

Department of Justice and Attorney-General

Workplace Health and Safety Queensland

Manual tasks involving the handling of people

Code of Practice 2001

This Queensland code of practice was preserved as a code of practice under section 284 of the *Work Health and Safety Act 2011*.

This code was varied by the Minister for Education and Industrial Relations on 27 November 2011 and published in the Queensland Government Gazette on 2 December 2011.

This preserved code commences on 1 January 2012.

PN11179

© *The State of Queensland (Department of Justice and Attorney-General) 2011*

Copyright protects this document. The State of Queensland has no objection to this material being reproduced, but asserts its right to be recognised as author of the original material and the right to have the material unaltered.

The material presented in this publication is distributed by the Queensland Government as an information source only. The State of Queensland makes no statements, representations, or warranties about the accuracy or completeness of the information contained in this publication, and the reader should not rely on it. The Queensland Government disclaims all responsibility and all liability (including, without limitation, liability in negligence) for all expenses, losses, damages and costs you might incur as a result of the information being inaccurate or incomplete in any way, and for any reason.

Contents

1. Introduction.....	4
1.1 What is “people handling”?	5
1.2 People handling activities and injury	7
1.3 Risk factors	8
2. The risk management process – an overview	9
3. Identification	10
3.1 List the people handling tasks	10
3.2 Identify the actions in each task	11
3.3 Identify the direct risk factors	11
3.4 Identify the contributing and modifying risk factors	15
3.5 Compile the lists	22
4. Assessment	23
4.1 Estimate the level of risk associated with each action	23
4.2 Prioritise actions	24
5. Control	26
5.1 Methods of risk control - overview	26
5.2 Select controls.....	27
5.3 Implement controls	28
6. Review	29
7. Control options.....	30
7.1 Work area design	30
7.2 Workplace environment.....	35
7.3 The handling procedure	36
7.4 Characteristics of the person being handled.....	45
7.5 Individual characteristics of the worker.....	47
7.6 Work organisation.....	48
Appendix 1: Definitions	51
Appendix 2: Risk factors – a model of their interaction	53
Appendix 3: Checklists	55
Appendix 4: Design	61
Appendix 5: Planning a handling procedure	64
Appendix 6: Training	65
Appendix 7: A method of risk assessment	68
Appendix 8: Sample control implementation plan	72
Appendix 9: Case study applying the code	73

1. Introduction

This *Manual Tasks Involving the Handling of People Code of Practice* is an approved code of practice under section 274 of the *Work Health and Safety Act 2011* (the Act).

An approved code of practice is a practical guide to achieving the standards of health, safety and welfare required under the Act and the *Work Health and Safety Regulation 2011* (the Regulation).

A code of practice applies to anyone who has a duty of care in the circumstances described in the code. In most cases, following an approved code of practice would achieve compliance with the health and safety duties in the Act, in relation to the subject matter of the code. Like regulations, codes of practice deal with particular issues and do not cover all hazards or risks which may arise. The health and safety duties require duty holders to consider all risks associated with work, not only those for which regulations and codes of practice exist.

Codes of practice are admissible in court proceedings under the Act and Regulation. Courts may regard a code of practice as evidence of what is known about a hazard, risk or control and may rely on the code in determining what is reasonably practicable in the circumstances to which the code relates.

Compliance with the Act and Regulation may be achieved by following another method, such as a technical or an industry standard, if it provides an equivalent or higher standard of work health and safety than the code.

An inspector may refer to an approved code of practice when issuing an improvement or prohibition notice.

How is the code organised

In providing guidance, the word ‘should’ is used in this Code to indicate a recommended course of action, while ‘may’ is used to indicate an optional course of action.

This Code also includes various references to provisions of the Act and Regulation which set out the legal requirements. These references are not exhaustive. The words ‘must’, ‘requires’ or ‘mandatory’ indicate that a legal requirement exists and must be complied with.

Who has duties?

A **person conducting a business or undertaking** has the primary duty under the Act to ensure, as far as reasonably practicable, that workers and other persons are not exposed to health and safety risks arising from the business or undertaking.

Officers, such as company directors, have a duty to exercise due diligence to ensure that the business or undertaking complies with the Act and Regulation. This includes taking reasonable steps to ensure that the business or undertaking has and uses appropriate resources and processes to provide and maintain a safe work environment.

Workers have a duty to take reasonable care for their own health and safety and that they do not adversely affect the health and safety of other persons. Workers must comply with any reasonable instruction and cooperate with any reasonable policy or procedure relating to health and safety at the workplace.

Consulting workers

Consultation involves sharing of information, giving workers a reasonable opportunity to express views and taking those views into account before making decisions on health and safety matters.

The Act requires that you consult, so far as is reasonably practicable, with workers who carry out work for you who are (or are likely to be) directly affected by a work health and safety matter.

If the workers are represented by a health and safety representative, the consultation must involve that representative.

You must consult your workers when proposing any changes to the work that may affect their health and safety.

Consulting, cooperating and coordinating activities with other duty holders

The Act requires that you consult, cooperate and coordinate activities with all other persons who have a work health or safety duty in relation to the same matter, so far as is reasonably practicable.

Sometimes you may share responsibility for a health and safety matter with other business operators who are involved in the same activities or who share the same workplace. In these situations, you should exchange information to find out who is doing what and work together in a cooperative and coordinated way so that all risks are eliminated or minimised as far as reasonably practicable.

Further guidance on consultation is available in the *Work Health and Safety Consultation, Coordination and Cooperation Code of Practice*.

1.1 What is “people handling”?

"People handling" refers to any workplace activity where a person is physically moved, supported or restrained at a workplace.

Specifically, people handling refers to workplace activities requiring the use of force exerted by a worker* to hold, support, transfer* (lift, lower, carry, push, pull, slide), or restrain* a person* at a workplace.

People handling is a hazardous manual task. This code should be read in conjunction with the *Hazardous Manual Tasks Code of Practice*.

No worker should fully lift a person, other than a small infant, unaided. (That is, without assistance from, for example, **mechanical aids, assistive devices or another worker/s.**)

All people handling activities are a potential source of injury and therefore, a hazard. If you undertake people handling at your workplace, you should use a process (such as the one described in chapters 2 – 6 of this document) to manage the risks associated with this hazard.

People handling is often only one part of a worker's job. If other parts of the worker's job also involve manual handling of other loads, it is essential to assess the whole job and manage the risks associated with undertaking those activities which add to the accumulative stress on the worker's body.

In this document, the terms, 'activity', 'task' and 'action' are used to refer to different aspects of people handling, as follows:

1. **People handling activities** is a collective term for a group of related people handling tasks.
2. **People handling tasks** are the specific 'pieces' of work undertaken at the workplace, which involve the physical movement of a person.
3. **People handling actions** are the individual elements of the task and refer to movements which are undertaken.

The difference between these terms is illustrated in the example below. (Note, for illustration purposes, the actions have been provided for the first three tasks only.)

Activity	Task	Action
Showering a person	a) transfer person from bed to shower chair	i) assist person to sit up on the edge of the bed † ii) transfer person to standing position † iii) transfer pivot from standing (and lower) into shower chair †
	b) convey person to shower	i) unlock brakes of shower chair ii) push shower chair to shower † iii) manoeuvre shower chair into cubicle
	c) undress person	i) remove clothes from upper part of person's body supporting upper limbs as necessary ii) loosen clothes on lower limbs iii) assist person's partial rise to stand iv) remove clothes from lower part of persons body supporting lower limbs as necessary v) lower person into shower chair
	d) shower person	
	e) dry person	
	f) dress person	
	g) convey person to bedroom etc	
	h) transfer person from chair to bed	

† denotes those actions which are likely to represent a significant risk of injury.

1.2 People handling activities and injury

The most frequently injured body parts from people handling activities undertaken without assistance are the back, shoulders and wrist.

People handling activities can contribute to a number of work-related musculoskeletal disorders (WRMDs)* including:

- Low Back Disorders (injuries to muscles, ligaments, inter-vertebral discs and other structures in the back).
- Tendon Disorders (injuries affecting the tendons in the wrist, and elbows particularly).
- Nerve Disorders (injuries affecting the wrist, neck and shoulder).
- Upper limb muscle strains (injuries affecting the rotator cuff* and forearm particularly).

WRMDs occur in two ways:

- **gradual wear and tear** (cumulative trauma) caused by frequent periods of muscular effort involving the same body parts, and
- **sudden damage** caused by unexpected movements, intense or strenuous activity, for example, when people being handled move suddenly or when the worker is handling a load beyond their capacity.

Gradual wear and tear is the most common way WRMDs occur. Even when an injury seems to be caused by overload, the triggering event might just be the final trauma to tissues already damaged by previous exposures to people handling and other manual activities.

Common work-related actions within people handling tasks which contribute to WRMDs include:

- unaided lifting or supporting weight
- frequent and repetitive lifting with a bent and/or twisted back regardless of weight
- pushing or pulling actions, particularly on slopes or surfaces that are uneven, or are resistant to wheels, for example, carpeted floors, wheeled equipment that is not maintained
- unexpected force for example, catching a person who is falling to prevent the person injuring themselves or others
- static working positions with the back bent, for example, holding a limb during a surgical procedure or providing stability while a person stands
- lowering in restricted spaces, for example, into a vehicle or onto a toilet.

1.3 Risk factors

To gain a greater understanding of the relationship between people handling activities and injury, it is useful to consider the factors (known as ‘risk factors’) which influence the level of risk associated with undertaking people handling tasks.

These risk factors can be grouped into two distinct categories:

- **direct risk factors** – which directly stress/injure the worker’s body
- **contributing risk factors and modifying risk factors** - which affect how the task or action is done.

(A detailed explanation of risk factors and a model of their interaction are provided in Appendix 2.)

There are three **direct risk factors**:

- forceful exertion
- working postures (awkward, static)
- repetition and duration.

It is important to note that if none of these direct risk factors are found to be associated with the people handling task or action, there is no risk and no need to assess the task or action.

There are a total of **six contributing risk factors** and **modifying risk factors**. These risk factors are the **causes** of the direct risk factors.

The **contributing** risk factors are:

- work area design
- work environment
- handling procedure
- characteristics of the person being handled.

The **modifying** risk factors are:

- characteristics of the worker
- work organisation.

It is the contributing and modifying risk factors that are controlled to manage the risk of injury.

A description of each of the risk factors is provided in sections 3.3 and 3.4. Checklists to assist with identifying these risk factors are provided in Appendix 3.

2. The risk management process – an overview

Under the *Work Health and Safety Regulation 2011* (the Regulation), a person conducting a business or undertaking (PCBU) must manage risks to health and safety relating to a musculoskeletal disorder associated with a hazardous manual task.

Detailed information about risk management is contained in part 3.1 of the Regulation and the *How to Manage Work Health and Safety Risks Code of Practice*.

Risk management is an ongoing process. It should be undertaken:

- now, if it has not been undertaken before
- when changes occur at, or are planned for, the workplace
- when there are indications for potential injury
- after an incident (or ‘near miss’) occurs
- at regularly scheduled times appropriate to the workplace.

<p>Identification</p> <ul style="list-style-type: none"> • Consult with workers and observe the tasks. • Make a list of all the people handling tasks. • Make a list of the actions within each of these tasks. • For each action, determine which of the direct risk factors are present. • For each action, identify the contributing and modifying factors
<p>Assessment</p> <ul style="list-style-type: none"> • Consult with the workers. • Determine the level of risk associated with each action. • Prioritise actions for control.
<p>Control</p> <ul style="list-style-type: none"> • Consult with workers. • Determine solutions that will manage the contributing and modifying risk factors. • Implement chosen control measures
<p>Review</p> <ul style="list-style-type: none"> • Consult with workers. • Review people handling actions and tasks to determine the effectiveness of measures.

3. Identification

The first step in the process of managing exposure to people handling risks is identification. This step involves identifying people handling tasks, actions within each task, direct risk factors, and, contributing and modifying risk factors.

3.1 List the people handling tasks

The first part of identification is to make a list of those tasks undertaken at the workplace that involve handling people.

Common work-related people handling tasks include:

- raising a person who is at ground level
- assisting with toileting
- bathing/showering a person
- dressing/undressing a person
- transferring a person from a bed into a chair or from a chair into a bed
- assisting a person from a restricted space, such as a car or bus
- repositioning a dependent person, such as in a bed or chair
- moving or conveying a person from one location to another, for example, *in a wheelchair*
- supporting/being ready to support a person/child, such as during rehabilitation or when the child climbs on playground equipment
- rescuing or retrieving an injured or deceased person
- restraining a person, for example, to prevent movement in a person with cognitive* or behavioural problems.

3.2 Identify the actions in each task

The second part of identification involves identifying the actions involved in each of the tasks. Breaking the task into its actions allows all the components of the task to be considered. Analysing these actions helps to identify those aspects of the task that might place the worker and/or person at risk. This process facilitates the selection of appropriate and targeted control measures.

The task of raising a person who is at ground level, could involve the following people handling actions:

Action 1 – repositioning the person (for example, putting them in the recovery position)

Action 2 – administer first aid, if required

Action 3 – position the person in a sitting position

Action 4 – position a chair close to the person

Action 5 – assist the person as they rise to sit on the chair

Action 6 – assisting the person as they rise to stand.

Alternatively, the task of raising a person who is at ground level could involve the use of a hoist, as follows:

Action 1 – assist the person to roll to their side

Action 2 – position the sling on/under the person

Action 3 – position hoist close to the person

Action 4 – attach the sling to the hoist

Action 5 – follow the operating instructions; use the hoist to lift the person.

A number of people handling tasks will have actions in common. The action of raising a person to stand from a seated position will be required when:

- toileting a person
- transferring a person from a wheelchair to a bed
- removing a child from a high-chair
- assisting a person out of a car or bus.

3.3 Identify the direct risk factors

The next part of the identification step is to identify the direct risk factors associated with each of the actions. (Checklists are provided in Appendix 3 to assist with identifying these risk factors.) It is expected that most people handling actions will involve at least one of the direct risk factors, and, therefore, all actions should be considered. However, **if none of the direct risk factors are found to be associated with the action, there is no need to proceed with assessing the action.**

The three direct risk factors are:

- forceful exertions
- working postures (awkward, static)
- repetition and duration.

Forceful exertions

Forceful muscular exertions place high loads on body tissues and so are associated with a large percentage of WRMDs.

The level of muscular effort needed for an action is affected by a number of factors, such as:

- **Awkward working postures** – A higher level of muscular exertion is needed when a body part is in an awkward posture.
- **Static positions** - Holding a body part, such as the back or shoulder in a fixed position, for example, when supporting a person, places a considerable load on the body part. Continuous standing, for example, can also be a problem if it needs to be maintained for a prolonged period. The load is increased significantly if the posture is static and awkward.
- **Sudden movement** - Responding to sudden movement in people being handled who faint, fall or are uncooperative (because of cognitive or behavioural problems), can lead to large forceful exertions.

Forceful exertions are caused by the following contributing and modifying risk factors:

- **Characteristics of the person being handled**, for example, needing to respond to sudden movement or to apply restraint.
- **The handling procedure**, for example, whether it is carrying, lifting or pulling.
- **The work area design**, for example, whether bending and reaching are needed because of the location of work items.
- **Work organisation**, for example, lack of maintenance of equipment.

Forceful exertions are also caused by **working postures**, (awkward, static) for example, reaching across a bed and lifting a person.

Working postures

Working postures affect the level of muscular effort needed to perform an action, and how quickly muscles fatigue.

Working postures can be:

- **dynamic** or **static**
- **awkward** or **neutral**.

It is the static working postures and the awkward working postures that represent a risk.

Dynamic postures involve movement. A **static posture** refers to a posture where a body part is held in a fixed position. Static postures lead to earlier fatigue than dynamic postures because, with static postures, blood flow to the muscle is restricted and the energy supply to the muscle can run out. Many people handling activities involve both types of working postures, for example, a worker using his/her arms to dress a person, while having the back bent in a fixed posture.

Awkward postures are postures where joints of the body are away from the midline or from the neutral position.

Neutral positions (figure 1) include:

- back and head upright with normal spinal alignment
- arms by the sides of the body with the shoulders relaxed
- forearms hanging straight, or at a right angle to the upper arm when working
- legs straight.



Figure 1

Awkward working postures while handling people are not always harmful in themselves. However, an awkward posture is likely to cause damage to body tissues in combination with:

- **Another awkward posture** - The back being both bent forward **and** bent sideways or twisted increases the stresses on the spine. For example:
 - transferring a person from bed to chair, when the worker needs to bend or twist sideways
 - assisting a dependent person into a vehicle or bus
 - rescuing or retrieving a person from a restricted area.
- **Static positions** - Maintaining a fixed position for a prolonged period accelerates the fatigue in muscles, such as when having the back bent or shoulders tensed when holding a load or working with the hands. For example:
 - supporting a person's limb during a surgical procedure
 - bending over a bath while tending to a person.
- **Forceful exertions:** the muscular effort to perform an action increases as the body part moves further away from the neutral position.
 - lifting a person from a low bed, the floor or out of a low chair
 - positioning a person in a bed from lying to sitting up
 - responding to sudden movement in people such as fainting or falling

- restraining a difficult person during a transfer.
- **Repetitive tasks:** people handling tasks which use awkward postures and are performed repeatedly without breaks increase the likelihood of tissue damage. For example toileting or bathing people during peak periods.

Awkward working postures addressed in this standard include the following high-risk awkward working postures:

- **Back**
 - Bent forward, for example, tending to a person on a low bed.
 - Bent sideways, for example, using a shoulder lift to assist a person to sit up in bed.
 - Twisted, for example, settling a person into a car or manoeuvring a person in a shower, where space is limited.
 - A combination of the above awkward postures.
- **Neck**
 - Bent back wards, for example, looking up.
 - Twisted for example, looking over the shoulder.
 - Bent downwards.
 - A combination of the above awkward postures.
- **Arms and shoulders**
 - Reaching up above the shoulder for example, removing children from play equipment.
 - Reaching away from the body (including behind) for example, having an obstacle in the way when trying to grasp a person.
- **Hands and wrist**
 - Pinching an unsupported object weighing 1 kg or more.
 - Gripping with a pinch grip (figure 2) for example, pulling a slide sheet holding the sheet between the thumb and index finger, or with the wrist in an awkward posture (figure 3).



Figure 2



Figure 3

- **Legs**
 - Squatting for more than a total of 2 hours per day.
 - Kneeling for more than a total of 2 hours per day.

The following contributing and modifying risk factors cause high-risk working postures:

- the **work area design** in which the task/action is performed
- the **characteristics of the person being handled** - the special way the person might have to be handled because of a particular problem or individual characteristic, and
- the **method of people handling** - lift, carry, pull etc.

Refer also to the checklist in Appendix 3.

Repetition and duration

Repetition - is a major risk factor for WRMDs.

It usually means the same muscles and joints are being moved continuously and this can result in

- increased "wear and tear" of body tissues because of the limited opportunity for them to recover during repetitive work, and/or
- muscle fatigue, which could be followed by an inflammatory response and tissue damage.

The **frequency** of a repetitive people handling task or action (how many times it is done) is critical in causing adverse health effects.

Examples of common repetitive tasks include:

- handling people into and out of vehicles at arrival or departure times in an educational facility
- assisting people with activities of daily living at routine times such as meals, toileting or getting in or out of bed
- recreational activities in child care centres involving moving children on and off equipment.

Duration – refers to the length of time a people handling task is done during a shift. This is important when the worker is exposed to risk factors such as forceful exertions, repetitive movement, and static awkward postures.

Tasks that are repetitious or of long duration can generally be controlled through changing the modifying risk factor of work organisation, by reducing task frequency or exposure time, and or implementing policies to ensure the availability and correct use of handling aids.

Refer also to the checklist in Appendix 3.

3.4 Identify the contributing and modifying risk factors

The identification step also involves identifying the risk factors that contribute to or modify the level of risk associated with each of the actions. (Checklists are provided in Appendix 3 to assist with identifying these risk factors.)

The relevant contributing and modifying risk factors associated with people handling actions are:

Contributing risk factors

- work area design
- workplace environment
- the handling procedure
- characteristics of the person, as a load.

Modifying risk factors

- individual characteristics of the worker
- work organisation.

Work area design

The work area is that part of the workplace where a particular people handling task or action is based. It includes furniture and fittings, vehicles, and the equipment used by the worker in performing the action.

The design/layout of a work area and the risk of injury are linked, because the relative positions of work items and the worker affect the:

- working postures, and
- level of muscular exertion.

The design of the workplace should allow the worker as far as possible to:

- be upright and facing forward
- have a clear view of the task
- perform the action between hip and shoulder height and without reaching forward and or twisting.

Problems with the design/layout of work areas include:

- **Dimensions of furniture and equipment:** if the surface on which the person to be handled is not height adjustable (e.g. too low or too high) or too wide, the worker might have to bend and reach, for example –
 - bathing a person in a conventional bath
 - tending a person in a low, queen-size bed
 - the caring/rehabilitation of a disabled child on a floor mat.
- **Location of items in the work area:** can result in awkward postures (dynamic and static) such as reaching or bending, for example:
 - having furniture which is not moveable or limits workable space so workers have to reach over to handle a person
 - using the area under furniture for storage so there is insufficient space for the feet.
- **Access ways:** Insufficient space for moving handling equipment or mobile furniture can result in awkward postures and additional force being used, for example pushing equipment through a standard doorway.
- **Space constraints:** can prevent the worker standing close to a person being handled, or standing up straight. This can result in awkward postures and an increased level of muscular effort, for example:

- toilet cubicles or other constricted or crowded spaces with insufficient room to stand beside the person being assisted
- manoeuvring mechanical aids around beds
- vehicles with limited head room into which people are required to be assisted and/or lifted and positioned.
- **Floor levels:** Different floor levels, steps, lips, and lack of suitable ramps can result in awkward postures and an increased level of muscular effort, for example, moving/manoeuvring wheeled equipment and mobile furniture into lifts.

Refer to the relevant checklist in Appendix 3. Appendix 4 also provides information about design.

Work environment

Aspects of the work environment that increase the risks associated with undertaking people handling actions include:

- **Surfaces:** Floors and other surfaces underfoot that are uneven, slippery or sloping, add to the level of exertion required to perform people handling activities.
- **Housekeeping:** Poor housekeeping can contribute to awkward postures, for example, reaching or bending over obstacles, and can result in an increase in the level of forceful exertion required to perform an action.
- **Ambient conditions:**
 - **Thermal Comfort:** Heat/humidity, cold and wind contribute to the physical demands placed on workers during handling, and can lead to the earlier onset of fatigue, for example, when undertaking rescue procedures during extremes of heat, cold, wind or humidity.
 - **Noise:** Both the level and the type of noise can interfere with communication, such as giving instruction or warnings, especially during team handling and between the worker(s) and the person being handled.
 - **Lighting:** People handling actions performed in an area with low lighting can result in visual compromise which can lead to awkward postures, such as leaning forward. Further, poor lighting can limit the visibility of obstacles.
- **Working in people's homes:** In people's homes, the work environment is unpredictable and there is generally a limit to what the worker can control.

Refer to the relevant checklist in Appendix 3.

The handling procedure

The handling procedure refers to the way a task or action is carried out. Different handling procedures result in different working postures and different levels of muscular effort needed to perform an action.

Lifting, lowering, holding and carrying

These handling actions can involve a worker supporting part or all of the body weight of the person being handled. These actions are a primary cause of WRMDs in workers.

When lifting/carrying, the force exerted on the spine¹ by the load is an important factor contributing to injury. This is affected by the **weight** of the person combined with the **distance** of the centre of gravity² of the person relative to the worker's spine. An increase in this distance greatly increases the load on the spine.

Distance is increased when:

- the person is bulky
- the person has to be held away from the body, because of, for example, attachments, equipment or behavioural patterns of the person
- extended reach is needed because of, for example, an obstacle in the way.

The following aspects also increase the physical demands of the handling action:

- The **vertical distance** the person has to be lifted or lowered increases the load, through awkward postures of the back or arms, for example:
 - lifting a person from a low chair to a standing position (figure 4)
 - lowering a child from play equipment.



Figure 4

- **Asymmetry of the load:** Weight is not distributed evenly in a person with the upper half generally being heavier than the lower half. This can affect team handling. For example, for workers carrying a stretcher, the worker at the head end will support more of the weight.
- **Asymmetric lifting:** causes more stress on one side of the worker's body than the other, for example, lifting a person out of a bath that is located against a wall or pulling a person from the water into an Inflatable Rubber Boat (IRB).

¹ This force is measured as the 'bending moment' and is calculated as Weight X Distance.

² The centre of gravity of a regular object is at its centre. In an object of uneven weight distribution, it is towards the heavier side.

- **Location:** The starting and finishing positions of a person during a transfer affects whether the worker has to lift or lower or to twist, for example, transferring a person from a bed to a trolley which is higher, or a chair at right angles.
- **Distance moved:** generally, the greater the distance the person is moved, the longer the load is on the body.
- **Working while seated:** Less weight can be handled when the worker is seated than when the worker is standing.
- **Constricted work space:** limiting the ability to manoeuvre or stand up straight for example, positioning a person in a vehicle or working in a hostel room or person's home with too much furniture.

Sliding, pushing and pulling

Sliding, pushing and pulling are actions that allow people to be moved across surfaces with the weight of the person supported by the assistive device, for example:

- a slide sheet to reposition people in bed
- a slide board to transfer at level
- a wheelchair, stretcher, or trolley for moving people.

Restraining

The need to restrain a person or body part can occur with another handling task. This can increase the effort needed and the risk associated with performing the people handling task or action.

Appendix 5 provides information about planning a handling procedure. Refer also to the relevant checklist in Appendix 3.

Characteristics of the person being handled

Unlike other general load handling activities, with people handling, the health and safety of the load, that is, the person being handled, has to be considered as well as the health and safety of the worker(s) and others.

Both the physical and the non-physical, including cognitive and behavioural, characteristics of the person (the load) will affect how the people handling activity is undertaken and the risk(s) involved.

Physical characteristics

One of the main problems with people handling is that the weight of the person (the load) is often more than the weight of an object considered acceptable for an unaided worker to manually handle. In an office environment, for example, a service person would not be expected to move a photocopier, weighing approximately 70 kilograms, without the assistance of a trolley.

If the task also involves the handling of a stretcher or coffin, the level of risk will be increased because of the additional weight of these items to the weight of the load.

Other physical characteristics of the person can increase the risk of injury by causing the direct stressors, which places demands on the worker(s) and limits handling controls. These characteristics include:

- the type of injuries a person may have (for example, fractures, spinal injuries, contractures)
- the ‘infectious state’ of the person (for example, the need to wear specific personal protective equipment)
- the physical flexibility of the person
- whether the person is attached to any medical equipment and can be held close to the worker’s body during a transfer
- whether the person has any physical disabilities
- whether it is suspected or known that the person is under the influence of drugs or alcohol
- whether the person is (or is likely to) make sudden, uncontrolled movements (for example, slip, convulse, loss of balance)
- whether the person is physically capable of assisting the worker(s).

Non-physical including cognitive and behavioural characteristics of the person (the load)

As well as the physical condition of the person, non-physical, including cognitive and behavioural, characteristics of the person can affect the handling activity and the level of risk.

This includes the person’s:

- **State of arousal:** A person, not in a fully conscious state, for example, if the person is asleep, unconscious or has fainted, will be totally dependent on the worker and, in effect, heavier to handle.
- **Predictability of behaviour:** Unpredictable behaviour, for example, when it is suspected or known that a person is under the influence of drugs or alcohol or suffers from dementia, head injury or a psychological condition, can hinder the handling activity. Any sudden and/or uncontrolled movement by the person being handled can require the worker to use high muscle forces and can result in overloading of body tissues, for example, a worker moving suddenly to restrain a person.
- **Willingness to assist:** Handling can be easier if the person is willing to assist and cooperates with the worker(s). If the person has behavioural problems and/or is aggressive, the handling procedure is likely to require more force from the worker(s). Even the person moving independently of the worker can hinder the handling activity. Procedures should be designed so that minimum reliance is placed on the person’s assistance and alternative controls are used.
- **Ability to communicate and understand:** A person can assist a handling procedure, if they can understand what is intended/required for the procedure. Effective communication can be difficult, however, when the person does not speak the same language as the worker, or their condition limits their ability to understand instructions, for example, if the person has an intellectual disability.
- **Need for dignity and privacy:** Handling methods used to preserve the dignity and privacy of the person (including deceased persons) can increase the risk of injury, for example:
 - closing the toilet door while assisting the person, which can restrict space
 - dressing and undressing a person in the shower rather than beside the bed, which can increase the number of handling tasks and actions required to perform the activity.

Refer to the relevant checklist in Appendix 3.

Characteristics of the individual worker

Characteristics of the individual worker, such as those outlined below, can influence the level of risk associated with performing the action:

- **Competency:** A lack of competency by the worker can contribute to the level of risk associated with performing a task. Appendix 6 provides information about training, including competencies for training.
- **The physical capabilities** of the worker are a significant factor. For example:
 - Workers with an existing back injury, (for example, a ruptured disc, which might be pain free) have a greater chance of re-injury.
 - Young workers can be at greater risk than adult workers because they are still developing physically. Older workers with a reduced physical capacity or previous work-related injuries can be at greater risk of injury. However, older workers might be able to compensate for any physical loss by their skill in performing an action or task.
 - Workers in the last stages of pregnancy can be at greater risk of injury. Pregnancy can affect the risk of back pain because of a number of factors, including the changing shape of the body. Loading stress can be increased in some handling situations because the worker cannot get as close to the person. Hormonal changes also cause softening of tissues and laxity of joints in pregnancy. The ligaments of the lower back and pelvis, and the muscles of the pelvic floor regions are particularly at risk when moving a person.
 - Workers who are new, are returning from long absences and whose functional capacity for the physical demands of the work may not be back to normal, or are on workplace rehabilitation programs can be at greater risk of injury.
- **Clothing and footwear:** Wearing inappropriate items of clothing and footwear can increase the level of risk associated with performing a handling action, for example:
 - Tight-fitting and/or short skirts, dresses etc which do not allow workers to adopt optimal working postures because of restrictions in the clothing or modesty concerns.
 - Footwear lacking stability and good traction with the floor to prevent slipping.
- **Personal protective equipment (PPE):** Items of PPE can increase the level of risk by increasing demands of the actions. For example:
 - Gloves can add to the difficulty in grasping and holding a person, particularly if the gloves do not fit well.
 - Heavy clothing to protect against heat (fires) or cold can cause restrictions in movement.

Refer to the relevant checklist in Appendix 3.

Work organisation

The way work is organised, or procedures are administered can affect the level of risk by:

- increasing the frequency with which repetitive tasks are performed
- increasing the duration of exposure to the risk
- reducing the time for recovery between tasks
- increasing the level of forceful exertion required.

Organisational aspects that increase the level of risk include:

- **Staffing levels** - Too few workers for people handling tasks can result in increased work demands being placed on the existing workers, for example, increased number of transfers

(repetition) and longer duration on handling tasks. This can lead to fatigue and reduced work capacity. This is a common experience during peak times, for example, during bathing and dressing activities, of assisting dependent people into cars.

- When **working in isolation**, for example, when caring for a dependent person in their own home, a worker generally does not have the opportunity to call for assistance and/or use team-handling. The availability of assistance to a worker will affect the level of risk associated with performing people handling actions.
- **Lack of variability** - can increase the load on body tissues due to lack of changes in posture and the reduced chance for recovery, for example:
 - performing one action repeatedly, such as positioning people in bed
 - performing people handling actions with similar requirements.
- **Inadequate rest breaks** - might not allow enough time between people handling tasks and so contribute to fatigue and overexertion, for example, busy work schedules leading to missed work breaks.
- **Extended workdays** - Long work hours (more than 8 hours) can lead to increased exposure to the risk of injury, for example:
 - Overtime due to workers on the next shift suddenly being unavailable.
 - 12-hour shifts in work units catering for dependent people.
- **Administrative policies and procedures** - A lack of policies and procedures, inadequate policies and procedures, or policies and procedures which are not followed can increase the level of risk associated with performing a people handling task/action, for example:
 - A procedure for use of shared equipment which is not followed.
 - Lack of consultation with workers when purchasing new equipment or vehicles.

Refer to the relevant checklist in Appendix 3.

3.5 Compile the lists

Using the information about each of the risk factors above and the checklists in Appendix 3, identify and list the direct risk factors and the contributing and modifying contributing factors associated with performing each action.

Observe the tasks and actions being undertaken and consult with workers when compiling the lists. In a small workplace, an individual might be familiar with all the activities undertaken and so is able to prepare the lists of people handling tasks and actions, and to identify the risk factors.

At a larger workplace, it may be necessary to develop the lists through a workplace health and safety committee or at a staff meeting.

People handling tasks, actions and associated risk factors can also be identified through:

- further consultation with workers
- regular observation of work processes
- minutes of previous workplace health and safety committee meetings and staff meetings
- diaries or activity reports
- incident reports, including hazard reports and improvement logs
- industry statistics, including workers compensation data.

A summary of the identification process:

- consult with workers
- list the workplace tasks that involve people handling
- record the people handling actions involved in each task
- identify the direct risk factors associated with each action.

Note, if none of the direct risk factors exist, there is no need to proceed with assessing the action.

- Identify the contributing and modifying risk factors.

Questions to ask:

- What do the workers think?
- What tasks involve people handling?
- What are the main actions in each task?
- What are the direct risk factors?
- What are the contributing and modifying risk factors?

4. Assessment

Assessment involves determining the level of risk associated with each of the people handling actions identified. The desired outcome of the assessment step is a prioritised list of people handling actions requiring control.

Further, when more than one people handling task is assessed, then the overall risk estimate for the task can be used to develop a prioritised list of tasks requiring control.

Consult with workers throughout this process to assist with determining the level of risk associated with each of the people handling actions and the priority of each task.

4.1 Estimate the level of risk associated with each action

Sections 3.3 and 3.4 provided a description of the risk factors and some explanation of how the factors influence (either decrease or increase) the level of risk associated with performing the action.

In order to prioritise the people handling actions, the risk associated with performing each action should be assessed. It is up to the assessor how this assessment is done. The assessor can choose any method of risk assessment as long as a prioritised list of actions is achieved.

A way of assessing risk is to consider the **likelihood** and **consequences** of an incident* occurring at the workplace.

Likelihood

To estimate the likelihood of an incident occurring at the workplace, the following aspects can be considered:

- how often the action is undertaken
- the number of workers performing the same or a similar action
- the duration of time that the action is performed

- distractions
- the effectiveness of existing control measures
- capacity and characteristics of the workers
- environment
- availability and use of equipment
- condition of equipment
- injury data/history³.

Consequences

To estimate consequences, the severity of a potential injury or illness that could result from performing a people handling action can be considered. Reference can also be made to injury records and statistics, and information on injuries from people handling in related industries for an indication of the potential severity of injury.

4.2 Prioritise actions

Use your likelihood and consequence estimates to rank and then list the people handling actions requiring control. You might decide that some actions, for example, those for which it is very unlikely that an incident would occur and for which the consequences are minor, may not require control.

Overall level of risk for the task

The overall level of risk assigned to the task is the highest estimate of risk associated with any action, for example, if using the method described in Appendix 7, one action has a rating (risk score) of 4 and all other actions have a rating of 1, then the overall rating for the task will be 4. This risk estimate for the task can be used for developing a priority list of tasks for control.

A note about this method of risk assessment

The above method of assessing the level of risk considering likelihood and consequences can be undertaken to derive measured risk estimates (risk scores), which are then used to develop the action priority list. This optional risk assessment method is detailed in Appendix 7. Various other methods of risk assessment are available and can be used to obtain a prioritised list of people handling actions. There are also various tools available, which can provide useful information to assist with the assessment, such as mobility assessments of the person and functional capacity evaluations of the worker.

A summary of the assessment process

Consult with workers:

- Estimate the likelihood of an incident occurring at the workplace.
- Estimate the consequences of an incident occurring at the workplace.
- List the people handling actions in the order of they require control.

³ Note, an absence or lack of recorded incidents does not necessarily mean that there is no risk associated with performing the people handling action.

Questions to ask:

- What do the workers think?
- What is the likelihood and potential severity of injury associated with each action?
- What should be fixed?
- What should be fixed first?

5. Control

Risk control involves:

- making decisions about the best measure(s) to control exposure to the contributing and modifying risks identified
- implementing the chosen controls.

Consultation with workers is an important part of this process. Due to their experience in undertaking the task/action, workers are likely to be able to offer valuable suggestions about how to manage the risk. In addition to the positive effect on worker morale, consultation should enhance "ownership" of the measures and facilitate the implementation process. This will help to achieve better health and safety outcomes.

5.1 Methods of risk control - overview

Control measures for people handling can be grouped into two major categories – "**design**" and "**administrative**" controls, as shown in the following table.

Risk control categories	Methods of risk control
<p>Design controls involve the arrangement, or alteration of:</p> <ul style="list-style-type: none"> • physical aspects of the work area such as equipment or furniture/fittings, or • the work procedure. <p>Design controls are preferred because they -</p> <ul style="list-style-type: none"> • can eliminate or at least minimise exposure to risk factors • have the advantage of being relatively permanent (compared with administrative controls). <p>For these reasons, implement design controls wherever possible.</p>	<p>Job design and redesign – The aim of job redesign is to make sure that all components of a task are arranged to reduce the risk of injury.</p> <p>It includes consideration of factors such as –</p> <ul style="list-style-type: none"> • the design of the work area • the work postures required to carry out the action, how often it is repeated and for how long. <p>Provide mechanical aids - provide any aid or mechanical device that will assist workers to carry out the actions.</p>
<p>Administrative controls are achieved primarily by modifying existing personnel arrangements.</p> <p>Administrative controls do not remove the root cause of potential problems. These controls can only reduce exposure to the risk of injury. They might also be forgotten or not followed under stressful</p>	<p>Work organisation - examine opportunities to reduce exposure by rotating workers, and avoiding peaks in the workload.</p> <p>Task-specific training - training in work methods for specific tasks or actions helps workers to carry out these tasks/actions in a safe and effective way.</p>

or other conditions as they are behaviour based, for example, coping with staff reductions.	Maintenance - on a regular basis helps ensure equipment works well and is available when needed.
---------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------

Chapter 7 of this Standard provides further information about methods of control, linking specific control options to the individual risk factors (identified at section 3.4).

5.2 Select controls

The next step in the risk management process is to decide how the risks associated with the actions can be managed or controlled. When deciding on control measures, consult with workers for their suggestions.

Control strategy

It is useful to think of control in terms of a total strategy, which can include design controls or administrative controls (or some combination of both). For example, a solution to a problem might involve a design control, such as a mechanical device, in combination with administrative controls, such as training to use the device, plus use of a ‘no lift’ policy.

In developing the control strategy, consider both short-term (or interim) measures and long-term measures. If, in the above example, the device is not immediately available, or funds are not immediately available to purchase the device, measures must still be put in place to manage the risk in the short term (even if such measures are temporary), until longer term measures can be implemented. For example, administrative controls, such as team-handling with training might be used until the mechanical device (which represents a better solution), is acquired.

In developing the control strategy, preference should be given to design controls over administrative controls, (as explained at section 5.1). Administrative controls should only be used:

- where it is not possible to design problems out of tasks or actions,
- to supplement design controls - such as when training is provided with the introduction of a new mechanical device, or a maintenance schedule drawn up
- when waiting to implement design based controls due to funding or other delays.

Use the following criteria to choose the control measures:

- **Effectiveness** - the degree to which the solutions control the risk.
- **Timeliness** - the overall time to fully implement a solution which works effectively to eliminate or minimise the risk of injury.
- **Controls do not create other risks** – the solutions do not result in a transfer of risk, for example, incorrect use of a handling aid, such as a transfer sheet can create forceful exertions on the workers forearms.
- **Efficiency** – the solutions have benefits not only for health and safety, but also for productivity, efficiency and worker moral.
- **Cost effectiveness** – the outlay for the solution(s) should justify the potential risks and injury outcomes. Ensure that funds allocated to the chosen solutions suitably control the risks. For

example, the cost outlaid on a hoist will be justified if training, in isolation, does not adequately control the risk.

The specific control options are considered in chapter 7.

5.3 Implement controls

Implementation generally involves the following:

- **Trialling solutions** - before making them permanent. Some ideas do not work as well in practice as on paper. It can be useful to do a "mock-up" of a room to determine whether control options, such as workplace design or use of a mechanical device, will work. It is also important to consult with workers before setting up the trial and during this testing period. This assists in determining how well the proposed solution(s) actually work, and identifying any additional modifications that are required.
- **Revising controls** - After the initial testing period, the proposed solution might need to be revised. Make modifications where necessary. Conduct further testing to see that the appropriate changes have been made.
- **Developing work procedures** – Develop work procedures in relation to the new control measures selected, to make sure they are effective. Part of this process is to prepare a plan outlining the most appropriate procedure for handling the person. (Appendix 5 provides advice about planning a handling procedure.) Management, supervision and worker responsibilities should be clearly defined in the procedures developed.
- **Communication** - The reasons for the changes should be clearly communicated to workers and others. Any concerns raised should be evaluated.
- **Training** - Provide training to ensure the competency of workers, supervisors and others in relation to the new control measures.
- **Supervision** - Adequate supervision should be provided to verify that the new control measures are being followed and used correctly.
- **Maintenance** - Maintenance of tools and equipment (including personal protective equipment) relating to control measures is an important part of the implementation process. Work procedures should include maintenance requirements to ensure the ongoing effectiveness of the new control measures.
- **Setting time frames** - Time frames should be set for controls to be implemented and evaluated.

Preparing an implementation plan

Planning is critical to make sure controls for problem actions are implemented in a timely fashion. Keep a written record for use during the implementation and evaluation phases, and for future reference.

The following is a guide to preparing a written 'control implementation plan', a document which can be used to facilitate the implementation process:

- Note the risk factor(s) and the control measures selected.
- Decide on the activities necessary to implement the selected control(s).
- Allocate staff member(s) to be responsible for carrying out the activities.
- Set a date for completing each activity.

- Specify the date for evaluation of the control options and any other follow-ups.
- Review the control implementation plan regularly to assess progress.

A blank example of a ‘control implementation plan’ and a guide to completing the form are provided in Appendix 8. The plan should include the proposed dates and people responsible for undertaking the activities required to implement the control measures.

A summary of the control process:

- Consult with workers.
- Develop a control strategy, which includes design and/or administrative controls and short-term and long-term measures, as necessary.
- Implement the chosen control measures, using the following steps –
 - trial the control measures
 - revise the control strategy, if necessary
 - develop supporting policies and procedures
 - advise workers and others about the new control measures
 - provide training and supervision in relation to the new control measures
 - ensure maintenance in relation to the new control measures will be undertaken
 - set time frames to put the control measures in place
 - document information in an implementation plan.

Questions to ask:

- What do the workers think?
- How do you fix the problems?
- How do you put selected control measures in place?

6. Review

The final step in the process of managing exposure to the risks associated with people handling is to monitor and review the effectiveness of measures. This step is necessary to make sure the implementation process is complete and to assess whether the implementation of control measures has achieved appropriate control of the risk.

It is important to consult with workers and others and particularly those who have worked with the new control measures.

A review should be undertaken immediately after implementing the controls and again a short period of time after the measures have been in place (for example, 3 months after implementation). In addition, a formal review should be undertaken annually or as required.

If problems are discovered, determine what might have prevented the control measure(s) working as planned, and decide what needs to be changed to make them operate more effectively. Implement these changes using the process outlined in section 5.3.

Review is an ongoing process. Consult with workers and supervisors regularly, observe work activities during walk through surveys, and monitor injury reports to ensure problems have been resolved.

A summary of the review process:

- Consult with workers.
- Make sure selected controls have been implemented, as planned.
- Check to see that introduced controls are working and are being used correctly.
- Check to see that the introduced controls have resulted in elimination or minimisation of the risk.
- Make sure no new risk has been introduced, or any existing problems made worse.

Questions to ask:

- What do the workers think?
- Are the measures in place?
- Are the measures working?
- Are there any new problems?

7. Control options

Under section 3.5, a list of the contributing and modifying risk factors associated with the people handling actions was developed. Control measures are directed at these contributing and modifying risk factors to manage the risk.

This chapter provides specific control options for each of the contributing and modifying risk factors. The control options are linked to the checklist questions, provided in Appendix 3. Use the information provided in section 5.2 to determine which of the control options are most appropriate. The control options, below, are arranged, where possible, in line with their priority as a control. For example, design control options are placed before administrative control options.

7.1 Work area design

Consider the following:

Height of furniture and fixtures

- Fixed work heights should be set within a comfortable working range for the people handling task for the majority of workers, that is, handling in a hip to shoulder range with neutral postures, where possible.
- Height adjustable items allow handling at the best height for the worker. Suitable items include:
 - height-adjustable beds with lockable castors on all legs, which allow access and operation of brake control (figure 5)
 - height-adjustable trolleys for moving/transferring people
 - height-adjustable tables for dressing children and other dependent persons.
- Mobile hoist bath seats with mechanically adjustable seat height for showering, toileting and bathing.

- Height adjustable bath trolleys on wheels, tilting/reclining shower chairs and commodes.
- Armchairs with an elevating seat for people who have to be regularly transferred in and out of easy chairs.
- Block raisers on beds and other furniture in a person's home.



Figure 5

Width of furniture

- The worker and the person handled should be positioned to have a comfortable reach, for example, the worker has one leg kneeling on the bed instead of standing beside the bed, to reduce reach to the person.
- People who are tended to or transferred regularly should have:
 - armchairs that are not too wide, particularly if they are also low
 - a single rather than a larger bed.

Items to aid independence of persons can reduce handling needs:

- Locate attachments/aides where they can be reached from chair height to enable some people to undertake activities of daily living, for example, showering themselves with minimal assistance.
- Add safety aids such as bath seats, safety bars and grab rails to existing facilities (figures 6 and 7).
- Locate night lights in the work areas where people handling will occur.
- For children who have reached the early walking age, purpose built furniture, such as appropriately dimensioned steps (figure 8) can be an effective way of raising a child to a change table or bench and reduce handling needs. Note, with such equipment, the child must be supported and guided while on the steps and moving from the steps to the table or bench.

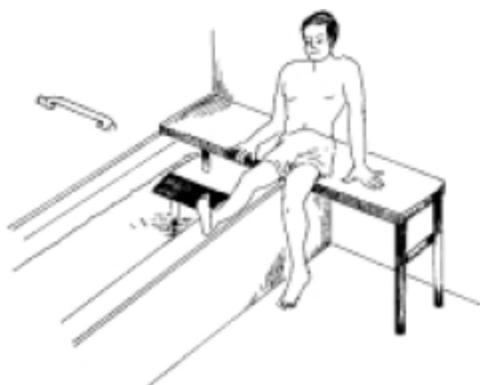


Figure 6

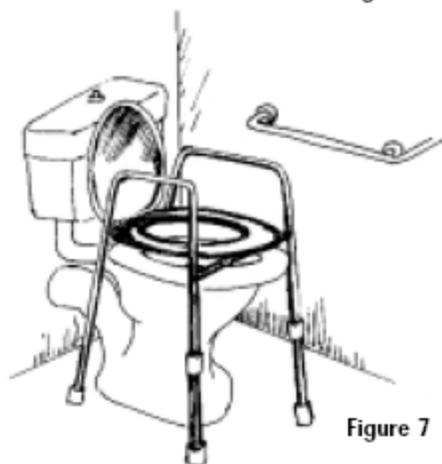


Figure 7

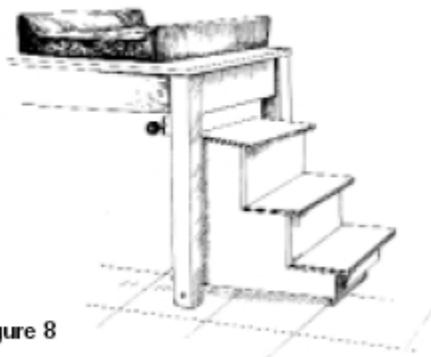


Figure 8

Work space – make sure there is enough space in each critical location, including work areas such as classrooms or dining rooms, to safely perform the actions needed.

- Design rooms to accommodate furniture, equipment and functional movement space (figure 9). (Figure 9 shows the functional space for a wheel chair bound person who can stand on one leg).
- Position furniture so that there is sufficient room for the worker to manoeuvre.
- Careful placement of furniture, equipment and fittings minimises dangerous handling conditions and facilitates the safe use of assistive devices and lifting equipment.
- Provide furniture, which is easily moved to allow access, for example, lightweight chairs with wheeling attachments (figure 10).

- Increase functional space with privacy curtains (figure 11), sliding doors or curtains (figure 12) and mobile equipment, such as a mobile shower trolley (figure 13).

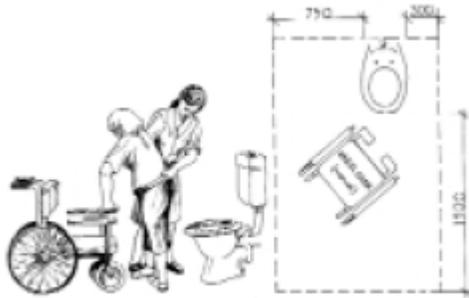


Figure 9

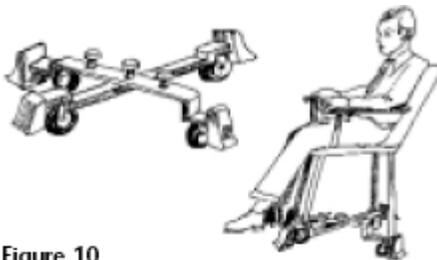


Figure 10

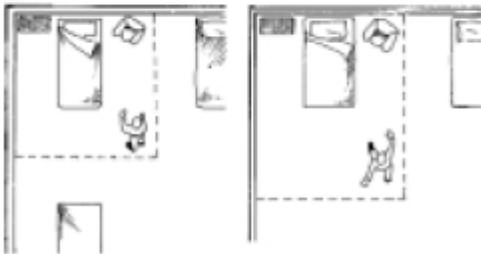


Figure 11

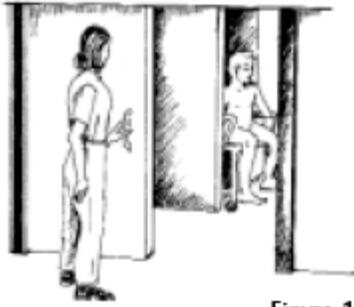


Figure 12



Figure 13

Access ways - make sure there is enough space in each critical location to safely perform the actions needed:

- through doorways and along corridors and round corners when furniture or equipment needs to be moved even on rare occasions or on an emergency basis
- adjacent to beds (three sides) toilets, showers, baths

Handling equipment - Make sure all items of handling equipment are:

- suited to the task or action
- easy to manoeuvre and do not require
- excessive force by the worker in any aspect of use
- designed to allow good posture when assembling, positioning or using
- stored close to the work area in which used
- are kept in good working order with regular proactive maintenance
- do not cause an obstruction
- do not create any other risks in use.

Access in vehicles - to allow sufficient room for people handling, select vehicles with:

- a tail-gate/ramp for wheelchair access
- wide doorways on both sides to facilitate access
- sliding doors or doors that stay open without having to be held open by the worker
- sufficient room inside the vehicle for positioning and securing the person in a short time, for example, head room and sufficient space between the driver's and passengers' seats
- implement policies and procedures which promote the use of suitable transport, for example, maxi taxis which are fitted with an hydraulic lifting platform or a family vehicle suitable to the handling requirement

7.2 Workplace environment

Consider the following:

- **Floor surfaces** (in general)
 - Use non-slip materials on floor surfaces.
 - Keep floors dry and free from contaminants, such as spills.
 - Keep floor surfaces clean.
 - Wet-clean floors when there is time for them to dry before they need to be walked on.
 - Keep a "wet floor" sign displayed until the floor is dry.
- **Floor surfaces for wheeled equipment:** Make sure floor surfaces on routes for example, corridors, ramps, lift doorways, over which equipment will be pushed/ pulled have hard smooth surfaces (not carpet) where possible. This will reduce the resistance, and the muscular effort needed, and better suit the equipment's steering characteristics.
- **Working outdoors**
 - Remove obvious obstacles and avoid steep inclines or slippery ground when working outside the regular workplace.
 - In grounds outside buildings, keep access ways well maintained and free of litter.
 - Provide cover from rain where people handling activities are carried out, for example, transport drop-off areas at schools with dependent students.
- **Housekeeping**
 - Keep work areas clean, tidy and free of clutter and obstacles.
 - Do not use corridors or other access ways for storage of packages or other items.
 - Make sure items or other equipment which can cause slips and trips is put away immediately.
- **Ambient conditions**
- **Thermal comfort**
 - Ensure workers wear appropriate clothing that is not too bulky or restrictive. (Also refer to section 7.5 about individual characteristics of the worker.)
 - Reduce temperature and humidity where possible by providing fans or air conditioning.
 - When working outdoors, for example, rescues, reduce the shift time of workers working in hot, humid, cold or windy situations, where possible.
 - Encourage workers to work at a sensible pace and for shorter periods in temperature extremes.
 - In hot conditions, it is essential to provide adequate rest periods and allow for replenishment of body fluids.
- **Noise**
 - Where possible, minimise extraneous noise.
 - Ensure those communicated with have heard or understood the communication. It may be necessary to communicate visually.
- **Lighting**
 - Improve the layout of existing lights by lowering or raising them or changing their position in the work area.
 - Use screens, visors, shields, hoods, curtains, blinds or external louvres to reduce glare.

7.3 The handling procedure

Before deciding on control options to address this risk factor, consider what is the most appropriate way of handling a person. Appendix 5 provides advice about planning a handling procedure.

In addition, consider the following:

- Provide mechanical handling equipment - including mechanical handling equipment, lifting devices, mobile and fixed hoists with rigid seats, slings or lifting frames. Examples of these are shown in figures 14 - 21, below and next page.



Figure 14



Figure 15



Figure 16



Figure 17



Figure 18



Figure 19



Figure 20



Figure 21

Mechanical handling equipment should be:

- easy to use
- designed to suit the load
- readily available and accessible during ordinary activities and emergencies
- regularly serviced, including maintenance of castors.

Consider the following when selecting mechanical hoists and hoist systems:

- The typical handling tasks/actions for which the equipment is likely to be used, for example, transfers between bed, chair, bath, toilet and vehicle.
- The characteristics of people to be lifted, for example, size, weight, disabilities, behaviour.
- The work environment, for example accessibility, floor surfaces, layout.
- The design of hoists, for example, load capacity, range of lift, stability, accessibility, clearance, manoeuvrability, reliability, attachments, control and safety mechanisms, ease of use, compatibility with other equipment.
- The design of slings, for example, safety, stability, style, comfort and acceptability to users, ease of attachment and removal, access for toileting.

Note: the provision of mechanical handling equipment should be accompanied by training in its use and a maintenance schedule for the equipment. This training should be provided to all users.

- Provide assistive handling devices – a range of aids is available to assist with particular tasks/actions (figures 22 - 26):
 - **carrying a person** - spine boards, scoop stretcher, basket stretcher, drop sheet stretcher, emergency back board (Note, while 2 workers would be required to assemble the stretcher illustrated in figure 22, at least 4 workers would be required to undertake the transfer.)
 - **lifting a person** - lifting frame
 - **transferring a person** - transfer belt, rigid slide board (fibreglass board which can be used to form a bridge between bed and trolley, bed and bath trolley, wheelchair and car)
 - **repositioning a person** - PVC transfer board, patient slide, slide sheet/cushion, drawsheet
 - **pivoting a person** - turning disk, turntable
 - **positioning a person in bed** - a fabric sliding aid, slip sheet
 - **a person changing position themselves** - pull ropes, monkey pole, patient hand or foot blocks, rope ladder, hand rails.

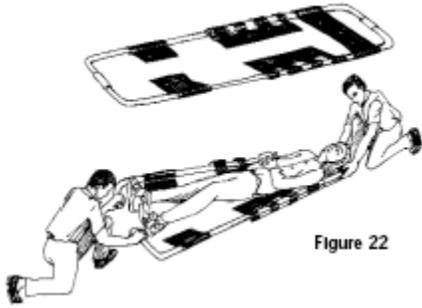


Figure 22



Figure 23



Figure 24



Figure 25



Figure 26

Handling aids should be:

- as light as their function will permit
- well balanced, with the angle between handle and working parts designed to avoid extreme bending of the wrists and arms
- designed to allow comfortable and secure grasp
- suitable for both right and left-handed workers and for hands of different sizes
- designed for two handed use where appropriate.

- **Avoid double handling** (figures 27 – 31)
 - Eliminate or reduce multiple handling actions by introducing equipment like tilting/reclining chairs, shower chairs/ trolleys, trolleys or mechanical lifting devices.
 - Provide lightweight chairs with wheeling attachments on the legs to allow the chair to be moved to the desired location, to avoid having to transfer the person from one chair to another.
 - Use easy to manoeuvre hospital beds instead of trolleys for relocations to the operating theatre.
 - Eliminate the need to use awkward handling environments, for example, the choice of classroom for a disabled student to eliminate the need to use stairs.

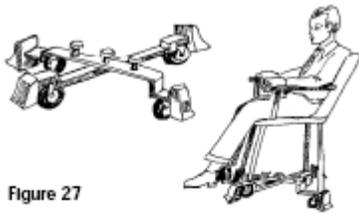


Figure 27



Figure 28



Figure 29



Figure 30



Figure 31

- **Modify the handling procedure** – lifting and lowering.
 - Encourage the person to assist, when possible (figure 32).
 - Convert to pushing or pulling by use of transfer systems like wheelchairs, trolleys and hoists.
 - Transfer at level by adjusting furniture in starting or finishing locations so they are at the same height.
 - Reduce the weight to be lifted or lowered, for example, by removing a blanket.
 - Improve access to bring the person close to the worker's body (figures 33).
 - Move a person to the same level or from a higher to a lower level rather than the reverse (figures 34).



Figure 32



Figure 33



Figure 34

- **Modify the handling procedure – holding and carrying**
Use furniture or mechanical equipment to eliminate or minimise holding time, for example, pushers, chairs, beds or tables.
- **Modify the handling procedure – pushing and pulling**
 - Eliminate the need to push or pull by using hydraulic-powered mechanical equipment, for example, hoists, or mechanical pushers, pullers, bedmovers, detachable load transporters, tugs.
 - Use wheels or castors appropriate to transfer surfaces.
 - Design the work method so that the worker does not have to –
 - i) Push, pull or slide a person sideways.
 - ii) Apply these forces from a sitting position.
 - Use equipment with pushing/pulling applied at about waist level.
 - Provide good maintenance of equipment, wheels and castors, and floor surfaces.
- Avoid manual lifting and carrying of a person. Manual lifting and carrying should only be used as a last resort where lifting aids are unavailable or impractical, and only:
 - in emergency or exceptional circumstances,

- after a risk assessment is done, and
- if other workers are available for team handling and they have been suitably trained.

Transferring the risk to another worker is not acceptable. The handling procedure should be able to be controlled without having to call on another worker with exceptional capacity, or a worker from another organisation (for example, Ambulance).

- **Design procedures for people falling suddenly.** There is no choice but to deal with this situation manually. However, workers will be at risk and it is necessary to train them in the following, prior to working with people:
 - Technique to assist people to the ground so as to avoid injury to the worker and the person. Specialist advice will be needed for this.
 - What the procedure is for seeking assistance, administering first aid etc.
 - How to make the person comfortable.
 - How to call for assistance, for example how and when to use a mechanical aid, to transfer the person from the ground.
- **Team handling** (figures 35 - 37) should only be used where no other solution is available. Team handling is inherently a risk as it is impossible to ensure equitable load sharing and/or to prevent sudden transfer of load. Risks in team handling include:
 - inexperience in one or some of the team members, which may mean the load is not shared equally
 - different physical dimensions (such as height) of team members and different capacity of individual members, which can also mean the load is not shared equally
 - team members not exerting force simultaneously
 - coordination loss by individual team members, because of the adjustments they make, for example, hand and foot placement to fit in with other team members
 - if operating on steps or a slope, most of the weight being borne by team members at the lower end
 - unexpected increased loading and/or change in balance because one team member loses his/her grip
 - "social loafing", where some team members are forced to carry the bulk of the load because others choose to use minimal effort.



Figure 35



Figure 36



Figure 37

For team handling, decide on (a) the handling procedure, and (b) the number of workers needed.

Before starting, make sure:

- one person is appointed to co-ordinate the lift and instruct the others
- the team members are of similar capacity and stature and know their responsibilities during the lift
- aids to assist with handling (stretcher, slings, straps, lifting bars, lifting tongs, trolleys, hoists) are used where possible (figure 38)
- there is enough space for the handlers to manoeuvre as a group
- appropriate training in team handling has been provided
- the lift has been rehearsed, including what to do in case of emergency.



Figure 38

Training for team handling should include the following elements:

- Assessing the load – the physical characteristics of the person (such as their weight, type of injuries the person might have etc) and the non-physical characteristics of the person (such as the person's state of arousal, their predictability of behaviour etc).
- Assessing the lift - type of lift, number of people, where they should stand etc.
- Preparing to lift - clear the area of potential hazards and obstacles.
- Timing and coordination of team members - using a countdown to minimise unexpected movement.
- A worker giving warning to other team members if s/he is not ready to commence the lift and/or needs to rest temporarily while carrying the load.
- Dealing with unexpected loading, for example, one team member suddenly lets go of the load.
- Using lifting aids.
- Practising team lifting.

Team handling outside the regular workplace – In situations where a worker is at a workplace outside his/her control, for example, a rescue scene, or a person's home, it may be necessary to seek assistance from bystanders or carers. In such circumstances, the worker should:

- be trained in how to instruct others in assisting with team handling
- give clear directions to the helper/s, before the transfer.

7.4 Characteristics of the person being handled

The characteristics of the person being handled need to be considered in planning a handling method that is safe for the **person** and the **worker/s**.

Consider the following:

- **Change the presentation of the person**, such as, the posture of the person and the positioning of any attached items so that the person is easier to grip and can be held close to the worker. For example:
 - person being handled might grasp one wrist with the other hand or cross their arms
 - the hands of a person being rescued can be tied together to assist being carried by rescuers (Figure 39)
 - a small child's legs can be positioned as shown in Figure 40 when being lifted from the floor. (Ensure that if a chair is being used to assist a worker, the chair has sufficient strength and stability).



Figure 39



Figure 40

- **Plan for unpredictable movement** – When you have identified people who might make involuntary or unexpected movements or be uncooperative, select the handling method accordingly with sufficient workers to support the person and to react to sudden movements of the trunk or limbs.
- **Consider attachments** to the person which can promote instability:
 - plan how to deal with tubes, splints, braces, casts, monitoring devices which also need to be handled with the person
 - lighten the weight on stretchers to be carried by removing any unnecessary items such as blankets.
- **Improve grip** by considering clothing:
 - Modify the person's clothing so it does not interfere with a secure grip by the handler.
 - For people with a fragile skin, grip clothing if it is sturdy enough instead of the person.

- **Communicate with the person** where possible. Seek maximum assistance and cooperation from the person being handled by ensuring, as far as possible, that the person is fully prepared and understands the procedure to be used. For example, figures 41 – 43 shows a sling lift from the floor. This is a two worker assist with one worker operating the sling, while the other worker's role is to communicate and reassure the person, and assist where necessary.



Figure 41



Figure 42



Figure 43

7.5 Individual characteristics of the worker

Consider the following:

- **Competency** - Make sure workers receive training and supervision in –
- Performing all the routine handling tasks and actions to be done in their work unit, and acquire an understanding of the risks they might be exposed to, particularly if these tasks/actions are not performed correctly.
- Doing a risk assessment of actions they are required to perform.
- Working with new equipment or work procedures that have been introduced.

Make sure workers are assessed to ensure their competency to perform the work safely. Refer to Appendix 6 for information about training, including competencies.

- **Physical capacity** - Assess the needs of workers who are younger, older, pregnant, or with an existing back injury when deciding:
 - who should do specific tasks/actions
 - how many workers are needed in a team handling situation involving the worker
 - on the duration of a particular task/action
 - on longer working hours.

Note: In making decisions about individual workers, it may be necessary to seek assessment through a health professional in relation to the specific duties of a job.

- **Unaccustomed work** can affect workers new to the area, or returning from extended absences for example maternity leave, recovering from an operation, or other medical problems such as a hernia. Provide a gradual adjustment process to physically demanding work activities through:
 - allocation to tasks with lighter physical demands
 - a gradual introduction to the full number of people handling tasks normally performed
 - more frequent rest breaks
 - job rotation.
- **Clothing** - including uniforms and other specialist clothing worn by workers involved in people handling activities, should allow for easy functional movement. For example:
 - Freedom of hip and knee movement so that the worker can kneel, have one knee up on a bed close to the person, squat with the legs widely spread, or assume a semi-squat or half kneeling position. Trousers and culottes, for example, generally enable unrestricted working postures, while allowing for modesty and comfort.
 - No upper limb restriction when placing the arms around a person. This can be done by designing garments with an "action back" to give extra room when needed, or making them in a fabric that stretches, for example, knit materials.
 - No restriction due to excess material being caught in equipment or being knelt on.

Note: A conventional straight-skirted short dress is generally not suitable for many people handling tasks.

- **Footwear** - should offer good support and stability and have non-slip soles and heels to prevent slips and falls, and allow the best postures for forces applied.
- **PPE** – use PPE appropriate to the particular demands of the action.

- Gloves should not hinder the worker's ability to gain and maintain a secure grip on the person.
- In areas where foot-covers are worn, make sure the floor surface is non-slip.
- Consider a reduced shift length or increased rest periods when workers are wearing heavy protective clothing, which increases the physical demands of working in hot or cold conditions.

7.6 Work organisation

Consider the following –

- **Work load** - Plan resources and organise tasks to facilitate work during peak periods by:
 - Arranging staff levels so that there are sufficient workers available to complete tasks at peak periods.
 - Rescheduling tasks so that physically heavy workloads are spread throughout a shift or shared throughout the day by workers on different shifts instead of being concentrated in one shift.
 - Providing sufficient staff, or a procedure for accessing help when a dependent person is being transferred.
 - Arranging tasks so that additional rest breaks will be available to workers beyond set breaks or negotiated arrangements, if required.
- **Working in isolation** – To overcome a lack of ready assistance from other workers.
 - If the person being handled is able to bear their own weight, they can assist the worker.
 - If the person is unable to bear weight, the worker should use mechanical assistance.
 - There are many new products available which might be useful, such as the fitting of portable overhead tracking systems (figures 44 – 46) and various hoists (figure 47).
 - Investigate sources of funding for the supply and fitting of people handling systems/equipment, such as the government, service clubs.
 - There should be policies in place, which state that if the people handling task can not be undertaken without risk to the worker, the worker should not undertake the task, for example the person being handled or their family refusing the use of a hoist.
- **Task variation** - to help prevent problems with repetitious activity:
 - Combine two or more tasks to be done by one worker. It is preferable if the second task does not involve people handling, for example, administrative work.
 - Allow rotation of tasks within a certain number of workers so that each worker can have frequent changes of tasks.



Figure 44



Figure 45



Figure 46



Figure 47

- **Extended hours** - determine whether the type of work is suitable for shifts longer than eight hours. Repetitive and/or physically demanding work might not be suitable for long work hours. In general:
 - reschedule tasks when overtime is worked so that the amount of heavy or repetitive work is not increased
 - provide additional or longer rest breaks when overtime is worked
 - do not require workers recovering from injury to work overtime unless part of a prescribed workplace rehabilitation program.
- **Purchasing specifications** – when purchasing equipment, it is necessary to specify the:
 - uses or functions of the equipment
 - general performance characteristics required
 - need to accommodate a range of physical characteristics of workers and/or people.
- **Maintenance and servicing** – establish procedures for the routine maintenance and regular servicing of equipment as per the manufacturer’s specification. List which equipment requires servicing and specify for each:
 - who is responsible for the servicing (some might be suitable for servicing by workers, and others only by qualified personnel)
 - the nature of the servicing needed
 - frequency of servicing (the frequency might need to be increased with increasing age of the equipment).

The general duties of PCBUs regarding the use and maintenance of mechanical handling equipment are subject to the provisions of the *Work Health and Safety Act 2011*. Guidance can also be found in the *Plant Code of Practice*.

- **Reporting procedures** - put systems in place for workers to report:
 - Problems with equipment (or any other aspects of work organisation) needing attention. Early reporting is desirable otherwise these items could be causing unnecessary muscular strain and might lead to injury.
 - The need for assistance with undertaking a people handling task/action.

Specify clear guidelines to:

- workers on how and to whom to report in either circumstance, and
- supervisors on how to respond to a worker's report.

- **Emergency procedures** - When designing procedures for evacuation of a building during an emergency, consider the effect of people handling on the health and safety of workers.
- **Consult workers** - who do the everyday work in a work area, before changes are made to facilities or new equipment is purchased.

Appendix 1: Definitions

Cognitive refers to the faculty of knowing or perception.

Hazard means a situation or thing that has the potential to cause harm.

Incident refers to an accident or event which results in death, injury or illness.

Person or people refers to the person/s being handled and include babies and children, people with disabilities and deceased people.

People handling refers to those workplace activities requiring the use of force exerted by a worker to hold, support, transfer (lift, lower, carry, push, pull, slide), or restrain another person at a workplace.

People handling actions are the individual elements of the people handling task and refer to movements which are undertaken.

People handling activities is a general term which refers to any movement where a person is handled.

People handling tasks are the specific pieces of work undertaken at the workplace, which involve the physical movement of a person.

Restraint, in this Code, refers to restraint needed as an adjunct to a people handling activity such as when transferring or assisting a person. It does not cover handling aggression, where aggression is the major hazard (e.g. in the Police Service and Corrective Services).

Risk is the possibility that harm (death, injury or illness) might occur because of the hazard.

Rotator cuff refers to the muscles and tendons that surround the shoulder joint to form a musculotendinous cuff.

Transfer refers to the physical moving of a person from one position to another. It includes lifting, lowering, carrying, pushing, pulling and sliding.

Work area is that part of the workplace where a particular people handling action is based. It includes furniture and fittings, vehicles, and the equipment used by workers in doing the action.

Worker refers to anyone in a carer situation, involved in a rescue or involved in moving a deceased person. A 'worker' means a worker as defined in the *Work Health and Safety Act 2011*.

Work-Related Musculoskeletal Disorders (WRMDs) are work-related disorders that involve soft tissues such as muscles, tendons, ligaments, joints, blood vessels and nerves. Examples include: Muscle strains and tears, ligament sprains, joint and tendon inflammation, pinched nerves, degeneration of spinal discs, carpal tunnel syndrome, tendinitis, rotator cuff syndrome.

Appendix 2: Risk factors – a model of their interaction

Risk factors are defined as factors associated with the demands of a people handling action that can contribute to (by increasing the likelihood and degree of injury), or aggravate a WRMD in the worker(s) performing the action.

What are the risk factors?

The specific risk factors dealt with in this standard and their category as a risk factor are:

Direct risk factors - the mechanisms of injury	1. Forceful exertion 2. Working posture (awkward, static) 3. Repetition and duration
Contributing risk factors - the causes of the direct risk factors	4. Work area design 5. Work environment 6. The handling procedure 7. Characteristics of the person
Modifying risk factors - the causes of the direct risk factors	8. Characteristics of the worker 9. Work organisation

The risk factors associated with people handling actions are categorised in this way to explain:

- how they affect the worker, and the demands of the action, and
- how they relate to other risk factors.

The interaction between the different risk factors is explained below.

Direct risk factors - Directly stress the workers' body. These are the risk factors that cause or contribute to WRMDs from people handling.	Direct risk factors include – The level of muscular (1) " force exerted ", (2) " working postures " (awkward, static), (3) " repetition " of actions, and the " duration " of time these conditions are sustained. Direct risk factors are identified first. If these risk factors do not exist, there is no risk and no need to proceed with an assessment.
Contributing risk factors - Affect how the action is done. They are the source of the problem or the cause of the direct risk factors.	Contributing risk factors include the – (4) "work area design", the (5) conditions of the "work environment", the (6) "handling procedure" being undertaken, and the (7) " characteristics "

	<p>of the person", being handled.</p> <p>Control measures are directed at these risk factors. It is these risk factors that need to be redesigned to eliminate or minimise the impact of the direct risk factors.</p>
<p>Modifying risk factors - Contribute to a further change in the impact of the direct risk factors.</p>	<p>Modifying risk factors include the -</p> <p>(8) "Characteristics of the individual worker", such as a worker's physical capacity, can modify the effects of the direct risk factors on the body.</p> <p>This means that a task/action might have adverse health effects for one operator, but not another.</p> <p>(9) "Work organisation" modifies the exposure to the direct risk factors. It cannot change the actual design of the task/action, just the conditions under which it is done.</p> <p>Elements, such as the shift length or state of maintenance of handling aids, increase or decrease the exposure time or exposure level of a risk factor.</p> <p>Control measures can also be directed at these risk factors.</p>

Appendix 3: Checklists

This Appendix contains checklists to assist with identifying the direct and the contributing and the modifying risk factors. As noted earlier, **if the direct risk factors do not exist, there is no risk and therefore no need to proceed with an assessment.**

To use the checklist, answer each question with a "yes" or "no". If the box with your response is shaded, investigate further to see if it is necessary to implement a control. Specific control options to address the questions in each of the checklists are provided in Chapter 7 of this Code. The proforma included in Appendix 8 can be used to implement and record the control measures selected.

Checklist for the direct risk factors

Note: "forceful exertions" is an integral part of the following risk factors, working postures (awkward, static), characteristics of the person being handled, the handling procedure, the work area design, and work organisation. A checklist to identify forceful exertions is not provided here, but is covered under these risk factors.

Working posture

<p>1. Back - does the people handling action require repetitive movement or prolonged static positions with the back:</p> <ul style="list-style-type: none"> • bent forward? • twisted? • bent side-ways? • d) bent forward or sideways and twisted? 	YES	NO
<p>2. Neck - does the people handling action require repetitive movement or prolonged static positions with the neck:</p> <ul style="list-style-type: none"> • bent backwards? • twisted? • bent forward? • d) a combination of the above positions? 	YES	NO
<p>3. Arms and shoulders - does the people handling action require repetitive movement or prolonged static positions with:</p> <ul style="list-style-type: none"> • extended reach in front? • reaching above the shoulders? 	YES	NO
<p>4. Hand and wrist – does the people handling action require repetitive and/or prolonged forceful exertions while gripping equipment?</p>	YES	NO
<p>5. Legs – is repetitive or sustained squatting or kneeling performed?</p>	YES	NO
<p>6. Other postures – is a standing posture without walking sustained for long periods?</p>	YES	NO

Repetition and duration

1. Do people handling activities undertaken through the shift require frequent or prolonged actions involving the transfer, holding, supporting or restraining of the person?	YES	NO
2. Does the worker perform the same or similar people handling actions throughout the shift?	YES	NO
3. Is a physically demanding people handling task/action performed frequently during a shift?	YES	NO
4. Is one posture required to be maintained for long periods?	YES	NO

Checklist for the contributing and modifying risk factors

Work area design

1. Are items of furniture, fittings and equipment on which people are positioned: <ul style="list-style-type: none"> • of a height, or adjustable to a height, so that workers do not have to bend in handling people? • of a width that allows easy access without reaching? 	YES	NO
2. Are items of furniture and fittings: <ul style="list-style-type: none"> • positioned to allow easy access to people and give workers sufficient space for leg and feet movements and to turn their body when necessary? • easy to move if necessary to allow space? • designed so that workers can get their feet underneath? • too wide for easy access to a person (a large bed or armchair)? 	YES	NO
3. Have all items and fittings, which allow people to assist themselves, been provided?	YES	NO
4. Facilities – with regard to the design of areas where people are handled: <ul style="list-style-type: none"> • is there adequate space in areas where handling aids or wheelchairs are used for easy movement? • is the space around the toilets large enough for two workers to assist a person? • are all doors (bedroom, bathroom, toilet, communal rooms and lift), corridors and corners wide enough for the movement of beds and handling equipment? • is there sufficient room so that equipment can be used as intended? • do all floor levels allow for the easy manoeuvring of mobile 	YES	NO

furniture and equipment?		
5. Is handling equipment: <ul style="list-style-type: none"> • designed for safe use (trolleys, beds and wheelchairs with locking mechanisms etc)? • easy to manoeuvre? • stored close to where they are used and in an area with good access? • able to fit into/through all necessary spaces? 	YES	NO
6. Does the vehicle design allow workers assisting people in vehicles: <ul style="list-style-type: none"> • access from both sides? • internal headroom? • easy access for wheelchairs? 	YES	NO

Workplace environment

1. Do people have to be handled over surfaces which are: <ul style="list-style-type: none"> • uneven underfoot? • slippery or wet? • protected from the weather? 	YES	NO
2. Does flooring on routes over which wheeled equipment and furniture will be pushed/pulled allow easy movement?	YES	NO
3. Is the area in which a people handling task/action to be performed cluttered or untidy?	YES	NO
4. Is the workplace outdoors and requiring people to be carried over difficult terrain?	YES	NO
5. Are there extremes of heat, cold, wind or humidity?	YES	NO
6. Do workers have to walk long distances or search for appropriate mechanical aids/equipment?	YES	NO
7. Does noise interfere with communication?	YES	NO
8. Is lighting adequate to perform handling actions or tasks?	YES	NO

The handling procedure

1. Is manual lifting or carrying a person required during a transfer procedure?	YES	NO
2. Can the person be held close to the worker's body?	YES	NO
3. Is a worker required to support all/most of the body weight of a person unaided?	YES	NO

4. Is the person located: <ul style="list-style-type: none"> • on the floor or below knuckle height? • above the worker's shoulder? 	YES	NO
5. Does the worker need to bend over to one side to assist a person?	YES	NO
6. Is the person supported by one hand only?	YES	NO
7. Is the person located where access or movements are restricted?	YES	NO
8. Is the person pushed, pulled or slid across the front of the worker's body?	YES	NO
9. Are there excess transfers in a task?	YES	NO
10. Are situations possible where people can fall or collapse to the floor?	YES	NO

Characteristics of the person being handled

1. Is the person: <ul style="list-style-type: none"> • awkward to handle? • bulky or blocking the view of handlers? • difficult to grip (slippery or wet)? 	YES	NO
2. Is the person limited physically, for example: <ul style="list-style-type: none"> • unconscious? • conscious but unable to assist? • unable to bear weight? • has reduced postural control/balance? 	YES	NO
3. Does the person have conditions which require special handling, for example, fractures, skin conditions, impaired motor control?	YES	NO
4. Is the person: <ul style="list-style-type: none"> • uncooperative through cognitive or behavioural problems or drugs (including alcohol) and likely to move around or go rigid? • unable to communicate and understand when told what is to happen? • unpredictable, likely to make sudden movements or lose their balance? 	YES	NO
5. Is the person: <ul style="list-style-type: none"> • attached to medical equipment? 	YES	NO

<ul style="list-style-type: none"> positioned on handling equipment (such as a stretcher or wheelchair) which needs to be moved with them? 		
-----------------------------------------------------------------------------------------------------------------------------------------------------------	--	--

Individual characteristics of the worker

1. Does the worker/s have the necessary competency to: <ul style="list-style-type: none"> perform heavy people handling tasks/actions? make decisions about how to handle people with specific problems, for example, people unable to help or who are unpredictable? set up and use mechanical devices? assist with team handling in the tasks/actions within their work unit where this might be required? 	YES	NO
2. Do the workers have any ongoing or temporary physical characteristics that indicate a limited capacity to perform the task/action?	YES	NO
3. While performing people handling tasks, are workers wearing: <ul style="list-style-type: none"> clothing which restricts the worker in using the best working postures? footwear offering inadequate stability, support and traction with the walking surface? 	YES	NO
4. Does the required PPE increase the demands of the action e.g: <ul style="list-style-type: none"> gloves interfering with type of grip used? foot-covers affecting traction with floor? heavy or cumbersome protective clothing, restricting movement? 	YES	NO

Work organisation

1. Is the work load affected by: <ul style="list-style-type: none"> unexpected work load increases? people handling tasks occurring frequently in one part of a shift? insufficient workers to assist with activities of daily living e.g. toileting, bathing when peak workloads occur, or to assist other staff with handling people? 	YES	NO
2. Is organised team handling available where no alternative is possible?	YES	NO
3. Are people handling tasks performed without planned rest breaks or the worker being able to take a short break when necessary?	YES	NO

<p>4. Are long shifts (over 8 hours) or overtime undertaken where work involves frequent people handling?</p>	YES	NO
<p>5. Are handling aids:</p> <ul style="list-style-type: none"> • sufficient in number for the volume of people handling tasks/actions done in the work unit? • available for all the different tasks/actions done in the work unit? • used on all occasions they should be? • which need to be shared, accompanied by a procedure on their location and movement which suits all workers concerned? • accompanied by adequate procedures on their safe use and introduced with training and supervision for casual as well as regular staff? • not working well, or out of action due to needing maintenance? • purchased only after consideration of their health and safety effect on workers during use? 	YES	NO
<p>6. Are there adequate policies and procedures for:</p> <ul style="list-style-type: none"> • workers to report or fix unsafe equipment or environmental conditions? • handling people as safely as possible during emergency evacuation? 	YES	NO

Appendix 4: Design

The planning stage, either during the design of equipment or facilities, or when deciding on purchasing specifications, is the time to make sure all foreseeable risks will be managed when the control measures are implemented at the workplace. Additional costs can be incurred in redesigning or modifying plant or processes once they are being used in the workplace. It is therefore not only more practical, but also more cost effective to manage risks at the design stage.

Under the *Work Health and Safety Regulation 2011*, a designer of plant or a structure must ensure that the plant or structure is designed so as to eliminate the need for any hazardous manual task to be carried out in connection with the plant or structure. If it is not reasonably practicable to comply with this requirement, the designer must ensure that the plant or structure is designed so that the need for any hazardous manual task to be carried out in connection with the plant or structure is minimised so far as is reasonably practicable.

Design and individual differences

Ergonomics principles should be observed at the planning stage. This means that tasks are designed to fit the workers doing them, not the reverse. The human body has limitations, and so special considerations apply to the design of all task components, for example -

- equipment, such as vehicles, furniture and fittings, mechanical lifting devices, people transfer aids and all work area components
- the work procedure – which includes the sequence of activities and the interaction of workers, equipment and the person.

An important aspect in the design of equipment and work procedures is the variability between individuals in body dimensions and physical capacity, as follows:

- Body dimensions – The use of natural postures and movements are necessary for efficient work. Equipment should therefore accommodate workers of varying sizes.
- Physical and functional capacity - Strength, endurance etc generally differ between people according to their age, gender and injury history. Allowance should be made for individual differences in workers capacity in the design of equipment and work processes. Design factors that should be considered include -
 - how long a worker needs to build up to the necessary strength to meet the work demands
 - the length of time a task/action is carried out
 - the frequency with which it is done
 - whether a conditioning period for any new or returning staff will be required.

Design and specification - equipment and facilities

In general, PCBU's have primary control over new acquisitions, building design or other changes in their workplace. They are, therefore, in a position to ensure that standards are met with regard to health and safety.

PCBUs should:

- **Consult** - with workers and supervisors as well as the person(s) being handled, where appropriate, prior to the design or purchase of equipment, buildings, renovations, or vehicles to make sure all factors have been considered.
- **Seek information and advice** – When required, seek advice from specialist professionals, including ergonomists and engineers.
- **Brief purchasing officers** - PCBUs must choose between products, equipment and services carefully when purchasing so the best design is selected having regard to the postures and forceful exertions needed to use the product, equipment or services and the potential risk factors present when in use. Purchasing officers should be advised accordingly.
- **Brief designers** - and engineers who are designing or modifying work procedures or equipment for use in people handling, to make sure that risk is eliminated or minimised "on the drawing board". They also need to ensure that new risks are not created.

Provide specifications for the:

- intended uses or functions of equipment, products and services
- work area layout in which they will be used
- general performance characteristics required to minimise the risk to health and safety from working with the equipment, products and services.
- **Brief architects** - Ensure, as far as possible, that architects and others designing renovations and new facilities understand what people handling tasks will be carried out so they can plan enough room for movement, equipment and access by people⁴.

Provide information, and implications of the information for the design, to the designers about:

- the sizes, and space requirements for people handling activities
- capabilities of people likely to occupy the facility
- methods of assistance to be used – team lifting, mobile lifting machines or fixed lifting equipment
- whether people will need to be moved regularly.

Figure 48 shows the functional area for a wheelchair bound person who can stand on one leg, and requires assistance from one staff (using a frontal transfer). The wheelchair is placed as indicated in the figure. Figure 49 shows the functional area needed for a person in a lifting machine and with assistance of one or two staff on either side. The transfer to the lifting machine has been done outside this area.

Where possible, "mock-ups" of rooms/work areas should be used to ensure space and access requirements will be met.

Fixed overhead lifting and transferring devices (figure 50) have great potential to make people handling safer and more efficient, and their use should be encouraged, where practical. However, they can restrict room layout. For example, in a bedroom, the placement of the bed is dictated by

⁴ Refer to the following publication – *Workcover Victoria (2007). A Guide to Designing Workplaces for Safer Handling of People (3rd Edition)*.

the position of the machine. The structural integrity of the ceiling must be sufficient to support the device. Such issues are best considered at the building design stage to avoid conflicts with services in the ceiling space and structural ramifications.

Mobile overhead tracking systems can also be considered. These systems can be retrofitted and relocated.

- **Brief vehicle buyers** - brief the officer in charge of vehicle purchase to make sure features such as the following are considered -
 - access into the vehicle on at least 2 sides to reduce transfers of people across the seat width
 - doors wide enough for loading and unloading the type of people carried. Sliding doors are best, where possible
 - doors that are not too heavy as they might need to be opened numerous times during a shift
 - doors that will stay open easily
 - sufficient room inside the vehicle for the worker to position and place the seat belt on the person and make them comfortable.

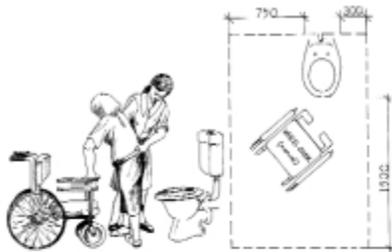


Figure 48

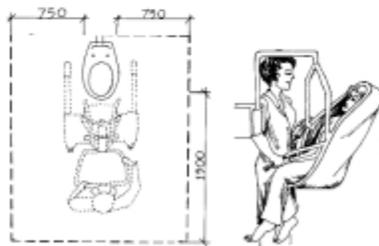


Figure 49

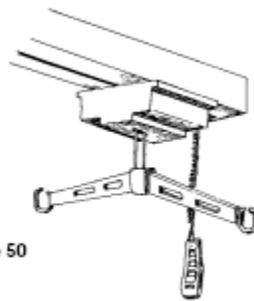


Figure 50

Appendix 5: Planning a handling procedure

Part of the implementation process is to develop work procedures. This Appendix provides advice about planning a handling procedure.

In planning a handling procedure:

- consider the aim and overall purpose of the procedure, for example, to bathe the person
- consider the location and position of the person at the beginning and end of the procedure for example, bed, chair, trolley
- take into account an assessment of each of the relevant risk factors, in particular the characteristics of the person being handled (Refer to Section 3.4).

A record of the handling plan, and any associated assessments of the person, such as mobility assessments, should be documented.

Such documentation should be used by workers to record the handling procedures required for a particular person or group of people. The plan will provide direction for other workers.

Update the handling plan, whenever there are changes in the above elements. (For example, the characteristics of the person, such as their conscious state, can alter.) The person(s) will need to be reassessed on a regular basis, which in turn might require the updating of the handling procedure. Workers must be advised of any documented handling plan, any updates of the plan and the need to follow the plan, where required.

Who needs to be planned for?

- Planning for handling procedures needs to be done at the level of the - individual person, for example:
 - a school child with a disability
 - a person in an aged care residence
 - a hospital patient
 - a person cared for in their own home.
- group of people with similar characteristics and needs, for example:
 - children of a particular age in a child care centre
 - people attending the clinical rooms of a health professional, such as, an occupational therapist or pathologist.

Planning for emergency situations

In some cases there is no time to assess the risk factors and plan a handling procedure for a specific person, and sometimes the handling actions need to be carried out speedily.

General procedures should be developed to cover the transfer of dependent people in emergency handling environments that can be predicted from experience, for example:

- a person who has collapsed in a toilet or other restricted space
- a person to be extricated from a car.

Appendix 6: Training

PCBUs must ensure workers and others at the workplace are provided with adequate information, training and supervision to enable them to undertake people handling tasks/actions in the safest possible way.

The degree of competency or skill a worker has achieved through training and instruction can influence the level of risk associated with performing a people handling task or action.

Workers should be able to demonstrate a satisfactory level of competency in performing the action(s). Regular supervision initially and periodic checks later are important to make sure competencies are maintained.

Who should be trained?

Training (and supervision) of relevance to people handling tasks/actions should be provided to **all workers/persons involved in people handling when:**

- they are being inducted into jobs which involve risks from people handling
- a new people handling task is introduced, or a task/action has been redesigned
- a situation arises requiring variations to usual people handling procedures, for example, people with a changed state of arousal
- new equipment such as mechanical aids or adjustable furniture are introduced.

In addition to workers, **other groups** who should receive training include:

- supervisors and managers of workers involved in people handling
- WHSRs
- in-house designers and engineers, and workers responsible for the selection and maintenance of equipment, task design and organisation
- volunteers
- non-permanent staff such as people from agencies - Ensure that they have a manual handling competency certificate prior to employment and provide training specific to the facility, for example training in the particular equipment and policies used in that workplace
- family and friends who participate in people handling with a worker in the home.

In addition, refresher training should be provided to **workers returning to work after an extended absence**. Refresher training should also be provided to **all workers** on a regular basis to maintain competencies.

Training program review and evaluation

Review training regularly, and when there is change in the:

- handling equipment
- work procedures, including changes in control measures for particular people handling tasks
- legislation/standards and supporting documentation.

Training records

Keep records of induction and training given to workers. The records can include the:

- date of the session and training site
- topics dealt with
- name and signature of the trainer and each of the workers who attended the session
- level of competency attained
- review your records regularly to ensure all workers have received appropriate and up-to-date training.

Training content

Tailor the contents of the people handling training program to specific needs by using examples based on:

- common people handling tasks performed in the organisation, or in the unit where the worker will be employed
- the injury pattern of the organisation or industry sector.

Arrange for practical on-site demonstrations undertaking people handling tasks that workers will be doing in the workplace. This has the added advantage of reminding workers and supervisors of correct procedures.

The following table lists competencies workers should have in order to undertake people handling tasks safely and efficiently.

TOPIC	COMPETENCIES
Personal safety	<ul style="list-style-type: none">• how to identify problems with a task or action and choose appropriate solutions (basic risk management)• the types of workplace injuries associated with the manual tasks performed, their causes, early signs of injury and risk factors• when transferring a person (lifting, carrying, pushing etc)<ul style="list-style-type: none">- know the policy for handling procedures, for example, No lift- when to call for help- how to safely use all mechanical aids and assistive devices- how to set up and adjust the work area for safe and efficient handling- have the ability to apply the principles of safe handling (when physically handling)- can carryout all required handling techniques (when physically handling)
Administrative	<ul style="list-style-type: none">• the need to report symptoms early, the procedures for reporting and procedures the designated officer

	<p>for receiving reports</p> <ul style="list-style-type: none">• how to report problems with the maintenance or operation of mechanical aids and assistive devices• the need to identify and report when the handling plan should be updated.
--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Appendix 7: A method of risk assessment

Following is a simple method of assessing the level of risk associated with a hazard. This risk assessment method has been applied to the performance of people handling activities. The desired outcome of risk assessment is a prioritised list of people handling actions requiring control.

Risk assessment method⁵:

- (a) For each of the actions:
 - (i) Estimate the *likelihood* of an incident occurring at your workplace, bearing in mind existing control measures.
 - (ii) Estimate the *consequences* of an incident occurring at your workplace, bearing in mind existing control measures.
 - (iii) Combine your likelihood and consequence estimates to rate the level of risk associated with the action.
- (b) Using these ratings, develop a prioritised list of people handling actions requiring control.

Estimating likelihood

Use the following descriptive scale to nominate the likelihood of an incident occurring at your workplace.

Likelihood	Very likely	Could happen frequently
	Likely	Could happen occasionally
	Unlikely	Could happen, but rarely
	Very Unlikely	Could happen, but probably never will

Consider the following factors, which can affect the likelihood of an incident occurring by affecting the level of risk associated with performing the action and the likelihood of death, injury or illness resulting:

- **How often the action is undertaken** – Generally, the more often an action is performed, the more often a worker is exposed to risk and the more likely it is that an incident will occur.
- **The number of workers performing the same or a similar action** – Generally, the greater the number of workers performing an action, the greater the number of workers exposed to a risk and the more likely it is that an incident will occur.
- **The duration of time that the action is performed** – Generally, the longer a worker performs an action, the longer the worker is exposed to risk, the more likely it is that an incident will occur.
- **Distractions** – such as time pressures can influence the decisions made about how to undertake the task, for example the need to finish work in a short period and choosing not to use a hoist. This can increase the likelihood of an incident occurring.

⁵ This method provides a rough means of ranking the level of risk associated with each action. The risk scores derived should be interpreted with caution as the process by which they are obtained is subjective.

- **The effectiveness of existing control measures** – If existing control measures are effective, they will reduce the likelihood of an incident occurring.
- **The capacity and characteristics of the workers** – Adequate training and reasonable competence to do a task may reduce the likelihood of an incident occurring. Special characteristics of the worker, for example, right or left hand orientation may affect the likelihood of an incident occurring.
- **Environmental conditions** – Are there conditions which can increase the likelihood of an incident occurring, for example rescuing from a boat.
- **The availability and use of equipment** – The availability and correct/appropriate) use of people handling equipment can influence the likelihood of an incident occurring.
- **The condition of equipment** – The use of defective equipment is more likely to cause an incident.

Estimating consequences⁶

Use the following descriptive scale to nominate the consequences of an incident occurring. That is, consider the severity of a potential injury or illness that can result from performing a people handling action.

Consequences	Extreme	Death, permanent disablement
	Major	Serious bodily injury or serious work caused illness
	Moderate	Moderate injury or illness requiring casualty treatment
	Minor	Minor injury or illness requiring first aid only, no lost work time

Refer to injury records and statistics, which will help identify the potential severity of a people handling related injury. Information on injuries from people handling in related industries can also help indicate the potential severity of injury.

Rate each action

The level of risk, or ‘risk score’ for each action, is determined by the relationship between likelihood and consequence. This relationship can be represented using a matrix, as follows. Determine the risk score for each action by plotting the consequence and likelihood estimates on the chart below.

⁶ Note, many of the factors considered in the *How to Manage Work Health and Safety Risks* are not relevant to people handling activities.

Risk priority chart

Likelihood How likely could it happen?	Consequences: How severely could it hurt someone?			
	Extreme - death, permanent disablement	Major - serious bodily injury or serious work-caused illness	Moderate - moderate injury or illness requiring casualty treatment	Minor - minor injury or illness requiring first aid only, no lost time
Very likely - could happen frequently	1	2	3	4
Likely - could happen occasionally	2	3	4	5
Unlikely - could happen, but rare	3	4	5	6
Very unlikely - could happen, probably never will	4	5	6	7

This stage of the risk assessment⁷ gives a basis for ranking actions in terms of the need for control.

The scores (1-7) in the risk priority chart indicate how important it is to do something about each action, as shown in the table below:

⁷ The risk scores obtained using this method have no absolute value, but provide a means of ranking the action ONLY.

Score	Attention required
1, 2 or 3	do something about these actions immediately
4 or 5	do something about these actions as soon as possible
6 or 7	these actions may not need immediate attention

You might decide that some actions, for example, those with a score of 6 and 7, may not require control.

Prioritise actions

Prioritise actions requiring attention based on their risk score. When risk scores for all people handling actions are compared, the resulting ranking will be a guide to the order in which the actions should be addressed.

Appendix 8: Sample control implementation plan

Actions (task elements)	Risk factor	Cause	Controls	Activity responsibility	Status and date	Finish date

To complete the form:

- Record the actions, which need controlling in column 1.
- List the direct risk factors identified in each action in column 2.
- Describe the cause of the risk factors, that is, the contributing and modifying risk in column 3.
- Consult the risk control options in chapter 7 of the document to assist with selecting controls. Note the measure(s) under ‘controls’ in column 4.
- Decide on the activities needed to implement the controls and allocate the staff member who will be responsible for carrying out the activity under ‘activity – responsibility’ in column 5.
- Allocate a date for completing the activity and enter under ‘finish date’ in column 7.
- The column titled ‘status and date’ is for monitoring progress of controls that may take time to put in place. It is good practice to review the control implementation plan regularly to assess the status of compliance. In addition, specify the date for evaluation of the risk controls and any other follow-ups.

Appendix 9: Case study applying the code

Raising a person from the floor

About the case study

A common people handling task in many people handling environments is the raising or the assisted raising of a person from the floor. Whether in a health care facility, childcare environment or emergency rescue situation, the process and the steps to follow are the same.

For the purposes of this case study, this people handling task occurs in an aged care residential facility.

The following is a comprehensive example of the risk management process undertaken for the people handling task of raising a person from the floor. The case study includes examples of the documentation⁸ that can be kept and further detail to illustrate the thought processes undertaken. It is not intended to provide a template for all risk assessment activities. Note, the risk management process undertaken and recorded in this case study is only in relation to the hazard of manual tasks involving people handling. In reality, consideration should also be given to other hazards at the workplace and to ascertain why the resident was on the floor.

Identification

Raising a person from the floor was documented on the "List of People Handling Tasks" (refer to section 3.1 of the Code). This list has been prepared following observation of tasks undertaken at the workplace and consultation with relevant workers.

Identify the actions in each task

The following record (table 1) is also kept with the actions listed.

⁸ Note – the level of detail you record for your workplace activities will need to be sufficient to conduct the risk management process and for subsequent review and evaluation.

Table 1: Actions involved in the task of ‘Raising a resident from the floor’

ACTIVITY	TASK	ACTION
Supervised ambulation of the residents	Raising the resident from the floor (after an independent fall or facilitated fall)	<ol style="list-style-type: none"> 1. *Clear and secure the area ensuring safety of the resident 2. Reposition the resident e.g. roll into the recovery position 3. Administer first aid and make resident comfortable, if required 4. *Call for assistance 5. Position the resident in a sitting position – one worker supporting, one moving the resident 6. *Position a chair close to the resident 7. Assist the resident as they rise to sit on the chair 8. Assist the resident as they rise to stand

* non-people handling actions

Identify the direct risk factors and identify the contributing and modifying risk factors.

Table 2 contains a breakdown of the direct risk factors and the contributing and modifying risk factors for each of the people handling actions shown in column 3 of table 1 above. The checklists from Appendix 3 were used to identify the risk factors.

Note:

- The direct risk factors for each action were identified first, because if none of these were present, there would be no risk associated with the action and no need to proceed with assessing the action.
- The contributing and modifying risk factors associated with each action were identified, to assist in determining suitable control measures. - A list of these risk factors is contained within table 2.
- The information contained in table 2 is generic and is relevant to all ‘from floor lifts’ undertaken in the facility.

Assessment

The desired outcome of risk assessment is a prioritised list of people handling actions requiring control. The advice of workers was sought in assessing the likelihood and consequences of the risk factors (risk estimates of each action) and in developing a prioritised list of actions (table 3).

Note: the use of the risk estimates assessment method shown in this code is optional.

Determine the level of risk associated with each action and the overall task and prioritise the actions requiring control.

An estimate of the likelihood and consequences of an incident occurring at the facility is provided in table 3.

The level of risk associated with the overall task is the same as the level of risk determined for action 4 (the highest priority).

Control

Workers were consulted during both stages of risk control. They assisted with:

- making decisions about the best measure(s) to control exposure to the contributing and modifying risk factors identified, and
- implementing the chosen control measures.

After determining the priority order of the actions, control measures, which are linked with the associated risk factors, were considered.

Select the controls

In deciding on appropriate controls, preference was given to design controls over administrative controls. Consideration was also given to long term and interim measures.

The information in chapter 7 of this Code, which is linked to the specific checklist questions from Appendix 3, provides suggestions on possible control measures linked to the risk factors.

Table 4 lists the actions requiring control (in order of priority), their associated risk factors and the chosen control measures.

Implement chosen controls

The following implementation process was used to ensure control measures were successfully put in place at the workplace:

- **Trial measures**

A small working group was established to choose a hoist. Three hoists were trialled for a 2 week period. The hoists were assessed in terms of their suitability for the task, safety considerations, ease of operation by the workers and space requirements. Workers were consulted before setting up the trial.

Based on the feedback of the trial and evaluation process, XYZ hoist (a mobile hoist with sling attachment) was chosen and was put on the requisition list for purchase within 6 months (based on budget).

- **Revise controls**

The trial showed the need to arrange certain furniture in handling areas to ensure sufficient space for easy use of the hoist. During the trial, it became evident that there was a need to plan for larger work areas in the future. The requirement for easily accessible storage was also noted, arrangements were made for storage in the store room behind the kitchen. A further week of the trial found that the changes were effective.

- **Develop work procedures**

A plan was prepared which outlined the most appropriate procedure for undertaking the task of raising a resident from the floor in the facility. This procedure was documented, training and reinforcement through supervision provided.

- **Communication**
Workers were advised about the chosen control measures.
- **Training**
Workers received training as outlined in the control strategy. Training has been scheduled as per the implementation plan. Supervisors have been advised of their responsibility to ensure all workers use hoists for the task of raising a resident from the floor.
- **Supervision**
Arrangements have been made for supervision of workers as outlined in the control strategy.
- **Maintenance**
A maintenance schedule will be developed for the new hoist(s) (when purchased) and relevant workers will be instructed in undertaking required maintenance.
- **Set time frame**
Timeframes have been set in relation to the new control measures as outlined in table 5.

The control strategy prepared for the overall task with the implementation details is shown in table 5.

Review

A review of the task to ensure the effectiveness of the measures is scheduled to commence on 1/6/02. Workers can provide feedback to their supervisor, in relation to the implemented control measures and any new risks, at any time. Whenever there is need to raise a resident from the floor because of a fall, a record is kept and the reason for the fall investigated. At this time, the resident is reassessed to ensure that the resident is being handled in the most appropriate manner.

Table 2: Direct risk factors, modifying and contributing risk factors associated with each action for the task of raising a resident from the floor

People handling actions	Direct risk factors	Contributing and modifying risk factors	Contributing and modifying risk factors common to all actions
<p>1. Reposition the resident e.g. Roll into the recovery position</p>	<p>Working Postures - Awkward working postures: - bent back, extended reach, kneeling. Static working posture: - sustained kneel.</p> <p>Forceful Exertions - of back, shoulders and lower limbs (due to working postures)</p>	<p>Causes of the working postures: Handling Procedure - resident on the floor - manually rolling resident</p> <p>Characteristics of the Person being Handled - resident is unable to position her/himself due to physical state (e.g. because physically unable).</p> <p>Causes of the forceful exertions: Handling Procedure - as for Working Postures above</p> <p>Characteristics of the Person being Handled - as for Person being Handled - as for Working Postures above</p>	<p>Individual Characteristics of Worker: - not all workers are trained in team handling from floor methods e.g. agency staff - some workers have a history of back problems - uniform - skirt restricts postures</p> <p>Work Organisation: - workers regularly doing overtime (increasing total handling activity) - policies and procedures - one hoist available for facility, (but often in use elsewhere) and stored in non-central locations</p>
<p>2. Administer first aid, if required</p>	<p>Working Postures - as for action 1</p> <p>Forceful Exertions - as for action 1 - static hold to support limb/head (due to working postures)</p>	<p>Causes of the working postures: Handling Procedure - as for action 1. Characteristics of the Person being Handled - as for action 1 - resident requiring first aid.</p> <p>Causes of the forceful exertions Handling Procedures - as for Working Postures Characteristics of the</p>	

		Person being Handled - as for Working Postures	
3. Position the resident in a sitting position – one worker (w1) supporting the resident, the second worker (w2) moving the resident	Working Postures - as for action 1 Forceful Exertions - as for action 1 for both workers - for w1, static hold to support upper body (due to working postures)	Causes of the working postures: Handling Procedures -resident on the floor -manually push resident Characteristics of the Person being Handled -as for Working postures	
4. Assist the resident as he/she rises to sit on the chair	Working Postures: -team (assisted) lift with semi-squat, bent back Forceful Exertions: -upper limb and back, knees and hips (due to working postures)	Causes of the working postures: Handling Procedures -working between floor and hip range -manual team (assisted) lift -workers required to support all/most of the weight of the resident unaided Characteristics of the Person -person could fall suddenly Causes of the working postures: Handling Procedures -as for action 4 Causes of the forceful exertions Handling Procedures -as for Working Postures	
5. Assist the resident as he/she rises to stand	Working Postures -as for action 4, but not as extreme Forceful Exertions -as for action 4, but not as extreme	Causes of the working postures: Handling Procedures -as for action 4 Causes of the forceful exertions Handling Procedures -as for Working Postures	

Table 3: Estimates of the likelihood and consequences for each action and priority

Action	Likelihood estimate	Consequences estimate	Priority of action	Attention required
1. Repositioning the resident e.g. roll into the recovery position	Medium - low -worker assumes extended reach, bent back and static kneel -single worker involved	Potential for injury and accumulative contribution to injury	4 th priority	Medium - long term attention
2. Administer first aid, if required	Low -worker can assume extended reach, bent back and static kneel -worker supports residents body parts for periods -single worker involved	Minor potential for injury and accumulative contribution to injury	5 th priority	No attention at this stage
3. Position the resident in a sitting position	High -worker assumes awkward postures and uses forceful exertions for considerable duration -single worker involved -action occurs (as part of task) daily	Potential for serious bodily injury and accumulative contribution to injury -workplace investigation records show action related case of low back injury	2 nd priority	Immediate attention
4. Assist the resident as he/she rises to sit on the chair	Very high -worker(s) assume very high-risk awkward postures and use large forceful exertions for considerable duration -team assisted lift involved -action occurs (as part of task) daily	Potential for serious bodily injury, permanent disability and accumulative contribution to injury -workplace investigation records show action related case of low back injury	1 st priority	Immediate attention
5. Assist the resident as he/she rises to stand	Medium -worker(s) assume some awkward postures and forceful exertions -team assisted lift involved	Potential for injury and accumulative contribution to injury	3 rd priority	Immediate - short term attention

	-action occurs (as part of task) daily			
For overall task	Very high -worker(s) assume very high-risk awkward postures and use large forceful exertions for considerable duration -team assisted lift involved -action occurs (as part of task) daily	Potential for serious bodily injury, permanent disability and accumulative contribution to injury - workplace investigation records show action related case of low back injury - industry statistics show task related cases of low back disorders		Immediate attention

Table 4: Control options for each action (Note, actions are listed in order of priority)

Action	Risk factors (contributing and modifying)	Controls
4. Assist the resident's rise to sit in chair	<p>Handling Procedure</p> <ul style="list-style-type: none"> -working between floor and hip range -manual team (assisted) lift required -worker required to support all/most of the body weight of the person unaided <p>Characteristics of the person</p> <ul style="list-style-type: none"> -possibility of the person falling 	<ul style="list-style-type: none"> -Eliminate this action, provide hoist to lift from floor -develop procedure to include: use of hoist, accessibility and storage of the hoist, communication with the resident, use of 2 workers -provide training in the procedure and correct use of the hoist
3. Position resident in a sitting position	<p>Handling Procedure</p> <ul style="list-style-type: none"> -resident on the floor -resident being pushed <p>Characteristics of the person</p> <ul style="list-style-type: none"> -resident is limited physically 	<ul style="list-style-type: none"> -eliminate this action, provide hoist to lift from floor -develop a procedure, as for action 4 -provide training in the procedure and correct use of the hoist
2. Assist the resident's rise to stand	<p>Handling Procedure</p> <ul style="list-style-type: none"> -as for action 4 	<ul style="list-style-type: none"> -eliminate the risk of the person falling or collapsing and the risks associated with team lifting, provide hoist to lift from floor -develop a procedure as for action 4 -provide training in the procedure and correct use of the hoist
1. Reposition the resident	<p>Handling Procedure</p> <ul style="list-style-type: none"> -resident on the floor -resident in being pushed (rolled) <p>Characteristics of the person</p> <ul style="list-style-type: none"> -resident is limited physically 	<ul style="list-style-type: none"> -develop procedure to include: team handling, where possible and communication with resident -training in the procedure
Common to all actions	<p>Characteristics of the Worker</p> <ul style="list-style-type: none"> -not all workers are trained in team handling from floor methods -some staff with history of back problems -uniform restricts movement <p>Work organisation</p> <ul style="list-style-type: none"> -workers regularly do overtime -1 hoist available, stored non-centrally 	<ul style="list-style-type: none"> -revise uniform, allowing for trousers and culottes, which will enable unrestricted working postures while allowing for modesty and comfort -provide training in relevant procedures (including team lifting for action 1) and correct use of equipment -provide additional staff, so that workers are not required to work overtime, if possible

Table 5: Control strategy for the overall task with implementation details – Raising a person from the floor

Control Strategy	Activity responsibility	Status and date	Finish date
Design controls		Design controls	
<ul style="list-style-type: none"> Provide mobile hoist with sling attachment to lift from floor. 	Purchasing – J. Bloggs	Longer term control – 2 week trial to begin week commencing 4/3/02 – Selected equipment to be purchased within 6 months of decision (based on budget)	15/3/02
Revise uniform, allow for trousers and culottes	Uniform committee – M. Smith	Longer term control – committee to be established in Feb 2002	April 2002
Administrative controls		Administrative controls	
<ul style="list-style-type: none"> Develop procedure to include – <ul style="list-style-type: none"> Use of the hoist Accessibility and storage of hoist(s) Communication with resident Use of 2 workers 	Administration (Policy) – K. Brown	Draft to be prepared in time for hoist trial – February 2002.	1/3/02
<ul style="list-style-type: none"> Provide training in the procedure and correct use of the hoist 	Training unit – B. Jones	Preliminary training for hoist trial.	1/3/02
<ul style="list-style-type: none"> Provide additional staff to minimise overtime 	HR Manager – L.Black	Longer term control – March 2002	30/6/02
Interim measures		Interim measures	
Design controls		Design controls	
<ul style="list-style-type: none"> Use team lifting, where possible 	Relevant supervisor	Interim control – December 2001	Ongoing
Administrative controls		Administrative controls	
<ul style="list-style-type: none"> Provide training and supervision in team lifting 	Training unit – B. Jones	Interim control – Training to be undertaken during December 2001	January 2002
<ul style="list-style-type: none"> Develop procedure to include – <ul style="list-style-type: none"> Team lifting where possible Accessibility and storage of existing hoist Communication with resident People falling suddenly 	Policy unit – K. Brown	Interim control – November 2001	January 2002
<ul style="list-style-type: none"> Provide additional or longer rest breaks when overtime is required 	Relevant supervisor	Interim control – immediate action – advice provided to staff – 30/10/01	30/10/01