

Back Injury Prevention

Techniques For Reducing Back Injuries In the Health Care Industry

HS96-093C (06-11)

Goal

This program provides information on proper patient handling techniques to help reduce the potential for back injuries to health care workers.

Objectives

The employee will learn about lifting devices and their uses, demonstrate safe lifting techniques for moving or repositioning patients, and know what to do when a patient falls.

Introduction

Lifting and moving patients is a large part of the job performed by occupational/physical therapists, nurses, nursing aides, orderlies, and attendants. These employees suffer one of the highest back injury rates in the nation, second only to construction workers. Total recordable injury incidence rate for hospitals is 7.1 per 100 full-time employees. The incidence rate for home health care professionals is not available. However, for ambulatory health care services the rate 1.8 is and 6.4 for nursing and residential care facilities.¹

According to the National Institute of Occupational Safety and Health (NIOSH), back injuries among health care professionals are estimated to total \$20 billion in annual direct and indirect costs.²

When lifting and moving patients, there are four factors which can lead to back injuries or aggravation of back injuries:

- physical demands of work;
- equipment;
- work practices; and
- personal factors.

The physical demands of work for health care professionals include forceful exertions, awkward position or postures, and repetition.

¹ Bureau of Labor Statistics, 2009.

² Collins JW, Nelson A, and Sublet [2006]. Safe lifting and movement of nursing home residents, DHHS (NIOSH) Publication No. 2006-117. Cincinnati, OH: National Institute for Occupational Safety and Health.

The use of lifting devices/equipment/aids (holding, pushing, or handling) can cause forceful exertions or awkward body postures.

Some work practice issues could include:

- lifting or moving patients without help (equipment or team lifting);
- using poor body mechanics; and
- performing unaccustomed physical work (standing for long periods, working more than one shift, covering for other employees).

Home and recreational activities such as sports and home repairs can also lead to or aggravate back injuries. Individuals who are not in good physical condition tend to be more susceptible to back injuries.

The most successful approach to preventing back injuries in health care professionals is to developing a plan to address the specific lifting and moving requirements of the employees and the types of devices/equipment /aids they use. The plan should include:

1. assessment of patients;
2. assist equipment and devices;
3. safe work practices;
4. lift teams; and
5. comprehensive training.

Lifting Devices/Equipment/Aids

Lifting devices/equipment/aids are designed to reduce the biomechanical stress exerted on the employee while lifting and transporting a patient. Some common lifting devices/equipment/aids are:

- draw or transfer sheets;
- slide boards;
- gait belts or transfer belts;
- trapeze bars; and
- mechanical lifts (total-body, stand-assist, compact and ambulation).



figure 1

Draw or transfer sheets are heavy cotton bed linens which are placed under a patient (see figure 1). They are used to slide patients between horizontal surfaces or for repositioning in beds or chairs. Slippery sheets or large plastic bags can also be used in place of draw or transfer sheets.

Slide boards are thin, lightweight plastic boards that are bed length. The patient is slid or rolled onto the board and the board is then pushed or pulled to complete the transfer (see figure 2).



figure 2

Gait belts are canvas belts without handles. They are used to support patients being moved. The belts are fastened securely around the patient's waist and the health care provider grips the belt. Transfer belts are used like the gait belts but **transfer belts** are wider and have padded handles on each side. This allows better control in case of a fall (see figure 3).



figure 3

A **trapeze bar** is a triangle-shaped device that is suspended above the bed. Patients who are able can use the trapeze bar to position themselves in bed, or to assist when being transferred (see figure 4). A trapeze bar should always be adjusted so that the patient's elbows are slightly bent while grasping the bar.



figure 4

There are various types of **mechanical lifts**. Total-body lifts are used to move and lift patients who are fully dependent. Stand-assist lifts are used for moving patients to and from chairs, toilets, beds, or into and out of showers. Compact lifts are a smaller version of total-body or stand-assist lifts. These lifts are convenient to use for home care. Ambulation lifts are used to support a patient during walking. The patient pushes the lift along as they walk. A strap across the back prevents the patient from falling backward. (see figure 5).



figure 5

Techniques

Health care employees must have comprehensive classroom instruction, demonstrations, and hands-on training in safe lifting methods, as well as the proper use of any mechanical lifting devices used in the facility. When lifting or transferring a patient, remember to:

- use your leg muscles, not your back;
- bend your knees, not your waist;
- maintain a neutral back posture; and
- have someone help you whenever possible.

The following techniques will help ensure your safety, the safety of your patients, and should be part of safe work practices.

Turning Patient in Bed, With or Without a Draw Sheet

- position the bed at thigh level;
- lower the bed rail;
- place your knee on the bed;
- cross the patient's arms over the chest and cross the legs; and
- with one hand on the patient's shoulder and one on the hip, roll the patient toward you.

Reposition Patient in Bed Using a Draw Sheet – Requires Two Employees

- position one employee on each side of the patient;
- adjust the bed height to waist level of the shortest employee;
- lay the bed flat;
- bend your knees and point one foot in the direction of the move;
- each employee grasps the draw sheet with both hands; and
- lift and move in unison.

Bed to Gurney Transfers (see figure 6)

- get a partner to help if possible;
- place a slide board or plastic bag under the draw sheet to slide the patient more easily;



figure 6

- position the bed and gurney next to each other and lock wheels in place;
- adjust bed and gurney to thigh level;
- get close to the patient by placing your knee on the gurney or by getting on the gurney; and
- slowly and gently slide the patient onto the gurney.

When transferring a patient by yourself using this method, alternate between sliding the legs and torso.

Bed to Wheelchair Transfers

- use a transfer belt, if possible;
- adjust the bed to its lowest height;
- position the wheelchair at the head of the bed and lock the wheels;
- bend your knees and spread your feet to a shoulder-width apart;
- help the patient sit up on the edge of the bed by placing one of your hands under the neck and shoulder blades, and the other under the knees;
- with both hands, grasp the patient around the waist or grasp the transfer belt;
- brace your knees against the patient's knees to help the patient stand up and lock their knees;
- rock the patient to a standing position (the patient can help by pushing down on the bed with their arms as you rock forward); and
- bend your knees and move your feet to turn and lower the patient into the chair (have the patient reach for the chair arms for support).

Wheelchair to Table or Bed Transfers

- adjust the table or bed height to the patient's hip level;
- position wheelchair close to the table or bed and lock wheels;
- bend your knees and wrap your arms around the patient's waist, or grasp the transfer belt with both hands;
- lift the patient to a standing position (the patient can help by pushing down on the arms of the chair);
- sit the patient on the edge of the table or bed;
- help the patient lie down on the table or bed; and
- use a draw sheet to comfortably reposition the patient.

Assisting Falling Patients

- don't try to catch the patient or prevent the fall;
- try to slow the fall by lowering the patient to the floor (try to maintain a neutral body posture);
- protect the patient's head as much as possible as you help them gently to the floor; and
- get help to lift the patient from the floor.

Summary

The following points are important in preventing back injuries during patient transfers:

- communicate the plan of action to the patient and other employees to ensure that the transfer will be smooth and without sudden, unexpected moves;
- before beginning a transfer, remove any obstacles, and correctly position all required equipment and furniture, and lock wheels;
- maintain eye contact and communication with the patient;
- be alert for trouble signs;
- always request assistance before attempting a transfer;
- record any transfer problems on the patient's chart; and
- to alert employees on other shifts; also note the need for special equipment and devices.

Using proper handling techniques will help protect the back of health care professionals and ensure the safety of the patients.

Review

1. When transferring a patient from a bed to a wheelchair, a mechanical lift can be used. **True or False**
2. When transferring a patient from a bed to a gurney, a slide board or plastic bag should be used. **True or False**
3. A draw sheet should be used when repositioning a patient in a bed. **True or False**
4. Try to catch the patient if they are falling. **True or False**
5. Health care professionals do not need training to learn to use mechanical lifting devices. **True or False**

Answers:

- (1) True
- (2) True
- (3) True
- (4) False
- (5) False

Resources

This Safety Training Program was published with sources from the Bureau of Labor Statistics, U. S. Department of Labor, National Institute for Occupational Safety and Health, the Texas Department of Insurance, Division of Workers' Compensation (TDI-DWC), and is considered accurate at the time of publication.

The TDI-DWC also offers several back injury safety publications online at www.tdi.state.tx.us/wc/safety/videoresources/index.html, including:

- Back Injury Prevention (English & Spanish), and
- Back Injury Prevention Safety Training Program.

The TDI-DWC features a free occupational safety and health audiovisual loan library. Call 512-804-4620 for more information or visit the agency website at www.tdi.state.tx.us/wc/safety/videoresources/avcatalog.html.