

Safe Patient Handling and Movement (SPHM) Toolkit

This toolkit contains the following materials required to incorporate evidence-based patient handling into a nursing school curriculum:

1. Didactic content
2. Clinical laboratory content

The toolkit also contains additional optional background material (in gray).

ANA partnered with the National Institute of Occupational Safety and Health (NIOSH) and the Tampa Veterans Administration Patient Safety Center of Inquiry to develop this toolkit.

Directions for use:

I. Didactic:

- Assign required readings to students. You will have to provide reserve copies of these copyrighted print articles or links to them via your school's library.
- Instruct the students to print out and save the Assessment Criteria and Care Plan and Safe Patient Handling and Movement Algorithms; they should have those available when they watch the slide show (below).
- Assign viewing of the SPHM Curriculum Module slide show either on the student's own time or in class. Because this slide show is narrated, you will need a sound card and speakers and have Windows Media Player or RealPlayer installed.

- Download the SPHM Curriculum from NIOSH at

<http://www.cdc.gov/niosh/review/public/safe-patient/introduction.html>

Note that Patient_Handling.zip is a zipped file; you will have to extract all the files into one location, such as your computer desktop. When you are ready to play the slide show, click on the file named Patient_Handling_Presentation.exe. Your computer must also have Flash Player installed; link available at the NIOSH download site or from

http://www.adobe.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash

- There is a sample quiz under the optional materials.

II. Laboratory:

Once the students have completed the didactic portion of the module, they should have an opportunity to practice SPHM in a laboratory setting. This will require your school to have at least the following types of equipment: ceiling lift, mobile lift, sit to stand lift, and a friction reducing device. Possible sources include purchasing or seeking a donation of these devices or borrowing them from a practice partner or a vendor.

Require the students to read [Applying Principles of Safe Patient Handling and Movement](#) (below).

I. Safe Patient Handling and Movement (SPHM) Module: Required Didactic

Course Objectives

1. Define health care ergonomics.
2. Recognize high-risk patient care activities.
3. Identify risks in patient care environments
4. State why mechanical aids are needed when moving and handling patients.
5. Use algorithms to identify safe patient handling and movement strategies.

Required Student Reading:

Nelson, A., Fragala, G., & Menzel, N. (2003). Myths and facts about back injuries in nursing. *AJN*, 103(2), 32-41. (Due to copyright restrictions, each school must provide and make this article available for students, either on reserve or electronically).

Nelson, A., Owen, B., (2003) Safe patient handling movement. *AJN*, 103(3) 32-44. (Each school must make this article available for students, either on reserve or electronically.)

ANA Position Statement: [Position statement on elimination of manual patient handling to prevent work-related musculoskeletal disorders](http://nursingworld.org/readroom/position/workplac/pathand.htm). Available at:
<http://nursingworld.org/readroom/position/workplac/pathand.htm>

Assessment Criteria and Care Plan and Standard Safe Patient Handling and Movement Algorithms. Available at <http://www.visn8.med.va.gov/visn8/patientsafetycenter/safePtHandling/default.asp>
Click on they hyperlink: Assessment Form and Algorithms (PDF). You must have Adobe Acrobat Reader installed.

Required Student Viewing and Listening

Narrated PowerPoint “Safe Patient Handling Curriculum Module.”

This presentation requires the students to have copies of the Assessment Criteria and Care Plan, as well as the Standard Safe Patient Handling and Movement Algorithms (above), in front of them

II. Safe Patient Handling and Movement (SPHM) Module: Laboratory

Course Objectives

1. Assess patients to select the right combination of equipment and personnel needed to handle or move them safely
2. Apply positioning and mobility techniques that are safe for patient and caregiver

Required Student Reading in Preparation for Laboratory Session

Applying Principles of Safe Patient Handling and Movement (SPHM) (See below.)
Assessment Criteria and Care Plan and Standard Safe Patient Handling and Movement Algorithms
(previously downloaded in didactic assignment).

Required Laboratory Activities

Students will be trained in the operation of various SPHM aids.

Students will practice assessing “patients” (mannequins or other students) for their handling and movement needs, using the Assessment Criteria and Care Plan for Safe Patient Handling and Movement. Faculty will set up stations representing a variety of tasks. At minimum, these stations should include:

1. Lifting fully dependent patient out of bed and into chair using powered full body sling lift (overhead or mobile).
2. Assisting cooperative patient with some lower body strength from sitting position to standing position using powered sit-to-stand lift.
3. Transfer to stretcher from bed a fully dependent patient using lateral transfer device (such as a friction reducing device).
4. Reposition (using a friction reducing device) a patient in bed: side-to-side, up-in-bed

Required Evaluation

Faculty will ensure each student has had a chance to practice at each station.

Applying Principles of Safe Patient Handling and Movement

Biomechanics is the study of the mechanics of muscular activity. Body mechanics is a subset of biomechanics and one use is to describe body positions thought to provide some protection from the force associated with lifting and moving patients. Use these principles **in conjunction with SPHM** aids when handling and moving patients because body mechanics alone are not sufficient to protect you from the heavy weight, awkward postures, and repetition involved in manual handling.

- Maintain a wide stable base.
- When providing care, put the bed at waist level. When moving a patient, put the bed at hip level.
- Face the direction of your movement. Avoid twisting your body.
- Keep the patient as close to your body as possible.

Body mechanics is also used to assess the alignment of patients when they are standing, sitting, or lying down. See your textbook for a further explanation of this use.

Process

- 1) Take responsibility for knowing how equipment works and its availability
- 2) Assess the client and the environment, using the Assessment Criteria and Care Plan.
- 3) Select the appropriate algorithm.
- 4) Gather the appropriate equipment and other staff members needed.
- 5) Organize the physical environment and the equipment to ensure safe completion of the task. This includes locking the wheels of the bed or chair, putting the bed/stretchers at the correct height, removing clutter, and making sure any mobile equipment is charged.
- 6) Procedures with two or more caregivers require communication and coordination. Make sure your team members know their role. Rehearse if necessary.
- 7) Position yourself using the principles of body mechanics (above).
- 8) Coach the patient. Tell the patient what action you plan and expect from them. Show them what to do, and then help them move through the activity.

Optional Background Didactic Material for Faculty to Use if Desired

Principles of Safe Patient Handling and Movement

Patient handling and movement activities are a necessary part of basic nursing care. Nurses of all ages and experience levels become injured on the job while performing tasks such as getting patients out of bed, transferring them to stretchers, or pulling them up in bed. Research studies into the biomechanics of nursing activities have found that they are a hazard for musculoskeletal injury to the caregiver. The answer does not lie in improving lifting techniques or hiring stronger nurses but in assessing what is needed to accomplish the task safely and then carrying out the task appropriately. Many tasks require the use of mechanical equipment or other SPHM aids. This is called ergonomic intervention or modifying the job to protect the worker.

Symptoms of musculoskeletal disorders include pain that varies according to stage.

- Early stage: pain may disappear after a rest away from work.
- Intermediate stage: body part aches and feels weak soon after starting work and lasts until well after finished work
- Advanced stage: body part aches and feels weak even at rest; sleep is affected; light tasks are difficult on days off.

Other symptoms include tingling or numbness, fatigue, or weakness. Signs include redness and swelling, loss of full or normal joint movement.

Don't ignore signs and symptoms. Report them to your instructor, if a student, or employee health department, if a staff member, for early medical attention. Use ice and rest. Do some stretches.

One principal risk factor for these types of injuries is frequent or forceful manual lifting, as is found in patient handling and movement tasks. The basic principles of ergonomics, or fitting the job to the worker, seem to offer the best hope for improving the problems associated with muscle and joint disorders caused by nursing tasks. This approach is a step towards the goal of decreasing the number and severity of job-related injuries in nursing practice by increasing safety and decreasing fatigue. Patient care ergonomics improve your productivity and help you to feel less tired at the end of the workday

Ergonomic approaches are used to:

- (1) design jobs and job tasks to fit people rather than expecting people to adapt to poor work designs
- (2) achieve a proper match between the worker and their job by understanding and incorporating the limits of people
- (3) take into account that when job demands exceed the limits of workers, there are problems.

Risk Factors

The key to safe nursing work environments is careful analysis of the factors that explain most of the risk involved in providing patient care. Ergonomic assessments focus on two of these key factors—characteristics of the work environment and job tasks.

Characteristics of the work environment can include the nursing practice setting, patient assignments, scheduling, space, equipment, and staffing. There is greater risk of injury for nurses in nursing homes, geriatric units, and spinal cord injury units than in general hospital units. Risk increases when comfortable body postures cannot be assumed due to space limitations or equipment problems.

Specific risk factors in the environment include:

- Slippery or wet surfaces
- Uneven floor surfaces
- Obstruction on floor surfaces
- Physical obstructions (cabinets, commodes, etc.)
- Space too small or difficult to access
- Entrance way width too small
- Poor arrangement of furnishings
- Uneven work surfaces: different heights between caregiver and bed, wheelchair and toilets
- Poor bathing area design
- Poor design of chairs

Much of the problem of back injuries in nursing facilities has been blamed on a lack of appropriate equipment in working condition and understaffing. It is generally accepted that some of the lifts and heavy patient care tasks require multiple staff members to accomplish safely. Low staffing make this teamwork difficult, and nurses often attempt these tasks alone.

Units at high risk of back and other injuries to caregivers have the following characteristics:

- History of frequent injuries in the past
- High proportion of dependent patients
- Lack of use of lifting equipment in good repair
- Low staffing levels

Characteristics of job tasks that put the caregiver at risk include the following:

- reaching and lifting loads far from the body
- lifting heavy loads (greater than 40 - 50 pounds under *ideal* conditions)
- twisting while lifting
- unexpected changes during the lift (combative patient, falling patient)
- reaching low or high to begin a lift
- moving a load a significant distance
- frequent lifting (more than 12 lifts a shift)
- unassisted lifting

- awkward posture of person doing lifting
- excessive pushing or pulling forces required
- lack of ability to grasp the patient securely (no handles)
- patient to be lifted is totally dependent, has unpredictable behavior or is combative, has an inability to understand, or special medical conditions such as burns or stroke

Manually lifting patients is the most frequent reason for work related back pain in health care. The risk for lifting injuries increases for nurses who hold patients away from the body while lifting and when bending and twisting while lifting occurs. This awkward angle and position frequently occurs during bathing and feeding. The greatest risk is associated with one person transferring techniques. Sudden high effort from unexpected events, such as preventing a patient from falling, is also associated with high risk for injury.

Here are some nursing tasks that put the caregiver at risk of injury if done without assistance:

Transferring patient from bathtub to chair
Transferring patient from wheelchair or shower/commode chair to bed
Transferring patient from wheelchair to toilet
Transferring a patient from bed to stretcher
Lifting a patient up from the floor
Weighing a patient
Bathing a patient in bed
Bathing a patient in a shower chair
Bathing a patient on a shower trolley or stretcher
Undressing/dressing a patient
Applying anti-embolism stockings
Lifting patient to the head of the bed
Repositioning patient in bed from side to side
Repositioning patient in geriatric chair or wheelchair
Making bed an occupied bed
Feeding bed-ridden patient
Changing absorbent pad
Transporting patient off unit

In the past, nursing schools taught future nurses that body mechanics (specialized positioning of the caregiver's body) could protect against injury during manual handling procedures. However, research has shown that body mechanics alone is not protective for the following reasons:

1. Manual lifting techniques were based on studies that only included men.
2. Manual lifting techniques focus only on the lower back.
3. Manual lifting techniques were based on loads that weigh far less than typical patients.
4. Manual lifting techniques were based on stable loads that could be held close to the body.

In addition, the following characteristics of moving patients make body mechanics unsuitable for this task:

1. Unstable load.
2. Do not have handles.
3. Uneven distribution of weight.
4. May be combative.

“The Nurse’s Load” (*Lancet* editorial, 1965, p.422).

The adult human form is an awkward burden to lift or carry. Weighing up to 100 kilograms or more, it has no handles, it is not rigid, and it is liable to severe damage if mishandled or dropped. In bed a patient is placed inconveniently for lifting, and the placing of a load in such a situation would be tolerated by few industrial workers...Since much of the nurse’s day is spent in lifting patients, it is no small wonder that orthopedic wards often contain nurses with strained backs as patients.

Opportunities to improve quality of care through ergonomics programs also exist. For example, the following patient benefits can be realized:

- Increased patient comfort, security, and dignity during lifts and transfers.
- Enhanced patient safety during transfers as evidenced by decrease in patient falls, skin tears, or abrasions.
- Promotion of patient movement and independence.
- Enhance toileting outcomes and increase in continence
- Improved quality of life for patients.

The key to effective back injury prevention programs is the use of ergonomic-based approaches that analyze job tasks and identify risk factors with the purpose of changing unacceptable job demands.

In addition to ergonomic interventions, other changes are needed to maximize caregiver safety. These include:

- a clutter-free bedside environment to allow for free movement of equipment and personnel
- co-worker attitudes supportive of ergonomic interventions
- adequate supply of modern SPHM equipment conveniently located and in good working order
- SPHM equipment that does not markedly slow down the care process
- administrative support through the use of a non-punitive no-lift or low-lift policy
- safety concern reporting system with rapid follow-up
- supervisor encouragement of early reporting for musculoskeletal disorders

SPHM Aids

These include powered, mechanical full body lifts (either mobile or ceiling-mounted), powered, mobile sit to stand lifts, friction reducing devices, and transfer belts. These aids work by bearing most of the load, reducing the load by lowering the friction between skin against cloth, or providing

patients with handles to increase the ability to grasp an unpredictable patient. Go to <http://www.visn8.med.va.gov/patientsafetycenter/> choose the “Safe Patient Handling and Movement” tab and select “Technology Resource Guide.”

Optional Laboratory Materials for Faculty Use if Desired

Skill	Proficient	Not Proficient
Assesses patient’s handling and movement needs, demonstrated by selecting the correct algorithm		
Selects correct SPHM aid or specifies number of other staff members needed to complete activity		
Describes or demonstrates proper operation of SPHM aid prior to use with patient		
Positions patient correctly for use of SPHM aid		
Arranges environment to allow use of SPHM aid		
Applies SPHM aid to patient correctly		
Completes SPHM activity safely for self and patient		

Quiz for Didactic, SPHM

These are multiple choice questions. Select the one best answer.

1. Ergonomics means:
 - a. Making changes to the job to fit the worker*
 - b. Making changes to the worker to fit the job
 - c. Making workers work harder at their job
 - d. Selecting stronger workers for the job

2. The goal of patient care ergonomics is to:
 - a. Slow down your work
 - b. Help you feel and work better*
 - c. Increase your work load
 - d. Make patients recover faster

3. Which of the following patient care tasks involve heavy lifting?
 - a. Charting
 - b. Talking with the patient
 - c. Transferring an immobile patient*
 - d. Giving medications

4. Which of the following is a *work environment* factor that can reduce safety for both patient and caregiver?
 - a. Caregiver educational level
 - b. Uneven work surfaces*
 - c. Patient BMI above 40
 - d. No-lift policy

5. While bending forward, you spend 30 minutes feeding a patient on bed rest. What is (are) the musculoskeletal risk factor(s) in this situation?
 - a. Pushing/pulling
 - b. Awkward posture
 - c. Long duration
 - d. Heavy lifting
 - e. b and c
 - f. All of the above

6. The purpose of assessing tasks and surroundings for risk factors is to:
 - a. Take steps to protect yourself*
 - b. Slow down your work pace
 - c. Delay care to the patient
 - d. Distribute the workload to staff

7. If you had to transfer a totally dependent patient from a nonadjustable stretcher to a nonadjustable bed of different heights, what is the best step you could take to reduce the environmental risk factor?
 - a. Use a friction reducing device when transferring.*
 - b. Use a wide base of support when transferring.
 - c. Coach the patient to make the transfer unaided.
 - d. Use a draw sheet to transfer the patient.

8. A staff nurse asks you to help her perform a lift you feel is unsafe. What would be your best response?
 - a. "I'm busy caring for another patient, but I will help find someone to assist."
 - b. "What does the safe lifting algorithm say we need to move the patient?"
 - c. "Let me check with my instructor if I am allowed to help lift this patient."*
 - d. "Tell me how you would like me to assist you with moving the patient."

9. Why are mechanical aides needed for patient handling?
 - a. Nurses do not have sufficient training using proper body mechanics.
 - b. Manual lifting techniques are not sufficient to protect nurses from injury.*
 - c. Body mechanics algorithms are too complicated and difficult to understand.
 - d. Nursing staff levels have declined in most institutions in recent years.

10. Use of a gait belt reduces what risk factor from moving patients that isn't present when moving boxes?
 - a. Weight
 - b. Dependence
 - c. Cooperation
 - d. No handles.*

* Indicates correct answer.