



**Continuing Care
Safety Association**

Recognizing Resident Handling Hazards



#110, 6325 Gateway Boulevard, Edmonton, AB T6H 5H6
780-433-5330 www.continuingcaresafety.ca

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Continuing Care Safety Association

VISION

Incident free workplaces

MISSION

To create safe workplaces through the provision of education, leadership & collaboration.

VALUES

- *Value safe work, and safe work behaviours*
- *Value the right of each worker to have a safe, healthy and incident free work environment*
- *Value members input, feedback and direction*

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Recognizing Resident Handling Related Hazards

Introduction

Today's workplace is very different than it was only a few short years ago, and it is dramatically different when compared to 20 years past. However, continuing care facilities continue to struggle with reducing worker injuries related to resident handling. While it is true that there are many devices and equipment that can help to reduce the amount of effort required for resident handling, there is still some physical effort required to move, steady or position the resident. If the resident handling tasks are not designed properly, or we use poor body mechanics, the risk of injury is increased. The incidence of MSI in our industry has driven up costs to facilities, and has also adversely affected workers' day-to-day activities

This booklet has been created to provide you with some basic information about design-related hazards that are associated with resident handling tasks and are found in most workplaces. Design-related hazards can be due to:

- the physical design, set-up or layout of the work area and/or the equipment needed to perform the resident handling tasks
- the design of the workplace environment including lighting, layout, etc.
- the design of the organization including such things as workload, postural variety, opportunities for recovery, and work methods

Use this booklet, and the Resident Handling Hazard Identification Checklist that is included, to help you identify hazards in your workplace that can contribute to pain and discomfort, time away from work, errors, reduced performance, and increased costs for your organization.

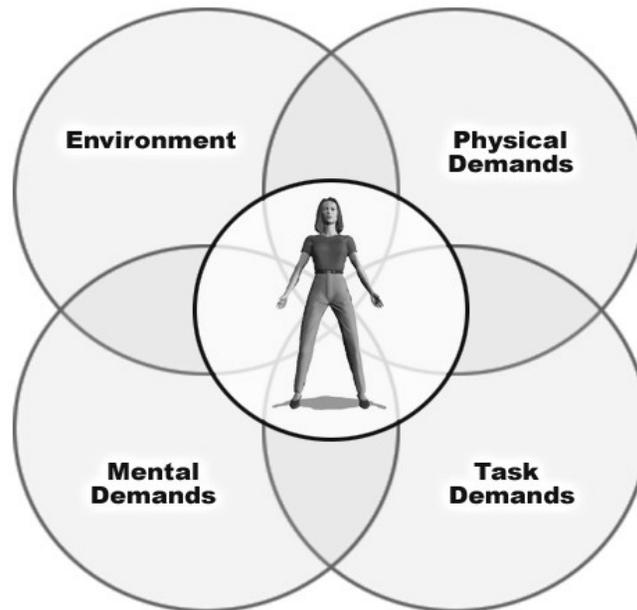
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What is ergonomics?

Ergonomics is the systematic process of designing the workplace for people through the application of our knowledge of humans to:

- the equipment they use
- the environments in which they work
- the tasks they perform and
- the management systems in which they work

The key to good ergonomics is taking a human-centered view. That is, when any workplace or job is being designed, the person or people who will be performing the job or working in the workplace should be the first thing that is considered in the design process. Only by understanding who will be working in the workplace, and taking into account their capabilities and needs can we design workplaces that will minimize the risk of pain and discomfort, while maximizing performance.



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What is Safe Resident Handling?

Resident handling refers to the activities of lifting, lowering, holding, pushing, or pulling of residents while assisting them with their daily living activities.

Many activities are related to the incident of MSI among workers, including:

- Frequency, force, and postures associated with resident handling
- Design and layout of the care environment
- Availability and use of appropriate resident handling equipment
- Work organization
- Resident characteristics
- Knowledge of appropriate resident handling techniques
- Belief that back injuries are just part of the job

Resident Handling and injuries

As mentioned previously, while it is true that there are many devices and equipment that can help to reduce that amount of effort required for resident handling, there is still some physical effort required to move, steady or position the resident. And, if the resident handling tasks are not designed properly, or we use poor techniques the risk of injury is increased.

When most people think about resident handling and injuries they typically only think about back injuries. It is true that lifting, lowering, pushing, pulling and carrying can all contribute to the development of back pain. Resident handling tasks can also lead to injuries in the neck, shoulders, arms, elbows, hands, wrists and legs. It is not uncommon to find out that people were performing resident handling tasks when they were involved in slip, trip and fall accidents.

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Well-designed workplaces and resident handling tasks allow people to not only work more safely, with less chance of experiencing a resident handling related injury; but they also allow work to be performed more effectively, efficiently, and productively.

When looking to solve problems related to resident handling and prevent resident handling-related injuries, involve everyone in a creative and open process. This will result in the development of effective and, often, low cost solutions that will help to improve the health and well-being of all workers and the overall organization.

Recognizing Resident Handling-Related Hazards

In order to eliminate design-related hazards associated with resident handling tasks managers and employees must know how to recognize them. This booklet has been designed for just this purpose. On the next few pages, you will learn about some of the most common design problems that are commonly found whenever people perform resident handling tasks and get to know how they can lead to Musculoskeletal Disorders (MSD's) and other performance issues.

Key hazards associated with resident handling tasks

Research and experience show that injuries and claim costs are reduced when the risks of MSI are identified, assessed, and controlled as part of an effective occupational health and safety program.

Alberta OH&S legislation requires the assessment and control of workplace hazards. For resident handling tasks, the assessment should not be a one-time static assessment, but changes constantly to consider caregiver, task, equipment, environment,

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and resident variables. An effective Safe Resident Handling Program will assist in providing a systematic approach to assess risk. Four key risk factor groups should be considered in order to determine what procedures or equipment should be used for resident handling. These include:



1. Physical demands of the task

The risk factors associated with the physical demands of the task include: force, repetition, duration, and work postures. Eliminating or minimizing these risk factors will reduce the risk of MSI.

Force

Refers to the effort a worker exerts to overcome the inertia of a load or to grip an object. There are three basic types of force:



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- Lifting, lowering and carrying force: the greater the level and longer the duration of a force, the higher the risk of MSI. The objective is not to stop resident care activities, but to minimize the forces involved as much as practicable. Often workers do not identify transferring and repositioning tasks as lifts, when in reality they are.
- Gripping force: handling tasks that require high levels of grip force or excessive bending or sideways twisting of the wrists can cause excessive stress on the tendons and pinching of the nerves in the wrists. Gripping with the palms down uses weaker/smaller muscles in the arms and hands; and, results in elevation of the shoulder. This puts the shoulder, elbow and wrist joints in awkward postures under load, which increases the risk of MSI.



- Pushing and pulling force: When pushing or pulling, extending the arms in awkward postures, particularly outside of the range between shoulder and elbow heights, increases the risk of MSI. When assessing risks, remember to consider smaller muscles that have to exert force, such as the muscles of the hands when pulling. In general, it is better to push rather than pull a load, although pushing loads may present other hazards such as restricted vision.



Repetition and duration

Frequency of repetition (how often) and duration (how long) are important risk factors in resident handling activities. The risk of MSI increases with the frequency and length of time that workers are exposed to the MSI risk factors. Although the effort required to handle a single resident may be low, the cumulative effect of handling many

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residents during a shift may result in a greater risk than that associated with an occasional lift of a much heavier load.

Small muscles, such as hand muscles, often bear a considerable level of force and tire faster than larger muscles. Many care workers experience pain and discomfort in their wrist and shoulders because they lift and pull residents instead of transferring their own weight to achieve the transfer or reposition.

Some resident care activities that do not fall under the standard definition of repetition may in fact be repetitive. Examples include: hand cranking beds, assisting residents to dress, and crushing resident medications. Repetitive activities such as these can be minimized by implementing engineering or administrative controls.



Work postures

Work postures that require any part of the body to be positioned outside its neutral position (the position of optimal strength) are considered awkward postures. In general the more awkward the posture used, the greater the risk to the worker. The following examples describe awkward postures that should be avoided.

- Handling loads away from the trunk of the body:
 - Holding a load further away from the trunk increases the level of stress placed on the lower back, regardless of the handling technique used.
 - Examples of resident handling tasks: moving a resident up in bed, transferring a resident from bed to chair or chair to bed, etc.



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- Handling loads in awkward, stooped postures:
 - Stooping or bending over, particularly for prolonged periods, puts a lot of stress on the lower back.
 - Examples of resident handling tasks: raising a resident from supine to sitting position, repositioning a resident in a wheelchair, etc.



- Twisting when lifting:
 - The effects of twisting are increased when combined with stooping or reaching and lifting.
 - This causes a high level of stress and poses a risk for MSI to the lower back.
 - Examples of resident handling tasks: repositioning the resident up in bed, transferring a resident to bed to chair or chair to bed, etc.



- Static or fixed postures:
 - Using awkward static postures for prolonged periods may increase the risk of cumulative injury.
 - Static postures may pose risks to the lower back, shoulders, elbows, and wrists.
 - Examples of resident handling tasks: supporting residents while providing personal care, supporting residents while toileting, etc.



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2. Resident characteristics

Handling residents presents considerably greater risk than handling inanimate objects. People feel pain, vary in size and shape, and may have various clinical needs. All of these factors will influence the way that a resident is handled. The risk factors related to the resident include:

Communication	Cognition	Behavioural & Emotional Status
<ul style="list-style-type: none"> - Speech - Vision - Hearing - Understanding - Language barrier 	<ul style="list-style-type: none"> - Memory - Judgment - Concentration - Decision-making 	<ul style="list-style-type: none"> - Resistive - Unpredictable - Uncooperative - Depressive - Aggressive - Confused - Agitated
Medical Status		Physical Status
<ul style="list-style-type: none"> - Diagnosis - Devices - Pain level - Medication - Fatigue - Skin Integrity 		<ul style="list-style-type: none"> - Weight - Height - Sensory abilities - Range of motion - Muscle strength - Muscle tone - Mobility and balance - Coordination - Weight-bearing

It is important to note that relatively light residents may pose just as much, if not more, risk to workers. When a resident is heavy, workers know they should use mechanical lifts or other transfer assist devices, along with getting assistance. Workers may not have the same appreciation of risk with lighter residents and may attempt to manually transfer them without appropriate handling equipment or without confirming the resident's weight-bearing status. If the resident fails to weight-bear, it may result in injury to the worker.

Recognizing Resident Handling Related Hazards

Remember, the resident mobility assessment (completed at assessment and a regular intervals based on the organization's internal procedures) identifies the level assistance the resident requires. This information is typically included in the resident's care plan and may be posted in the resident's room for quick reference. Therefore, workers should follow the care plan unless their observations of the resident's condition suggest it is unsafe to do so. In these situations, workers should inform their supervisors or the appropriate action should be taken to eliminate or minimize the risks. This may include reassessing the resident's handling needs and updating the resident's care plan.

3. Work Environment

Risk assessments must include characteristics of the work environment. This requires an assessment of the physical work environment, including aspects of the design of the workplace and equipment that could contribute to the risks of MSI.

Here are examples of how the layout and condition of the work environment can affect the physical demands of resident handling:

- Rooms, bathrooms, hallways, and other spaces may be small or crowded, or may contain obstructions that prevent workers from using optimal postures.
- Heights of resident transferring points such as beds, chairs, or toilets may result in awkward postures.
- There may not be enough mechanical lifts, slide equipment, or other transfer assist-devices to ensure that all workers have ready access to them.
- Manual cranks or hard-to-reach controls on beds, chairs or handling equipment may discourage workers from making the necessary adjustments, resulting in awkward postures or forceful exertions.
- Poorly maintained wheels may make moving and positioning beds and wheelchairs difficult.
- Missing or faulty brakes may cause beds or chairs to shift during transfers.
- Uneven or slippery floors may increase the risks of MSI.

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- Poor lighting may disorient residents and result in residents or workers losing their footing
- The position of beds and other furniture or equipment may not reflect the needs of the facility's written handling procedures.
- Doorways may not be wide enough for equipment such as mechanical lifts.

4. Work Organization

The way in which work is organized can affect the risk of MSI. For example, jobs that involve frequent handling activities with little variation or many separate tasks with similar postures, such as washing and dressing a resident, may lead to chronic overuse of specific muscles increasing the risk of injury.

Current research indicates that the cumulative effects of heavy lifting in care environments pose a significant risk of chronic overuse and damage to the soft tissues of the lower back and other areas of the body.

Work organization risk assessments should consider such things as:

- Work recovery cycles
 - Work recovery cycles are opportunities to periodically rest body parts that perform physical activities.
 - Insufficient recovery time increases the risk of injury.
- Task variability
 - Tasks that are performed repeatedly over a prolonged period can result in overuse or stress of muscles or other soft tissues.
 - The longer workers perform tasks, the greater the risk of injury.
- Work rate
 - Work rate refers to the speed with which a task is carried out.
 - Excessive work rates lead to fatigue, poor technique, and increased risk of injury.

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Facilities can reduce risks by reorganizing work tasks. For example:

- Whenever possible, bring care to the resident rather than moving the resident.
- Improve planning and assessment to eliminate unnecessary resident handling (for example, by reducing the number of transfers required in a given activity).
- Spread handling tasks as evenly as practicable over the work shift and among staff.
- Expand jobs by increasing the variety of tasks each worker performs.
- Avoid having designated bathing positions; as the staff allocated to these positions must complete the same repetitive tasks on a daily basis.
- Ensure that workers take adequate rest breaks. It is generally better to take frequent, shorter breaks than infrequent longer breaks. NOTE: a break in this context does not necessarily refer to stopping work; it may include periods of light duties or alternative task that enable stressed body parts to recover.

Additional risk factors to consider:

In addition to considering the elements in the four risk factor groups, consider the following additional risk factors:

- Caregiver
 - Assessment of whether the task can be done safely while protecting both the resident and the caregiver,
 - Whether additional assistance from another caregiver is required,
 - Level of communication between caregivers assisting in the task,
 - Level of awareness about the proper use of equipment, and
 - Physical readiness to perform the task
 - ⇒ properly warmed up, proper footwear, etc.;
 - ⇒ How am I feeling today, am I tired or sore?

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⇒ Do I have any injury or limitations that I need to be aware of?

- Clothing
 - It is important to wear clothing that is appropriate for the handling activities being performed.
 - For example, some clothing may inhibit free worker movement or prevent the worker from getting close enough to the resident during handling activities.
 - Adaptive resident clothing may make some resident care tasks easier. (for example, dressing and toileting)

- Personal risk factors for workers
 - Some workers may have personal risk factors such as pregnancy that place them at greater risk of MSI.
 - Workers returning to work after an injury are at risk of re-injury. Disability prevention and return to work strategies should be employed allowing for modified work duties to help the work manage the injury while remaining productively employed.
 - Poor physical fitness can increase a worker's risk of injury. Workers are encouraged to maintain a good level of physical fitness.
 - However, the fittest workers can sustain injuries when the physical demands of tasks or jobs exceed the strength and abilities of the worker.

Point to Remember!

Nothing is in of itself ergonomic ... a work system could be described as being ergonomic but individual components are only ergonomic if they:

- fit the User
- match the task
- are used in a well-designed environment
- 'fit' the other components in the system

Resident Handling Hazard Identification Checklist

Resident Handling Hazard Identification Checklist

This checklist will help you identify design-related hazards associated with resident handling tasks that may increase the risk of employees developing musculoskeletal pain / discomfort, decrease performance and increase an organization's operational costs.

This checklist identifies whether certain, common hazards exist. It does not assess the level of risk, and this checklist alone should not be used to determine if changes should be implemented.

This checklist should be used with the full participation and input of the employees who perform the job/task in question. Observations alone are not enough, and it is not appropriate for the person(s) using the checklist to base decisions only on what they see or think about a job. When using the checklist you should always:

- Understand the task(s) the employee performs during the day, how long they perform the task for and/or how often
- Ask employees what concerns they have about the design, set-up and organization of their workstation and work areas
- Ask workers if they find specific resident handling tasks to be physically demanding or if they have experienced pain or discomfort that they relate to performing resident handling tasks
- Consider individual needs based on body size, previous injury, etc.
- Observe tasks being done when practical
- Ask the employee if you are unsure

Resident Handling Hazard Identification Checklist

Analyst's Name:	
Date:	Time:
Company:	Department:
Job Name	
Brief Description of Specific Resident Handling Task:	

If the answer to any of the following questions is "YES" further assessment may be required in order to better identify and prioritize hazards that need to be controlled to reduce the risk of a resident handling-related injury!

Red Flag Issues:	Yes	No
Does this task have a history of resident handling-related injuries?		
Resident requires caregiver to lift more than 35lbs of their weight, or is unpredictable in the amount of assistance offered?		

Resident Handling Hazard Identification Checklist

Physical Demands Risk Assessment:	Yes	No
1. Workers lift all or a significant portion of the resident's weight, or apply force vertically.		
2. Workers mainly use their arms or backs to apply force.		
3. Workers use forceful grips with wrists in an awkward posture.		
4. Workers exert force while in awkward postures for example, stooped, twisted, reaching forward , or reaching overhead).		
5. Workers perform tasks with their back in awkward postures (stooped, twisted, bent to the side, bent backward, or bent forward).		
6. Workers lift or pull residents at a distance from them (for examples, with bed rails up, arms on wheelchairs, or furniture near the bed).		
7. Workers conduct transfer or assists while in postures that may put them off balance.		
8. Workers pull with their arms in awkward postures (for example, behind the body).		
9. Workers support a body part or hold a position for a sustained period (for example, holding residents away from them while cleaning them in bed).		
10. Workers support residents while performing care tasks (for example, transfers or repositioning).		
11. Workers perform quick or jerky movements.		
12. Workers do not use draw sheets or low friction slide sheets during transfers or repositioning tasks.		
13. Workers do not move their feet while twisting their torsos or turning their upper bodies to move residents. (nose doesn't follow the toes).		

Resident Handling Hazard Identification Checklist

Pre-Task Resident Risk Assessment

Yes No

Check the residents cognitive status:

Can the resident follow and understand two-step instructions?		
Is the resident orientated to place, time, date etc.		
There are no recent changes observed in the resident's cognitive status.		

Transfers:

Resident is able to lift shoulders from head of bed @ 45 degrees		
Resident states or demonstrates ability to rise from lying to sitting as Very Difficult or Hard		
Resident is able to boost – independently or minimally assist		
Resident has not been out of bed for an extended period of time		
Resident demonstrates significant fear, anxiety, reluctance		
Resident is able to lift arms against gravity		
Resident is able to lift legs against gravity		
Resident demonstrates significant change in medical stability		
Resident reports significant weakness or dizziness		
Resident reports pain level 7/10 consistently and it is not diminished by pain medication		
Resident is able to roll in bed		
Resident is able to sit up at the side of the bed unsupported		
Resident is able maintain balance side-to-side while sitting		

Resident Handling Hazard Identification Checklist

Pre-Task Resident Risk Assessment	Yes	No
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Bed Re-positioning:

Can the resident keep their shoulders and feet flat on the bed, and lift both hips off of the bed?		
Can the resident move legs over one at a time in the direction of the desired movement with minimal or no assist?		
Can the resident roll from side to side with or without the use of the arms?		

Weight-bearing:

Can the resident straighten his/her leg from a bent position by pushing against your hands, placed into the soles of the patient's feet? Test both legs.		
Can the resident straighten and lift each leg off bed about 6"? Test both legs.		
OR Can the resident with upper leg supported in the chair, straighten leg? Staff should try to bend the patient's leg at the knee while the patient resists. Test both legs.		
Can the resident straighten a bent elbow against your resistance?		
Can the resident while keeping knees straight, move his/her own foot in a circle, up and down?		

NOTES:

Resident Handling Hazard Identification Checklist

Workplace Risk Assessment

Yes No

Residents:

Do the admission procedures cover safe resident handling?		
Do resident care plans include safe resident handling procedures and are they completed?		
Is the resident's care plan available to all caregivers?		

Caregivers:

Is there always a full complement of staff?		
Do caregivers take regular breaks?		
Are workloads manageable and the pace of work reasonable?		
Do all staff know the safe resident handling policy and do they follow the defined procedures?		
Are resident handling responsibilities included in performance appraisals?		
Are there procedures for non-compliance?		
Are there procedures for emergency situations?		
Have all caregivers completed basic resident handling training?		
Is there extra-training provided for specialized needs?		
Do all caregivers attend annual refresher training?		
Are all incidents and injuries recorded and reviewed?		
Is early reporting of conditions that limit handling ability encouraged?		

Resident Handling Hazard Identification Checklist

Workplace Risk Assessment continued

Yes No

Task and Equipment:

Do caregivers always consider the resident care plan before starting handling tasks?		
Are only approved safe resident handling techniques used for tasks?		
Is there always enough caregivers to carry out handling tasks safely?		
Are handling tasks staggered? E.g. bathing patients over different shifts		
Is sufficient time allowed to carry out handling tasks?		
Are handling tasks rotated among caregivers?		
Do all caregivers know how to check and use the equipment properly?		
Is there sufficient equipment for the staff and tasks in the work area?		
Is equipment easy to store and retrieve—is there enough storage space?		
Is equipment regularly checked, repaired and replaced?		

Facilities:

Is there sufficient space in handling areas to perform task and manoeuvre equipment around beds?		
Is there good lighting and clear visibility for tasks?		
Are floors non-slip, stable and even?		
Can equipment be easily moved over flooring?		
Are work areas free of trip hazards? E.g. trailing cords, rugs		

Resident Handling Hazard Identification Checklist

Remember if the answer to any of the checklist questions is "NO", further discussion should take place to determine whether the identified hazards are of concern.

What prompted you to conduct this analysis:

- Proactive review of task related resident handling hazards:
- Response to worker concerns/comments:
- Frequency/number of accidents/injuries at this job:
- Other (please explain):
-
-

Does this job have a history of accidents/injuries related to resident handling tasks: Y N

If yes, over the past three years, how many accidents/injuries related to resident handling tasks were recorded for this job?

Total # of resident handling related accidents/injuries: _____

Which parts of the body have been affected:

- shoulder region: arm: upper back:
- lower back: neck region knee/leg:
- ankle/foot:

As with any checklist, this Resident Handling Hazard Identification Checklist **does not measure the level of the risk to employees**, it simply indicates that a hazard is present, even if the hazard presents a very small risk to workers

Recognizing Resident Handling Related Hazards

General Design Guidelines for Resident Handling Tasks

The following resident handling guidelines may help eliminate risks of MSI to workers:

- 1) Eliminate unnecessary resident handling.
- 2) Encourage residents to assist in their own transfers as much as they are safely able.
- 3) Install appropriate resident assistive devices such as grab bars or rails to help the resident be more independent.
- 4) Use mechanical equipment such as ceiling lifts or electric beds to eliminate the need for strong manual forces.
- 5) Use electric beds to eliminate handling procedures such as sitting up in bed.
- 6) Design new facilities with resident handling needs in mind.
- 7) Do not perform the task if a safe solution is unavailable. Use an alternative work method until a safe solution is provided. If necessary, you may have to care for the resident in bed until appropriate equipment is available.

The following resident handling guidelines may help minimize risks of MSI to workers:

- 1) Use height-adjustable beds and specialized feeding tables to avoid awkward postures.
- 2) Use slide boards, transfer boards, or slider sheets to reduce forces and awkward postures.
- 3) Develop safe work procedures that reduce the risks of MSI to workers to the lowest possible levels and ensure that workers follow these procedures.
- 4) Train workers to improve their technique.

Recognizing Resident Handling Related Hazards

- 5) Ensure the resident assessments are kept up to date.
- 6) Observe the resident's condition before each transfer to ensure that the designated transfer can be performed safely.
- 7) Change the workplace layout for the organization of tasks to reduce distances for pushing or carrying tasks.
- 8) Store heavy items at more convenient heights.
- 9) Modify tasks to reduce the amount of time workers spend stooped over.
- 10) Modify or reorganize tasks to increase variety.
- 11) Share or rotate tasks among workers. NOTE: this only applies to reducing the repetition of tasks that are otherwise safe. Sharing or rotating will not turn an unsafe lift into a safe one.
- 12) Install ramps so that stretchers, carts, and wheelchairs can be moved easily.
- 13) Use improved handles, wheels, or castors to help reduce the amount of force needed to move a load.
- 14) Implement a preventative maintenance program for the moving parts of equipment.

ACKNOWLEDGEMENTS

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