

---

**Oregon Nurses Association,  
Bay Area Hospital  
and  
The University of Oregon Labor Education and Research Center**

**Present**

**Safe Patient Handling in Health Care:**

**Applied Ergonomics for Nurses and  
Health Care Workers**

**And**

**Patient Orientation**



**A Guide for Instructors**

---

**This material has been made possible by a grant from Oregon Occupational Safety and Health Division, Department of Consumer and Business Services.**

**Brand names mentioned or seen in the training materials do not constitute endorsement of the device, equipment or product by the Oregon Occupational Safety and Health Division, Oregon Nurses Association, Bay Area Hospital, the University of Oregon Labor Education and Research Center or other organizations that support this grant.**

**The information in this booklet is intended to provide general guidance. There may be instances in which workplace issues are more complex than those presented here. You may need the advice of a professional Ergonomist or other experts.**

**The content is intended to provide current information about ergonomics and safety issues related to patient handling and care tasks. The field of ergonomics is dynamic, and new information is constantly being developed.**

**Instructional written materials were developed by Lynda Enos, RN, MS, COHN-S, CPE, Nursing Practice Specialist and Ergonomist, Oregon Nurses Association 2004.**

**Supporting partners:**

**Legacy Health Systems  
Mt. Hood Community College Allied Health  
Oregon Association of Hospitals and Health Systems  
PeaceHealth  
Samaritan Health Services  
SAIF Corporation**



## Background

---

Nurses, nursing aides, orderlies and attendants suffer *more* work related musculoskeletal disorders (WRMSDs) that require time off work *than any other occupation* in the United States (United States Department of Labor [U.S. DOL], 2000). **Back injuries**, caused by repeated exposure to forceful exertions (lifting or pushing) and awkward and prolonged postures associated with lifting and moving patients manually, are the most common WRMSDs reported by nurses and health care workers.

According to Oregon Workers' Compensation Division data for 2002, over 1,500 health care professionals in Oregon received serious injuries on the job that year, 68 percent of those from sprains, strains and muscle tears.

Unfortunately nurses and health care workers are still manually moving and lifting patients using the same methods that have been taught for over 30 years in the United States, that is, techniques that are unsafe for both nurses and patients and have been ineffective to reduce the incidence of back injuries in health care professionals.

Ergonomics is about designing work environments and tasks and equipment to fit the physical and cognitive capabilities of workers with the goal of reducing injuries, such as strains and sprains and other WRMSDs, and the risk of mistakes or human errors.

This program has been created to assist your organization to reduce WRMSDs associated with manual patient handling and care tasks. Ergonomics principles that can be used at your facility to identify and address hazards associated with manual patient handling and other patient care tasks are demonstrated.

### ***Overall Program Goals***

The program is designed to facilitate the use of evidence-based musculoskeletal injury prevention strategies by nurses and health care workers that:

- Increase acceptance and use of patient lift and transfer equipment available by nurses and other health care workers, to facilitate safe patient handling and movement.
- Provide nurses and health care workers with strategies to reduce their risk of WRMSDs through participation in the selection of patient handling and other equipment appropriate for their work setting and the use of best work practices.
- Enhance patient perception regarding comfort and security of patient handling equipment, thereby, facilitating patient cooperation to allow use of such equipment.

## Background (continued)

---

### *About the Program*

The program is designed with flexibility in mind. Tailor this program to meet your organization's specific needs, for example, the materials provided can be used to develop or enhance an existing ergonomics or safe-lift program at your facility.

This training program is designed to be used as a supplement and in conjunction with the Oregon OSHA *A Back Injury Prevention Guide for Health Care Providers* (provided on the enclosed CD-ROM) and “**Ergonomics Awareness Training**” courses available through Oregon OSHA. For more information, go to [www.orosha.org](http://www.orosha.org) or call Oregon OSHA toll-free (888) 292-5247, Option 2.

***This program is not a substitute for specific training on the safe use of patient handling equipment. Not all patient handling equipment available is shown in the training videos.***

The training program is divided into two sections:

1. Applied Ergonomics for Nurses and Health Care Workers

Materials Provided:

- Instructor guide
- Video
- PowerPoint Presentation
- Participant Handouts
- Attendance sheet
- Training quiz
- Course evaluation

2. Patient Orientation

Materials Provided:

- Instructor guide
- Video
- Participant Handout

**All written training documents and other useful reference materials are available on the CD-ROM provided.**

## Table of Contents

---

|  |           |
|--|-----------|
| <b>Applied Ergonomics for Nurses and Health Care Workers Instructor Guide.....</b> | <b>1</b>  |
| <i>Course Overview</i>   |           |
| Introduction.....  | 2         |
| Program Objectives.....  | 2         |
| Training Materials.....  | 3         |
| Training Organization.....   | 4         |
| Scheduling the Training.....   | 5         |
| Instructor Preparation.....  | 6         |
| Training Preparation.....  | 7         |
| After Training Is Completed.....   | 8         |
| <b><i>Course Instructional Plan</i> .....</b>                                      | <b>9</b>  |
| Part 1 - Instruction.....  | 10        |
| Part 2 - Case Studies .....  | 33        |
| Case Study 1 .....   | 35        |
| Case Study 2 .....   | 37        |
| Case Study 3 .....   | 39        |
| Case Study 4 .....   | 41        |
| Case Study 5 .....   | 43        |
| Case Study 6 .....   | 45        |
| Quiz & Review.....   | 47        |
| <b>Patient Orientation Instructor Guide .....</b>                                  | <b>48</b> |
| <i>Course Overview</i>   |           |
| Introduction.....  | 49        |
| Program Objectives.....  | 49        |
| Training Materials.....  | 50        |
| Training Organization.....   | 50        |
| Scheduling the Training.....   | 50        |
| Training Preparation.....  | 51        |
| <b><i>Course Instructional Plan</i> .....</b>                                      | <b>52</b> |
| Training Presentation.....   | 52        |

## Table of Contents (continued)

---

### Appendix: Applied Ergonomics for Nurses and Health Care Workers

|              |   |
|--------------|---|
| Appendix I   | Participant Handout: <i>Applied Ergonomics for Nurses and Health Care Workers Participant Guide</i> |
| Appendix II  | Attendance Sheet  |
| Appendix III | Quiz  |
| Appendix IV  | Class Evaluation  |
| Appendix V   | Definitions of MSDS   |

### Appendix: Patient Orientation

|              |  |
|--------------|--|
| Appendix VI  | Participant Handout: <i>A Guide to Equipment used to safely Move, Lift and/or Reposition Patients or Residents</i> |
| Appendix VII | References for all Materials   |

### Contents of Safe Patient Handling in Health Care CD-ROM

- *Safe Patient Handling in Health Care: A Guide for Instructors* including all appendices.
- “Applied Ergonomics for Nurses and Health Care Workers” PowerPoint Presentation.
- *A Back Injury Prevention Guide for Health Care Providers*. Feletto M., Graze W. (1997). OR-OSHA Consultation Programs.
- *OSHA Guidelines for Nursing Homes: Ergonomics for the Prevention of Musculoskeletal Disorders*. (2003). Occupational Safety and Health Administration.
- *Ergonomics Program Steps for Health Care Flow Chart*. Enos, L. (2003).
- Patient Safety Center of Inquiry, Veterans Health Administration, and Department of Defense Veterans Administration Hospital, Tampa, Florida, resource documents:
  - *Patient Care Ergonomics Resource Guide: “Safe Patient Handling and Movement. 2001, Part 1 & 2”*
  - *Algorithms for Patient Handling*
  - *Algorithms for Bariatrics*
- Resource list for further information.

**Safe Patient Handling in Health Care:  
Applied Ergonomics for Nurses and  
Health Care Workers**

**Instructor Guide**

## **Course Overview**

---

### **Introduction**

The *Safe Patient Handling Program: Applied Ergonomics for Nurses and Health Care Workers* is a training program designed to help health care facilities and nursing educators teach nurses and other health care workers how to reduce their risk of back and other work related musculoskeletal disorders (WRMSDs). Participants will learn to identify and implement strategies to eliminate or reduce hazards associated with patient handling and movement and other patient care tasks, using engineering, work practice and administrative controls.

It is recommended that this training session be conducted by occupational health and safety personnel, ergonomists, educators or health care providers who are knowledgeable in the principles of ergonomics and safe patient handling.

Use the *A Back Injury Prevention Guide for Health Care Providers*, the *OSHA Guidelines for Nursing Homes: Ergonomics for the Prevention of Musculoskeletal Disorders* and other reference documents provided in the enclosed CD-ROM for additional guidance as needed when planning your training program.

### **Program Objectives**

The content of the training teaches employees to:

- Identify why there is no **Safe Way** to perform manual patient handling tasks.
- Identify risk factors that contribute to WRMSDs associated with manual patient handling tasks.
- Define strategies to eliminate or reduce hazards for WRMSDs, using engineering, work practice and administrative controls.

## **Course Overview**

---

### **Training Materials**

The *Safe Patient Handling Program: Applied Ergonomics for Nurses and Health Care Workers* includes the following materials:

1. Video  
“Applied Ergonomics for Nurses and Health Care Workers”  
  
Section 1 – Instruction. Allow 12 minutes to view this section of the video.  
  
Section 2 – Practice Activity: Six Case Studies. Allow 18 minutes to view all case studies plus additional time for discussion and/or group work.
2. PowerPoint slides on CD-ROM that provides *optional* supporting materials for Sections 1 and 2 of the video.
3. Facilitator guide that includes:
  - A course overview (which you are reading now)
  - Instructional plan
  - An appendix that includes:
    - Participant handout (which includes a Practice Activity worksheet)
    - Attendance sheet
    - Quiz
    - Class evaluation
    - Definitions of MSDs

**The materials listed above are also available on the enclosed CD-ROM.**

*Additional required materials:*

- VCR
- Computer projector and laptop computer with PowerPoint software or an overhead projector and printed PowerPoint overheads
- Projector screen
- Flip chart and pens

## Course Overview

---

### Training Organization

The *Safe Patient Handling Program: Applied Ergonomics for Nurses and Health Care Workers* is designed with built-in flexibility for you to adjust training timeframes to meet your specific needs.

This training employs the following activities and instructional tools:

- Section 1 of the instructional video *Applied Ergonomics for Nurses and Health Care Workers* reviews common causes of WRMSDs, such as back injuries associated with patient handling and care tasks, and identifies ergonomics principles used to eliminate or reduce the employee's risk of injury. A systematic 4-step process that employees can use to help reduce their risk of injury is presented.
- **Optional** review and further exploration of WRMSD prevention strategies for nurses and health care workers, using the PowerPoint presentation.
- In Section 2 of the instructional video *Applied Ergonomics for Nurses and Health Care Workers*, case studies provide structured activities that allow participants to practice identifying risk factors for WRMSDs and use the 4-step process to define engineering and work practice solutions.
- Multiple choice quiz.

## **Course Overview**

---

**Scheduling the Training** When scheduling the training session, groups of no more than 20 employees are recommended. This promotes interaction between the trainer and participants and facilitation of the structured activities.

You might want to identify an employee(s) who would like to share their experience with the group of an injury related to patient handling and the impact of the injury on their life.

A testimonial from a respected co-worker can be extremely effective in convincing staff to improve their injury prevention behaviors, such as using lift equipment and best work practices.

Section 2 of the video provides six case studies or scenarios that to allow participants to identify risk factors and hazards that contribute to WRMSDs and to determine a safer way to perform each patient handling and care task. Each study demonstrates an unsafe method of performing a patient handling task and then shows the same task performed in a safer manner using good work practices and appropriate patient handling equipment.

*Case Studies Provided:*

- Case Study 1: Repositioning Patient in Bed
- Case Study 2: Transfer from Chair to Bed
- Case Study 3: Transfer from Bed to Stretcher
- Case Study 4: Transfer from Wheel Chair to Bed
- Case Study 5: Making a Bed and Repositioning Patient in Bed
- Case Study 6: Patient Ambulation and Fall Recovery

If this material is used as is, this session could last *one to one and one-half* hours. Choose from the supplied materials what is appropriate for your participants. Incorporate items specific to your organization and/or additional material related to certain topics, such as access to and safe use of patient handling equipment and best work practices.

## Course Overview

---

### Instructor Preparation

#### ***Learning Objectives:***

Upon completion of the *Safe Patient Handling Program: Applied Ergonomics for Nurses and Health Care Workers* program participants will be able to:

- Identify activities at work or away from work that could put you at risk of musculoskeletal disorders (MSDs).
- Identify the primary risk factors that can contribute to the development of work related MSDs.
- Define why manual patient handling tasks are unsafe.
- Define health care ergonomics.
- Define engineering, work practice and administrative controls.
- Identify examples of work practice controls that can help reduce your risk of injury when performing patient handling and care tasks.
- Describe the four action steps that can reduce your risk of injury.

#### ***Behavioral Objectives:***

Upon completion of the *Safe Patient Handling Program: Applied Ergonomics for Nurses and Health Care Workers* program participants will be able to demonstrate the following behaviors:

Use the following four step process when performing patient handling and transfer and other care tasks:

1. Assess the patient to determine appropriate method of lift or transfer.
2. Assess the environment and remove hazards.
3. Get necessary equipment and help as required.
4. Perform the task safely.

## **Course Overview**

---

### **Training Preparation**

1. Identify the location of the room in which you will conduct the training. Ideally, the room will be quiet, well ventilated, and well lighted. Classroom style seating will allow participants to take notes and form discussion groups if desired.
2. Schedule the session and send out notices to managers and supervisors. Prepare employees for training by distributing flyers and posters and/or using e-mail distribution and Intranet postings.

*Before you conduct the training session:*

3. Review all program materials thoroughly. Customize the program to meet your training goals and to include information pertinent to your organization. Consider using pictures or videos from your facility whenever appropriate.
4. Make notes of example discussion questions and anticipate questions participants are likely to ask.
5. Determine how to best facilitate case studies activities in Part 2 of the video.
6. Practice presenting the program.
7. Make enough copies of the Participant Handout (including the Practice Activity worksheet) as necessary and the session quiz for all those attending the session.
8. Copy the quiz to your PowerPoint presentation or make an overhead transparency to facilitate discussion of answers with the group.
9. Copy the attendance and evaluation sheets.
10. Gather and prepare other materials specific to your organization that you need for the training and practice, such as your facility's safe lift policy and procedure, and patient handling equipment instructional materials.

## **Course Overview**

---

### **Training Preparation (continued)**

11. Prepare flip chart pages and/or use PowerPoint slides:

- Agenda
- Objectives
- An outline of your organization's ergonomics and/or safe patient handling and movement program
- Other pertinent information and/or discussion points

12. Test computer and TV/VCR equipment.

13. Cue up the video so it is at the starting point.

14. Remember, wherever possible, it is important to allow the participants to actively participate in the session. This allows participants to take an active role in learning, and increases the ability to recall what is learned.

### **After Training Is Completed**

Make sure that all participants sign the attendance sheet and complete a course evaluation form. Collect: *Applied Ergonomics for Nurses and Health Care Workers* quiz and course evaluation forms.

Keep all written training materials, attendance sheets and quizzes per your facility's training policies.

## **Course Instructional Plan**

---

**Please read the following before planning your training program.**

The Course Instructional Plan can be adapted to fit your training goals and time frame.

### **Section 1 – Instruction**

**Slides 1 - 4** are required. Use the slides provided or transfer content to a flip chart.

**Slides 5 - 32** are recommended but not required. These slides provide review and further information about ergonomics, risk factors for MSDs and principles for MSD prevention. You may use all or some of these slides as a basis for further instruction about specific topics or items you wish to discuss.

**Slides 33 - 42** are recommended but not required. These slides may be used to review and discuss the 4-Step process that employees can use to help reduce their risk of injury together with elements of your facility's safe lift policy, such as selecting the safest equipment and handling technique based on patient characteristics.

### **Section 2 – Practice Activity: Case Studies**

**Slides 43 - 80** are required. These slides provide information for each of the six case studies that should be used to facilitate discussion and application of the 4-Step injury prevention process. You may choose to use all or some of the case studies for the practice activity.

**Slides 45 - 49** Case Study 1: Repositioning Patient in Bed

**Slides 50 - 54** Case Study 2: Transfer from Chair to Bed

**Slides 55 - 61** Case Study 3: Transfer from Bed to Stretcher

**Slides 62 - 68** Case Study 4: Transfer from Wheel Chair to Bed

**Slides 69 - 73** Case Study 5: Making a Bed & Repositioning Patient in Bed

**Slides 74 - 80** Case Study 6: Patient Ambulation and Fall Recovery

## Course Instructional Plan

### Materials to Use

### Teaching Guide

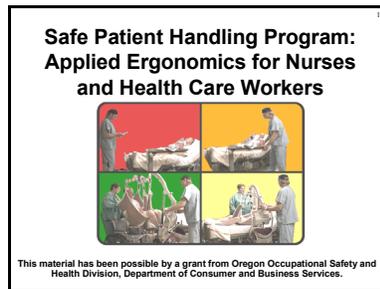
Slides 1 - 4 are required. Use the slides provided or transfer content to a flip chart.

### Introductions

Welcome employees to the session and introduce yourself.

Discuss locations for restrooms, beverages, etc. You may want to ask if this could be a “cell-free zone.” Recommend pagers be set to vibrate.

### Slide 1



Introduce the workshop *Safe Patient Handling Program: Applied Ergonomics for Nurses and Health Care Workers*. Discuss how the workshop fits into your organization’s or facility’s ergonomics and safe patient handling program.

Remind employees of the importance of:

- Safety in your organization.
- Their role in your organization’s or facility’s ergonomics and safe patient handling program.

### *Optional Activity:*

Ask volunteer participant(s) who were identified before the class to share their experiences related to patient handling.

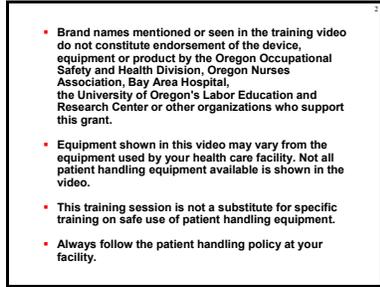
## Course Instructional Plan

| Materials to Use   | Teaching Guide  |
|--|---|
| <p><b>Slide 2 Review Training Objectives</b></p> <div data-bbox="397 478 781 768" style="border: 1px solid black; padding: 5px;"><p style="text-align: center;"><b>Session Objectives</b></p><ul style="list-style-type: none"><li>▪ Identify activities at work or away from work that could put you at risk of Musculoskeletal Disorders (MSDs).</li><li>▪ Identify the primary risk factors that can contribute to the development of work related MSDs.</li><li>▪ Define why manual patient handling tasks are unsafe.</li><li>▪ Define health care ergonomics.</li><li>▪ Define engineering, work practice and administrative controls.</li><li>▪ Identify examples of work practice controls that can help reduce your risk of injury when performing patient handling and care tasks.</li><li>▪ Describe the four action steps that can reduce your risk of injury.</li></ul></div> | <p>Refer to the training objectives.</p> <ul style="list-style-type: none"><li>• Identify activities at work or away from work that could put you at risk of musculoskeletal disorders (MSDs).</li><li>• Identify the primary risk factors that can contribute to the development of MSDs.</li><li>• Define why manual patient handling tasks are unsafe.</li><li>• Define health care ergonomics.</li><li>• Define engineering, work practice and administrative controls.</li><li>• Identify examples of work practice controls that can help reduce your risk of injury when performing patient handling and care tasks.</li><li>• Describe the four action steps that can reduce your risk of injury.</li></ul> |
| <p><b>Slide 3 Review Agenda</b></p> <div data-bbox="397 1339 781 1629" style="border: 1px solid black; padding: 5px;"><p style="text-align: center;"><b>Session Agenda</b></p><ul style="list-style-type: none"><li>▪ Background</li><li>▪ The ABC Hospital Safe Patient Handling Program</li><li>▪ Applied Ergonomics for Nurses and Health Care Workers Video: Section 1</li><li>▪ Review Key Points from Video</li><li>▪ Applied Ergonomics for Nurses and Health Care Workers Video: Section 2 – Case Studies</li><li>▪ Case Studies: Discussion and Group Work</li><li>▪ Quiz and Evaluations</li></ul></div>   | <p>Review the agenda (the slide provided or a flip chart could be used).</p> <ul style="list-style-type: none"><li>• Background.</li><li>• The ABC Hospital Safe Patient Handling Program (Your facility’s program).</li><li>• Applied Ergonomics for Nurses and Health Care Workers Video: Section 1.</li><li>• Review key points from video.</li><li>• Applied Ergonomics for Nurses and Health Care Workers Video: Section 2 – case studies.</li><li>• Case Studies: Discussion and group work.</li><li>• Quiz and evaluations</li></ul>   |

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

### Slide 4 Show Video (12 minutes)



Present the “Safe Patient Handling Program: Applied Ergonomics for Nurses and Health Care Workers” Video.

You may show Slide 4 before the video.

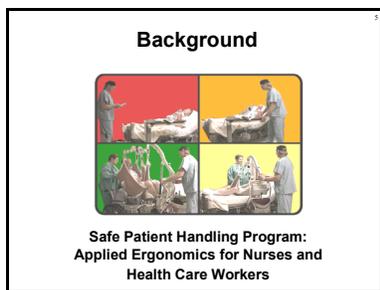
Stop the video at “Case Studies” if you plan to review the information given in the first part of the video and/or divide participants into groups for the practice activity.

Encourage participants to watch for:

- The causes of musculoskeletal disorders (MSDs).
- Methods of reducing their risk of injury (MSDs) when performing patient care and handling tasks.

**Slides 5 - 32 are recommended but not required. These slides provide review and further information about ergonomics, risk factors for MSDs and principles for MSD prevention. You may use all or some of these slides as a basis for further instruction about specific topics or items you wish to discuss.**

### Slide 5 Background



Show Slide 5 and inform participants that you will now review and discuss the injury prevention concepts and ideas presented in the video.

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

### Slide 6 The Incidence of MSDs in Health Care

**The Incidence of MSDs in Health Care**

- The most common MSDs reported by nurses and nursing aides are strains or sprains and injuries due to overexertion (lifting, pushing or pulling) associated with patient handling tasks.
  
- At risk Occupations for Strains and Sprains, 2000
  - # 1 Truck Drivers
  - # 2 Nursing aides, orderlies & attendants
  - # 3 Laborers
  - # 6 RN's
  - # 18 LPNs

Source: U.S. DOL, 2002

Show and review Slide 6

- The most common MSDs reported by nurses and nursing aides are strains or sprains and injuries due to overexertion (lifting, pushing or pulling) associated with patient handling tasks.
  
  - At risk Occupations for Strains and Sprains, 2000
    - # 1 Truck Drivers
    - # 2 Nursing aides, orderlies & attendants
    - # 3 Laborers
    - # 6 RNs
    - # 18 LPNs
- (Source: U.S. DOL, 2002)

***Additional information that you may choose to present:***

Studies show that nurses leave the profession due to back pain.

The risk of MSDs associated with manual patient handling may lead to increased absenteeism, job turnover and decreased staff retention.

### Slides 7, 8 & 9 Why is Manual Patient Handling So Hazardous?

**Why is Manual Patient Handling So Hazardous?**

- The Physical Demands of Work
  - Patient
    - Weight (heavy load)
    - Shape (bulky and awkward)
    - Behavior (unpredictable, confused, fragile, in pain)
  - High repetition of tasks
  
- Equipment and Facilities Design
  - Constricted work space
  - Poorly maintained equipment

Why is manual patient handling so hazardous?

Ask participants to give examples of work factors that make manual patient handling hazardous.

Show Slides 7, 8, & 9

*Emphasize* that the physical effort required to repeatedly lift and move patients manually is greater than your musculoskeletal system can tolerate.

The physical demands of work

- Patient
  - Weight (heavy load)
  - Shape (bulky and awkward)
  - Behavior (unpredictable, confused, fragile, in pain)
  - High repetition of tasks

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

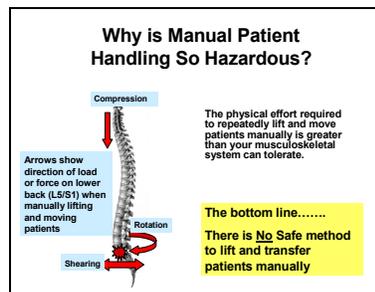
### Slides 7, 8 & 9 Cont.

**Why is Manual Patient Handling So Hazardous?**

- **Poor Work Practices**
  - Adjustments on equipment (e.g., bed) not used
- **Personal Factors**
  - Off the job activities e.g., Lifting and handling children; trash; shopping, or performing yard work, etc
  - Previous Injury

**Remember: Using good biomechanics is not enough to prevent back injuries and other MSDs caused by manual patient handling.**

**Why is Manual Patient Handling So Hazardous?**



Arrows show direction of load or force on lower back (L5/S1) when manually lifting and moving patients

Compression

The physical effort required to repeatedly lift and move patients manually is greater than your musculoskeletal system can tolerate.

Rotation

Shearing

**The bottom line.....**  
There is **No Safe** method to lift and transfer patients manually

- Equipment and Facilities Design, e.g.,
  - Constricted work space
  - Poorly maintained equipment
- Poor Work Practices, e.g.,
  - Adjustments on equipment (e.g., bed) not used
- Personal Factors:
  - Off the job activities, e.g., Lifting and handling children, trash, shopping or performing yard work, etc.
  - Previous injury

Review the impact of manual patient handling on the spine.

Forces directed to the low back (L5/S1) when manually handling and lifting patients exceeds human tolerance.

Force can be a combination of compression, shearing and torsion.

### *Additional information that you may choose to present:*

Factors that increase risk of low back injury and injury to other body structures, e.g., shoulders, wrists, knees, etc:

- Performing patient care tasks may require static trunk flexion (hold a forward bend position for more than a few seconds or minutes).
- Sudden or unexpected shift in load (patient) being handled.
- Working in constricted spaces often exaggerates the use awkward postures.
- Poorly maintained equipment can increase the force required to operate it (e.g., worn or broken casters on beds or carts).

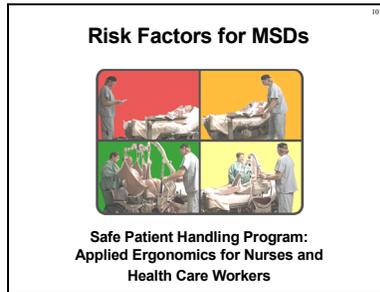
## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

Slides  
7, 8 & 9  
Cont.

Ask why manual patient handling may also be hazardous to the patient, e.g., increase risk of falls and skin trauma.

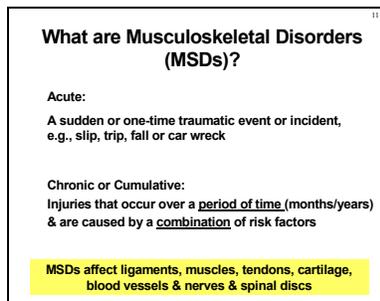
Slides 10 & 11  
**Risk Factors for MSDs**



Show Slides 10 & 11

Inform participants that you are going to review and discuss risk factors for MSDs.

### What are Musculoskeletal Disorders (MSDs)?



Acute:

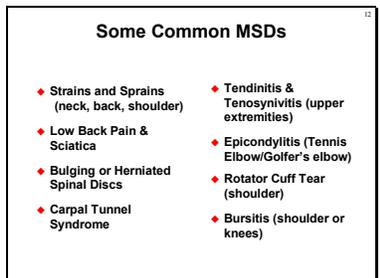
A sudden or one-time traumatic event or incident, e.g., slip, trip, fall or car wreck.

Chronic or Cumulative:

Injuries that occur over a period of time (months/years) & are caused by a combination of risk factors.

MSDs affect ligaments, muscles, tendons, cartilage, blood vessels & nerves & spinal discs.

Slide 12  
**Some Common MSDs**



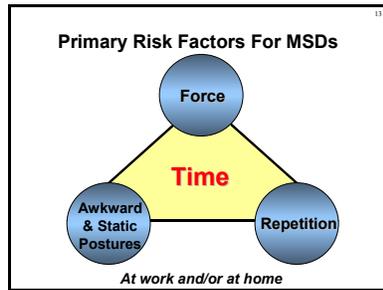
Display and review Slide 12

If you wish to define some of the MSDs noted on the slide, a list of MSD definitions can be found in Appendix V.

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slide 13 Primary Risk Factors For MSDs**



Ask “Give examples of the three primary risk factors for MSDs” for example, carefully demonstrate an awkward posture such as reaching forward over shoulder height.

Display and review Slide 13

*Emphasize* that the risk of injury is increased by duration (time) of exposure to the task, intensity and combination of risk factors.

Ask participants to give other sources of risk factors for MSDs at home. *Emphasize* that ergonomics applies off the job, too.

More information about risk factors for MSDs can be found in *A Back Injury Prevention Guide for Health Care Providers*.

**Slides 14 & 15 Awkward Posture & MSDs**

For each of the risk factors described in Slides 14 - 20 ask participants to give other examples of work tasks that require the use of awkward and/or static postures, force, or repetition or a combination of these risk factors.

**Optional Activity:**

Record responses on flip chart. You can discuss possible solutions to reduce participant exposure to these risk factors at the end of this slide review.

Display and review Slides 14 & 15

**Awkward Posture & MSDs**

**Awkward Posture & MSDs**

**Definition:**  
Position of the body when performing physical tasks

**Awkward postures** cause biomechanical stress to joints and surrounding soft tissues. Strength to the body part is decreased accelerating muscle fatigue and increasing risk of injury.

**Awkward Postures include:**

- Bending
- Twisting
- Reaching overhead
- Kneeling
- Squatting
- Pinch grips

**Definition:**

Position of the body when performing physical tasks.

Awkward postures cause biomechanical stress to joints and surrounding soft tissues. Strength to the body part is decreased accelerating muscle fatigue and increasing risk of injury.

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slides  
14 & 15  
Cont.**

**Awkward Posture & MSDs**

Examples:

- Providing medical care or performing personal hygiene tasks when the patient is in a chair or bed that is too low
- Accessing medical equipment such as in-wall oxygen or suction equipment
- Manually repositioning or transferring patients

Examples:

- Providing medical care or performing personal hygiene tasks when the patient is in a chair or bed that is too low
- Accessing medical equipment such as in-wall oxygen or suction equipment
- Manually repositioning or transferring patients

***Additional information that you may choose to present:***

Poor lighting, poorly designed information displays, or obstructed field of vision can contribute to awkward postures, e.g. reading small print on medication containers in poor light or viewing a computer monitor in a brightly lit room (glare issue).

**Slides 16 & 17**    **Static or Fixed Postures and MSDs**

Display and Review Slides 16 & 17

Static or Fixed Postures & MSDs

**Static or Fixed Postures & MSDs**

Definition:  
Postures or work positions that are held for a period of time

Blood supply reduced to muscles → muscle fatigue



Definition:

Postures or work positions that are held for a period of time.

Blood supply reduced to muscles leads to muscle fatigue.

Examples:

- Prolonged standing or sitting
- Performing patient care tasks or making a bed while bending forward at the waist for a few minutes or longer
- Supporting a patient's extremities or heavy instruments during a nursing task or medical procedure

**Static or Fixed Postures & MSDs**

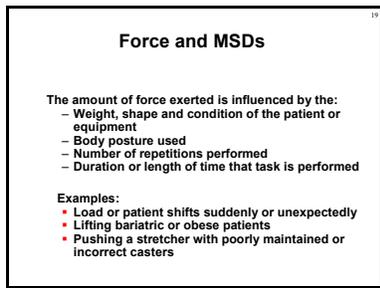
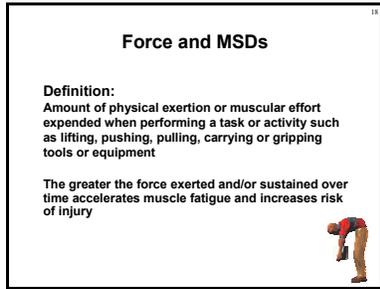
Examples:

- Prolonged standing or sitting
- Performing patient care tasks or making a bed while bending forward at the waist for a few minutes or longer
- Supporting a patient's extremities or heavy instruments during a nursing task or medical procedure

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slides 18 & 19**      **Force and MSDs**



Display and Review Slides 18 & 19

**Force and MSDs**

**Definition:**

Amount of physical exertion or muscular effort expended when performing a task or activity, such as lifting, pushing, pulling, carrying or gripping tools or equipment.

The greater the force exerted and/or sustained over time accelerates muscle fatigue and increases risk of injury.

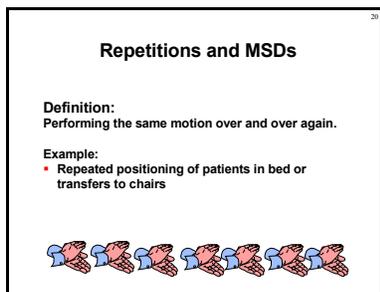
The amount of force exerted is influenced by the:

- Weight, shape and condition of the patient or equipment
- Body posture used
- Number of repetitions performed
- Duration or length of time that task is performed

**Examples:**

- Load or patient shifts suddenly or unexpectedly
- Lifting Bariatric or obese patients
- Pushing a stretcher with poorly maintained or incorrect casters

**Slide 20**      **Repetitions and MSDs**



Display and review Slide 20

**Repetitions and MSDs**

**Definition:**

Performing the same motion over and over again.

**Example:**

- Repeated positioning of patients in bed or transfers to chairs

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

Slide  
20  
Cont.

*Additional information that you may choose to present:*

The amount of repetition is affected by the pace of work, amount of recovery time for muscle groups between activities and the amount of variety in work tasks.

Slides  
21 & 22

### The Cumulative Effect

Display and review Slides 21 & 22

**The Cumulative Effect**

Duration of Exposure to Risk Factors (Time)

Affected by:

- Working through breaks
- Overtime
- Task variability

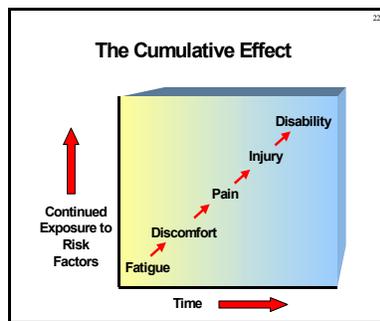
When the musculoskeletal system is exposed to a combination of these risk factors (too quickly, too often and for too long) without sufficient recovery or rest time, damage occurs

The Cumulative Effect

Duration of Exposure to Risk Factors (Time)

Affected by:

- Working through breaks
- Overtime
- Task variability



When the musculoskeletal system is exposed to a combination of these risk factors (too quickly, too often and for too long) without sufficient recovery or rest time, damage occurs. This wear & tear process eventually causes physical symptoms such as pain and swelling.

*Emphasize* the risk of injury is increased by duration of exposure to the task, intensity and combination of risk factors.

As repetitive motions, forceful exertions, and other contributing factors increase in work tasks, so does the recovery time (i.e., the length and frequency of muscle relaxation breaks) needed to help reduce fatigue and prevent injury. If recovery time is not sufficient and exposure continues over weeks, months and years, then the severity of the MSD increases (Slide 22).

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slides  
21 & 22  
Cont.**

*Additional information that you may choose to present:*

Keep in mind that personal factors, such as level of physical fitness, weight, diet, habits, and lifestyle, may also affect the development of MSDs.

Various medical conditions may also predispose individuals to MSDs or increase the severity of symptoms. In addition, psychosocial factors may have an impact on MSDs. These factors include:

- Level of stress
- Level of job security and satisfaction
- Amount of autonomy on the job (e.g., degree of control over the arrangement of work areas or the pace of work)

**Slide  
23**      **Patient Handling  
Higher Risk Tasks**



Show Slide 23

Patient Handling - Higher Risk Tasks

- Transfer from/to bed to chair or stretcher
- Manually moving patient in bed
- Manually lifting from floor
- Attempting to stop falls

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slides 24 & 25**      **Prevention**



Display and review Slides 24 & 25

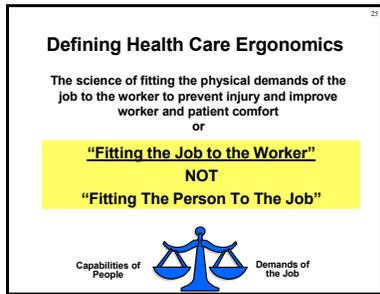
Inform participants that you will now review and discuss ways in which MSDs can be prevented using ergonomics principles.

The goal of MSD prevention activities is to eliminate or reduce the number of ergonomics risk factors, thereby reducing the risk for MSDs.

Emphasis that:

*Employee Safety = Patient Safety*

**Defining Health Care Ergonomics**



Defining Health Care Ergonomics

The science of fitting the physical and cognitive demands of the job to the worker to prevent injury, human error and improve worker and patient comfort.

or  
“Fitting the Job to the Worker”  
NOT  
“Fitting The Person To The Job”

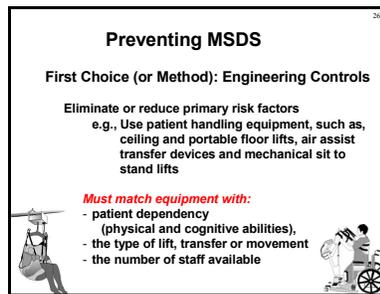
In the case of MSDs we are interested in balancing the physical capabilities of people to the physical demands of the job.

*This is a good time to review your organization's ergonomics or safe lift policy again.*

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slide 26**      **Preventing MSDS Engineering Controls**



Show and review Slide 26

Discuss what type of patient handling equipment and other ergonomic devices/equipment that are available or will be available at your facility.

Add devices available to the PowerPoint slide or list on a flip chart. Showing photographs of devices is also helpful.

### Preventing MSDS

First Choice (or Method): Engineering Controls  
Eliminate or reduce primary risk factors, e.g., use patient handling equipment, such as ceiling and portable floor lifts, air assist transfer devices and mechanical sit to stand lifts.

Must match equipment with:

- Patient dependency (physical and cognitive abilities)
- The type of lift, transfer or movement
- The number of staff available

### *Optional Activity:*

Discuss the advantages and disadvantages of each type of patient handling equipment at your facility, the MSD risk reduction it provides, and correct use and maintenance. This information should be provided to you by the supplier (vendor) of patient handling equipment at your facility. Additional information is provided on the CD-ROM that accompanies this training material.

You may want to incorporate hands-on training in the correct use of patient handling equipment available at your facility.

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slides 27 & 28**    **Preventing MSDS Work Practice Controls**

**Preventing MSDS**

**Second Choice: Work Practice Controls**

Reduce employee exposure to primary risk factors by using best work methods, e.g.,

- Plan work organization
- Use good housekeeping practices
- Use adjustments on equipment
- Get help
- Eliminate unnecessary movements
- Don't use broken equipment

**Remember – it's the employee's responsibility to use good work practices and follow the organizations' safe patient handling policy and procedures**

**Preventing MSDS**

**Second Choice - Work Practice Controls**

- Use neutral or good body postures  
Neutral postures reduce physical stress on musculoskeletal structures and enable optimum blood flow to the musculoskeletal system

**Example:**  
Work at proper heights & keep everything in easy reach

**Using good body mechanics or postures is still important when using patient handling equipment and devices**

Show and review Slides 27 & 28

Discuss work practice controls used in your safe lift program.

*Emphasize* that it is the employee's responsibility to use best work practices and follow the organizations' safe patient handling policy and procedures.

Using good body mechanics or postures is still important when using patient handling equipment and devices.

Preventing MSDS

Second Choice: Work Practice Controls

Reduce employee exposure to primary risk factors by using best work methods, e.g.,

- Plan work organization
- Use good housekeeping practices
- Use adjustments on equipment
- Get help
- Eliminate unnecessary movements
- Don't use broken equipment
- Use neutral or good body postures

Neutral postures reduce physical stress on musculoskeletal structures and enable optimum blood flow to the musculoskeletal system. Your body is in the strongest and most balanced position.

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

Slides  
27 & 28  
Cont.

Example:

- Work at proper heights & keep everything in easy reach

*Ask participants for examples of best work practices that may reduce their risk of injury*

### Optional Activity:

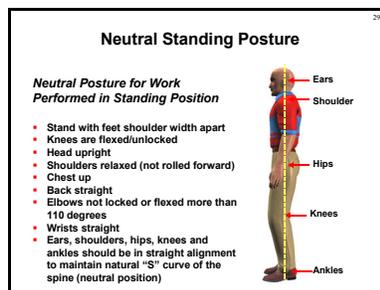
Discuss tips to help maintain good bodymechanics when lifting or moving objects:

- Plan your move
- Mentally prepare
- Physically prepare
  - Use the body as a unit
  - Keep load close to body
  - Wide to a stable base
  - Lower your center of gravity
  - Keep your nose between your toes
  - Bend at the hips no the waist
  - Point your toe where you want to go
  - Shift through your lower body
  - Never twist your back

Slide  
29  
**Preventing MSDS  
Neutral Standing  
Posture**

Show and review Slide 29

Neutral Posture for Work Performed in Standing Position



- Stand with feet shoulder width apart
- Knees are flexed/unlocked
- Head upright
- Shoulders relaxed (not rolled forward)

## Course Instructional Plan

| Materials to Use              | Teaching Guide   |
|-------------------------------|--|
| <b>Slide<br/>29<br/>Cont.</b> | <ul style="list-style-type: none"><li>• Chest up</li><li>• Back straight</li><li>• Elbows not locked or flexed more than 110 degrees</li><li>• Wrists straight</li><li>• Ears, shoulders, hips, knees and ankles should be in straight alignment to maintain natural “S” curve of the spine (neutral position)</li></ul> <p><i>Additional information that you may choose to present:</i></p> <p>It is important to keep the 'S' curve of the spine when moving, bending, and lifting. The loss of these curves means the back is less stable and more prone to injury.</p> <p>Some other neutral postures are:</p> <ul style="list-style-type: none"><li>• Wrist—neutral posture is the handshake position with the hand extending straight from the wrist</li><li>• Elbow—neutral posture is with the elbow bent at approximately 90°</li><li>• Shoulder—neutral posture is with the upper arm hanging down from the shoulder (but not rounded forward)</li><li>• Back—the normal “S” curve is the neutral position for the back</li><li>• Neck—the neutral position is with the head balanced squarely above the shoulders</li></ul> <p><i>Optional Activity:</i></p> <p>Demonstrate the difference between poor and good standing posture. Have participants try this exercise with you.</p> |

## Course Instructional Plan

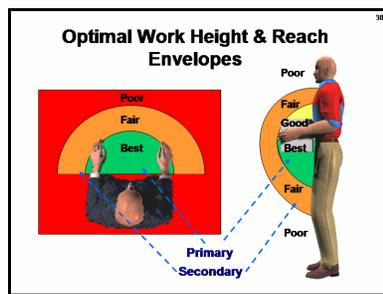
| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

Slide  
29  
Cont.

Poor posture - Stand with feet close together and weight on one leg. Round (slouch) out the back and drop the head and shoulders forward.

Good posture – use the information presented in Slide 29 to demonstrate good standing posture.

Slide  
30  
**Preventing MSDS  
Optimal Work Height &  
Reach Envelopes**



Show and review Slide 30

The 'Best and Good' or Primary Reach Distance is the area where work tasks are performed, or tools and equipment handled frequently.

The Fair or Secondary reach distance is the area where work tasks are performed, or tools and equipment handled infrequently.

Reach envelopes is the term used to describe the areas that we can reach in a safe position as we move the arm around the shoulder or the forearm around the elbow.

These are important because they determine the area in which we can comfortably work using neutral body postures.

Movement around the elbow defines the primary work area, while the secondary work area can be found by moving the entire arm.

### ***Optional Activity:***

Have participants give examples of work tasks they perform in the secondary reach envelope. Have them discuss how they may be able to change work layout and tasks they describe so that the reach distance is reduced.

## Course Instructional Plan

| Materials to Use  | Teaching Guide  |
|---|---|
| <p><b>Slide 31</b>      <b>Preventing MSDS Administrative Controls</b></p> <div data-bbox="397 478 776 768" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>Preventing MSDS</b></p> <p><b>Second Choice: Administrative Controls</b></p> <p>Reduce employee exposure to primary risk factors, e.g.,</p> <ul style="list-style-type: none"> <li>• Ergonomics training</li> <li>• Policy &amp; procedures that define good work practices</li> <li>• Job rotation</li> <li>• Staffing and overtime practices</li> </ul> </div>                        | <p>Show and review Slide 31</p> <p>Discuss administrative controls used in your safe lift program.</p> <p>Preventing MSDS</p> <p>Second Choice: Administrative Controls</p> <p>Reduce employee exposure to primary risk factors, e.g.,</p> <ul style="list-style-type: none"> <li>• Ergonomics training</li> <li>• Policy and procedures that define good work practices</li> <li>• Job rotation</li> <li>• Staffing and overtime practices</li> </ul>  |
| <p><b>Slide 32</b>      <b>Preventing MSDS Summary</b></p> <div data-bbox="397 1234 776 1524" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>Preventing MSDS</b></p> <div style="text-align: center; background-color: #e0f0ff; padding: 10px;"> <p>Engineering<br/>+<br/>Work Practice<br/>+<br/>Administrative<br/>Controls<br/>=<br/>Reduce the Risk of Injury for<br/>Employees &amp; Patients</p> </div> <p style="text-align: center; font-size: small;"><i>Remember - back belts are ineffective in preventing back injuries</i></p> </div> | <p>Show and review Slide 32</p> <p><i>Emphasize</i> that it is often a combination of controls that is used to effectively reduce the risk of work related MSDS.</p> <p>Preventing MSDS</p> <p style="text-align: center;">Engineering + Work Practice + Administrative Controls = Reduce the Risk of Injury for Employees &amp; Patients</p> <p>Remember - studies have not shown that back belts are effective in preventing back injuries.</p> <p><b>Optional Activity:</b></p> <p>Ask participants why they might choose <i>not</i> to use an engineering (such as a lift device), or work practice control (such as raising a bed to the correct work height).</p> <p>Record responses on flip chart. Discuss how these issues might be overcome, e.g., improve access to equipment.</p> |

## Course Instructional Plan

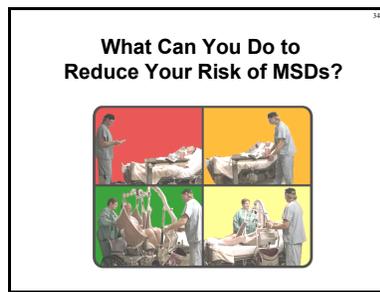
| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

Slides 33 - 42 are recommended but not required. These slides may be used to review and discuss the 4-Step process that employees can use to help reduce their risk of injury together with elements of your facility's safe lift policy, such as selecting the safest equipment and handling technique, based on patient characteristics.

**Slides 33 & 34**    **What Can You Do to Reduce Your Risk of MSDs?**

Show and review Slides 33 & 34

What Can You Do to Reduce Your Risk of MSDs?

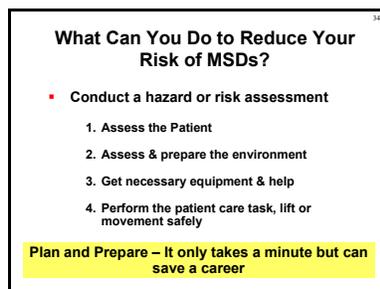


Conduct a hazard or risk assessment

- Assess the patient
- Assess & prepare the environment
- Get necessary equipment & help
- Perform the patient care task, lift or movement safely

**Conduct a hazard or risk assessment**

Plan and Prepare – It only takes a minute but can save a career.



*Note:* As your ergonomics/safe lift program develops, you can add best work practice information to any of these four steps.

Discuss how you assess individual patients to determine what type of equipment and the number of staff is required to lift or transfer them safely at your facility.

*For example:* You may assess patients on admission and incorporate patient handling requirements into the patient care plan.

Care Plan Considerations include:

- Type of task to be completed, e.g., transferring, repositioning, ambulating, or toileting

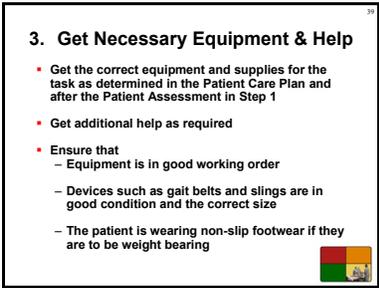
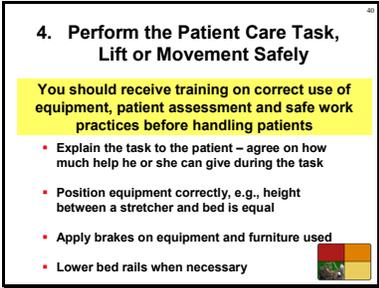
## Course Instructional Plan

| Materials to Use   | Teaching Guide   |
|--|--|
| <p><b>Slides<br/>33 &amp; 34<br/>Cont.</b></p>   | <ul style="list-style-type: none"> <li>• Type of equipment or assistive devices needed</li> <li>• Number of caregivers needed to complete the task safely</li> </ul> <p>Refer to the following resource documents on the enclosed CD-ROM for more information on selecting the safest equipment and handling technique, based on patient characteristics:</p> <ul style="list-style-type: none"> <li>- <i>Patient Care Ergonomics Resource Guide: “Safe Patient Handling and Movement. 2001, Part 1 &amp; 2”</i></li> <li>- <i>Algorithms for Patient Handling</i></li> <li>- <i>Algorithms for Bariatrics</i></li> </ul> <p>Source: The Patient Safety Center of Inquiry, Veterans Health Administration, and Department of Defense Veterans Administration Hospital, Tampa, Florida.</p> |
| <p><b>Slides 35 &amp; 36</b></p> <p><b>Step 1: Assess the Patient</b></p> <div data-bbox="397 1262 776 1549" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>1. Assess the Patient</b></p> <p><b>Goal:</b></p> <p>To assess if patient status (physical and cognitive abilities) has changed and to determine the safest method to transfer or move the patient.</p> <p>Compare assessment with patient handling orders or instructions in the Patient’s Care Plan and ensure that staff are alerted to changes in patient status.</p> </div> <div data-bbox="397 1585 776 1873" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>1. Assess the Patient (continued)</b></p> <p>This brief observation includes assessment of the patient’s:</p> <ul style="list-style-type: none"> <li>• Ability to provide assistance</li> <li>• Physical status – ability to bear weight, upper extremity strength, coordination and balance</li> <li>• Ability to cooperate and follow instructions</li> <li>• Medical status – changes in diagnosis or symptoms, pain, fatigue, medications</li> </ul> <p style="background-color: yellow;">When in doubt, assume the patient cannot assist with the transfer/ repositioning</p> </div> | <p>Show and review Slides 35 &amp; 36</p> <p>1. Assess the Patient</p> <p><b>Goal:</b><br/>To assess if patient status (physical and cognitive abilities) has changed and to determine the safest method to transfer or move the patient.</p> <p>Compare assessment with patient handling orders or instructions in the Patient’s Care Plan and ensure that staff is alerted to changes in patient status.</p> <p>This brief observation includes assessment of the patient’s:</p> <ul style="list-style-type: none"> <li>• Ability to provide assistance</li> <li>• Physical status – ability to bear weight, upper extremity strength, coordination and balance</li> <li>• Ability to cooperate and follow instructions</li> </ul>   |

## Course Instructional Plan

| Materials to Use   | Teaching Guide  |
|--|---|
| <p><b>Slides<br/>35 &amp; 36<br/>Cont.</b></p>   | <ul style="list-style-type: none"> <li>• Medical status – changes in diagnosis or symptoms, pain, fatigue, medications</li> </ul> <p>When in doubt, assume the patient cannot assist with the transfer or repositioning task.</p>   |
| <p><b>Slides 37 &amp; 38</b></p> <p><b>Step 2: Assess &amp; Prepare the Environment</b></p> <div data-bbox="397 800 781 1089" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><b>2. Assess &amp; Prepare the Environment</b></p> <ul style="list-style-type: none"> <li>▪ Ensure that the path for transfer or movement is clear and remove (using good body posture) obstacles and clutter that constrain use of good posture and access to the patient, e.g.,                             <ul style="list-style-type: none"> <li>- bed tables, and chairs</li> <li>- trip hazards, e.g., cords from medical equipment</li> <li>- slip hazards, e.g., spilled beverages or other fluids on the floor</li> </ul> </li> </ul> </div> <div data-bbox="397 1125 781 1415" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>2. Assess &amp; Prepare the Environment (continued)</b></p> <ul style="list-style-type: none"> <li>▪ Consider safe handling of medical devices, such as catheters, intravenous tubing, oxygen tubing, and monitoring devices</li> <li>▪ Ensure good lighting.</li> <li>▪ Adjust equipment, such as beds to correct working height to promote good postures</li> <li>▪ Keep supplies close to body to avoid long reaches</li> </ul> </div> | <p>Show and review Slides 37 &amp; 38</p> <p>2. Assess &amp; Prepare the Environment</p> <ul style="list-style-type: none"> <li>• Ensure that the path for transfer or movement is clear and remove (using good body posture) obstacles and clutter that constrain use of good posture and access to the patient, e.g.,                             <ul style="list-style-type: none"> <li>- Bed tables, and chairs</li> <li>- Trip hazards, e.g., cords from medical equipment</li> <li>- Slip hazards, e.g., spilled beverages or other fluids on the floor</li> </ul> </li> <li>• Consider safe handling of medical devices, such as catheters, intravenous tubing, oxygen tubing, and monitoring devices</li> <li>• Ensure good lighting</li> <li>• Adjust equipment, such as beds to correct working height to promote good postures</li> <li>• Keep supplies close to body to avoid long reaches</li> </ul> |

## Course Instructional Plan

| Materials to Use  | Teaching Guide   |
|---|--|
| <p><b>Slide 39</b>      <b>Get Necessary Equipment &amp; Help</b></p>                                  | <p>Show and review Slide 39</p> <p>3. Get Necessary Equipment &amp; Help</p> <ul style="list-style-type: none"><li>• Get the correct equipment and supplies for the task as determined in the Patient Care Plan and after the Patient Assessment in Step 1.</li><li>• Get additional help as required.</li><li>• Ensure that:<ul style="list-style-type: none"><li>- Equipment is in good working order</li><li>- Devices such as gait belts and slings are in good condition and the correct size</li><li>- The patient is wearing non-slip footwear if they are to be weight bearing</li></ul></li></ul> <p><i>Additional information that you may choose to present:</i></p> <p>Review the equipment maintenance program and the procedure for reporting broken or malfunctioning equipment and at your facility.</p> |
| <p><b>Slides 40 &amp; 41</b>      <b>Perform the Patient Care Task, Lift or Movement Safely</b></p>  | <p>Show and review Slides 40 &amp; 41</p> <p>4. Perform the Patient Care Task, Lift or Movement Safely.</p> <p>You should receive training on the correct use of equipment, patient assessment, and safe work practices before handling patients.</p> <ul style="list-style-type: none"><li>• Explain the task to the patient – agree on how much help he or she can give during the task</li><li>• Position equipment correctly, e.g., height between a stretcher and bed is equal</li><li>• Apply brakes on equipment and furniture used</li><li>• Lower bed rails when necessary</li></ul>  |

## Course Instructional Plan

| Materials to Use   | Teaching Guide  |
|--|---|
| <p><b>Slides 40 &amp; 41 Cont.</b></p> <div data-bbox="397 373 768 646" style="border: 1px solid black; padding: 5px;"><p>4. Perform the Patient Care Task, Lift or Movement Safely (continued)</p><ul style="list-style-type: none"><li>• Coordinate the task as a team (nurses and patient)</li><li>• Have the patient assist as much as possible</li><li>• Use good body posture – keep work close to the body and at optimal height</li><li>• Know your physical limits and do not exceed them</li></ul><p style="background-color: yellow; text-align: center;">Follow your organizations safe patient handling policy and procedures</p></div> | <ul style="list-style-type: none"><li>• Coordinate the task as a team (nurses and patient)</li><li>• Have the patient assist as much as possible</li><li>• Use good body posture – keep work close to the body and at optimal height</li><li>• Know your physical limits and do not exceed them</li></ul> <p>Follow your organizations' safe handling policy and procedures.</p> <p><i>Additional information that you may choose to present:</i></p> <p>Know how to use equipment</p> <p>Plan the lift and communicate with staff and patient.</p> <p>Work together, including actions of more than one caregiver as well as the patient.</p> <p>Consider infection control precautions when sharing lift equipment or other devices between patients.</p> |
| <p><b>Slide 42</b></p> <p><b>What Else Can You Do?</b></p> <div data-bbox="397 1360 768 1633" style="border: 1px solid black; padding: 5px;"><p style="text-align: center;">What Else Can You Do?</p><ul style="list-style-type: none"><li>• Report Ergonomic Problems to Your Supervisor</li><li>• Apply Back Injury Prevention Principles to Your Off -The-Job Activities</li><li>• Report Any Physical Problems Early = Quicker Recovery</li></ul></div>  | <p>Show and review Slide 42</p> <p>What Else Can You Do?</p> <ul style="list-style-type: none"><li>• Report ergonomics problems to your supervisor</li><li>• Apply back injury prevention principles to your off -the-job activities</li><li>• Report any physical problems early = quicker recovery</li></ul> <p><i>Optional Activity:</i></p> <p>Go back to the tasks and related risk factors identified by participants at Slides 14 &amp;15 and brainstorm possible solutions.</p>   |

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

Slides 43 - 80 are required. These slides provide information for each of the six case studies that should be used to facilitate discussion and application of the 4-Step injury prevention process. You may choose to use all or some of the case studies for the practice activity.

Slides 45 - 49 Case Study 1: Repositioning Patient in Bed

Slides 50 - 54 Case Study 2: Transfer from Chair to Bed

Slides 55 - 61 Case Study 3: Transfer from Bed to Stretcher

Slides 62 - 68 Case Study 4: Transfer from Wheel Chair to Bed

Slides 69 - 73 Case Study 5: Making a Bed & Repositioning Patient in Bed

Slides 74 - 80 Case Study 6: Patient Ambulation and Fall Recovery

### Practice Activity

#### CASE STUDIES

The purpose of the case studies is to practice identifying risk factors or hazards for MSDs (both acute and cumulative) and to develop potential solutions that may be engineering, and/or work practice controls. The 4-step process that employees can use to help reduce their risk of injury is emphasized.

Depending on the size of your class, you may choose to divide participants into groups of 4 or 5 and have each group identify and present risk factors and solutions for each case study reviewed.

#### *Process*

View the first part (the unsafe method) of each case study. Stop the tape and identify the primary risk factors and safety hazards in the patient handling scenario viewed. Determine a safer way to perform the task that would eliminate or reduce risk factors and hazards identified. Use the slides provided in the instructional materials to aid your discussion.

A participant worksheet to be used for this *Practice Activity* is provided in the participant handout.

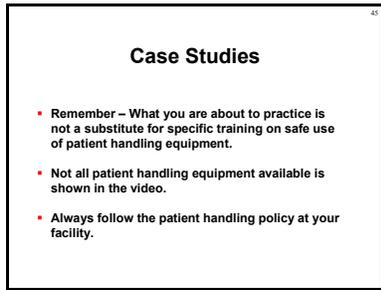
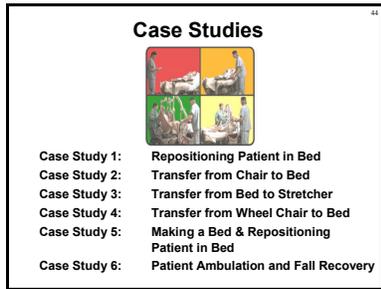
## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slides 43 & 44**    **Case Studies**  
**View video**  
**(Each case study is approximately 3 minutes in length)**

Show Slides 43 & 44

Review the purpose of the *Practice Activity* and explain how participants are expected to participant.



Case Studies

Remember – What you are about to practice is not a substitute for specific training on safe use of patient handling equipment.

Not all patient handling equipment available is shown in the video.

Always follow the patient handling policy at your facility.

Present the first Case Study you have chosen to view from the “Safe Patient Handling Program: Applied Ergonomics for Nurses and Health Care Workers” Video.

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slide 45**      **Case Study 1**  
**Repositioning Patient in Bed**

**What Did You See?**

**Case Study 1**  
**Repositioning Patient in Bed**

**What Did You See?**

- Identify primary risk factors for MSDs
- Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries
- Determine the cause or the primary risk factors and hazards observed
- Determine a safer way to perform the task

Show Slide 45 and discuss or have groups present risk factors or hazards identified, the task or job step they are associated with and the cause of the risk factors.

Case Study 1  
Repositioning Patient in Bed

What Did You See?

- Identify primary risk factors for MSDs
- Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries
- Determine the cause or the primary risk factors and hazards observed
- Determine a safer way to perform the task

**Slides 46 & 47**      **Case Study 1**  
**Repositioning Patient in Bed**

**Case Study 1**  
**Repositioning Patient in Bed**

| Task                    | Risk Factors & Hazards   | Cause  |
|-------------------------|--|--|
| Injection of Medication | Back bent & twisted coupled with static posture<br>Trip Hazard | Bed too low<br>Rail up<br>Bed table obstructs access<br>Phone on bed – cord on floor |
| Dispose of needle       | Back bent<br>Neck bent backwards<br>Long reach (arm overhead)  | Bed table obstructs access   |

Show Slides 46 & 47

To determine the basic or root cause(s) of the risk factor or hazard observed, keep asking questions about how the job is performed until you reach a cause that describes a *poor fit* between the worker's physical capabilities and the equipment or environment.

**Case Study 1**  
**Repositioning Patient in Bed** (continued)

| Task               | Risk Factors & Hazards   | Cause   |
|--------------------|--|---|
| Reposition patient | Back bent & twisted<br>Neck bent backwards<br>Forceful exertion– back and shoulder | Bed too low<br>Rail up<br>Weight of patient<br>Patient did not assist |

## Course Instructional Plan

| Materials to Use  | Teaching Guide  |
|---|---|
| <p><b>Slides 48 &amp; 49</b>    <b>Case Study 1</b><br/><b>Repositioning Patient in Bed</b></p> <p><b>The Safer Way</b></p> <div data-bbox="397 583 768 863" style="border: 1px solid black; padding: 5px;"><p style="text-align: center;"><b>Case Study 1</b><br/><b>Repositioning Patient in Bed:</b><br/><b>The Safer Way</b></p><ul style="list-style-type: none"><li>▪ <b>Assess the Patient</b><ul style="list-style-type: none"><li>- Has upper extremity strength, can sit unaided, is non-weight bearing, cooperative (consider medical status etc.)</li></ul></li><li>▪ <b>Assess the Environment</b><ul style="list-style-type: none"><li>- Move bed table and phone, raise bed, lower rail when administering injection</li><li>- Raise bed and lower bed rails before moving patient</li></ul></li></ul></div> <div data-bbox="397 926 776 1213" style="border: 1px solid black; padding: 5px;"><p style="text-align: center;"><b>Case Study 1</b><br/><b>Repositioning Patient in Bed:</b><br/><b>The Safer Way (continued)</b></p><ul style="list-style-type: none"><li>▪ <b>Get Necessary Equipment &amp; Help</b><ul style="list-style-type: none"><li>- Friction reducing device (slippery sheet) &amp; two nurses or caregivers</li></ul></li><li>▪ <b>Perform the Task Safely</b><ul style="list-style-type: none"><li>- Coordinate the move</li><li>- Use good posture</li><li>- Have patient assist</li></ul></li></ul></div> | <p>Show Slides 48 &amp; 49</p> <p>Case Study 1<br/>Repositioning Patient in Bed:</p> <p>The Safer Way</p> <ul style="list-style-type: none"><li>● <b>Assess the Patient</b><ul style="list-style-type: none"><li>- Has upper extremity strength, can sit unaided, is non-weight bearing, cooperative (consider med status, etc.)</li></ul></li><li>● <b>Assess the Environment</b><ul style="list-style-type: none"><li>- Move bed table and phone, raise bed, lower rail when administering injection</li><li>- Raise bed and lower bed rails before moving patient</li></ul></li><li>● <b>Get Necessary Equipment &amp; Help</b><ul style="list-style-type: none"><li>- Friction reducing device (slippery sheet) &amp; two nurses or caregivers</li></ul></li><li>● <b>Perform the Task Safely</b><ul style="list-style-type: none"><li>- Coordinate the move</li><li>- Use good posture</li><li>- Have patient assist</li></ul></li></ul> |

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slide 50**      **Case Study 2**  
**Transfer from Chair to Bed**

**What Did You See?**

| Case Study 2<br>Transfer from Chair to Bed  |  |
|---|--|
| What Did You See?   |  |
| <ul style="list-style-type: none"> <li>• Identify primary risk factors for MSDs</li> <li>• Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries</li> <li>• Determine the cause or the primary risk factors and hazards observed</li> <li>• Determine a safer way to perform the task</li> </ul> |  |

Show Slide 50 and discuss or have groups present risk factors or hazards identified, the task or job step they are associated with and the cause of the risk factors.

Case Study 2  
Transfer from Chair to Bed

**What Did You See?**

- Identify primary risk factors for MSDs
- Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries
- Determine the cause or the primary risk factors and hazards observed
- Determine a safer way to perform the task

**Slides 51 & 52**      **Case Study 2**  
**Transfer from Chair to Bed**

| Case Study 2<br>Transfer from Chair to Bed |   |   |
|--|---|---|
| Task                                       | Risk Factors & Hazards                          | Cause   |
| Assisting patient from chair to bed        | Forceful exertion – back<br>Back bent & twisted | Patient weight<br>Patient not capable of bearing full Weight<br>Patient not assessed<br>Chair too low |

Show Slides 51 & 52

To determine the basic or root cause(s) of the risk factor or hazard observed, keep asking questions about how the job is performed until you reach a cause that describes a *poor fit* between the worker's physical capabilities and the equipment or environment.

| Case Study 2<br>Transfer from Chair to Bed (continued) |   |  |
|--|---|--|
| Task   | Risk Factors & Hazards  | Cause  |
| Assisting patient onto bed                             | Forceful and sudden exertion – back<br>Back bent & twisted<br>Neck bent backwards | Patient not capable of full weight bearing<br>Patient not assessed |
| Repositioning in bed                                   | Forceful exertion – back<br>Back bent & twisted<br>Neck bent backwards            | Patient not capable of full weight bearing<br>Bed too low          |

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slides 53 & 54**    **Case Study 2**  
**Transfer from Chair to Bed**

**The Safer Way**

**Case Study 2**  
**Transfer from Chair to Bed:**  
**The Safer Way**

- **Get Necessary Equipment & Help**
  - Powered Sit-to-Stand device
  - Only one caregiver needed
- **Perform the Task Safely**
  - Apply equipment brakes when raising and lowering patient
  - Raise bed before lifting patient's legs
  - Use good posture
  - Have patient assist

**Case Study 2**  
**Transfer from Chair to Bed:**  
**The Safer Way (continued)**

- **Get Necessary Equipment & Help**
  - Powered Sit-to-Stand device
  - Only one caregiver needed
- **Perform the Task Safely**
  - Apply equipment brakes when raising and lowering patient
  - Raise bed before lifting patient's legs
  - Use good posture
  - Have patient assist

Show Slides 53 & 54

Case Study 2  
 Transfer from Chair to Bed:

The Safer Way

- **Assess the Patient**
  - Partial weight bearing, cooperative, has upper extremity strength and can sit unaided
- **Assess the Environment**
  - Move bed table, lower head of bed; lower bed rail using good posture
- **Get Necessary Equipment & Help**
  - Powered sit-to-stand device
  - Only one caregiver needed
- **Perform the Task Safely**
  - Apply equipment brakes when raising and lowering patient
  - Raise bed before lifting patient's legs
  - Use good posture
  - Have patient assist

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slide 55**      **Case Study 3**  
**Transfer from Bed to Stretcher**

**What Did You See?**

| Case Study 3<br>Transfer from Bed to Stretcher  |  |
|---|--|
| <b>What Did You See?</b>  |  |
| <ul style="list-style-type: none"> <li>• Identify primary risk factors for MSDs</li> <li>• Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries</li> <li>• Determine the cause or the primary risk factors and hazards observed</li> <li>• Determine a safer way to perform the task</li> </ul> |  |

Show Slide 55 and discuss or have groups present risk factors or hazards identified, the task or job step they are associated with and the cause of the risk factors.

Case Study 3  
Transfer from Bed to Stretcher

**What Did You See?**

- Identify primary risk factors for MSDs
- Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries
- Determine the cause or the primary risk factors and hazards observed
- Determine a safer way to perform the task

**Slides 56, 57 & 58**      **Case Study 3**  
**Transfer from Bed to Stretcher**

| Case Study 3<br>Transfer from Bed to Stretcher |  |                                       |
|--|--|---------------------------------------|
| Task   | Risk Factors & Hazards   | Cause                                 |
| Positioning stretcher in room                  | Back bent and twisted  | Poor posture or bodymechanics         |
|  | Sharp corners or protruding edges on furniture (risk of soft tissue contusion) | Moving furniture in constricted space |
| Preparing transfer                             | Back bent<br>Long reach (arm overhead)   | Passing IV bag and tubing over bed    |

Show Slides 56, 57 & 58

To determine the basic or root cause(s) of the risk factor or hazard observed, keep asking questions about how the job is performed until you reach a cause that describes a *poor fit* between the worker's physical capabilities and the equipment or environment.

| Case Study 3<br>Transfer from Bed to Stretcher (continued) |   |                                  |
|--|---|----------------------------------|
| Task   | Risk Factors & Hazards                              | Cause                            |
| Performing transfer  | Extreme forceful exertion – back and shoulders      | Patient weight and shape         |
|  | Back bent   | Patient unable to assist         |
|  | Neck bent backwards                                 | Stretcher higher than bed height |
|  | Extreme bending of knee (on bed) coupled with force | Width of stretcher and bed       |
|  | Extended reach to grasp drawsheet                   | Use of drawsheet to move patient |
|  | Forceful grip (poor hand hold)                      |                                  |

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

Slides  
56, 57  
& 58  
Cont.

| Case Study 3<br>Transfer from Bed to Stretcher (continued) |   |  |
|--|---|--|
| Task   | Risk Factors & Hazards  | Cause  |
| Moving the stretcher                                       | Forceful exertion - back and shoulder<br>Back bent and twisted<br>Neck bent backwards and twisted<br>Arms extended away from body | Pushing and Pulling stretcher on carpeted surface<br>Lack of holder on stretcher for oxygen tank<br>Lack of steering control on stretcher<br>Stretcher too low |

Slides  
59, 60  
& 61

### Case Study 3 Transfer from Bed to Stretcher

#### The Safer Way

| Case Study 3<br>Transfer from Bed to Stretcher:<br>The Safer Way  |  |
|---|--|
| <ul style="list-style-type: none"> <li>▪ Assess the Patient                             <ul style="list-style-type: none"> <li>- This is a Bariatric patient who cannot assist with the transfer</li> </ul> </li> <li>▪ Assess the Environment                             <ul style="list-style-type: none"> <li>- Move furniture from of work area before bringing stretcher into room</li> </ul> </li> </ul> |  |

| Case Study 3<br>Transfer from Bed to Stretcher:<br>The Safer Way (continued)   |  |
|--|--|
| <ul style="list-style-type: none"> <li>▪ Get Necessary Equipment &amp; Help                             <ul style="list-style-type: none"> <li>- Air assisted friction-reducing device &amp; three caregivers</li> <li>- Pass IV bag around patient</li> <li>- Stretcher has holder for IV and Oxygen tank</li> <li>- Larger wheels and steering assist mechanism</li> </ul> </li> </ul> |  |

| Case Study 3<br>Transfer from Bed to Stretcher:<br>The Safer Way (continued)   |  |
|--|--|
| <ul style="list-style-type: none"> <li>▪ Perform the Task Safely                             <ul style="list-style-type: none"> <li>- Coordinate the preparation and transfer</li> <li>- Work heights equal and equipment/bed brakes applied</li> <li>- Use good posture</li> <li>- Adjust stretcher height for movement to allow good posture</li> <li>- 2<sup>nd</sup> person required to guide front of stretcher only</li> </ul> </li> </ul> |  |

Show Slides 59, 60 & 61

Case Study 3  
Transfer from Bed to Stretcher:

#### The Safer Way

- Assess the Patient
  - This is a Bariatric patient who cannot assist with the transfer
- Assess the Environment
  - Move furniture from of work area before bringing stretcher into room
- Get Necessary Equipment & Help
  - Air assisted friction-reducing device & three caregivers
  - Pass IV bag around patient
  - Stretcher has holder for IV and oxygen tank
  - Larger wheels and steering assist mechanism
- Perform the Task Safely
  - Coordinate the preparation and transfer
  - Work heights equal and equipment/bed brakes applied
  - Use good posture
  - Adjust stretcher height for movement to allow good posture
  - 2<sup>nd</sup> person required to guide front of stretcher only

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slide 62**      **Case Study 4**  
**Transfer from Wheel Chair to Bed**

**What Did You See?**

| Case Study 4<br>Transfer from Wheel Chair to Bed   |  |
|--|--|
| What Did You See?  |  |
| • Identify primary risk factors for MSDs   |  |
| • Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries |  |
| • Determine the cause or the primary risk factors and hazards observed                     |  |
| • Determine a safer way to perform the task  |  |

Show Slide 62 and discuss or have groups present risk factors or hazards identified, the task or job step they are associated with and the cause of the risk factors.

Case Study 4  
Transfer from Wheel Chair to Bed

**What Did You See?**

- Identify primary risk factors for MSDs
- Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries
- Determine the cause or the primary risk factors and hazards observed
- Determine a safer way to perform the task

**Slides 63, 64 & 65**      **Case Study 4**  
**Transfer from Wheel Chair to Bed?**

| Case Study 4<br>Transfer from Wheel Chair to Bed |  |  |
|--|--|--|
| Task   | Risk Factors & Hazards                                       | Cause  |
| Preparing to Assist the Patient                  | Forceful exertion - back<br>Back bent<br>Neck bent backwards | Holding patient's leg while adjusting foot rest<br>Adjusting leg supports/foot rests |
| Assisting patient from wheelchair to bed         | Forceful exertion - back<br>Back bent & twisted              | Patient not capable of full weight bearing<br>Patient weight<br>Patient not assessed |

Show Slides 63, 64 & 65

To determine the basic or root cause(s) of the risk factor or hazard observed, keep asking questions about how the job is performed until you reach a cause that describes a *poor fit* between the worker's physical capabilities and the equipment or environment.

| Case Study 4<br>Transfer from Wheel Chair to Bed (continued) |   |   |
|--|---|---|
| Task   | Risk Factors & Hazards  | Cause   |
| Assisting patient onto bed                                   | Forceful and sudden exertion - back<br>Back bent & twisted<br>Neck bent backwards | Patient not capable of full weight bearing<br>Patient not Assessed<br>Wheel chair away from bed |

## Course Instructional Plan

### Materials to Use

### Teaching Guide

Slides  
63, 64  
& 65  
Cont.

| Case Study 4<br>Transfer from Wheel Chair to Bed (continued) |  |   |
|--|--|---|
| Task   | Risk Factors & Hazards   | Cause   |
| Repositioning in bed   | Forceful exertion<br>-back<br>Back bent & twisted<br>Neck bent backwards | Bed too low<br>Bed rail up<br>Head of Bed partially raised<br>Patient does not assist |

Slides  
66, 67  
& 68

**Case Study 4  
Transfer from Wheel  
Chair to Bed**

### The Safer Way

| Case Study 4<br>Transfer from Wheel Chair to Bed:<br>The Safer Way   |  |
|--|--|
| <ul style="list-style-type: none"> <li>Assess the Patient                             <ul style="list-style-type: none"> <li>Partial weight bearing, cooperative, has upper extremity strength and can sit unaided</li> </ul> </li> <li>Assess the Environment                             <ul style="list-style-type: none"> <li>Move bed table, raise bed, raise head of bed, lower bed rail using good posture</li> </ul> </li> </ul> |  |

| Case Study 4<br>Transfer from Wheel Chair to Bed:<br>The Safer Way (continued)   |  |
|--|--|
| <ul style="list-style-type: none"> <li>Get Necessary Equipment &amp; Help                             <ul style="list-style-type: none"> <li>Gait belt; crutches and trapeze bar</li> <li>Only one caregiver needed</li> </ul> </li> </ul> |  |

| Case Study 4<br>Transfer from Wheel Chair to Bed:<br>The Safer Way (continued)  |  |
|---|--|
| <ul style="list-style-type: none"> <li>Perform the Task Safely                             <ul style="list-style-type: none"> <li>Use good posture to apply gait belt and to adjust wheel chair foot supports</li> <li>Have patient assist to hold leg while adjusting foot support</li> <li>Do NOT lift but guide patient to a standing position</li> <li>Have patient transfer self to bed with stand-by assist</li> <li>Have patient reposition self on bed</li> </ul> </li> </ul> |  |

Show Slides 66, 67 & 68

Case Study 4  
Transfer from Wheel Chair to Bed: The Safer Way

- Assess the Patient
  - Partial weight bearing, cooperative, has upper extremity strength and can sit unaided
- Assess the Environment
  - Move bed table, raise bed, raise head of bed, lower bed rail using good posture
- Get Necessary Equipment & Help
  - Gait belt; crutches and trapeze bar
  - Only one caregiver needed
- Perform the Task Safely
  - Use good posture to apply gait belt and to adjust wheel chair foot supports
  - Have patient assist to hold leg while adjusting foot support
  - Do NOT lift but guide patient to a standing position
  - Have patient transfer self to bed with stand-by assist
  - Have patient reposition self on bed

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slide 69**      **Case Study 5**  
**Making a Bed and Repositioning Patient in Bed**

**What Did You See?**

**Case Study 5**  
**Making a Bed and Repositioning Patient in Bed**

**What Did You See?**

- Identify primary risk factors for MSDs
- Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries
- Determine the cause or the primary risk factors and hazards observed
- Determine a safer way to perform the task

Show Slide 69 and discuss or have groups present risk factors or hazards identified, the task or job step they are associated with and the cause of the risk factors.

Case Study 5  
 Making a Bed and Repositioning Patient in Bed

**What Did You See?**

- Identify primary risk factors for MSDs
- Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries.
- Determine the cause or the primary risk factors and hazards observed
- Determine a safer way to perform the task

**Slides 70 & 71**      **Case Study 5**  
**Making a Bed and Repositioning Patient in Bed**

**Case Study 5**  
**Making a Bed and Repositioning Patient in Bed**

| Task           | Risk Factors & Hazards   | Cause  |
|----------------|--|--|
| Making the bed | Forceful exertion – back and shoulders (nurse turning & holding patient)<br><br>Back bent & twisted in static posture (nurse turning & holding patient)<br><br>Repetitive bending & twisting of back (nurse making bed)<br><br>Neck bent backwards (both nurses) | Weight of patient<br><br>Patient unable to assist<br><br>Bed too low<br><br>Bed Rails up |

Show Slides 70 & 71

To determine the basic or root cause(s) of the risk factor or hazard observed, keep asking questions about how the job is performed until you reach a cause that describes a *poor fit* between the worker’s physical capabilities and the equipment or environment.

**Case Study 5**  
**Making a Bed and Repositioning Patient in Bed** (continued)

| Task                            | Risk Factors & Hazards  | Cause   |
|---------------------------------|---|---|
| Making the bed                  | Forceful grip - Poor hand hold (nurse turning & holding patient)<br><br>Slip Hazard                   | Using drawsheet<br><br>Spill on floor   |
| Repositioning patient up in bed | Forceful exertion – back and shoulder<br><br>Back bent & twisted<br><br>Neck bent backwards & twisted | Weight of patient<br><br>Patient unable to assist<br><br>Bed too low<br><br>Rail up |

## Course Instructional Plan

| Materials to Use   | Teaching Guide   |
|--|--|
| <p><b>Slides 72 &amp; 73</b>    <b>Case Study 5</b><br/> <b>Making a Bed and Repositioning Patient in Bed</b></p> <p><b>The Safer Way</b></p> <div data-bbox="399 625 776 909" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>Case Study 5</b><br/> <b>Making a Bed and Repositioning Patient in Bed:</b><br/> <b>The Safer Way</b></p> <ul style="list-style-type: none"> <li>▪ <b>Assess the Patient</b> <ul style="list-style-type: none"> <li>- This is a semi-conscious patient who is unable to assist</li> </ul> </li> <li>▪ <b>Assess the Environment</b> <ul style="list-style-type: none"> <li>- Clean up spill, have bed linens ready, raise bed and lower rails</li> </ul> </li> </ul> </div> <div data-bbox="399 947 776 1218" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>Case Study 5</b><br/> <b>Making a Bed and Repositioning Patient in Bed:</b><br/> <b>The Safer Way (continued)</b></p> <ul style="list-style-type: none"> <li>▪ <b>Get Necessary Equipment &amp; Help</b> <ul style="list-style-type: none"> <li>- Ceiling hoist and 2 nurses or caregivers</li> </ul> </li> <li>▪ <b>Perform the Task Safely</b> <ul style="list-style-type: none"> <li>- Coordinate lift and movement</li> <li>- Each nurse makes a side of the bed</li> <li>- Move bed and/or use ceiling lift to reposition patient safely</li> </ul> </li> </ul> </div> | <p>Show Slides 72 &amp; 73</p> <p>Case Study 5<br/>             Making a Bed and Repositioning Patient in Bed:</p> <p>The Safer Way</p> <ul style="list-style-type: none"> <li>• <b>Assess the Patient</b> <ul style="list-style-type: none"> <li>- This is a semi-conscious patient who is unable to assist</li> </ul> </li> <li>• <b>Assess the Environment</b> <ul style="list-style-type: none"> <li>- Clean up spill, have bed linens ready, raise bed and lower rails</li> </ul> </li> <li>• <b>Get Necessary Equipment &amp; Help</b> <ul style="list-style-type: none"> <li>- Ceiling hoist and two nurses or caregivers</li> </ul> </li> <li>• <b>Perform the Task Safely</b> <ul style="list-style-type: none"> <li>- Coordinate lift and movement</li> <li>- Each nurse makes a side of the bed</li> <li>- Move bed and/or use ceiling lift to reposition patient safely</li> </ul> </li> </ul> |

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slides 74**      **Case Study 6  
Patient Ambulation and  
Fall Recovery**

**What Did You See?**

**Case Study 6**  
**Patient Ambulation and Fall Recovery**

**What Did You See?**

- Identify primary risk factors for MSDs
- Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries
- Determine the cause or the primary risk factors and hazards observed
- Determine a safer way to perform the task

Show Slide 74 and discuss or have groups present risk factors or hazards identified, the task or job step they are associated with and the cause of the risk factors.

Case Study 6  
Patient Ambulation and Fall Recovery

What Did You See?

- Identify primary risk factors for MSDs
- Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries
- Determine the cause or the primary risk factors and hazards observed
- Determine a safer way to perform the task

**Slides 75, 76 & 77**      **Case Study 6  
Patient Ambulation and  
Fall Recovery**

**Case Study 6**  
**Patient Ambulation and Fall Recovery**

| Task               | Risk Factors & Hazards  | Cause  |
|--------------------|---|--|
| Ambulating patient | Trip hazards<br>Sharp corners or protruding edges on furniture (risk of soft tissue contusion)<br>Poor and unstable coupling (handhold) | Equipment in walkway<br><br>No safe way to support patient – holding wrist may cause soft tissue trauma to patient during fall |

Show Slides 75,76 & 77

To determine the basic or root cause(s) of the risk factor or hazard observed, keep asking questions about how the job is performed until you reach a cause that describes a *poor fit* between the worker's physical capabilities and the equipment or environment.

**Case Study 6**  
**Patient Ambulation and Fall Recovery**  
(continued)

| Task                                   | Risk Factors & Hazards  | Cause  |
|--|---|--|
| Attempting to control the patient fall | Forceful exertion – back and shoulders<br>Back bent & twisted<br>Neck bent backwards<br>Forceful twisting of left forearm when attempting to 'hold' patient during fall | Patient weight coupled with sudden motion<br><br>Location of patient at floor level<br><br>Poor coupling – no location to securely support patient and control the fall safely |

## Course Instructional Plan

|                         |                       |
|-------------------------|-----------------------|
| <b>Materials to Use</b> | <b>Teaching Guide</b> |
|-------------------------|-----------------------|

Slides  
75, 76  
& 77  
Cont.

| Case Study 6<br>Patient Ambulation and Fall Recovery<br>(continued) |  |  |
|---|--|--|
| Task  | Risk Factors & Hazards   | Cause  |
| Lifting patient from floor  | Forceful exertion – back and shoulder<br>Back bent<br>Neck bent backwards<br>Forceful grip - Poor coupling hand hold | Weight of patient<br>Patient unable to Assist<br>Location of patient - lift from floor level<br>No safe way to hold patient's arms and legs. Risk of soft tissue trauma to patient |

Slides  
78, 79  
& 80

### Case Study 6 Patient Ambulation and Fall Recovery

#### The Safer Way

| Case Study 6<br>Patient Ambulation and Fall Recovery:<br>The Safer Way   |  |
|--|--|
| <ul style="list-style-type: none"> <li>▪ Assess the Patient                             <ul style="list-style-type: none"> <li>– Can weight bear with standby assist and is cooperative</li> <li>– The patient cannot stand without assistance after fall</li> </ul> </li> <li>▪ Assess the Environment                             <ul style="list-style-type: none"> <li>– Move IV pole and wheelchair in walkway</li> </ul> </li> </ul> |  |

| Case Study 6<br>Patient Ambulation and Fall Recovery:<br>The Safer Way (continued)   |  |
|--|--|
| <ul style="list-style-type: none"> <li>▪ Get Necessary Equipment &amp; Help                             <ul style="list-style-type: none"> <li>– Use gait belt for ambulation</li> <li>– Only one nurse or caregiver needed</li> <li>– Portable powered floor lift and two nurses or caregivers to safely lift patient from floor using equipment</li> </ul> </li> </ul> |  |

Show Slides 78, 79 & 80

Case Study 6  
Patient Ambulation and Fall Recovery:

#### The Safer Way

- Assess the Patient
  - Can weight bear with standby assist and is cooperative
  - The patient cannot stand without assistance after fall
- Assess the Environment
  - Move IV pole and wheelchair in walkway
- Get Necessary Equipment & Help
  - Use gait belt for ambulation
  - Only one nurse or caregiver needed
  - Portable powered floor lift and two nurses or caregivers to safely lift patient from floor using equipment

## Course Instructional Plan

| Materials to Use | Teaching Guide |
|------------------|----------------|
|------------------|----------------|

**Slides  
78, 79  
& 80  
Cont.**

**Case Study 6**  
**Patient Ambulation and Fall Recovery:**  
**The Safer Way (continued)**

- Perform the Task Safely
  - Improve coupling or handhold by using gait belt with handles (less grip force required)
  - Control fall correctly using gait belt as aid (but not to 'lift' patient)
  - Maintain good posture while controlling the fall and supporting patient in floor lift sling
  - Use of portable powered floor lift reduces injury risk for caregiver and patient

- Perform the Task Safely
  - Improve coupling or handhold by using gait belt with handles (less grip force required)
  - Control fall correctly using gait belt as aid (but not to 'lift' patient)
  - Maintain good posture while controlling the fall and supporting patient in floor lift sling
  - Use of portable powered floor lift reduces injury risk for caregiver and patient

### Quiz & Review

Distribute the Applied Ergonomics for Nurses and Health Care Workers quiz (provided in the Appendix III) to each participant.

Instruct participants to complete the quiz.

Review the quiz while displaying an overhead or PowerPoint copy of the quiz. Read each question and ask participants for an answer and review the questions. Mark the correct answer on the overhead or slide if feasible. *Answers are provided in Appendix III.*

Instruct participants to sign and date the quiz.

Ask if there are any questions.

Offer a method for participants to find out more about ergonomics issues in health care and their organization's safe lift program.

**Safe Patient Handling in Health Care:  
Patient Orientation  
Instructor Guide**

## **Course Overview**

---

### **Introduction**

The *Safe Patient Handling Program: Patient Orientation* is a training program designed to inform patients and their families about safe patient handling practices that improve patient safety and comfort and reduce the caregiver's risk of back injury and other WRMSDs associated with manually lifting and moving patients.

It is recommended that this training session be conducted before or upon the patient's admission to your health care facility if feasible.

The video may also be used to educate nurses and other health care workers about the advantages of using patient handling equipment to lift and move patients.

Refer to *A Back Injury Prevention Guide for Health Care Providers* and the *OSHA Guidelines for Nursing Homes: Ergonomics for the Prevention of Musculoskeletal Disorders* provided in the enclosed CD-ROM for more information about patient handling equipment and devices.

### **Program Objectives**

The content of the training teaches

- Patients and their families the purpose and benefit to patients and caregivers of using mechanical equipment and other devices to lift, reposition, and transfer patients.
- Nurses and health care workers how to obtain patient cooperation with use of mechanical equipment and other devices that may be used to lift, reposition, and transfer patients.

## Course Overview

---

### Training Materials

*Safe Patient Handling Program: Patient Orientation* includes the following materials:

1. Video, titled “*Patient Orientation*”  
Allow 12 minutes to view the video.
2. Facilitator Guide that includes:
  - A course overview (which you are reading now).
  - Instructional plan.
  - An appendix that includes a participant handout, titled *A Guide to Equipment used to safely Move, Lift and/or Reposition Patients or Residents*

*Additional required materials:*

- VCR.
- Flip chart and pens

### Training Organization

This training employs the following activities and instructional tools:

- The *Safe Patient Handling Program: Patient Orientation* instructional video reviews the use of the most common patient handling equipment available for lifting, repositioning and transferring patients in health care facilities. Demonstration of equipment being used and explanation of use are provided.

### Scheduling the Training

Determine how your organization will complete the following:

- Schedule training for patients
- Notify patients and their families about the training.
- Identify who will present the materials.
- Determine where training will be conducted.

## Course Overview

---

### **Scheduling the Training** *Continued*

When scheduling the training session, consider groups of no more than 10 participants. This promotes interaction between the trainer and participants.

If this material is used as is, this session could last twenty to twenty five minutes, including time for questions and discussion.

You may wish to incorporate further information about patient handling equipment and the safe lift policy at your facility.

### **Training Preparation**

*Before the training session is conducted, the presenter should:*

1. Review all program materials thoroughly. Customize the program to meet your facility's training goals and to include information pertinent to your organization. Consider using pictures from your facility whenever appropriate.
2. Practice presenting the program.
3. Have copies of the *A Guide to Equipment used to Safely Move, Lift and/or Reposition Patients or Resident* available.
4. Gather and prepare other materials specific to your organization that you need for the training session, such as your facility's safe lift policy and procedure.

In addition, you may wish to keep a record of attendance.

5. Prepare flip chart pages
  - Session content
  - Objectives
6. Test TV/VCR equipment.
7. Cue up the video so it is at the starting point.

## **Course Instructional Plan**

---

### **Training Presentation**

1. Introductions.  
Welcome participants to the session and introduce yourself.
2. Discuss locations for restrooms, beverages, etc. You may want to ask if this could be a “cell-free zone.” Recommend pagers on vibrate.
3. Have participants sign an attendance sheet if applicable.
4. Review session objectives and content.
5. Present the “Safe Patient Handling Program: Patient Orientation” Video.
6. Discuss the safe lift policy at your facility and if applicable, other types of patient handling equipment not shown in the video.
7. Facilitate discussion and questions.
8. Collect attendance sheets if used.

*Appendix I*

---

**Safe Patient Handling in Health Care:  
Applied Ergonomics for Nurses and Health Care Workers  
Participant Guide**

# Safe Patient Handling in Health Care: Applied Ergonomics for Nurses and Health Care Workers Participant Guide

## Why is Manual Patient Handling So Hazardous?

1. The Physical Demands of Work
  - Patient
    - Weight (heavy load)*
    - Shape (bulky and awkward)*
    - Behavior (unpredictable, confused, fragile, in pain)*
  - High repetition of tasks
2. Equipment and Facilities Design
  - Constricted work space
  - Poorly maintained equipment
  - Previous Injury
3. Poor Work Practices
  - Adjustments on equipment (e.g., bed) not used
4. Personal Factors
  - Off the job activities e.g., Lifting and handling children, trash, shopping, or performing yard work.
  - Previous Injury

**The physical effort required to repeatedly lift and move patients manually is greater than your musculoskeletal system can tolerate.**



**Remember, using good body mechanics is not enough to prevent back injuries and other MSDs caused by manual patient handling. The bottom line.....There is No Safe method to lift and transfer patients manually.**

## What are Musculoskeletal Disorders (MSDs)?

### *Acute:*

A sudden or one-time traumatic event or incident, e.g, slip, trip, fall or car wreck

### *Chronic or Cumulative:*

Injuries that occur over a period of time (months/years) & are caused by a combination of risk factors

MSDs affect ligaments, muscles, tendons, cartilage, blood vessels, nerves, and spinal discs.

Some Common MSDs include:

- Strains and Sprains (neck, back, shoulder)
- Low Back Pain & Sciatica
- Bulging or Herniated Spinal Discs
- Tendinitis & Tenosynovitis (upper extremities)
- Epicondylitis (Tennis Elbow/Golfer's elbow)
- Rotator Cuff Tear (shoulder)
- Bursitis (shoulder or knees)
- Carpal Tunnel Syndrome

## Primary Risk Factors for MSDs

*Awkward Postures* e.g., Bending, twisting, reaching overhead, kneeling, squatting, pinch grips.

### *Static or Fixed Postures*

Postures or work positions that are held for a period of time, e.g., standing, sitting, bending forward at the waist while performing patient care tasks.



Brand names mentioned or seen in the training video do not constitute endorsement of the device, equipment or product by the Oregon Occupational Safety and Health Division, Oregon Nurses Association, Bay Area Hospital, the University of Oregon's Labor Education and Research Center or other organizations that support this grant. Equipment shown in this video may vary from the equipment used by your health care facility. Not all patient handling equipment available is shown in the video. This training session is not a substitute for specific training on safe use of patient handling equipment. Always follow the patient handling policy at your facility.

## Primary Risk Factors for MSDs

### Force

Lifting, pushing, pulling, carrying or gripping tools or equipment. The amount of force exerted is influenced by the:

- Weight, shape and condition of the patient or equipment
- Body posture used
- Number of repetitions performed
- Duration or length of time that task is performed



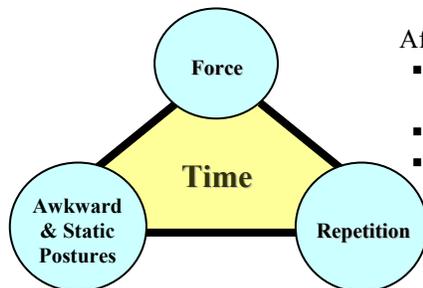
### Repetition

Performing the same motion over and over again.



### The Cumulative Effect

*Duration of Exposure to Risk Factors (Time)*



Affected by:

- Working through breaks
- Overtime
- Task variability

*At work and/or at home*

### Patient Handling Higher Risk Tasks

- Transfer from/to bed to chair or stretcher
- Manually moving patient in bed
- Manually lifting from floor
- Attempting to stop falls

(Source: Hignett, 2003)

## Defining Health Care Ergonomics

The science of fitting the physical and cognitive demands of the job to the worker to prevent injury, human error and improve worker and patient comfort or

“Fitting the Job to the Worker”

NOT

“Fitting the Person to the Job”

## Prevention of MSDs

### First Choice (or Method) - Engineering Controls

Eliminate or reduce primary risk factors, e.g., use patient handling equipment, such as, ceiling and portable floor lifts, air assist transfer devices and mechanical sit to stand lifts. *Equipment must be compatible with:*

- Patient dependency (physical and cognitive abilities),
- The type of lift, transfer or movement
- The number of staff available

### Second Choice - Work Practice Controls

Reduce employee exposure to primary risk factors by using best work methods, e.g.,

- Plan work organization
- Use good housekeeping practices
- Use adjustments on equipment
- Get help
- Eliminate unnecessary movements
- Don't use broken equipment
- Use neutral or good body postures, e.g., work at proper heights & keep everything in easy reach.

Using good body mechanics or postures is still important when using patient handling equipment and devices.

*It's the employee's responsibility to use good work practices and follow the organizations' safe patient handling policy and procedures.*

### Second Choice - Administrative Controls

Examples:

- Ergonomics training
- Policy & procedures that define good work practices
- Effective staffing and overtime policies

**Remember - back belts are ineffective in preventing back injuries.**

**Engineering + Work Practice**  
+  
**Administrative Controls**  
=  
**Reduce Risk of Injury for Employees & Patients**

## What Can You Do to Reduce Your Risk of MSDs?

**Plan and Prepare – It only takes a minute but can save a career**

### Conduct a hazard or risk assessment:

#### 1. Assess the Patient

Goal: To assess if patient status (physical and cognitive abilities) has changed and to determine the safest method to transfer or move the patient.

Compare assessment with patient handling orders or instructions in the Patient's Care Plan and ensure that staff is alerted to changes in patient status.

This brief observation includes assessment of the patient's:

- Ability to provide assistance
- Physical status – ability to bear weight, upper extremity strength, coordination and balance
- Ability to cooperate and follow instructions
- Medical status – changes in diagnosis or symptoms, pain, fatigue, medications

**When in doubt, assume the patient cannot assist with the transfer/ repositioning**

#### 2. Assess and Prepare the Environment

- Ensure that the path for transfer or movement is clear and remove (using good body posture) obstacles and clutter that constrain use of good posture and access to the patient, e.g.,
  - bed tables, and chairs
  - Trip hazards, e.g., cords from medical equipment
  - Slip hazards, e.g., spilt beverages or other fluids on the floor
- Consider safe handling of medical devices such as catheters, intravenous tubing, oxygen tubing, and monitoring devices
- Ensure good lighting.
- Adjust equipment such as, beds to correct working height to promote good postures
- Keep supplies close to body to avoid long reaches

#### 3. Get Necessary Equipment & Help

- Get the correct equipment and supplies for the task as determined in the Patient Care Plan and after the Patient Assessment in Step 1
- Get additional help as required
- Ensure that
  - Equipment is in good working order
  - Devices such as gait belts and slings are in good condition and the correct size
  - The patient is wearing non-slip footwear if they are to be weight bearing

#### 4. Perform the Patient Care Task, Lift or Movement Safely

**You should receive training on correct use of equipment, patient assessment and safe work practices before handling patients**

- Explain the task to the patient – agree on how much help he or she can give during the task
- Position equipment correctly, e.g., height between a stretcher and bed is equal
- Apply brakes on equipment and furniture used
- Lower bed rails when necessary
- Coordinate the task as a team (nurses and patient)
- Have the patient assist as much as possible
- Use good body posture – keep work close to the body and at optimal height
- Know your physical limits and do not exceed them

**Follow your organizations' safe patient handling policy and procedures**

#### What Else Can You Do?

Report Ergonomic Problems to Your Supervisor  
Apply Back Injury Prevention Principles to Your Off -The-Job Activities  
Report Any Physical Problems Early = Quicker Recovery

**Practice Activity – Case Studies**  
(Reproduce this sheet for each Case Study viewed and evaluated)

For Each Case Study viewed complete the following information:

Case Study Title \_\_\_\_\_

What Did You See?

- Identify Primary Risk Factors for MSDs
- Determine the cause of the risk factor(s)
- Identify hazards that may cause slips, trips, falls or other acute or traumatic injuries
- Determine a safer way to perform the task using the 4-steps:
  1. Assess the Patient
  2. Assess & prepare the environment
  3. Get necessary equipment & help
  4. Perform the patient care task, lift or movement safely

Example:

| Task  | Risk Factors & Hazards                    | Cause                              |
|---|---|------------------------------------|
| Preparing transfer of patient from bed to stretcher | Back bent<br>Long reach<br>(Arm overhead) | Passing IV bag and tubing over bed |



*Appendix III*

---

**Applied Ergonomics for Nurses and Health Care Workers Quiz**

- 1) Musculoskeletal Disorders (MSDs) such as back injuries may occur gradually over a period of time.
  - a) True
  - b) False
  
- 2) Using a friction reducing device to reposition a patient in bed is an example of an:
  - a) Engineering control
  - b) Work practice control
  - c) Administrative control
  
- 3) It is not necessary to use proper or neutral postures when using mechanical lift equipment.
  - a) True
  - b) False
  
- 4) Adjusting equipment such as beds to correct working height, keeping equipment within easy reach, and removing trip and slip hazards are examples of \_\_\_\_\_ controls.
  
- 5) Gait belts can be used for lifting patients.
  - a) True
  - b) False
  
- 6) List the three primary risk factors that contribute to MSDs:

**Applied Ergonomics for Nurses and Health Care Workers Quiz**

- 7) Manual patient handling is unsafe because:
- a) Patients can be heavy, bulky and unpredictable
  - b) Work is performed in constricted space
  - c) Adjustments on equipment are not used
  - d) All of the above
- 8) List the four action steps that can reduce your risk of injury when performing patient handling tasks:
- Step 1.
- Step 2.
- Step 3.
- Step 4.
- 9) The physical effort required to repeatedly lift and move patients manually is greater than your musculoskeletal system can tolerate.
- a) True
  - b) False
- 10) Engineering controls are designed to eliminate or reduce the severity or number of risk factors associated with a work task.
- a) True
  - b) False

**Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**Name (Print)** \_\_\_\_\_

**Dept.** \_\_\_\_\_

## Appendix III

---

### Applied Ergonomics for Nurses and Health Care Workers Quiz

#### Answer Sheet

- 1) Musculoskeletal disorders (MSDs), such as back injuries, may occur gradually over a period of time.  
**a) True**
- 2) Using a friction reducing device to reposition a patient in bed is an example of an:  
**a) Engineering control**
- 3) It is not necessary to use proper or neutral postures when using mechanical lift equipment.  
**b) False**
- 4) Adjusting equipment, such as beds to correct working height, keeping equipment within easy reach, and removing trip and slip hazards are examples of **Work Practice** controls.
- 5) Gait belts are to be used for lifting patients.  
**b) False**
- 6) List the primary risk factors that contribute to MSDs:
  - **Forceful Exertion (Force)**
  - **Awkward and/or Static Postures**
  - **Repetition**
- 7) Manual patient handling is unsafe because:  
**d) All of the above**
- 8) List the four action steps that can reduce your risk of injury when performing patient handling tasks:  
**Step 1. Assess the patient**  
**Step 2. Assess and prepare the environment**  
**Step 3. Get necessary equipment and help**  
**Step 4. Perform the patient care task, lift or movement safely**
- 9) The physical effort required to repeatedly lift and move patients manually is greater than your musculoskeletal system can tolerate.  
**a) True**
- 10) Engineering controls are designed to eliminate or reduce the severity or number of risk factors associated with a work task.  
**a) True**

*Appendix IV*

---

**Class Evaluation**

**Applied Ergonomics for Nurses and Health Care Workers**

1. Did this training program meet the stated objectives?

Completely 1 2 3 4 5 Not at all

If you checked 5, please explain \_\_\_\_\_

---

2. How do you rate the training program in terms of time?

It should be longer

It should be shorter

The length is about right

3. How would you rate the audiovisual aids? (Slides, overheads & flip charts)

Excellent 1 2 3 4 5 Needs improvement

If you checked 5, please explain \_\_\_\_\_

---

4. How would you rate the instructional materials? (participant handout)

Excellent 1 2 3 4 5 Needs improvement

If you checked 5, please explain \_\_\_\_\_

---

5. Did you find the training/presentation format easy to follow?

Completely 1 2 3 4 5 Not at all

If you checked 5, please explain \_\_\_\_\_

---

6. How would you rate the presenter overall (all sessions)

Excellent 1 2 3 4 5 Poor

Other comments about this training program (suggestions for improvement)

---

---

## Appendix V

---

### Definitions of MSDS

#### Common Terms for MSDs

Many MSD conditions are grouped under the terms *cumulative* or *repeated traumas*, *repetitive motion injuries*, or *repetitive strain syndrome*. (On your OSHA Log 300, you may see cases of muscle strains, ligament sprains, back, wrist, or shoulder pain.) Other terms, such as those noted below, may be found on the OSHA Log 300 or on the Employer's and Doctor's First Reports of Occupational Injury and Illness.

#### Medical Terms

**The general term *musculoskeletal disorder* is not a medical diagnosis.**

Musculoskeletal disorders primarily affect muscles, tendons, ligaments, nerves, and small blood vessels. Examples of specific types of disorders:

*Myalgia* — muscle pain

*Chronic myofascial pain syndrome* — chronic pain in the muscles

*Tendinitis* — inflammation of a tendon (e.g., shoulder tendinitis, tennis elbow, de Quervains disease)

*Tenosynovitis* — inflammation of a tendon and its sheath (e.g., in the wrists, hands, or fingers)

*Carpal tunnel syndrome* — swelling and entrapment of the median nerve in the wrist

*Thoracic outlet syndrome* — squeezing of the nerves and blood vessels between the neck and shoulder

*Degenerative or osteoarthritis* — wear and tear on the spine, joints, vertebrae, and disks, associated with long-term physical loads on spinal structures

*Appendix VI*

---

**Safe Patient Handling in Health Care:**

**Patient Orientation**

**A Guide to Equipment used to safely Move, Lift and/or Reposition  
Patients or Residents**

# Safe Patient Handling in Health Care: Patient Orientation

## A Guide to Equipment used to safely Move, Lift and/or Reposition Patients or Residents



*Not all equipment available for lifting and moving patients is described in this document.*

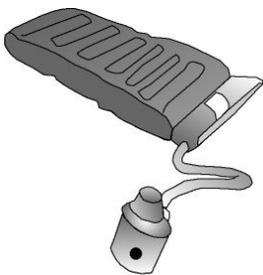
### The type of equipment nurses and/or caregivers will use to lift or move you depend on:

- Your medical condition and diagnosis
- How unwell you are feeling
- Your ability to stand and bear weight,
- Your upper body and arm strength
- Your ability to assist with the movement
- Your body size and shape
- Your doctor's instructions

### Lateral (side to side) transfer aids

These devices help to reduce friction when you are being moved lying on your back to and from a bed and a stretcher or an exam or operating table.

#### Air Assisted



A flexible mattress is placed under you. A motor (which may sound like a vacuum cleaner) is used to inflate the mattress. Air flows through holes in

the mattress creating a cushioned film of air allowing caregivers to easily pull the mattress from one surface to another.

#### Friction Reducing



A device such as a slippery sheet is placed under you reducing friction between you and the bed so that caregivers can more easily pull you from a bed to stretcher or table. A transfer or a roller board may also be used with or without the slippery sheet to help reduce friction.



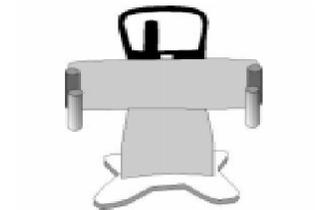
#### Mechanical

Some stretcher type devices use a crank mechanism to gently slide you on a foam pad from your bed to the stretcher. These devices may also convert to a chair position.



#### Mechanical

This type of device attaches to the bed sheet you are on. Using a motor the device will to pull you from your bed to a stretcher or table.

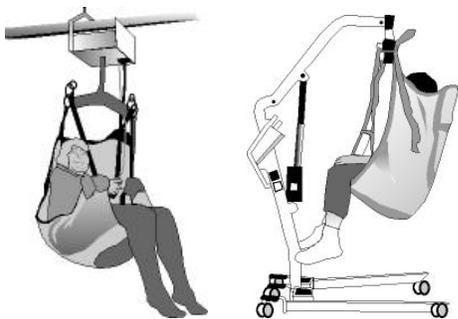


## Powered lift equipment

These devices are used to lift and move you in bed or from bed to chair, wheelchair or commode or into a car. They may also be used for bathing and toileting or to lift you from the floor.

### Ceiling Mounted and Powered Portable Lifts

A full body sling is placed under you to support your legs and back. While you are in the sling the device will gently lift and move you.



### Powered Stand Assist and Repositioning Device

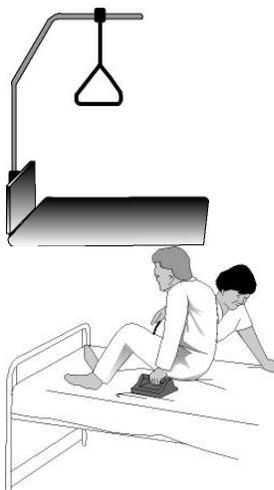
This device will help you stand up and move from bed to chair, commode or wheel chair if you are able to support some of your weight and can sit upright without help. A sling is placed around your mid-back and under your arms and hooked to a frame on the device. A motor is used to gently lift you to a standing position. The nurse or the caregiver can then move the device.



## Repositioning in bed

Some of the devices already described can also be used to move you when you are in bed. Powered Ceiling and Floor Lifts, Air Assisted and Friction Reducing Aids may be used to help you move in bed especially when you are unable to assist the nurse or caregiver. Other examples are:

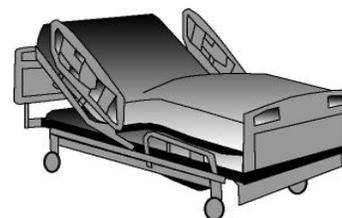
If you have good arm strength you may be



able to use a **Trapeze Bar** that is attached to your bed so that you can pull and move yourself in bed *or* **Hand blocks and push-up bars** (attached to the bed) to assist the nurse or caregiver to reposition you.

### Electric powered height adjustable bed

Adjustable beds allow the caregiver to position you at a safe work height. Adjustments on some beds may also help reposition you.



## Ambulation devices for walking and therapy

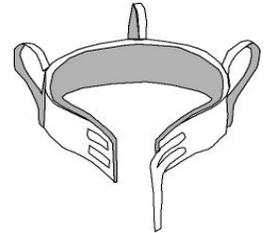
### Rolling Walking Assist Device



This device gives you a little extra support when walking. A belt or sling may be placed around you to keep you safe while the device rolls forward as you walk.

### Gait/Transfer Belts

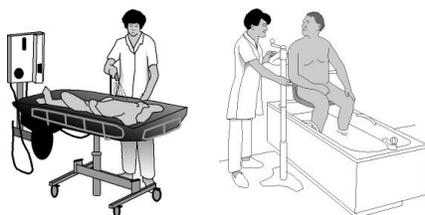
If you are able to stand and walk fairly well but need a little assistance, a belt may be secured around your waist to help you safely walk or transfer between your bed and a chair.



## Bathing and toileting

There are many devices that may be used to help you bath or use the toilet. Here are just a few:

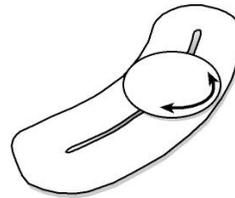
- **Shower chairs and commodes**
- **Bath boards and transfer benches** help you move in a seated position from a wheelchair or commode to a bathtub.
- **Shower gurneys** are portable 'stretcher' like devices that you lie in while being showered.
- **Special bath lifts** can transfer you into and out of the bath tub.
- **Powered height adjustable bathtubs** with easy entry door. These tubs can be lowered so that you can step into them safely.



## Seated transfers

### Sliding Boards

Slide boards act as a support bridge to help you transfer in a seated position between a chair to wheelchair and bed to chair. They may be made of wood or plastic and some have a movable seat. You may also wear a Gait Belt for support when using a slide board.



---

Brand names mentioned or seen in these training materials do not constitute endorsement of the device, equipment or product by the Oregon Occupational Safety and Health Division, Oregon Nurses Association, Bay Area Hospital, the University of Oregon's Labor Education and Research Center or other organizations that support this grant.

### Sources:

A Back Injury Prevention Guide for Health Care Providers. OR-OSHA Consultation Programs (1997). OSHA Guidelines for Nursing Homes: Ergonomics for the Prevention of Musculoskeletal Disorders (2003). Patient Care Ergonomics Resource Guide: Safe Patient Handling and Movement. Patient Safety Center of Inquiry, VHA and DOD Veterans Administration Hospital, Tampa, Florida (2001).

---

### Appendix VII.

---

#### References

*A Back Injury Prevention Guide for Health Care Providers.* Feletto M., Graze W. (1997). OR-OSHA Consultation Programs.

*A Biomechanical and Ergonomic Evaluation of Patient Transferring Tasks: Bed to Wheelchair and Wheelchair to Bed.* Garg A., Wen B., Beller D., Banaag D. (1991). *Ergonomics* 34(3):289-312.

*A Comprehensive Analysis of Low Back Disorder Risk and Spinal Loading During the Transferring and Repositioning of Patients Using Different Techniques.* Marras, W.S., Davis, K.G., Kirking, B.C., & Bertsche, P.K. (1999). *Ergonomics*, 42(7), 904-926.

*Addressing Occupational Strains and Sprains: Musculoskeletal Injuries in Hospitals.* Fragala, G and Bailey, L. (2003). *AAOHN Journal*, 51(6), 252-259.

*Easy Ergonomics: A Practical Approach for Improving the Workplace.* (2000). Oregon OSHA.

*Elements of Ergonomics Programs:* A. Cohen, C. Gjessing, L. Fine, B. Bernard and J. McGlothlin. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, March 1997 Publication # 97-117.

*Evidence-Based Patient Handling, Tasks, Equipment and Interventions.* Sue Hignett et al. (2003). Taylor and Francis.

*Handle With Care Campaign: The American Nurses Association's Campaign to Address Work Related Musculoskeletal Disorders.* A.B. de Castro (2004). *Online Journal of Issues in Nursing*, September 30, 2004.

*Handle With Care Campaign: Fact Sheet.* (2004). American Nurses Association.

*Keeping Patients Safe: Transforming the Work Environment of Nurses.* (2004). Institute of Medicine of the National Academies. The National Academies Press.

*Long Term Effectiveness of Zero-Lift in Seven Nursing Homes and One Hospital.* Garg A. (1999). U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.

*Lost-work time injuries and illnesses: Characteristics and resulting time away from work, 2000.* (2002). U.S. Department of Labor. Bureau of Labor Statistics.

*Musculoskeletal Disorders (MSDs) and Workplace Factors: A Critical Review of Epidemiologic Evidence for Work-Related Musculoskeletal Disorders of the Neck, Upper Extremity, and Low Back.* (1997). U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health.

### Appendix VII.

---

#### References

*OSHA Guidelines for Nursing Homes: Ergonomics for the Prevention of Musculoskeletal Disorders.* (2003). Occupational Safety and Health Administration.

*Patient Care Ergonomics Resource Guide: Safe Patient Handling and Movement.* (2001). Patient Safety Center of Inquiry, Veterans Health Administration, and Department of Defense Veterans Administration Hospital, Tampa, Florida.

*Preventing Nursing Back Injuries: Redesigning Patient Handling Tasks.* Nelson, A., Lloyd, J., Menzel, N. and Gross, C. (2003). AAOHN Journal, 51(3), 127-134.

*Revised NIOSH Equation for the Design and Evaluation of Manual Lifting Tasks.* Waters, T. R., Putz-Anderson, V., Garg, A., and Fine, L. J. (1993). Ergonomics, vol. 36 pp. 749-776.

*Safe Patient and Resident Handling.* (2000). Occupational Health and Safety Agency for Health Care in British Columbia.

*Spine Loading and Trunk Kinematics during Team Lifting.* Marras, W.S., Davis, K.G., Kirking, B.C., & Granata, K.P. (1999). Ergonomics 42(10), 1258-73.

*Table R6: Incidence rates for non-fatal occupational injuries and illnesses involving days away from work per 10,000 full-time workers by industry and selected parts of body affected by injury or illness 2000.* (2000). U.S. Department of Labor. Bureau of Labor Statistics.

*The Handling of Patients. Revised 4<sup>th</sup> Edition.* (1997). The National Back Pain Association and the Royal College of Nursing.

*Transfers and Lifts for Caregivers.* (2000). Health Care Health and Safety Association of Ontario.

*Transferring People Safely.* (2002). Worksafe Victoria.