



Back Injury Prevention Safety Training Program for the Health Care Industry



Goal

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

Objective

The objectives of this program are to inform health care workers about the:

- uses and types of lifting devices;
- safe patient moving and repositioning lifting techniques; and
- steps to take when a patient falls.

Introduction

Physical therapists, occupational therapists,

nurses, nursing aides, orderlies, and attendants regularly lift and move patients. Rates of injuries from overexertion in health care occupations are among the highest in the U.S., preceded only by construction and transportation workers.¹ Data from the Bureau of Labor Statistics (BLS) shows that in 2020, the rate of overexertion injuries across all private industries was 26.2 per 10,000 fulltime workers. By comparison, the overexertion injury rate for health care workers was 37.1 per 10,000.²

These injuries cost an estimated \$20 billion in direct and indirect costs per year.³ However, proper lifting and patient-moving techniques can prevent injury, reduce workers' compensation costs, and improve the quality of care delivered to patients.

Hazards

The greatest risk factors for overexertion in the health care industry are manual lifting and patient handling. The physical demands that most commonly lead to health care worker back injuries or aggravation of previous injuries occur while:

- using lifting devices, equipment, or aids -- such as those used for holding, pushing, or handling – that can cause forceful exertions or awkward body postures;
- lifting or moving patients alone instead of using team lifting or lifting equipment;
- using poor body mechanics, such as not maintaining good balance, posture, and alignment during moving, transferring, and positioning patients; and
- performing unaccustomed physical work, such as standing for long periods, working more than one shift, or covering for another employee.

Prevention

The most successful approach to preventing back injuries among health care workers is to develop and communicate a plan to address:

- specific lifting and moving requirements and
- the use of lifting devices, equipment, and aids.

Lifting devices, equipment, and aids
Lifting devices, equipment, and aids are designed to reduce the internal and external forces that exert stress on the employee



Figure 1 -
Health care workers use a transfer sheet to reposition a patient.

while lifting and transporting a patient. Some common lifting devices, equipment, and aids include:

- **Draw or transfer sheets**
Draw sheets (or transfer sheets) are used to transfer a patient safely from a bed to a stretcher or vice versa. They are heavy cotton bed linens that 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**
Slide boards, or slider 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.)
- **Gait belts**
Gait belts are canvas belts without handles. They are used to support

patients during a move. The belts are fastened securely around the patient's waist and the health care provider grips the belt. (See Figure 3.)

- **Transfer belts**

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 4.)

- **Trapeze bar**

A trapeze bar is a triangle-shaped device that is suspended above the bed. Able patients can use the trapeze bar to position themselves in bed to assist a health care professional during a patient transfer. Always adjust the

transfer bar so that the patient's elbows are slightly bent while grasping the bar. (See Figure 5.)

- **Mechanical lifts**

There are various types of mechanical lifts. Total-body lifts are used to move and lift fully-dependent patients. 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 6.)



Clockwise from upper left: Figure 2 -

Nurses place a slide board under a sheet; **Figure 3** - A physical therapist uses a gait belt to help a patient sit; **Figure 4** - An occupational therapist helps a patient stand with the use of a transfer belt; **Figure 5** - A patient uses a trapeze bar to reposition herself; and **Figure 6** - A nurse lifts a patient with the help of a mechanical lift.

Lifting and Patient-Moving Techniques

Safe work practices that include proper lifting and patient-moving techniques help protect employees and patients. Ensure employees receive comprehensive classroom instruction, demonstrations, and hands-on training in ways to lift safely and properly.

- **While lifting or transferring a patient:**
 - » use the leg muscles, not the back;
 - » bend at the knees, not at the waist;
 - » maintain a neutral posture that keeps the natural “S” curve of the back; and
 - » use assistance whenever possible.
- **When turning a patient in a bed, with or without a draw sheet:**
 - » position the bed at thigh level;
 - » lower the bed rail;
 - » place a knee on the bed;
 - » cross the patient’s arms over his or her chest;
 - » cross the patient’s legs;
 - » place one hand on the patient’s shoulder and one on the patient’s hip; and
 - » roll the patient toward the health care worker.
- **When repositioning a patient in bed using a draw sheet:**
 - » use two employees, each positioned on either side of the patient;



- » adjust the bed to the waist level of the shortest employee;
 - » lay the bed flat;
 - » bend at the knees and point one foot in the direction of the move;
 - » grasp the draw sheet with both hands; and
 - » lift and move in unison.
- **When moving a patient from a bed to a gurney:**
 - » get a partner to help if possible;
 - » place a slide board or plastic bag under the draw sheet to slide the patient more easily;
 - » position the bed and gurney next to each other and lock the wheels in place;
 - » adjust the bed and gurney to thigh level;
 - » get close to the patient by placing a knee on the gurney or get on the gurney; and

- » slide the patient – slowly and gently -- onto the gurney. (When transferring a patient alone using this method, alternate between sliding the patient’s legs and torso onto the gurney.)

- **When transferring a patient from a bed to a wheelchair:**

- » 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 at the knees and spread feet shoulder-width apart;
- » place one hand under the patient’s neck and shoulder blades, and the other hand under the patient’s knees;
- » help the patient sit up on the edge of the bed;
- » grasp the patient around the waist or grasp the patient’s transfer belt;
- » put the patient’s knees against the health care worker’s knees to help the patient stand;
- » rock the patient to a standing position (the patient can help by pushing down on the bed with his or her arms as the health care worker rocks forward);
- » bend the knees and point the feet in the direction of the move; and



- » lower the patient into the chair. (The patient can reach for the chair’s arms for support.)

- **When transferring a patient from a bed to a wheelchair using a mechanical device:**

- » expand the base of the lift to the widest position and place the lift underneath the surface where the patient is lying or sitting;
- » lock the brakes on the lift;
- » connect the sling to the lift (connections vary based on the lift and sling type);
- » use the pump handle (manual) or “up” button (electric) to raise the patient until his or her bottom is clear from the surface;
- » pull the lift back and turn to move toward the wheelchair while providing head, neck, or other physical support as needed;

- » position the patient in the lift over the desired surface and begin to slowly lower him or her onto the surface;
- » push back on the patient's knees to get the hips to the back of the seat for proper sitting position if moving the patient into a wheelchair; and
- » watch the person as the lift is lowered to prevent the bar from coming down and hitting the patient.

- **When transferring a patient from a wheelchair to a table or bed:**

- » adjust the table or bed height to the patient's hip level;
- » position the wheelchair close to the table or bed and lock the wheels;
- » grasp the patient around the waist or grasp the patient's transfer belt with both hands;
- » lift the patient to a standing position (the patient can help by pushing down on the chair's arms);
- » 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.

- **How to assist falling patients:**

- » never try to catch the patient or prevent the fall;
- » try to slow the fall by lowering the patient to the floor while trying to maintain a neutral body posture;
- » protect the patient's head as much as possible while gently assisting the patient to the floor; and
- » get help to lift the patient from the floor.

- **Additional steps to prevent back injuries during patient transfers:**

- » communicate the plan of action to the patient and other employees to ensure that the transfer goes smoothly and without sudden, unexpected moves;
- » remove any obstacles or furniture before beginning the transfer;
- » correctly position all required equipment and lock the wheels;
- » maintain eye contact and communication with the patient;
- » remain alert for signs of trouble;
- » request assistance before attempting a transfer;
- » record any transfer problems or special equipment needs on the patient's chart; and
- » alert employees on other shifts of any special patient needs.



Review

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

Answers
1. True; 2. True; 3. True; 4. False; 5. False.

References

¹U.S. Bureau of Labor Statistics, Occupational Injuries/Illnesses and Fatal Injuries Profiles, Incidence Rates of Nonfatal Injuries and Illnesses Involving Days Away from Work by Selected Worker and Case Characteristics and Event and Exposure, All U.S., Private Industry, 2020. <https://data.bls.gov/gqt/RequestData>. Accessed October 31, 2022.

²Occupational Safety and Health Administration, Healthcare, Patient Handling. <https://www.osha.gov/healthcare/safe-patient-handling/#:~:text=As%20many%20as%2020%25%20of,to%20be%20%2420%20billion%20annually>. Accessed October 31, 2022.



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