Provincial legislation

Saskatchewan, Manitoba and British Columbia (BC) have all enacted ergonomic regulations, with BC having the most comprehensive regulation. It requires employers to consult joint health and safety committee members

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and affected workers in identifying, assessing and controlling the risks associated with the development of musculoskeletal injuries.

Safe Work BC has published a guide entitled *Handle With Care: Patient Handling and the Application of Ergonomics Requirements.* It provides advice on complying with the requirements of the ergonomic regulation as it applies to health care workers and patient handling.

In Ontario, the *Regulation Respecting Health Care and Residential Facilities*, made under the *Occupational Health and Safety Act,* does not include provisions to protect workers against the hazards associated with patient lifting. In fact, ergonomic obligations exist only for those working with computers and are limited in scope.

Without specific ergonomics legislation Ontario workers and their representatives must rely on the employer's general duty clause in the *Occupational Health and Safety Act.* This clause requires employers to take every precaution reasonable for the protection of workers. Related guidelines to help meet this responsibility are available at **www.msdprevention.com**.

What controls are available?

Today, patient lifting techniques and devices are widely available. But health care providers continue to suffer. Why? Because these devices have typically been implemented without consultation and in isolation from other components of an effective patient-handling program.

Patient lifting techniques

It is still widely accepted that training in safe lifting techniques prevents job-related injury, but more than three decades of research dispute this belief. Based on study that can't be generalized to the predominately female nursing profession and difficult to translate into direct patient care, this approach has not proven effective. Complicating matters is the lack of agreement on what constitutes proper body mechanics. But more importantly, these measures fail to recognize that manual patient handling tasks are intrinsically unsafe because they are typically beyond the capabilities of the general work force and do not account for variables in the specific lifting task or environment.

Patient lifting programs and policies

By far the most successful approach to addressing back injury in nursing staff has been a comprehensive patient handling program that helps caregivers recognize, assess and control the workplace factors that cause the physical strain and stress associated with the lifting task. An effective patient handling program includes a policy that governs patient lifting, the purchase and maintenance of appropriate types, numbers of lifting devices and training in assessing the risk of lifting tasks and use of lifting equipment. A patient lifting policy should also govern the circumstances under which patients will be lifted and the mechanism to be used in performing lifting tasks.

Assessing a lift

In assessing the lift, consideration should be given to the lifting environment as well as the patient to be lifted. In doing so caregivers will acquire information on the physical constraints under which they may be required to perform the lift and which constraints can be modified to enhance the safety of the lifting procedure. In assessing the patient, the caregiver gains a better appreciation of the medical, physical and emotional status of the patient and the lifting technique or tool most suitable to the situation. An effective assessment will ensure the safety of both the patient and the caregiver during the lifting task.

Lifting device selection and use

With a sense of the variables that may impact the success of a lift, a caregiver can then select and use the most appropriate lifting device. Generally, lifting devices are employed where patients are not physically or mentally able or willing to assist in the transfer. There are numerous lifting devices available. The most common are the mobile lifting devices that require two caregivers to operate, the ceiling mounted devices that can be operated by one or two caregivers and the fixed lift that requires one or more caregivers.

Training in use of lifting devices

Worker training in the use of patient lifting devices is a critical component of any successful patient-handling program. Training should include information on the hazards associated with lifting, the workplace lifting policy and appropriate selection and use of different lifting devices. The most effective training has also incorporated opportunity for participants to practice using different lifting devices under different circumstances.

Are these controls successful?

For those workplace parties who have instituted patient lifting policies and programs based on ergonomic principles, the results have been significant.

At the Health Sciences Centre in Winnipeg, Manitoba, a minimal lift program was introduced after years of increasing injury rates in nursing staff. The purchase of patient lifting devices for all wards led to significant reductions in both the frequency and severity of MSDs. In the surgical unit alone, the number of hours of time lost due to injuries declined from 13,000 to 4,000 in just three years.

In Sault Ste. Marie hospitals, the adoption of a zero-lift program saw significant reduction in lifting injuries. The program consisted of a lift policy, use of lifting equipment and training in safe lifting techniques. This program has been particularly successful in the medical units where, over a 22-month period, injuries related to lifting incidents fell from 26 to five.

The program success has been directly attributed to ongoing educational support and program compliance audits.

A similar initiative was implemented at St. Joseph's Health Centre in Sudbury where a no manual lift education program was developed and delivered to nurses in the acute care inpatient unit. The training includes information in appropriate patient lifting techniques and tools and a practicum on lifting equipment use. In less than a year, the number of full-time staff equivalents, off work due to patient lifting-related injuries, declined from nine to two.

NOTE: Workers Health & Safety Centre offers several training programs – including a *Patient Handling* program – aimed at helping workers, their representatives, supervisors and employers implement effective MSD prevention programs in their workplace. Several ergonomics-related information resources are also available on our web site, including other bulletins, case studies and economic analysis all designed to help make the case for MSD prevention. To learn more visit **www.whsc.on.ca**.

The Occupational Health Clinics for Ontario Workers (OHCOW) has also published the *Healthcare Workers Patient Handling* document. It provides information and resources about a patient handling program including work assessment, lift techniques and lift equipment. For information visit **www.ohcow.on.ca.**

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