Dragon, Karen E. (CDC/NIOSH/EID)

From: FRAN ZIESMANN [fziesmann@haltonhealthcare.on.ca]
Sent: Tuesday, May 02, 2006 2:40 PM
To: NIOSH Docket Office
Subject: public comments for docket #072 from web site: patient handling

Importance: High

Attachments: BACK WELLNESS SHEET.doc; Handle with Care.pdf; 2006 BIBLIOGRAPHY evidence based.doc


BACK WELLNESS SHEET.doc (40 KB..


Handle with Care.pdf (9 MB)


2006 OGRAPHY evidence

Re: Draft Document for Public Review and Comment: Safe Patient Handling and Movement Principles NIOSH Docket #072 Not a bad attempt. Should be presented in modules, clearly and concisely.
Suggest:

* Goals and Objectives
* Patient related injuries overview (statistics and scope of the issue etc.)
* Ergonomic Principles (forces-push/pull/lift/lower, include spinal forces compression/shear/torque; repetition, awkward postures and positions) etc.
* Principles of Lifting and Bio-mechanics (straight back lifting principles)-emphasis on straight back lifting (U of Waterloo, Ontario Dr. Stuart McGill Biomechanist-researcher) Principle should be adaptable to various situations.

<<BACK WELLNESS SHEET.doc>>

* Minimal Lift and Safety Patient Handling Policy and Program (include definitions for lift, transfer, re-positioning- see "Handle with Care Program" from the Ontario Safety Association for Community and Health Care.
Also need for Senior Management Commitment" http://www.hchsa.on.ca/ <http://www.hchsa.on.ca/> and http://www.hchsa.on.ca/products/resrcdoc.html#rerge320 <http://www.hchsa.on.ca/products/resrcdoc.html#rerge320>

<<Handle with Care.pdf>>
Program responsibilities (senior management, supervisors, employees and contractor workers) emphasis on enforcement of policies, program development/maintenance/training/evaluation etc.

* Patient and Environmental Assessment
* Safe Patient Transfer Procedures and equipment (side by side, pivot transfers etc.) also include transfer equipment i.e. transfer belts (Owen and Garg Research), transfer disks, transfer slider boards, sit-stand hoists etc.
* Safe Lift Procedures and Equipment (mechanical lifts or lateral slide procedure with transfer boards, transfer sheets, samarit boards, roller boards, air pal or air float equipment, plastic bags etc.)
* Documentation and Communication
* Training Essentials
* Evaluation

Also see

British Columbia, Canada (Training Manual)
http://www.interiorhealth.ca/Information/Reports/Documents/MSIP+Manual.htm <http://www.interiorhealth.ca/Information/Reports/Documents/MSIP+Manual.htm>

OH&S Agency for Health Care in British Columbia
http://www.ohsah.bc.ca/index.php?section_id=325&section_copy_id=11633 <http://www.ohsah.bc.ca/index.php?section_id=325&section_copy_id=11633>

See Duane Saunders series (patient T&L videos, ergonomics etc 7750 West 78th street, Minneapolis, Minnesota 555439. Videos and Training Materials. They have been providing up to date training materials and videos on ergonomics, patient handling for over 15 years!!

http://www.NursingWorld.org/handlewithcare/
<http://www.nursingworld.org/handlewithcare>

http://nursingworld.org/readroom/position/workplac/pathand.htm
<http://www.nursingworld.org/readroom/position/workplac/pathand.htm>

<<2006 BIBLIOGRAPHY evidence based.doc>>

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HHS BACK WELLNESS
INJURY PREVENTION AND BACK CARE

INTRODUCTION

Eighty to ninety percent of the adult population experiences back pain at least once in their lifetime. Many back and neck injuries are preventable. The following information and TIPS may help prevent an injury or lessen the disability time and suffering.

PROPER POSTURE

The maintenance of spinal curves reduces excessive stresses and strains on the joints and soft tissues of the spine such as ligaments, discs and the muscles. Slumped sitting or lifting with the legs straight and back bent over-stretches the soft tissues of the spine and therefore places them at risk for injury. It is important to maintain good posture in SITTING, STANDING. SLEEPING AND DURING LIFTING.

REDUCE PHYSICALLY STRESSFUL LIVING AND WORKING HABITS

If your job places you in a prolonged flat back or swayback position, you should periodically stop and stretch in the opposite direction to reduce injuries. Avoid prolonged and awkward positions and take adequate rest breaks.

Evaluate your workplace and leisure activities to determine the proper working height(s) that preserve the spinal curves i.e. avoid work stations that are too low since it places the lumbar spine in the prolonged bent or flat back position.

If you are seated a great deal of the time select a chair which has a good lumbar support. If this is not available a lumbar roll or roll of towel may be placed between the chair and the lumbar spine.

PHYSICAL FITNESS

Maintain a reasonable level of fitness. This should include strengthening, flexibility and cardiovascular exercises. Current trends in research emphasise good lower extremity or leg flexibility.

PROPER BODY MECHANICS

Proper posture during lifting is critical in the prevention of back injuries. Biomechanical research on the lumbar spine recommends that, "WHEN LIFTING, THE LUMBAR CURVE SHOULD BE MAINTAINED TO PREVENT RISKING DAMAGE TO THE LUMBAR TISSUES i.e. muscles, ligaments, disc etc."

It has also been recognized that many tasks performed by workers require lifting in atypical or awkward positions, therefore the traditional instructions of "BEND YOUR KNEES NOT YOUR BACK, HOLD OBJECTS CLOSE TO YOUR BODY," cannot be performed effectively in all cases. The following guidelines and principles will assist you in determining the safest possible lifting techniques.

GENERAL LIFTING GUIDELINES AND PRINCIPLES

1. **TEST THE LOAD**

   - Determine whether the weight of the load is safe to move.
   - Determine how many persons are required or equipment required.

2. **PLAN THE MOVE** (remove obstacles)

   - Determine the type of lift, the equipment required and the pathway.
   - Clear the area of obstacles.

3. **WALK STRIDE STANCE**

   - Use a wide walk stride stance with one leg in front of the other to increase your base of support.

4. **KEEP YOU BACK STRAIGHT (MAINTAIN THE LUMBAR CURVE)** reduces shearing forces

   - Lift with the back straight to reduce the stress and strain on the soft tissues of the spine.
   - Keeping your head up helps maintain the lumbar curve.
   - Avoid lifting with the legs straight and back bent.
   - If reaching forward when lifting an item at knee or waist level is required, keep the back straight and stabilized, then bend slightly at the hips and knees. Use a walk-stride stance if pushing or pulling is required.

5. **BRING THE LOAD CLOSE TO YOUR BODY** (reduces lever arm)

   - Carrying the load close reduces the forces exerted on the spine.

6. **TIGHTEN THE ABDOMINAL MUSCLES**

   - Lightly contracting the abdominal muscles removes tissue slack on the spine and therefore prepares the spine for surprise loads.
   - The expression "1-2-3 lift" assists this process of abdominal contraction.

7. **AVOID TWISTING** (reduces torquing forces)

   - Move your feet in the direction of the move.
   - Forces exerted on the spine during twisting can cause damage to the disc and other soft tissues.

8. **LIFT WITH YOUR LEGS**

   - Bend your knees and hips so that your legs bear the load not your back while keeping your back straight and stabilized.

9. **AVOID SLUMPED SITTING OR PROLONGED BENDING BEFORE LIFTING**

   - Tissues that are already over-stretched are at risk of injury.
   - Perform backward bends before lifting if you have been slumped sitting.

POSTURE TIPS

STANDING	**KEEP YOUR CHIN TUCKED IN**
SITTING	**USE A LUMBAR SUPPORT**
LIFTING	**KEEP YOUR HEAD UP**

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ANA Brochure - "Preventing Back Injuries: Safe Patient Handling and Movement"
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http://www.interiorhealth.ca/Information/Reports/Documents/MSIP+Manual.htm

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7750 West 78th Street, Bloomington Minnesota, 55439 Phone 1-800-654-8357, Fax 1-612-944-1340.

Prepared by Frances Ziesmann BSc. BSc.PT DOHS

HCHSA Handle with Care™

A Comprehensive Approach to Developing and Implementing a Client Handling Program

Resource Manual

Second Edition

HCHSA

Health Care Health & Safety Association of Ontario

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Resource Manual

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Table of Contents

Module 1: Introduction

The Health Care Health and Safety Association (HCHSA) is committed to preventing and reducing injuries and illnesses in health and community care by providing programs, products and services that support the internal responsibility system and self-reliance in the workplace. In demonstrating this commitment, HCHSA is proud to introduce a new and revised edition of the Transfer and Lifts for Caregivers program entitled, *HCHSA Handle with Care™: A Comprehensive Approach to Developing and Implementing a Client Handling Program*. This program focuses on the client handling aspect of musculoskeletal injury (MSI) prevention and identifies a step-by-step approach to policy and program development in a variety of health care and community settings.

In this module, the rationale, goals, objectives and applications of the HCHSA Handle with Care™ Program are described.

1.1 Why Handle With Care

From 1991-1999, the number of injuries and occupational diseases in the health care sector has been steadily declining. However, in the year 2000 the number of injuries and occupational diseases rose slightly.

In 2000, there were 7,635 compensable lost time injuries in the seven rate groups that are served by HCHSA (Figure 1). Out of the seventeen industry sectors under the Workplace Safety and Insurance Board (WSIB), health care ranked fifth highest for lost time claims (behind services, manufacturing, schedule 2 and transportation).

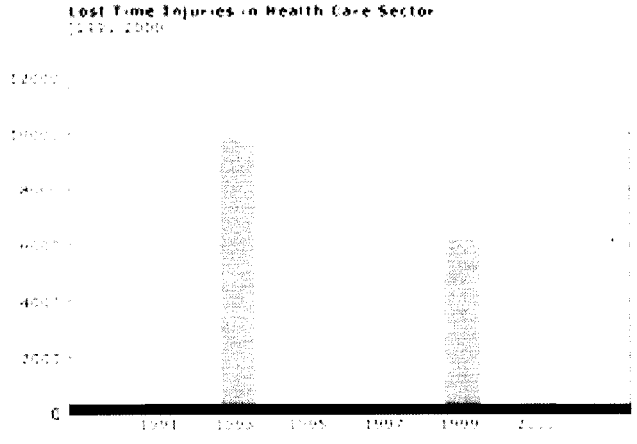


Figure 1. Lost Time Injuries in Health Care

Among all of the lost time injuries (all sectors) reported to the WSIB in 2000, sprains and strains occupied the highest percentage of claims at 39.9%. Back (including neck) injuries accounted for almost one third (29.3%) of body part injuries, while injuries to upper extremities (arms and hands) occurred in about one quarter of the reported cases in that year (Figure 2).

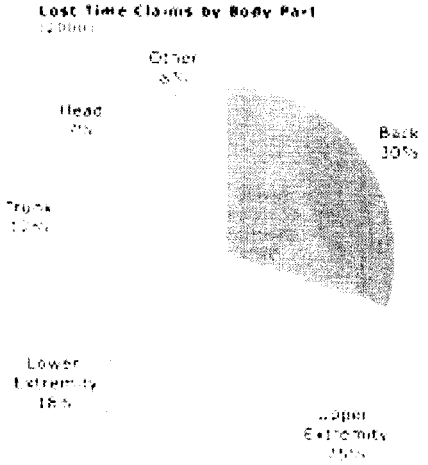


Figure 2. Lost Time Claims by Body Part

The most frequent lost time claim by event reported to the WSIB is "Bodily Reaction" and "Exertion", accounting for nearly half of all lost-time claims in 2000 (Figure 3).

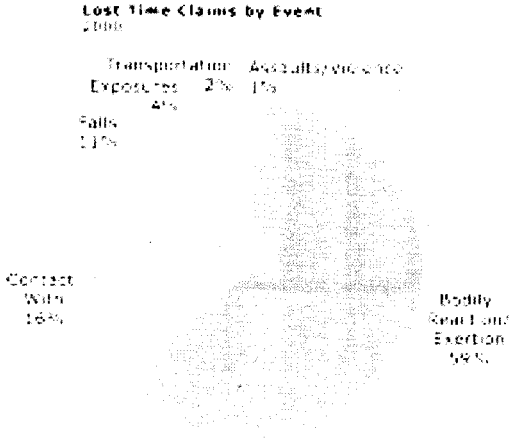


Figure 3. Lost Time Claims by Event

In the health care sector specifically, the top causative factor for lost time injuries during the years 1996-2000 was "over exertion" (Figure 4).

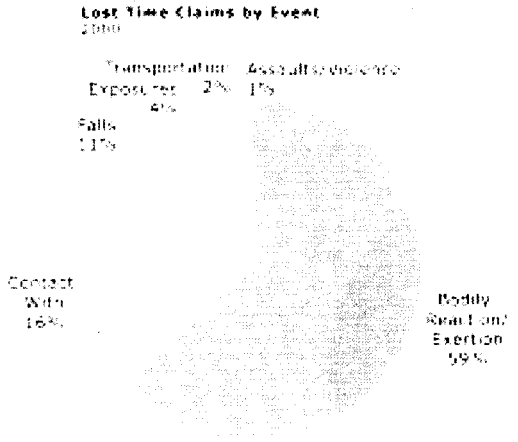


Figure 4. Top Causative Factor in Health Care Injuries

Back (including neck) injuries and injuries to upper extremities (arms and hands) were the top two areas of lost time injuries in the health care sector during the years 1996-2000 (Figure 5).

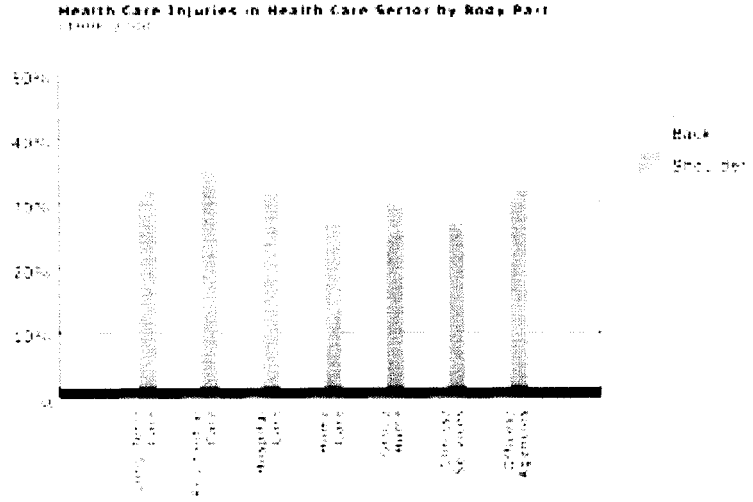


Figure 5. Lost Time Injuries in Health Care Sector by Body Part

These statistics strongly support the need to develop and implement a comprehensive client handling program in health sector organizations. This type of program decreases the risk of employee injury and subsequent WSIB costs.

WSIB costs are significant. In 1999, the costs for an average lost time injury/illness claim was over $11,771. When other organizational costs associated with the injury/ illness were considered, the average cost escalated to over $59,000 (WSIB 2001). While cost reduction is an important reason behind injury prevention initiatives,

compliance with the Occupational Health and Safety Act (OHSA) and applicable regulations is an equally important factor.

A comprehensive client handling program is the key to reducing the risk of injuries related to moving clients. It is one of the most important components of a complete approach to injury prevention in the health care sector.

1.2 Goals & Objectives

The HCHSA Handle with Care™ program goes beyond training caregivers in client transfers, lifts and repositioning techniques. The program helps caregivers to recognize, assess, plan, implement and control the workplace risk factors with respect to the handling of clients. This program enables organizations to standardize the approach to client handling techniques through a comprehensive policy and supporting program designed to reduce the risk of MSIs among caregivers.

Training staff in the proper assessment, transferring, lifting and repositioning techniques is only one part of a comprehensive MSI prevention program. Job factors and workplace design must also be examined. Tools, equipment, jobs and the environment must be compatible with the capabilities of the workers. Improving the design of jobs and the work environment improves the workers' health and safety and reduces their fatigue, discomfort and long-term disability.

The goals for the HCHSA Handle with Care™ program are as follows:

- To promote high standards of care for the client by using consistent transfers, lifts, and repositioning techniques.
- To protect both caregivers and clients from injury.
- To facilitate the use of safe, effective and consistent transfers and lifts.
- To provide a step-by step approach to program planning, development and implementation.
- To provide resource materials for effective education programs on injury prevention.

The objectives are as follows:

- To ensure maximum participation and independence of the client during transfers, lifts and repositioning.
- To promote consistent techniques in client transfers, lifts, and repositioning.
- To enable caregivers to continually assess all risk factors and choose appropriate client transfers, lifts and repositioning techniques.
- To enable caregivers to solve problems related to client transfers, lifts and repositioning.
- To teach caregivers appropriate skills for communicating with clients and other caregivers during client transfers, lifts and repositioning.
- To teach caregivers how to perform safe body mechanics.
- To provide easy, consistent documentation of transfer, lift and repositioning techniques.

The HCHSA Handle with Care™ program is designed for any caregiver that handles clients. This includes caregivers in:

- Hospitals
- Group homes and community living associations
- Long-term care facilities
- Residential care facilities
- Daycare organizations
- Community medical, rehabilitation and dental clinics
- Community care agencies
- Schools with mentally or physically challenged students

1.3 Overview of the Manual

This manual contains nine modules:

- **Module One: "Introduction" on page 1** provides the "why" behind the development and implementation of a comprehensive program. In addition, the HCHSA Handle with Care™ program goals and objectives are outlined.
- **Module Two:"Legislation" on page 7** outlines the key pieces of legislation that support the development and implementation of a program.
- **Module Three: "Musculoskeletal Injuries (MSIs) and Ergonomics" on page 17** helps the caregiver understand the physiological reasons of unsafe client handling, and how important it is to think twice about taking any *short-cuts* when transferring, lifting or repositioning clients. This module provides caregivers with a better understanding of anatomy and ergonomics, and helps caregivers understand the importance of their responsibility in preventing of work-related injuries.
- **Module Four: "Program Development and Implementation" on page 51** outlines the six steps in program development including management support, commitment and leadership, assessment of the current client handling situation, preparation of a business case, and the development, implementation and evaluation of the program.
- **Module Five: "Client Mobility Assessment" on page 99** outlines the assessment procedures and strategies that should be considered when conducting initial, ongoing and mini-assessments of a client's mobility status to ensure that the safe and appropriate client handling techniques are used.
- **Module Six: "Repositioning and Transfers" on page 123** outlines the various types of repositioning and transferring procedures, along with assistive devices that can be utilized to enhance the safety of the procedures for both staff and clients.
- **Module Seven: "Client Lifts and Lifting Devices" on page 149** outlines the various manual lifting techniques and the benefits of using a mechanical lift. The use of a mechanical lift is presented as the preferred lifting option but it is understood that there are circumstances and clients with which a mechanical lift cannot be utilized.

- **Module Eight: "Environment and Equipment" on page 161** provides general information with respect to client transfer, lift and repositioning devices and the employer's responsibilities related to the equipment. In addition, this section also provides information on the proposed Canadian Standards Association (CSA) Technical Information Letter on Mechanical/ Electromechanical Devices for Lifting Persons.
- **Module Nine: "Tips for Training" on page 177** introduces the factors involved with the principles of adult learning, tips for implementing training for your workplace, and the pros and cons of different training approaches.

Module 2: Legislation

All workplace parties must be familiar with the various pieces of legislation that pertain to the health and safety of workplace parties and clients. In this section, the rights, duties and responsibilities of the various workplace parties under the law in Ontario are reviewed.

2.1 Occupational Health & Safety Act

The Occupational Health & Safety Act (OHSA) is the fundamental legal authority for health and safety in Ontario. It sets out the minimum requirements with respect to the rights, duties and responsibilities of the workplace parties and establishes basic principles. The Ministry of Labour is the enforcer of the provisions of this act.

Duties and Responsibilities of Workplace Parties

The Act outlines the duties and responsibilities of employers, supervisors and workers.

Employers

Duties and responsibilities of employers are outlined in the Act in sections 25 and 26. The following duties and responsibilities apply to client handling issues.

An employer shall ensure that:

- the equipment, materials and protective devices provided by the employer are maintained in good condition; 25(1)

An employer shall:

- provide information, instruction and supervision to a worker to protect the health and safety of the worker;
- when appointing a supervisor, appoint a competent person;
- acquaint a worker or a person in authority over a worker with any hazard in the work and in the handling, storage, use, disposal and transport of any article, device, equipment or a biological, chemical or physical agent;
- afford assistance and co-operation to a committee and a health and safety representative in the carrying out by the committee and the health and safety representative of any of their functions;
- take every precaution reasonable in the circumstances for the protection of a worker;
- prepare and review at least annually a written occupational health and safety policy and develop and maintain a program to implement that policy; 25(2)

These responsibilities have many implications for client handling. In a health care workplace, the overall health and safety program should have a specific component dedicated to client handling.

The caregivers in community health care often work alone and face client handling tasks that exceed their capabilities. Work site design is often poor and equipment is not always available. Community health care employers are obliged to provide a safe working environment for their workers under the OHSA. However, work done in a private residence is not covered under the OHSA.

Supervisors

Section 27 of the Act outlines the duties and responsibilities of supervisors. Employers must appoint competent people as supervisors. A competent person means a *person who is qualified because of knowledge, training and experience to organize the work and its performance, is familiar with this Act and the regulations that apply to the work, and has knowledge of any potential or actual danger to health or safety in the workplace.*

A supervisor shall ensure that:

- a worker uses or wears the equipment, protective devices or clothing that the worker's employer requires to be used or worn.

The supervisor shall:

- advise a worker of the existence of any potential or actual danger to the health and safety of the worker of which the supervisor is aware; and
- take every precaution reasonable in the circumstances for the protection of a worker.

A competent supervisor should also be trained in client handling techniques and ensure that all staff follow the acceptable procedures as outlined in the program.

Workers

Section 28 of the Act outlines the responsibilities of the worker.

A worker shall:

- work in compliance with the provisions of this Act and the regulations;
- use or wear the equipment, protective devices or clothing that the worker's employer requires to be used or worn;
- report to his or her employer or supervisor the absence of or defect in any equipment or protective device of which the worker is aware and which may endanger himself, herself or another worker; and
- report to his or her employer or supervisor any contravention of this Act or the regulations or the existence of any hazard of which he or she knows.

No worker shall:

- remove or make ineffective any protective device required by the regulations or by his or her employer, without providing an adequate temporary protective device and when the need for removing or making ineffective the protective device has ceased, the protective device shall be replaced immediately;
- use or operate any equipment, machine, device or thing or work in a manner that may endanger himself, herself or any other worker; or
- engage in any prank, contest, feat of strength, unnecessary running or rough and boisterous conduct.

Workers have a responsibility to follow the client handling procedures communicated in the client handling program and the individual procedures identified for each client. They also have a responsibility to use the equipment provided and identified as appropriate to a client.

The Act also gives workers three important rights:

- "Right to Know" on page 10
- "Right to Participate" on page 10
- "Right to Refuse" on page 10

Right to Know

Workers have a right to know what hazards they are being exposed to on the job. Workers or their representatives are entitled to the following:

- information, instructions and supervision to enable workers to protect their health and safety
- the identification of any hazard in the work and in the handling, storage, use, disposal and transport of any article, device, equipment or a biological, chemical or physical agent
- information supplied to the Joint Health and Safety Committee (JHSC) regarding death, critical injury, lost time, medical aid or occupational illness of workers
- injury statistics of similar workplaces for use by the JHSC or health and safety representative (H&S Rep). With respect to client handling, the JHSC should:
    - ensure all workers involved in client handling are informed of the client handling program and instructed in safe procedures and use of transfer and lift devices
    - track lost time and medical aid injuries specifically associated with client handling
    - know how their organization compares with other health care organizations (e.g., programs, equipment, injuries)
    - monitor the scope of violent incidents occurring during client handling

Right to Participate

The OHSA is widely administered through a principle known as the Internal Responsibility System (IRS). When the IRS is functioning effectively, management and labour work co-operatively as partners in promoting workplace health and safety. Although the internal responsibility system is a principle part of the Ministry of Labour's preferred method of occupational health and safety administration, it is not found anywhere in legislation.

Workers have the right to participate with their employers to identify health and safety hazards in their workplace and to recommend solutions through the JHSC. Workers should identify workplace hazards, including those associated with client handling.

Right to Refuse

The right to refuse unsafe work can be particularly worrisome for a health care worker faced with an obviously unsafe task of handling a client. A health care worker can refuse unsafe work if an impending refusal does not jeopardize the life, health or safety of another person or the action being refusing is not viewed as being inherent to his or her job.

2.2 Regulated Health Professions Act

The employer is obliged to assess all potential hazards and to establish procedures to protect the safety of employees. In refusing to handle a client, some health care professionals must also be aware of their responsibilities under the Regulated Health Professions Act (RHPA). Professionals such as registered nurses, registered practical nurses, physiotherapists and occupational therapists are regulated under this Act. The scope of practice and standards of practice incorporated in this Act are monitored by their respective colleges. If the standards of practice are breached, the person may be charged with professional misconduct by their college.

In health care, a principle known as the *therapeutic relationship* requires nurses to ensure that needed nursing services are provided to clients except in the following cases:

- the client requests that services be discontinued
- an alternative arrangement has been made
- clients have been given the opportunity to make alternative arrangements

When workers' rights under the OHSA conflict with the RHPA, the provisions of the OHSA prevail initially. Once the minimum requirements of the OHSA have been met, the other Acts come into force.

2.3 Occupiers' Liability Act

The Occupiers' Liability Act obliges the occupant of a residence to ensure that it is reasonably safe for persons to enter the premises whether the danger is caused by the condition of the premises or by an activity carried out on the premises.

Occupier's duty:

- **Section 3 (1)**
  An occupier of premises owes a duty to take such care as in all the circumstances of the case is reasonable to see that persons entering on the premises, and the property brought on the premises by those persons are reasonably safe while on the premises.
- **Section 4 (1)**
  The duty of care provided for in section 3 (1) does not apply in respect of risks willingly assumed by the person who enters on the premises, but in that case the occupier owes a duty to the person to not create a danger with the deliberate intent of doing harm or damage to the person or his or her property and to not act with reckless disregard of the presence of the person or his or her property.

Under this Act, clients have obligations to provide a safe workplace. This Act defines *occupier* as follows:

- a person who is in physical possession of a premises, or
- a person who has responsibility for and control over the condition of premises or the activities carried on there, or control over persons allowed to enter a premises.

2.4 Public Hospitals Act

The Public Hospitals Act Regulation 965 Hospital Management, specifies under Bylaws section 4(d) that the Board shall pass Bylaws that establish and provide for the operation of an occupational health and safety program for the hospital that shall include procedures with respect to:

- a safe and healthy work environment in the hospital
- safe use of substances, equipment and medical devices in the hospital
- safe and healthy work practices in the hospital
- prevention of accidents to persons on the premises of the hospital
- elimination of undue risks and the minimizing of hazards inherent in the hospital environment

This simply reinforces the organization's obligation to ensure the well being of its staff.

2.5 Health Care & Residential Facilities Regulation

The Health Care and Residential Facilities Regulation came into effect on June 1, 1993. The Regulation applies to hospitals, laboratories, mental health facilities, nursing homes, group homes, homes for the aged, facilities for developmentally or physically impaired persons and laundry and power plants located in these facilities. It does not cover health care provided in a client's home.

The Health Care and Residential Regulation is composed of 117 sections, many of which are also contained in the Industrial Regulation. There are no sections dealing specifically with client handling. The section of the Regulation that deals with Material Handling Equipment (s. 75-79) does not include *equipment used to lift, lower or transfer a person who is not a worker.* Therefore, the specifications the Regulation lays out for material-handling equipment does not cover client transfer or lift devices.

Sections 8 and 9 of the Regulation are unique to this Regulation only. These sections specify what measures and procedures should be considered to ensure the health and safety of workers through comprehensive preventative programs.

- **Section 8**. Every employer in consultation with the joint health and safety committee or health and safety representative, if any, and upon consideration of the recommendation thereof, shall develop, establish and put into effect measures and procedures for the health and safety of workers.
- **Section 9**.
  - **(1)** The employer shall develop the measures and procedures for the health and safety of workers established under section 8. The measures and procedures may deal with, but are not limited to the following:
    - Safe work practices
    - Safe working conditions
    - The proper use, maintenance and operation of equipment
    - The reporting of unsafe or defective devices, equipment or work surfaces
    - The purchasing of equipment that is properly designed and constructed
    - The use, wearing and care of personal protective equipment and its limitations
  - **(2)** At least once a year, the measures and procedures for the health and safety of workers shall be reviewed and revised in the light of current knowledge and practice.
  - **(3)**The review and revision of the measures and procedures shall be done more frequently than annually, if:
    - the employer, on the advice of the joint health and safety committee or health and safety representative, if any, determines that such review and revision is necessary or
    - there is a change in circumstances that may affect the health and safety of a worker.
  - **(4)** The employer, in consultation with and in consideration of the recommendation of the joint health and safety committee or health and safety representative, if any, shall develop, establish and provide training and educational programs in health and safety measures and procedures for workers, that are relevant to the workers' work.

2.6 Industrial Establishments Regulations (O. reg. 851)

Industrial establishments are defined by the OHSA as "...an office building, factory, arena, shop or office, and any land, buildings and structures appertaining thereto."

The Industrial Establishments Regulation applies to all workplaces meeting this definition and in the health care sector includes workplaces that are not licensed health care facilities to which the Health Care and Residential Facilities Regulation applies.

Because of the title of the regulation some people in health and community care workplaces may not be aware that this regulation applies to them. The Industrial Establishments Regulations contain specific safety standards that must be complied with in workplaces to which the regulation applies. Some of the provisions contained in the regulation may not be applicable to every workplace, but employers in health and community care organizations must be familiar with the regulations to ensure that they comply with the sections applicable to them.

2.7 Canada Labour Code

Part II of the Canada Labour Code governs the health and safety of health care workers who fall under federal jurisdiction. Workers under the Canada Labour Code have similar rights as those under the OHSA.

Right to Participate

Workers have the right to work through their JHSC or H&S Rep to identify hazards in their workplace and to recommend controls to eliminate or reduce them.

Right to Refuse

The right to refuse is similar to the provincial legislation. If a worker has reasonable cause to believe that the use or operation of a machine or device constitutes a danger to himself, herself or another employee, or that a condition exists in any place that constitutes a danger to the employee, he or she may refuse to work.

This right is limited when the refusal would directly endanger the life, health or safety of another person or where the danger is inherent in the worker's work.

Duties & Responsibilities of Employers

Employers have a duty to ensure that the health and safety of every person employed by the employer is protected. Some specific duties that have implications for client handling include:

- Investigating, recording and reporting to the authorities all accidents and other hazardous occurrences known to the employer.
- Ensuring, in the manner prescribed, that employees have safe entry to, exit from and occupancy in the workplace.
- Providing each employee with the information, instruction, training and supervision necessary to ensure the health and safety at work of that employee.
- Ensuring that each employee is made aware of every known foreseeable hazard in the area where the employee works.

Duties & Responsibilities of Workers

Employees are responsible for taking all precautions to ensure their own health and safety and the health and safety of their co-workers.

Employees shall:

- Follow prescribed procedures with respect to the health and safety of employees.
- Take all reasonable precautions to ensure the health and safety of themselves, other employees and any other person likely to be affected by the employee's acts or omissions.
- Comply with all instructions from the employer concerning the health and safety of employees.
- Co-operate with the health and safety committee.
- Report to the employer any thing or circumstance in the workplace that is likely to be hazardous to the safety or health of the employee, the other employees or other persons granted access to the workplace by the employer.
- Report in the manner prescribed every accident or other occurrence arising in the course of or in connection with the employee's work that has caused an injury to the employee or to any other person.

2.8 Food & Drug Act/Medical Devices Regulation

The Medical Devices Regulation falls under the *Food and Drug Act*. A medical device is "any article, instrument or apparatus which is sold or presented for use in the diagnosis, treatment or prevention of disease or abnormal physical state, for correcting human body functions..." A client lifting device is not currently classified as a medical device. The only time that a client lifting device is classified as a medical device is when it is an integral part of a bathing system.

2.9 Canadian Guidelines and Standards

Guidelines and standards also provide rules but they are not legally enforceable unless the document is specifically referred to in a piece of legislation. However, inspectors and employers often use guidelines and standards when they are establishing organizational standards and practices.

Canadian Standards Association

The Canadian Standards Association (CSA) has a standard called Mechanical/ Electromechanical Lifting Devices for Persons (CAN/CSA Z33.5/97). In 2002, the standard was revised to a Technical Information Letter where specifications for certification are detailed. This change now requires the manufacturers of lifts to have their lifts tested to meet the certification standards.

Module 3: Musculoskeletal Injuries (MSIs) and Ergonomics

Understanding the structure and function of the musculoskeletal tissues helps caregivers understand what happens when these tissues are overloaded. This section reviews the basic anatomy and physiology of which caregivers should be aware when assessing and planning for client transfers, lifts and repositions. If caregivers understand the tissue stress involved with an unsafe transfer or lift, they may think twice about the damage that they are placing on their bodies when taking unsafe "short-cuts". Ergonomic principles are introduced to increase the understanding and importance of creating a working environment that matches the worker's abilities.

3.1 Anatomy

Spine

In normal posture, the spine is curved in the shape of a gentle "S". When this curve is exaggerated by poor posture, the delicate suspension system is altered, resulting in strain on the back structures.

Using safe body mechanics means maintaining the body in the best position possible to prevent gravity, which acts on body weight and load, from causing stress or strain on the back. Using unsafe body mechanics, such as bending at the waist with the knees straight, causes the body to be poorly balanced. This forces the small and weaker back muscles to work too hard to keep the body balanced, creating a high risk of back injury.

Shoulder

During client handling activities, caregivers are susceptible to increased wear and tear of their shoulder joints due to repeated reaching. This causes awkward positioning of the shoulder and generates high forces. The "rotator cuff" is a common term used to describe the four supportive muscles of the shoulder girdle. These muscles stabilize this "ball and socket", multi-directional joint that allows us to extend, flex, abduct/adduct, and externally/internally rotate our arms.

Shoulder MSIs have become a common incident during client handling activities due to the tasks and workloads that caregivers place on these joints.

The supraspinatus muscle is one of the four rotator cuff muscles that is prone to tendonitis. It is a small stabilizing muscle that acts to externally rotate the shoulder joint. This muscle is also an important postural stabilizer for the mid back. Aging causes this muscle to weaken, stretch and allow for the humerus (arm) to rotate inward, therefore adding to the *round back posture*. This progressive forward posture takes its toll on our necks. The shoulder and neck joints are also related in terms of postural changes and tendonitis.

Table 1. Anatomy

Component	Function	Structure
Spine 	The spine houses and protects the spinal cord, maintains the body in an upright position and gives the body flexibility.	The spine is divided into three segments: neck (cervical spine), trunk (thoracic spine), and low back (lumbar and sacral spine). It is made up of 33 bones (vertebrae) that connect the head to the pelvis. Twenty-four of the vertebrae are movable: seven in the neck; twelve in the trunk; and five in the low back. At the bottom of the spine, five bones are fused together to form the sacrum and four bones are fused together below that to form the coccyx (tailbone). From the side, the spine has an S curve –the cervical vertebrae curve forward, the thoracic vertebrae curve backward and the lumbar vertebrae curve forward. The low back curve balances the pelvis and spine over the legs for upright walking.

Table 1. Anatomy

Shoulder Joint 	Shoulder joint: The glenohumeral joint, commonly called the shoulder joint, is a ball-and-socket joint made up of the top, rounded portion of the humerus—the ball–and the dish-shaped part of the outer edge of the scapula, called the glenoid. The shoulder is the most mobile and flexible joint in the human body and it allows us to control and move our arms.	
Humerus	The humerus is the long thick bone in the upper arm.	The shoulder girdle consists of the clavicle, scapula, and humerus. The clavicle or "collar bone" crosses the first rib and extends to the acromion of the scapula. The scapula is a thin, flat, triangular plate of bone surrounded on both surfaces by the muscles of the back and rotator cuff. The humerus is the long bone of the upper arm and it articulates with the gleniod cavity of the scapula.
Scapula 	The scapulas are the large, flat, triangular bones that form the back part of the shoulder. They are covered by muscles on both surfaces which attach to the ribs and spine and then to the muscles of the arm.	
Clavicle 	The clavicle bone or "collar bone" connects the scapula bone in the shoulder to the sternum in the chest. Its function is to hold the shoulder upward and backward.	
Vertebrae 	The vertebrae surround the spinal cord and protect it from injury. Each vertebrae is drum-shaped at the front. This strong drum-shaped portion supports the weight of the body. Attached to the back of the drum-shaped portion is a ring of bone through which the spinal cord passes. This ring of bone has three projections, one going straight back and one to each side. Muscles and ligaments are attached to these projections. The vertebrae sit one on top of the other, with a disc between the drum-shaped portions. Discs are only found in the cervical, thoracic and lumbar areas. There are no discs in the coccyx and sacral areas except between the lowest lumbar vertebrae and the first sacral vertebra.	The vertebrae are drum-shaped in the front so that they support the body weight. They have three projections: one projects straight back and one projects to each side.

Table 1. Anatomy

Discs 	The main function of the discs is to act as shock absorbers. They also act as spacers between the vertebrae and are attached firmly to the vertebrae above and below, holding them strongly together.	The *annulus* is the outer part of the disc and surrounds the nucleus. It is made up of strong, crisscrossing elastic fibres. Because these fibres criss-cross, only half of them are activated when "twisting". When these fibres tear, they allow the nucleus to bulge into the spaces left by the tear, causing pain and leading to a herniated disc. The centre of the disc is the *nucleus*. When the discs are young and healthy, they are made up of a jelly-like substance that contains about 88% water. After 17 years of age, the percentage of water decreases and the discs lose their ability to function as shock absorbers.
Facet Joints	Facet joints, together with the discs, allow movement in the spine.	The facet joints are similar to all other joints: they are covered with cartilage and are encased in an elastic capsule that contains fluid. They are approximately the size of a finger joint. Facets are found on either side of the vertebrae and interlock with the facets of the vertebrae above and below to form facet joints.
Ligaments	Ligaments are designed to prevent excessive or abnormal movement. They connect and stabilize the vertebrae and any other joints of the skeletal system.	Ligaments are tough elastic fibres. They are found in front of, behind, at the side of and between the bones.
Back, Abdominal & Pelvic Muscles	Both the back and abdominal muscles have important functions related to the spine. Back Muscles: The main function of the back muscles is postural, keeping the vertebrae aligned and balanced. They are not designed for lifting. Abdominal and Pelvic Muscles: The abdominal muscles support the abdominal contents and spine. They maintain the pelvic tilt and protect the low back.	The back muscles are shorter, smaller, and much less powerful than leg muscles. They include the multifidus and thoracolumbar fascia (TLF) muscles that are found within the deep layers. Abdominal and Pelvic Muscles: The three sets of abdominal muscles run vertically, transversely and obliquely. They are broad, flat structures. The pelvic muscles include the diaphragm and sphincter muscles also known as the keegle muscles.

Table 1. Anatomy

Shoulder Muscles of the Rotator Cuff • Supraspinatus • Infraspinatus • Subscapularis • Terres Minor	The small postural muscles of the shoulder girdle support and stabilize the ball and socket joint of the shoulder.	The four rotator cuff muscles, also known as the "guardian" muscles, stabilize the shoulder joint. These small muscles allow flexion, extension, abduction, adduction, and internal/external rotation of the shoulder.
Spinal Cord Nerves	The spinal cord, nerves, skin, muscles and joints transfer sensory information to and from the brain. The brain reacts by sending messages to move the muscles.	The nervous system receives information with regard to changes occurring in the environment of the body by initiating and regulating appropriate responses.
Femoral and Sciatic Nerves		Femoral and Sciatic Nerves: The femoral and sciatic nerves are the large nerves that branch out from the lower vertebrae. They supply the muscles and skin of the leg and foot.
Ulnar Nerve		Ulnar Nerve: The Ulnar nerve, also known as the "accessory nerve", is the nerve of fine movements of the muscles of the hand.

3.2 Static and Dynamic Muscle Work

Most muscles are arranged around the joints of the skeletal system. The role of muscles are to produce an action, whether it be extension of the arm (straightening), or flexion of the low back (bending). The term *synergist* refers to co-contracting muscles working together or antagonists muscles working opposite or against each other. Muscles have an opposite reactive movement toward each other. When one muscle group contracts or shortens (biceps), the opposite muscle group (triceps) relaxes and lengthens. This can be compared to levers. Since muscles are alternately contracting and relaxing, there is good blood flow through them and their related structures. This is an example of dynamic muscle work, whereby the body part is loaded and unloaded.

Static muscular action takes place when muscles on both sides of the joints contract at the same time to keep a joint stable and in a fixed position (e.g., holding a bucket of water). This is called an isometric contraction or static loading. The body part is continuously loaded over a defined period of time, and the muscle is never completely shut off. A static contraction compresses the blood vessels, restricting circulation and therefore, allowing less nutrition to the tissues. When muscles contract in this way, they fatigue, cramp faster and need more recovery time than during dynamic muscle activity. An example of a static load is the continuous holding of a client over a given time period.

Static and dynamic muscle work can also be combined when performing tasks. An example of this type of work includes giving a client a bed bath, where the back and upper body are in motion and working dynamically, but the hand is constantly gripping a facecloth and working statically.

3.3 MSIs

MSIs can be defined as injuries or illnesses of muscles, tendons, ligaments, bursa, nerves, joints, bones and supporting blood vessels in either the upper or lower extremities (arms and legs) or the back. They can result from a sudden single event (such as a fall) but, more often, they develop over a period of time from activities that involve repetition, excessive force and awkward postures. MSIs are also referred to as repetitive strain injuries (RSIs), cumulative trauma disorder (CTD) and overuse syndromes.

Clinical diagnoses of MSIs include, but are not limited to:

- low back pain
- herniated discs
- sciatica
- tendonitis, including epicondylitis (tennis elbow) and rotator cuff tendonitis
- deQuervain's syndrome
- nerve entrapments (carpal tunnel syndromes)
- neurovascular syndromes (white finger disease)
- fractures
- dislocations

Despite growing publicity about MSIs, the number of incidents continue to increase at an alarming rate. An increasing number of MSIs are occurring within the health care sector for many reasons:

- Clients are being cared for in their homes, which often lack space, adjustable beds and other ergonomically designed equipment. As a result, there is an increase in the force and awkward postures used to care for these clients.
- Clients are being admitted to long-term care organizations and require higher levels of care.
- Organizations lack effective and comprehensive client handling programs.
- Workers are reluctant to report problems.
- Aging workers increase the risk of MSIs.

Common MSIs

Back pain affects most adults at some point in their lives. Fortunately, most episodes are fairly brief and are not incapacitating.

There are many causes of low back pain and many names used to describe back conditions. You may have heard of diagnoses such as lumbar sprains/strains, pinched nerves, slipped discs, degenerative disc disease and sciatica (i.e., when the pain extends down the leg). Most lifting and twisting injuries are strains and sprains to the muscles, ligaments and the small joints of the low back. Injuries to the discs between the vertebrae of the back are relatively uncommon.

Degenerative disc disease is not a disease; it is part of the normal aging process occurring over many years. After about age 17, the water based, inner nucleus of the discs in the spinal column gradually dries and flattens. The discs therefore lose height and the vertebrae move closer together. This causes wear and tear on the facet joints. When the elastic fibres of the annulus dry out, they tear more easily. Awkward postures (such as twisting), repetitive movements and excessive forces accelerate this process on the spine.

Some people refer to a herniated disc as a *slipped disc*. Discs do not slip out of place because the ligaments that surround the spine tightly secure them. Once there is a tear in the outer part of the disc (annulus), the jelly-like nucleus *pulposus* may push right through the outer wall of the disc, like a thinning balloon, and put pressure on the nerves, muscles, ligaments and joints of the back. This may cause severe pain in the back and/or the leg, called sciatica. The sciatic nerve roots connect to the lower body. When they are irritated, the pain radiates to the affected body parts: buttocks, knees and feet. Increased and repetitive flexion or bending forward of the spine causes increased force on the nucleus of the disc. All of the pressure is forced to the back of the spine. It is the thousands of bends (e.g., sitting, bending and lifting improperly), that cumulate the effects of wear and tear on the strong outer annulus layer that eventually causes the annulus wall to thin out, allowing the nucleus to bulge or herniate.

Back sprains and strains are the most common injuries affecting the connective tissues of the back. Strains and sprains occur when the muscles and ligaments of the back are overused and over stretched. This can occur during client handling activities, especially when risk factors such as forceful exertions and repetitive awkward postures occur in combination. Client handling cannot be as controlled or predictable as material handling. Therefore, client handling allows for more opportunities for back injuries to occur if they are not performed safely.

Other MSIs

Tendonitis, meaning "inflammation of the tendon" results when repetitive movements and awkward postures cause certain degrees of tears within the tendons due to overuse, wear and tear and fatigue. Because tendons have almost no blood supply, they heal very slowly. Tendonitis is most common in the hand, wrist, forearm and shoulder. The inflamed tendons swell and become painful. Tennis elbow, also called epicondylitis, is a tear of the tendon attaching a muscle to the bone around the elbow joint.

Quick Latin anatomy lesson

- **itis = inflammation**
- **arth = joint**
- **osteo = bone**

A sprain results when ligaments are over stretched and the ligament fibre tears. Like tendons, their blood supply is poor and, as a result, they take a long time to heal. Ligament sprains are often quite painful. Sprains may develop quickly (e.g., going over on your ankle), or may be the result of repeated small injuries accumulated over time.

A strain is the micro tearing of muscle tissue. Sometimes when muscles cramp or go into spasm, there may be nothing abnormal with the muscle itself. Rather, the muscle is trying to protect an underlying injury. Strains can occur due to weakness, fatigue and over exertion during activities such as client handling or due to a poor warm-up before exertion.

Rotator cuff tendonitis usually occurs when there is increased out-of-range motion of the shoulder girdle. An example of this repetitive movement would be working above your head or pitching and throwing a baseball. Extreme reaches tax the small rotator cuff muscles, namely the supraspinatus, and cause pain, weakness and decreased function of the shoulder.

Symptoms of carpal tunnel syndrome (CTS) include numbness and tingling of the first two fingers and thumb. CTS occurs when the median nerve becomes pinched or irritated as a result of the proximal swollen tendon sheaths running through the cramped carpal tunnel. The flexor tendons of the fingers, the median nerve and blood vessels all pass through the small carpal tunnel canal. Imagine placing uncooked spaghetti noodles within the diameter of a garden hose. Now, try to place the same amount of cooked noodles within the same diameter. The cooked noodles do not fit in the space. This is analogous to larger, inflamed tendons causing increased pressure on the nerves, all enclosed within the same, small, carpal tunnel space.

Osteoarthritis, meaning inflammation of the joints, is the most common joint disease and is the single greatest cause of lost time from work. The cartilage found in joints wears out due to repetitive strain or trauma such as a sports injury. As the joint ages, there may be swelling at the joints, pain, instability and limited range of motion.

3.4 Treatment of MSIs

It is important that workers and supervisors recognize that continuing to work with discomfort can make the injury worse and can create chronic conditions. This is particularly true for MSIs affecting the shoulders, elbows, wrists and hands. Rest is an important part of treating some conditions.

When signs and symptoms of an MSI first appear, it is imperative that the caregiver be referred to an appropriate health care practitioner. The sooner they can get treatment the better. Most people ignore the first few weeks of symptoms and the longer a caregiver waits to get treatment, the longer the recovery process and the more damage to the tissues. Act on any symptoms quickly. It is important to choose a health care provider who is familiar with the causes of MSIs and the tasks that caregivers must perform in their workplace. An immediate treatment, which can be performed when an injury occurs, is to hold ice on the affected area for 12-15 minutes, as often as possible throughout the day.

Once pain and discomfort are relieved and function is restored, the caregiver is ready to return to work. However, if the caregiver returns to an unchanged workplace, re-injury may occur. It is important to assess task demands to identify and change the risk factors that caused the injury in the first place. This is where the science of ergonomics plays a part. Workplace components must be designed or redesigned to reduce excessive demands on the caregiver's body. Ergonomists and kinesiologists specialize in these types of assessments.

Some Examples of MSIs

Table 2 lists examples of musculoskeletal injuries.

Table 2. MSI examples

INJURY/DISORDER	SIGNS & SYMPTOMS	TYPICAL CAUSES
Back Injuries Strains and sprains of muscles and ligaments or pressure on the discs between vertebrae. Bulges or tears of outer disc fibres. Wear and tear on facet joints. Other disorders.	Pain in the back or referred down the leg. Restricted movement of back. Additional signs and symptoms dependent on type of disorder.	Manual lifting and handling (e.g., caregiver transferring client). Awkward back posture (e.g., retrieving linen from a laundry cart). Prolonged static back postures (e.g., computer operator sitting for extended periods of time). Whole-body vibration (e.g., ambulance personnel sitting in a vibrating seat while driving).
Bursitis Inflammation of the bursa (sac) found around some joints, such as the shoulder, causing an increase in the fluid within the bursa	Swelling at the site of the bursa. Pain in the affected area when the joint is moved.	Forced and repetitive movement (e.g., x-ray technicians moving overhead equipment). Awkward reaches (e.g., pulling trays along the dietary belt).
Carpal Tunnel Syndrome Pressure on the nerve that passes through the carpal tunnel.	Tingling, pain and numbness in the thumb and fingers, especially at night.	Repetitive work (e.g., entering data into a computer using awkward wrist postures). Repetitive wrist movements and use of force (e.g., dietary tasks). Work requiring force using awkward wrist postures (e.g., using power tools or retractors).
Epicondylitis Inflammation of the area at the elbow where the tendons attach to bone (e.g., tennis elbow and golfer's elbow).	Pain and swelling at the site of the disorder and when using the hand and arm. Unable to hold a coffee cup.	Repetitive extension and flexion of the elbow with rotation of the forearm. Often requiring additional force (e.g., folding laundry or preparing and/or serving food).
Muscle Strains Tears and inflammation in fibres of muscles.	Local pain and swelling. Decreased ability to use muscle.	Overuse of muscles (e.g., all health care workers).
Rotator Cuff Tendonitis of one of 4 muscles of the shoulder (supraspinatus).	Local pain at the front of the shoulder. Decreased use of the shoulder.	Overuse, repetitive outer range, above the head movements.
Tendonitis Inflammation of tendons and tendon-muscle junctions.	Pain, swelling, tenderness or redness of area around tendon.	Repetitive movement of the arm and shoulder with the arm in an awkward posture (e.g., nurses, x-ray technicians).
Tenosynovitis Inflammation of tendon sheaths.	Aching, tenderness, swelling, pain and difficulty using part affected.	Repetitive work (e.g., analytical lab work). Can be brought on by sudden increases in workload or by introduction of new process.
Ligament Sprains Tears and inflammation of ligament fibres.	Pain, swelling and limitation of joint movement.	Awkward postures forcing over-stretching of the ligaments (e.g., turning the ankle during a fall or slip).

3.5 Prevention

Prevention initiatives should include the practical application of ergonomic considerations in client handling techniques.

Ergonomics

Ergonomics is simply defined as the study of work. The practice of applying ergonomics involves matching a worker's capabilities with their job demands. This is done by improving the design of workstations, equipment and tools and by reorganizing work tasks. When workplace components lack ergonomic design, the results are excessive demands on the body and, as a result, MSIs.

Participatory ergonomics provides a framework for involving staff in the application of ergonomic principles and technology. It is used to create positive change in the workplace by identifying problems and developing improvements through a process of consultation with all staff in the workplace. For example, when a new piece of equipment is purchased, staff should provide feedback on the features and use of the new equipment, on how the equipment is introduced and how staff are trained.

One way to start a participatory ergonomics program is to establish an ergonomic committee with membership comprised of various levels of staff in the organization.

Some organizations have included a set weight limit for manual lifting in their policy. However, to set a weight limit, it must have been agreed upon by all workplace parties. There is no legislated weight limit. The National Institute of Safety and Health (NIOSH) has developed guidelines that include a maximum acceptable weight of 23 kg for lifting objects under ideal circumstances. This guideline does not include the lifting of people. Because of the risk factors involved in lifting people, the policy for client handling should not set weight limits but should instead emphasize a policy of no total manual client lifting.

Physical Demands Analysis (PDA)

A PDA is the first step in assessing the level of risk associated with physical job tasks. This is the basic ergonomic tool that documents the physical requirements of a job. By observing the physical tasks performed in a job description, tasks that may pose a hazard to the worker can be identified. This is an important step in preventing MSIs. A qualified professional such as a kinesiologist, occupational therapist or ergonomist should perform a PDA. These professionals know the proper methods to use for the assessments and are equipped with the proper tools for analysis.

PDAs are assessments that focus on essential tasks that must be performed within a certain job description. Topics included in a PDA are:

- Strength Demands – manual lifting, pulling/pushing, carrying, handling, fingering/gripping and reaching
- Mobility Demands – sitting, standing, walking, running, climbing, balancing, bending and stooping
- Sensory/Perception Demands – visual needs, hearing, reading, writing and speech
- Environmental Demands – indoor/outdoor, hot/cold, vibration, noise, dust and confined spaces
- Work Organization Demands – shift work, working alone/team, travelling and public interaction

All of these factors represent the physical aspects of any job. Health care workers may perform many of these essential tasks daily. If caregivers perform tasks at a high frequency and with a heavy load, these tasks could be a hazard and ergonomics could play an important part in preventing workplace injuries.

Work Organization

Work organization involves:

- time frames allocated to the tasks
- sequence of the tasks
- length of a shift
- rotation of shifts
- scheduling of shifts
- ratio of staff to clients
- frequency and amount of overtime
- scheduling of rest breaks

Tasks should be organized so that not all client handling tasks are done within a short period of time. These tasks should be spread out among other tasks throughout the day. For example, some organizations require that all of the clients be up and dressed by 8:30 a.m. This requires that the caregivers starting their shift at 7:30 a.m., perform the heaviest tasks for the first hour of their job, at a time when they are most vulnerable to injury. Tasks can be distributed among several workers to reduce demands. This is particularly relevant when developing a bathing schedule.

The design of shifts has a great impact on the overall demand on workers. Factors that should be considered when designing shifts are the:

- length of each shift
- length of the shift cycle
- number of night shifts in a row
- number of days off following the night shift
- rotation pattern of the shifts, such as mornings, afternoons, nights

Designing shift work schedules is not an easy task. Although 12-hour shifts are common, some literature recommends eight-hour shifts. Other research suggests that rapid rotation from morning to afternoon to night shift has less negative physiological effects on caregivers than a long shift length. Factors such as noise, extreme temperatures, dust, exposure to toxic substances, monotony, high physical and mental demands and, conversely, low demands also have to be considered in designing shift work.

Psychosocial Factors

Stress can be caused by factors from inside and outside of the workplace. Poorly designed schedules and unrealistic pacing increase the potential for work-related stress. Some studies reveal that stress is related to the amount of responsibility and control a person has in their job.

To reduce stress in the workplace, most organizations focus on providing personal coping techniques, such as relaxation, instead of examining the workplace factors causing the stress. Research has found that personal coping strategies are ineffective without changing the psychosocial work factors.

To create a healthy organizational culture, all workplace parties must be involved in implementing changes that:

- increase employees' autonomy or control
- increase employees' job satisfaction
- increase employees' skills
- increase social support in the workplace (both supervisory and co-worker)
- improve physical working conditions
- make healthy use of technology (ergonomically designed client handling equipment)
- provide a reasonable balance of job demands

The employer is responsible for providing a healthy and safe environment for their employees. When designing jobs and tasks, the employer must take into consideration all of the possible risk factors. It is important to allow staff input in designing and/or changing the work organization.

Supervisors should introduce workers to changes in new procedures and practices in a measured and methodical way in order to minimize stress and enhance adoption of change. Organizational support of training and time for implementation help facilitate acceptance and increased use of the new practices. Clear policies and procedures also enhance compliance.

Biomechanics

Client handling procedures involve three types of injury risk:

- Risk of overstretching of muscles due to awkward postures
- Risk of overexertion
- Risk of cumulative or repetitive damage

The use of correct biomechanics or body mechanics combined with a sound knowledge of appropriate client handling techniques significantly reduces the risk of MSIs associated with client handling.

Most training programs designed to reduce the risk of injury associated with transferring and lifting objects are based on the concept of developing a set of *rules* that are to be applied regardless of the situation. However, transferring, lifting and repositioning clients is not the same as lifting boxes in a warehouse. Transferring, lifting and repositioning clients involves several integrated factors that make the application of a rigid set of biomechanical rules impractical.

The purpose of this section is to provide a practical approach to the application of biomechanical principles. It is the responsibility of the health care providers to implement each of these biomechanical principles to the best of their ability given the presented client handling procedure.

The HCHSA Handle with Care™ program recognizes that there are several factors that reduce the risk of injury associated with client handling procedures. However, the focus is on three basic biomechanical principles, which, if applied, significantly reduce the frequency of MSIs associated with client handling procedures. The three basic biomechanical principles are as follows:

- Keep the Weight Close to the Body.
- Promote Neutral Spine Alignment.
- Reduce Spinal Twisting.

Keep the Weight Close to the Body

This is the most important of the three principles. A transfer, lift or reposition performed at arm's length, places ten times the load on the spine as performing a transfer, lift or reposition with the client held close to the body.

Performing client handling techniques with the caregiver positioned away from the client, places the body out of balance and may lead to an increase in accidental injury to the caregiver (i.e., slips, twisting of the spine).

Transfers, lifts or repositions performed with the client positioned further away from the caregiver forces that caregiver to adopt a flexed spine. A flexed spine is not a neutral spine and thus increases the risk of injury.

Promote Neutral Spinal Alignment

Neutral spinal alignment occurs when the natural curves of the spine are maintained. A neutral spinal position equalizes the stress through all structures of the spine. When the spine deviates from a neutral position, increased stress is placed on specific spinal structures. For example, performing client handling procedures with a flexed lumbar spine places increased stress on the discs of the low back.

Don't worry if it is not possible to maintain a perfectly neutral spine for all client handling procedures. Injuries associated with a deviation from a neutral spinal position are usually the result of repetitive procedures. The idea is to adopt a neutral position as much as possible.

A neutral spine position is accomplished by bending the knees and hips. Bending the knees and hips also enables the caregiver to use the stronger leg muscles to assist

with the client handling procedure. If the caregiver does not bend their knees and hips or is too far away from the client, a neutral posture cannot be achieved. During all bending and lifting, the caregiver should tuck in their trunk muscles (inner unit). This "tucking in" allows for the neutral position. When repositioning a client in bed, the caregiver should try to place one knee on the bed to ensure stronger support to the low back.

Reduce Spinal Twisting

Rotating or twisting during a client handling procedure places increased stress on the structures of the spine. Repetitive twisting movements create excessive shearing forces on the discs and surrounding structures. The discs of the vertebrae have fibres that run in an oblique (criss-cross) pattern throughout the formation of the outer annulus layer. When we twist to one side, only 50% of the annulus fibres around the disc are able to take on the force (because of their pattern), therefore we are relying on 50% of weak connective tissue to help us lift that 150 lb. client. Over time, this twisting movement weakens the structures of the discs leaving them more susceptible to an injury such as a herniation or bulge.

The best method to reduce twisting movements of the spine is to pivot the feet and tuck in the trunk area during a client handling procedure. If this is not possible, then a viable alternative is to turn the lead foot in the same direction as the move. Some trainers refer to this as the *nose and toes* concept (at the start of the lift/transfer, the toes of the lead foot are pointed in the same direction as the nose is pointing when the lift/transfer is completed).

Other Factors

Other factors to consider are:

- Plan ahead
- Lift with the legs
- Use correct posture
- Maintain a stable base of support

Plan Ahead

Planning ahead ensures that all factors are considered before the client handling procedure is attempted. Factors to consider include, but are not limited to, the following:

- Is the path of the procedure clear?
- Is the shortest possible distance for the procedure being used?
- Is the equipment being used/set up properly (i.e., wheelchair brakes set, wheelchair foot rests removed)?
- Should mechanical aids be used to assist?
- Are the caregivers certain of the client handling procedure to be used?
- Has the caregiver conducted a client mini assessment prior to the client handling procedure?
- Has the working height been adjusted where possible?
- Is the caregiver wearing supportive footwear?

Lift with the Legs

Using the larger, stronger muscles of the legs and hips to assist with the client handling procedure reduces the risk of injury. The leg muscles are capable of generating more force than the smaller back muscles. Using these leg muscles is only possible if the caregiver bends the knees and the hips, tucks in the trunk, and has a secure grip before initiating the client handling procedure.

Again, if you are repositioning over a bed or bathtub, lift and bend one knee up onto the surface to increase the neutral posture of the lower and mid back.

Maintain a Stable Base of Support

Ideally the feet should be placed approximately shoulder width apart and one foot should be placed in front of the other to provide a stable base of support. It is easier for the caregiver to lose their balance if the feet are less than shoulder width apart and are not placed in front of one another. Wearing proper supportive footwear also adds to the stability of the body. Make sure floor surfaces are clear and clean.

Posture

Use correct posture is an important aspect of maintaining a healthy spine. But what is correct posture?

Unfortunately, many back care programs incorrectly imply that in order to maintain a healthy and pain free spine it is necessary to maintain the *ideal* posture throughout the entire day. This is not only impractical (try working at your desk without bending your neck) but it can also become quite uncomfortable. Any position, even those that are considered ideal can become uncomfortable if sustained for long periods of time. The body needs to move in different positions throughout the day. It is a good idea to counteract one posture with the opposite. If you sit all day, make sure you stand or walk at lunch or during your breaks.

Rules for safe lifting

You must use the following rules to ensure safe lifting:

- Always consider the use of a mechanical aid first.
- Use the powerful leg muscles and the large hip and knee joints while lifting.
- Tighten the abdominal and pelvic muscles to stabilize the spine and pelvis.
- Keep the client or object you are lifting close to your body when lifting. This makes the work easier and minimizes the strain on the lumbar spine.
- Avoid reaching over your head to lift. This puts strain on the facet joints at the back of the spine.
- Lift only to waist level. Place your feet firmly on the floor about shoulder width apart, so they create a wide base (about 30 cm).
- Place one foot in the direction of the lift and then pivot both feet in this direction while moving. Avoid twisting your back.
- Grasp the client or object firmly using the palms of your hands.
- Lift in stages if necessary. If the person or object slips, lower them gently to the floor while tightening your abdominal muscles and avoiding rotation.
- Remember that planning rhythm and timing are important in making a safe lift. Appoint a leader, the person who carries the heaviest part of the load. The leader gives the signals to lift, move and lower.
- Stand upright and bend backward five or six times after lifting.
- Keep your body in good condition.

There is no such thing as a "perfect" lift. There are always occasions when reaches or lifts are awkward and require you to twist or to be in a position where you cannot properly bend your knees. The point to remember is that when you can lift safely and are in the correct position (i.e., in front of you), make sure that you continue to follow the rules. Whether the object is 1 lb. or 25 lbs., always bend your knees and tuck in at the trunk. It is not the weight of the object that harms your tissues, it is the repetitive movement of bending at the lower spine, day-in and day-out, that causes wear and tear on your tissue.

Our spines are designed to move on a regular basis. No single posture is correct for a long period of time. However, activities at work and at home often require us to use postures that place repeated or sustained stress on the same structures. If these positions or postures are not interrupted on a regular basis (every 20 minutes), the result can be pain and discomfort.

The secret is to balance the loads that you place on your spine. This is accomplished by interrupting our activities on a regular basis and returning to a correct or neutral posture on a regular basis.

One analogy is to think of your spine as a bank account. Most of us spend more time bending our spine forward more than backward. This would be considered a withdrawal to our spine. In this example, a healthy spine is maintained by making a deposit to our spine by bending backward to a neutral position. The opposite is true for people who spend most of the day with their spine bent backward (i.e., ceiling painters). For these individuals, the withdrawal on their spine is bending backward and the deposit is bending forward to a neutral position. Just like your bank account, your spinal account should not become overdrawn.

Pregnancy

Many caregivers work during pregnancy and return to work after the birth of their babies. Before and after pregnancy, caregivers must pay extra attention to all aspects of body mechanics and posture, and must perform proper transfer, lift and repositioning techniques. Hormones secreted during pregnancy make the ligaments around joints softer (looser) than usual in preparation for the delivery of the baby. The caregiver's muscles must be strong in order to compensate for this temporary decrease in joint support from the ligaments.

Obviously, it is difficult to keep the person/object being lifted close to the body when pregnant. The leader must assign an appropriate task to the pregnant caregiver if they are assisting with a client transfer, lift or repositioning. The caregiver must be sure to strengthen her abdominal muscles by exercising after the birth.

Balance

Balancing the loads on your spine can be as simple as standing from a seated posture frequently throughout the day. When standing or sitting with your back and neck in proper posture, or what is also called neutral posture, you have three gentle curves in your spine. The neck and low back curve slightly inward (lordosis) and the mid back curves slightly outward (kyphosis). A neutral or correct posture requires that your chin be tucked in, shoulders back but relaxed and the pelvis level. In this posture there is minimal stress and strain on the spine.

Dr. Alf Nachemson's Postural Study revealed that:

- Lying on your back increases the force on the spine to 25%
- Lying on your side = 75% increase
- Standing = 100% increase
- Standing and bending forward with weight = 220% increase
- Sitting upright = 140% increase
- Sitting and bending forward = 185% increase

Be aware of the different postures throughout your day at work, and at home.

The first frame of Figure 6 shows correct posture and the associated impact on vertebrae. The second and third frames of Figure 6 show poor posture and the associated impact on vertebrae. (Poor posture is usually the result of weak back and stomach muscles.)

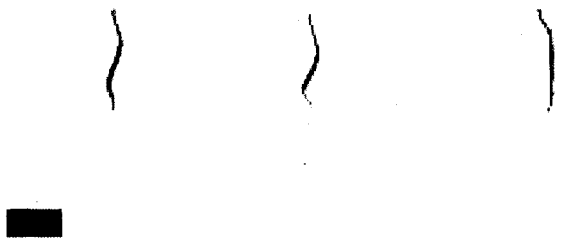


Figure 6. Comparison of Correct and Poor Posture

Figure 7 shows proper posture as a result of strong back and stomach muscles.

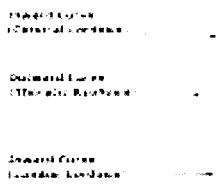


Figure 7. Correct Posture

Individuals who habitually adopt poor posture for extended periods of time can predispose the spine to injury and pain. Sustaining a poor posture for a prolonged period of time is often associated with weak stomach and back muscles. Stiff trunk and hip muscles also contribute to poor posture. The muscles in the back and hip need to be strong to support the spine. Muscles in the trunk and legs need to be stretched in order to maintain flexibility and make proper posture more comfortable and easier to maintain.

Standing places less pressure on the intervertebral discs than sitting. After standing for prolonged lengths of time, the low back curve increases (lumbar lordosis) because of fatigue in the back and stomach muscles. This increases the stress in the lower back, particularly in the area of the facet joints. Placing a small stool under one foot or using a low stable object or surface helps to lessen the exaggerated curve in the low back and helps return the spine to a more neutral posture.

Elevating one foot on an object can take the stress off the spine and help to maintain a neutral spine. Deconditioned people and pregnant women often have a *sway back,* which increases the curve in the low back, causing the joints to come close together.

People who sit constantly at a desk station often have a *flat back,* which decreases the curve in the low back, causing it to flatten and place stress on the back portion of the discs. Using a chair with a low back support assists in maintaining a more neutral posture. Even when using a lumbar support, try to change your posture every 20 minutes by standing up, bending backward or removing the lumbar support regularly.

In summary, your normal daily activities require you to repetitively bend the spine forward or backward. These positions are not harmful if done for a short period of time and if the movement is then balanced by returning to a neutral posture. For example, if you have been bending forward, crouching or stooping all day, try lying on your stomach to read the newspaper in the evening. This passively extends your low back while you catch up on the current events.

Exercise

Scientific research indicates that workers who have a good level of physical fitness experience fewer MSIs and recover faster from MSIs than unfit workers. The definition of a good level of physical fitness is the ability to complete work and home tasks, participate in leisure activities and have enough energy left to deal with an emergency. A balanced exercise program helps prevent injury and improve an individual's ability to perform the activities of normal living.

Physically demanding work is not a substitute for an exercise program. Work activities tend to rely on the same muscles and same movements on a repetitive basis. Work is <u>not</u> the same as working out. With work, you are actually damaging your tissues at a repetitive level, therefore increasing the wear and tear at a micro-level on a daily basis. Exercise is a positive counteraction after a day of repetitive work. Working out increases blood flow to the tissues and strengthens the muscle tissue in a positive way. A balanced exercise program must incorporate the muscles and movements that are not used on a repetitive basis during work activities.

Before initiating any exercise program, it is recommended that you consult a family physician or another appropriate health care professional.

A balanced exercise program consists of the following components:

- Cardiovascular Fitness
- Flexibility
- Muscle Fitness

Cardiovascular Fitness

Cardiovascular fitness refers to the body's ability to take in, distribute and use oxygen on a sustained basis. It involves the cardiac, respiratory and vascular systems (heart, lungs, blood vessels, etc.) and is required to perform tasks of a repetitive nature. A good level of cardiovascular fitness also helps an individual to recover faster from physical activities and reduces the risk of injury. Examples of cardiovascular fitness are running, swimming, walking and cycling. To ensure cardiovascular activity, increase your heart rate to at least 65% of its target rate. If you are working out to loose weight, you must run, walk, swim, etc. for more than 12 minutes. The body uses quick energy such as carbohydrates for the first 12 minutes then, any time after that, the body must burn its fat storage for longer frequencies. Cardiovascular training can be performed everyday.

Flexibility

An individual must possess adequate flexibility or range of movement to perform the essential activities associated with normal daily activities. A loss in flexibility of the connective tissue, changes the alignment of the joints. Tight tendons and muscles force joints to rotate differently offsetting the engineering structure of our skeletal system. A popular example of tight muscles would include the hamstrings (back of legs connecting into the low back). When these muscles are tight, they begin to pull down at the pelvis, causing a "flat back" to occur and in turn, causing back pain. Some forms of back pain may be corrected with just a good flexibility program.

Aging results in an overall decrease in flexibility along with the already poor circulation of tendons and ligaments. The changes to the tissues accompanied by the aging process, cause less flexibility and strength in the fibres of the connective tissue. Specific stretching exercises designed to loosen joints, tendons and lengthen muscles are required to improve and maintain a functional range of movement. Flexibility can be performed everyday.

Muscle Fitness

Adequate muscle fitness is necessary to perform normal daily activities. All individuals experience a decrease of muscle mass with aging. Did you know that as we get older, from age 35 on, we lose approximately 1 lb. of muscle per year? Therefore, at 50 years of age, we have lost approximately 15 lbs. of muscle tissue. Can you see the importance of resistive training to build muscle tissue in our later years? There are two types of muscle fitness: muscular strength and muscular endurance.

Muscular strength is a muscle's ability to produce a force. Muscular endurance refers to the ability of the muscle to produce force for prolonged periods of time. Both types of muscle fitness are necessary for the health care provider. Different exercise techniques are required to maintain or improve each of these strength requirements. Adequate muscle strength is required to perform activities requiring relatively large forces for short periods of time. For example, client and material handling tasks require health care professionals to exert large forces.

Adequate muscle endurance is required to perform activities requiring relatively small forces over prolonged periods of time. Examples include tasks involving sustained postures such as sitting, standing and bending.

Muscle tissue needs 48 hours to rebuild its stronger fibres. Therefore, you should not perform resistive strength training to the same muscle group everyday. For example,

if you trained your leg muscles today, you should only train your upper body tomorrow. If you've strengthened your whole body today, you should not strengthen tomorrow.

Warm-Up

The purpose of the warm-up is to adequately prepare all of the body's systems for the upcoming exercise session. A warm-up takes approximately 10 minutes and must include large muscle groups such as the legs. Light perspiration should be present at the conclusion of the warm-up. Examples of warm-ups are stretching and brisk walking.

When looking at client handling, it is very important to sometimes think of your task as a heavy, quick work out. By changing our behaviour process we should not complete any heavy activity before *warming up*. If you have been sitting at your desk for 30 minutes, you should get up early enough to walk around and stretch before you reposition a client. This outlook greatly adds to the prevention of future back strains.

Stretching

The purpose of stretching is to increase circulation to the tissues. Stretching warms up and lengthens the muscles and tendons to prepare them for exercise or heavy activity. Stretching also increases the range of motion (ROM) of the joints preventing them from tightening and creating inflexibility and pain. Stretching should involve slow, static movements that do not include any bouncing. Every stretch is individual and you should gauge your movement by not encountering any pain, but by feeling a slight pulling. Any quick, overexerted stretch could lead to injury. In time, your ROM increases and you are able to reach your toes or touch the back of your mid back. The duration of the stretch should be a minimum of 15-30 seconds to obtain the desired effect.

Breathing

Breathing is a big part of exercise. We tend to forget this very important factor. You must consciously inhale and exhale at a full capacity with each stretch or resistive training exercise. Always exhale on exertion. This holds true especially with weight lifting. Exhale when lifting the weight, inhale on the down motion of the weight. You should inhale deep into your pelvic and stomach area.

Cool Down

The purpose of the cool down is to dissipate or move the waste products (i.e., lactic acid) resulting from muscle contractions as well as to reduce muscle soreness. Cool down activities are normally 10 to 15 minutes in duration and include the same exercise actions but they are performed at a reduced pace (i.e., walking instead of jogging) and are concluded with stretching exercises.

The FIT Exercise Principle

The FIT exercise principle is a useful formula to ensure an appropriate exercise prescription. The FIT acronym stands for:

- **F** = Frequency of Exercise
- **I** = Intensity of Exercise
- **T** = Time of Exercise Session

When choosing a particular type of exercise it is important to add these key factors to your work out program in order to ensure that you have a positive outcome. An example for walking would be:

- Frequency: 3 times/week
- Intensity: 70% target heart rate
- Time: 40 minutes each time

An adequate warm-up and cool down is required to reduce the risk of injury before initiating any cardiovascular or muscle training.

FIT Applied to Cardiovascular Exercise

The FIT exercise principle specifically applied to cardiovascular exercise is:

- F = Frequency: 3-5 times/week
- I = Intensity: 60%-80% target heart rate
- T = Time: 30 minutes

A specific intensity is required to improve cardiovascular fitness. The target heart rate is used to determine exercise intensity. An intensity ranging between 60% (lower limit) and 80% (upper limit) is recommended to promote cardiovascular fitness.

The formula used to determine the target heart rate zone is **(220-Age) x Desired Exercise Intensity**.

For example, a 36-year-old health care provider wanting to work at an exercise intensity of 60% needs to exercise at the following heart rate:

- Exercise Heart Rate = (220-36) x 0.60
- Exercise Heart Rate = 184 x 0.6
- Exercise Heart Rate = 110.4

Therefore, the exercise heart rate needs to reach 110 beats/minute to achieve 60% exercise intensity.

FIT Applied to Muscular Strength

The FIT exercise principle specifically applied to muscular strength is:

- F = Frequency: 2-3 times/week
- I = Intensity: use a weight with which you can do 8-12 repetitions
- T = Time: 1-2 sets

FIT Applied to Muscular Endurance

The FIT exercise principle specifically applied to muscular endurance is:

- F = Frequency: 3-5 times/week
- I = Intensity: use a weight with which you can do 12-20 repetitions
- T = Time: 1-2 sets

On-The-Job Exercises

Before initiating any exercise program, it is recommended that you consult your family physician or another appropriate health care professional.

The purpose of on-the-job exercises is to periodically interrupt activities and restore normal spinal alignment by performing movements in the opposite direction (counter movements). Work tends to stress the same structures on a sustained or repetitive basis.

Performing counter movements on a regular basis restores balance to the spinal and shoulder structures and assists in reducing pain and preventing injuries.

Standing Extension (Back Bends):

- **Who:** Recommended for caregivers who perform prolonged sitting or forward bending activities.
- **Frequency:** One set each hour or as required to reduce pain. You should feel a slight pinching in your low back. If you have back problems, check with your health care professional.
- **How:** Standing with the feet approximately shoulder width apart and knees slightly bent:
  - Place the hands on the low part of the back.
  - Arch backward until a slight pressure is felt in the small of the low back.
  - Pause (do not hold) and return to a standing position.
  - Repeat 5 times, frequently throughout the day.

Figure 8. Standing Extension

Flexion in Sitting:

- **Who:** Recommended for caregivers who stand for long periods of time or perform activities requiring backward bending of the spine (i.e., reaching above your head repetitively with an overhead lift).
- **Frequency:** One set each hour or as required to reduce pain.
- **How:** Sit on a chair or stool with the knees apart:
  - Place arms at the sides.
  - Bend forward as if to touch the ground with your forehead until a stretch is experienced in the low back. Exhale slowly.
  - Pause (do not hold) and return to an upright sitting position.
  - Repeat 2-5 times.

Figure 9. Flexion in Sitting

Chin Tuck in Sitting Position:

- **Who:** Recommended for caregivers who perform activities requiring sustained and repetitive forward bending (flexion) of the neck. If you have a neck problem, check with your health care professional.
- **Frequency:** One set as required to reduce pain.
- **How:** Sit upright in a chair:
  - Attempt to position the head so that the ears are in line with the shoulders.
  - Keep looking straight ahead and move the head backward, pushing your chin back until a stretch is felt at the base of the neck. You should feel a slight pinching in the back of your neck.
  - Pause (do not hold) and return to the starting position.
  - Repeat 2-3 times.

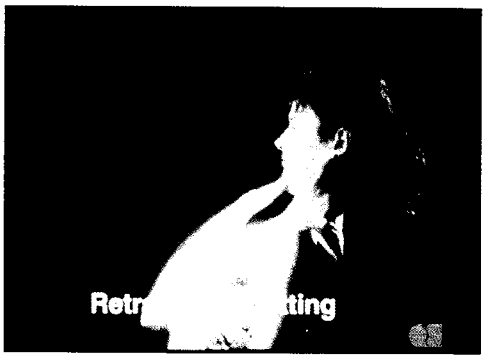


Figure 10. Chin Tuck/Retraction in a Sitting Position

At-Home Exercises

Before initiating any exercise program, it is recommended that you consult your family physician or treating practitioner.

The on-the-job exercises described in this manual, focus on movements designed to reduce the physical stress that work activities place on the body. On-the-job exercises do not assist in maintaining or enhancing range of movement, muscular strength or muscular endurance.

The exercises described in this manual serve as a basic exercise routine to promote spinal and shoulder joint health. It is recommended that this program be completed on a regular basis (3-5 days/week) to promote flexibility and strength of these joints. This home exercise routine is intended as a balance program and all of the exercises should feel comfortable. You should discontinue any exercises and consult your health care practitioner if you experience any difficulties with any of the exercises. Begin at your own pace and slowly increase frequency and intensity with repetition and time.

The muscles of the spine are primarily postural muscles. As a result, the exercises comprising this program focus on spinal mobility and muscle endurance.

Lumbar Extension:

- **Purpose:** Provides an effective counter movement of the lumbar spine and maintains/increases low back extension and range of movement.
- **Frequency:** 5-10 repetitions per session
- **Technique:** Lying on the stomach with the hands placed beside the shoulders:
  - Keeping the hips on the floor, relax buttocks muscles, extend the low back by pushing the shoulders up using the arms. Exhale on exertion (or when going up).
  - Continue until your arms are either straight or there is a stretching sensation in the low back. You do not have to extend all the way, leaning with your elbows bent is also effective.
  - Pause (do not hold) and return to the starting position. You should feel a pinch in your low back.
  - Continue until repetitions are complete.

Figure 11. Lumbar Extension

You can adapt this stretch without even knowing you are doing your back a favour. After work, lie on the floor on your stomach and lean on your elbows while reading the newspaper. Ten minutes everyday adds to your prevention program.

If your hips elevate during the exercise try placing your hands further forward in front of your shoulders. As the movement improves, your hands can gradually be placed closer to your shoulders.

Lumbar Flexion (Knees to Chest):

- **Purpose:** Provides an effective counter movement for caregivers performing prolonged standing or overhead activities and stretches back extensor muscles.
- **Technique:** Lying on the back pull both knees toward the chest, exhaling when bringing legs up:
  - Use the hands to provide extra stretch.
  - Pause, hold for 10 seconds. You should feel pulling along your low back.
  - Perform 5-10 repetitions.

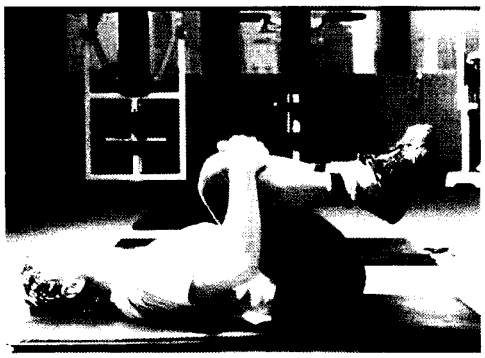


Figure 12. Lumbar Flexion

Quadriceps Stretch (Thigh Stretch):

- **Purpose:** Stretch the muscles in the front of the thigh. These muscles are used during client handling procedures and need to be stretched. One of the muscles comprising the quadriceps muscle group attaches onto the top of the hip. If this muscle becomes shortened, it can alter the position of the pelvis and increase stress on the facet joints of the spine.
- **Technique:** Lying on your side, keeping your body straight, tuck your stomach in and bend one foot towards your buttocks. (See Figure 13.) Breathe out:
  - Grab your foot with your hand and gently pull your foot closer to the buttocks until a comfortable stretch is felt in the front of the thigh.
  - Hold 15-30 seconds and release.
  - Perform 3-5 repetitions/leg.
  - Continue until the desired number of repetitions is completed. You should feel a pull along your front thigh.

Figure 13. Quadriceps Stretch

Wrap a towel around your foot if unable to grasp your foot comfortably with your hand. The exercise can also be performed standing.

Hamstring Stretch:

- **Purpose:** To stretch the muscles on the back of the leg. Bending the low back forward is a combination of movements from the low back and the hips. Shortened hamstring muscles can reduce the amount of forward bending and can alter the orientation of the pelvis and reduce the normal curve of the low back (lordosis). This can lead to increased stress on the discs and surrounding structures.
- **Technique:** Lying on the back, bend both knees while keeping both feet in contact with the floor. If the stretch is too easy with both knees bent up, leave your opposite leg straight on the floor (more advanced position).
  - Keeping the knee straight lift one leg as high as possible.
  - Remember: "point your toes to your nose" and exhale. You should feel pulling along the back of your thigh.
  - Hold 15-30 seconds.
  - Perform 3-5 repetitions per leg.
  - Continue until the desired number of repetitions is completed.

Figure 14. Hamstring Stretch

Lower Abdominal–Inner Unit:

- **Purpose:** To increase the muscular endurance of the trunk, therefore creating an *inner back brace* to increase the strength and stability of the lower back for all daily activities. This exercise incorporates the lower abdominal muscles (rectus abdominus), diaphragm, multifidus muscles (low back), and pelvic muscles.
- **Technique:** Lie on the back with the knees bent. There are different ways to learn this exercise depending if you are female or male.
    - **Female**: Try to contract all of the inner pelvic muscles by thinking about the fact that you just drank 8 glasses of water, and must hold it until you find the next washroom. You may have heard the term *keegle exercises* from having children. Hold the contraction as long as you can and repeat often throughout the day.
    - **Male**: You must also learn to contract your *inner unit*. Try to recreate the feeling of walking into a cold lake. You want to contract this hold for as long as possible throughout the day.

When you become a pro at these techniques, you can contract as often and as long as possible without anyone knowing. This exercise is one of the most difficult to learn. Don't give up and practice, practice, practice.

Perform 10 repetitions **daily.** Hold the contraction for as long as possible.

This exercise should always be used when bending, lifting and transferring clients. This exercise replaces the "pelvic tilt" as the inner unit incorporates more muscles therefore providing a more stable base for the low back.

Upper Back Extensors (Chest Raise):

- **Purpose:** To increase the muscular endurance of the upper and lower back extensors.
- **Technique:** Lie on the stomach with a pillow under the hips, and with the legs straight.
  - Place the arms straight along the sides of the trunk.
  - Raise the upper chest off the floor to a comfortable height. Keep head down, try not to extend the neck. Exhale.
  - Pause and return to the starting position.
  - Perform as many repetitions as possible, increase to ability.

Figure 15. Upper Back Extensors

The exercise can be made more difficult by changing the position of the hands. Place the hands beside the temples while performing the exercise to increase the difficulty. A further progression would involve placing the arms in front of the head.

Lower Back Extensors:

- **Purpose:** To increase the muscular endurance of the lower back extensors (buttock muscles).
- **Technique**: Lie on the stomach with a pillow under the hips and with the legs straight.
  - Place the hands underneath the forehead.
  - Raise one leg (keeping the knee straight) until the knee is slightly off the floor. You should not feel any discomfort in the low back. If you do feel discomfort, slightly lower the leg.
  - Pause and return to the starting position. Exhale on exertion.
  - Complete 8-12 repetitions.

Figure 16. Lower Back Extensors

The exercise can be progressed by adding light ankle weights.

Rotator Cuff:

- **Purpose**: To increase muscle flexibility and endurance of the shoulder joint.
- **Technique:** Standing with a hand bent on your hip, try to grasp your elbow and pull it forward. If you have problems with decreased ROM use a small towel to wrap around your elbow for the same stretch action.
  - Hold the stretch for 10 seconds. You should feel a pulling around the back and front section of your shoulder joint. This is part of your rotator cuff.
  - Repeat 3-5 times per day.

Biceps Stretch:

- **Technique:** Standing with an arm held up behind your body, lean against a wall either at 60 or 90 degree angle. Turn your palm outward with the thumb pointing to the floor.
  - Hold the stretch for 10 seconds. You should feel a pulling in the front of the shoulder and in the upper arm (biceps).
  - Repeat 3-5 times per day.

You may only be able to lift your arm up to a 60 degree angle at the beginning, do not get discouraged, your ROM increases with repeated stretching.

Module 4: Program Development and Implementation

The content presented in this module outlines the six steps in the development and implementation of a comprehensive and successful client handling program.

The six steps are:

1. Securing management commitment, support and leadership
2. Assessing your program needs
3. Developing the business case
4. Developing the program components
5. Implementing the program
6. Evaluating the program

The **first step** is the most important step toward planning a client handling program. Before embarking on the project, you need to secure initial commitment from senior management to investigate the prospects of a client handling program. Evidence collected during the initial stages of the program planning need to be summarized in a business plan proposal. This business plan is the vehicle by which senior management can make their final decision in providing their support and commitment for the development and implementation of the comprehensive program. Management needs to provide full commitment and support in terms of time, resources and financial resources. Senior management must also assign responsibility for the project to either an individual in the organization or to a multidisciplinary committee. The multidisciplinary committee approach, often used in larger organizations, capitalizes on the specialized skills and expertise of various personnel within the organization. A smaller facility or community care organization may, however, assign the responsibility to one individual. In this case, it is important that the assigned individual consult with various internal resources within the organization.

The **second step** involves the completion of a comprehensive assessment of the client handling issues within the organization. Such factors as incident/accident demographics, client mobility status, equipment, environment and the organizational culture all play an important role in identifying potential barriers, and have a significant influence on the success of the program.

The **third step** is the preparation and presentation of a business case to senior management to secure final approval and commitment for the development and implementation of a client handling program organization-wide. The information gathered and analyzed in step two–Assessment–must be organized and presented in a business case format, outlining both the financial and human benefits of the proposed program.

The **fourth step** is the development of the program. This involves the development of documented policies and procedures, formulating training plans, determining communication strategies, developing strategies for overcoming potential barriers, and establishing evaluation indicators.

The **fifth step** is the implementation of the program. A well-planned implementation strategy addresses all phases of the program beginning with the introductory phase through to the initial pilot project, and finally the organization-wide program implementation.

The **sixth step** is evaluating the program. The evaluation of the program should include both quantitative and qualitative indices. The quantitative indicators objectively evaluate the program in terms of injury demographics and Workplace Safety and Insurance Board (WSIB) costs, while the qualitative indicators indicate the effectiveness of the training and implementation.

The care giving business depends on its caregivers. Without them, there would be no delivery of service. The time and effort invested in planning, developing, and implementing a comprehensive program is truly a win-win strategy for all–the employer, employees and the clients.

4.1 Step One: Securing Management Commitment, Support and Leadership

Senior management commitment, support and leadership are the foundation of an effective program. Commitment and program support ensure that resources are available to develop, implement and maintain the program. They also secures other resources such as budget, human resources, materials and equipment, and enable caregivers to obtain other required skills through further education initiatives.

Leadership involves the overall responsibility for co-ordinating the program and guiding and inspiring the persons who are assisting with the development and implementation of the program. Senior management may assume the role of program leader or may delegate the leadership role to another management person.

It is important that the delegated leader possess the necessary skills. This is critical to the success of the program. Such skills include:

- Demonstrated ability to lead people
- Organization systems knowledge–policy/procedure development and implementation
- Health and safety technical knowledge in hazard assessment and best practices

If the organization is unable to identify an individual with these recommended skills, it may be necessary for senior management to assume the leadership role and seek assistance from external resources such as a private consultant. Where organizations have health and safety professionals, their role is to support the internal responsibility system of the organization by providing technical expertise, coaching, training, advise on legal obligations and measuring and summarizing the risks within the organization.

It is important that the assigned program leader involve others in the organization, such as front line staff, union representatives, JHSC/H&S Rep, supervisors, management, and health and safety staff, to assist in the program development and implementation. This could be either through a formal approach–multidisciplinary committee–or on an as-needed basis.

The multidisciplinary approach to program development is often used by larger health and community care organizations. Some benefits to this approach include:

- increased program support by workers and management, which contributes to program compliance
- capitalizes on the various skills and expertise of individuals within the organization
- provides additional human resources to manage the work in developing and implementing the program

The program leader/committee's responsibilities include:

- co-ordinating resources–internal and/or external (multidisciplinary committee)
- assessing organizational needs
- planning for the program development
- developing the program components
- implementing the program
- evaluating the program

Multidisciplinary Committee

If your organization chooses to adopt the multidisciplinary committee approach to program development and implementation, the following outline can assist the organization in establishing an effective committee:

- Selecting Committee Members
- Selecting Chairperson(s)
- Establishing Committee Terms of Reference
- Communicating the Committee's Activities

Selecting Committee Members

The assigned leader of the program takes the responsibility for organizing and co-ordinating the committee. In appointing other committee members, it is important to include both management and front-line staff. Those persons with either previous experience and/or a keen interest should be considered. The following is a list of suggested representation:

- Director of Nursing
- Health and Safety Co-ordinator
- Occupational Therapist/Physiotherapist
- Team Leaders/Charge Nurses
- Front line staff
- JHSC/H&S Rep

Selecting Chairperson(s)

The role of the chairperson is to ensure that meetings are both efficient and effective. Most frequently, this position is assigned to the senior management person or assigned program leader. Suggested responsibilities of the chairperson include:

- Facilitator of meetings
- Preparation of agenda and meeting minutes; forwarding to all members prior to the next committee meeting
- Scheduling of meetings and locations with notification to all committee members
- Ensuring that meetings start and end on time
- Ensuring that all members have an opportunity to express their views

Establishing Committee Terms of Reference

The terms of reference are the committee's guidelines for conducting committee business and should explicitly define the purpose, objectives and processes of the committee. The terms of reference should include the following components:

- Committee purpose, objectives and goals
- Committee membership
- Roles and responsibilities of members
- Roles and responsibilities of chairperson(s)
- Quorum
- Meetings: establish frequency of meetings and attempt to regulate scheduling of meetings (e.g., third Thursday of each month)
- Communication processes–agenda, minutes, and regular reports to senior management

Communicating the Committee's Activities

Senior management and the organization's JHSC/H&S Rep should be kept informed as to the progress of the program development and implementation through the following suggested methods:

- Receive copies of multidisciplinary committee meetings
- Quarterly summary reports on the program progress

4.2 Step Two: Assessing Organizational Factors

Step two is a critical step in the process of program development and one that is often omitted. An assessment of organizational factors that relate to client handling should be completed either when developing a new program or when strengthening an existing program. A comprehensive assessment identifies the existing and potential risks with respect to client handling issues, needs of the organization, clients and caregivers, and existing and potential barriers that may challenge the success of the program. The following categories of information should be gathered and analyzed during this assessment process:

- Analysing Incident/Accident Demographics
- Assessing Clients
- Assessing Equipment
- Assessing Environmental Barriers
- Assessing the Organizational Culture

Analysing Incident/Accident Demographics

Whether an organization uses a computerized software program or a data collection tool, it is imperative that the employee incidents/accidents be analyzed to identify trends. By identifying trends, the organization can unmask problems or issues. A trend analysis of incidents/accidents related to client handling activities may show that the incidents/accidents involve certain types of equipment, client handling methods, inexperienced staff or occur more frequently at certain times of day. While Analysing the causative factors of the incidents/accidents, it is important to identify whether the incidents/accidents occurred during a client handling activity. More specifically, it is important to identify if the incident/accident occurred during one of the following activities:

- lift
- transfer
- client repositioning

This process assists the organization in identifying needs and/or issues related to client handling activities.

Categories of Analysis

It is recommended that the organization consider the following categories for analysis:

1. **Incidents/accidents by date and time:** This can show periods of fatigue, inadequate rest periods, staffing shortages or periods of high work activities.
2. **Incidents/accidents frequency and severity rates by department:** This can show how many incidents/accidents occur, the claim type (near miss, first aid, medical aid or lost time), and how many lost time days. It is also important to group the injuries by unit/department. This assists the organization in determining key risk areas, perhaps areas that should be considered for the initial pilot of the program. In addition, it can identify specific needs related to the development of the program.
3. **Accident costs:** The financial data related to the claim should also be analyzed to indicate the costs of the various types of claims. Consult with the benefits administrator of your organization to review the WSIB NEER and Claim Cost Summary Statement. This statement indicates the name of each claimant and all of the costs associated with that claim. The costs should be calculated by unit/department/branch location. The cost figures associated with these claims are helpful when developing the business case.
4. **Incidents/accidents by experience level of staff:** Trends can show insufficiencies in orientation, initial and review training or employee development issues.
5. **Incident/accident trends by causative factor:** This identifies specific factors that have caused the incident/accident. Employee incident/accident reports should be reviewed and analyzed to determine which causative factor applies:
   - **Struck By or Contact By**: An accident in which a person has been struck abruptly or forcefully by some object in motion or a person is contacted non-forcefully by some substance or agent in motion which has an injury-upon-contact characteristic.
   - **Struck Against/Contact With:** An accident in which a person strikes abruptly or forcefully some stationary object or comes into contact non-forcefully with some stationary substance or agent which has an injury-upon-contact characteristic (electrical shock).
   - **Caught In, On or Between:** An accident in which a person is trapped in some type of enclosure or a part of a person's body is caught in some type of opening, caught on some protruding object, or pinched, crushed or otherwise caught between either a moving object and a stationary object or between two or more moving objects.
   - **Fall/Slip:** An accident can be divided into two categories: a foot-level fall or a fall-below. A foot-level fall occurs when a person slips, trips or falls on the same level on which he/she was standing or walking. A fall-below occurs when a person falls to the level below which they were standing or walking.
   - **Exposure:** An accident in which the employee is exposed to harmful conditions (e.g., toxic gases, fumes or vapours; toxic airborne particles; extremes of heat or cold; radiation).
   - **Patient Action:** An accident in which the employee is subjected to an untoward action by a patient.

- **Repetitive Action:** An accident that develops over a period of time due to the repetitive nature of the task being carried out.
- **Overexertion:** An incident where a person puts excessive strain on some part of their body.

A review of all employee incident/accident forms should be conducted. If possible, it is recommended that an analysis of the previous two to three years of incidents/ accidents be conducted to provide the organization with a baseline history of the nature, type and causal factors of the organization's incidents/accidents.

The analysis illustrates deficiencies in existing programs or supports the need for the development of a new program. It can also assist the organization in developing a priority listing of departments–highest to lowest incident/accident rates–which can determine the appropriate area/department to pilot the program.

Incident/Accident Analysis Collection Tool

Table 3 on page 58 shows and example of an incident/accident analysis tool. The tool assists the organization in collating the incident/accident data from employee incident report forms. Each unit/department should be analyzed individually.

Table 3. Incident/Accident Analysis Collection Tool

Date and Time	Client Handling Activity			Claim Type			Days Lost	Claim Cost	Body Part	Causative Factor (see legend)	Yr. on Job	Age	Gender	Other Factors
	Lift	Transfer	Reposition	First Aid	Med. Aid	Lost time	Hazard							

Causative Factor Legend

1. Struck by or contact by
2. Struck against/contact with
3. Caught in, on, between
4. Fall, slip
5. Exposure
6. Patient Action
7. Repetitive Action
8. Overexertion

Communicating Your Incident/Accident Analysis

Following the collection of the employee incident/accident data, it is recommended that a departmental summary of the analysis detail the following information:

- Number of incidents/accidents during each shift
- Number of incidents/accidents by each causative factor
- Number of incidents/accidents during lifts, transfers and repositioning
- Number of first aid, medical aid and lost time incidents/accidents
- Number of WSIB lost time days
- WSIB claim costs

To clearly illustrate the incident/accident analysis, a departmental summary sheet could include graphs and charts to display the pertinent information.

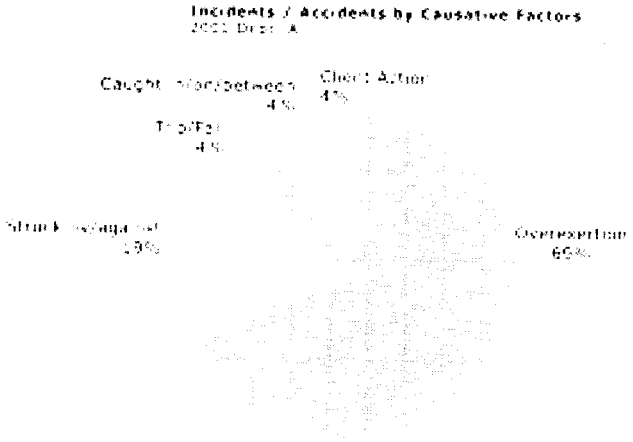


Figure 17. Incidents/Accidents by Causative Factors

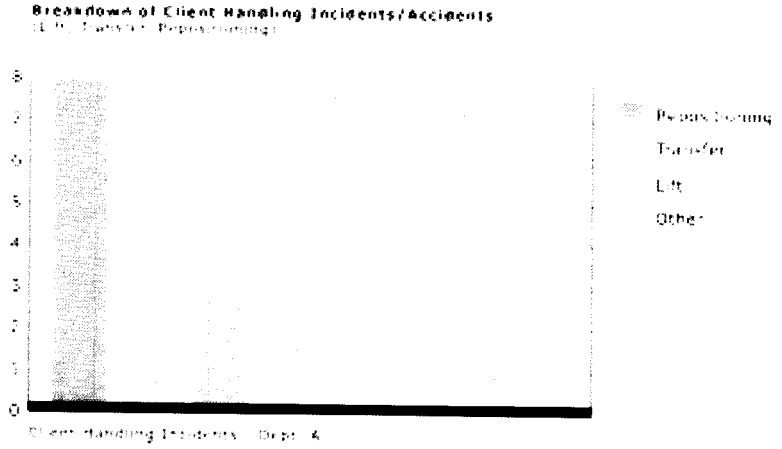


Figure 18. Breakdown of Client Handling Incidents/Accidents

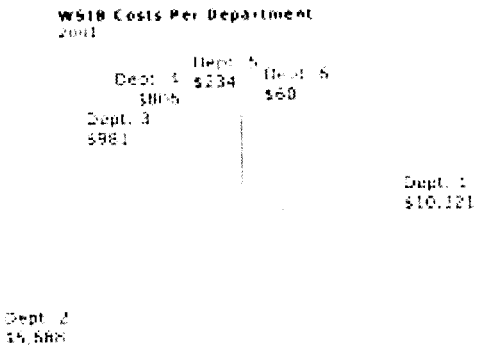


Figure 19. WSIB Costs per Department for 2001

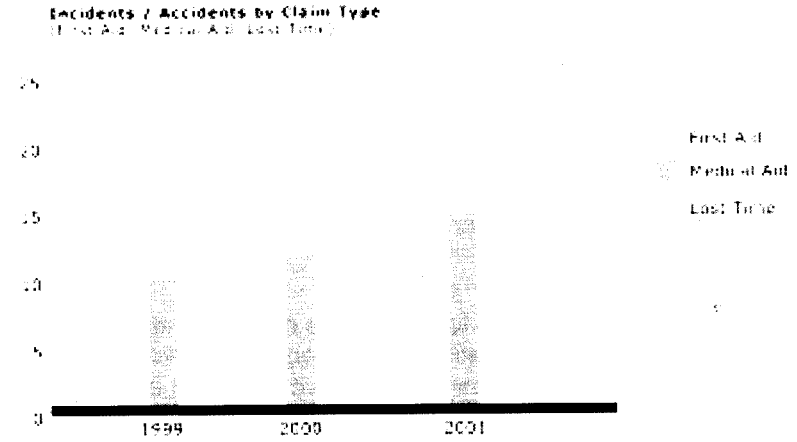


Figure 20. Incidents/Accidents by Claim Type

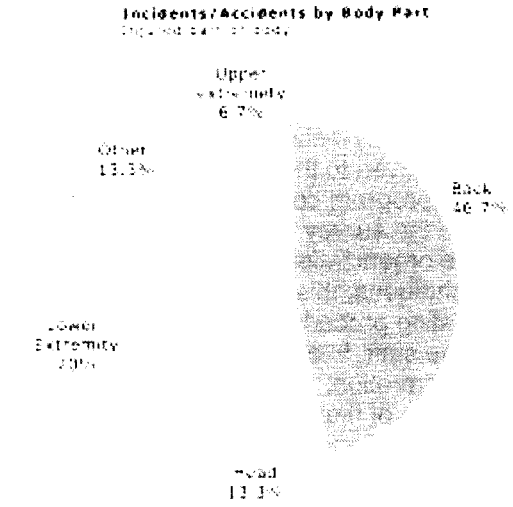


Figure 21. Incidents/Accidents by Body Part

Assessing Clients

Clients in a health care organization are assessed on a number of parameters. For instance, a medical assessment is done and a care plan is established based on the results of the assessment. Similarly, for the purpose of this program, a client mobility assessment must be done and a handling procedure established based on its findings. An effective client handling program requires that a thorough and comprehensive assessment of a client's mobility status is completed to determine the appropriate and safe client handling technique.

All clients should be assessed at the program development phase to help determine whether the client's needs can be met by the organization. As the program is implemented, ongoing assessments of new clients and reviewing the mobility status of existing clients must be done to ensure ongoing safety of both the staff and clients.

The assessment of a client's mobility status not only focuses on the physical capabilities of the client, but also on the cognitive, environmental, psychological and sociological parameters. These additional factors should be considered because a client may be physically fit to carry out a transfer, but due to unreliable cognitive skills or a cramped environment, a mechanical lift may be deemed safer. Cognitive factors are characteristics associated with a client's ability to comprehend and correctly interpret mental processes. Environmental factors are associated with factors about the area in which the handling task is being carried out. These might include issues such as space constraints, layout of furniture, type of flooring, etc. Psychological factors are related to the mental capacity of the client and are reflected in their resulting behaviour. Sociological factors are issues associated with the behaviours and interactions between the client and the caregivers.

Client Assessment Tools

The following tools can be used to assess the mobility status of the clients in each unit/department of your organization. It is essential to review the client's mobility prior to the onset of the program to ensure you have identified equipment issues, frequency of handling tasks and environmental issues that may impact on the safety of the client handling tasks. This assessment considers the frequency of lifts, transfers and repositioning tasks that are carried out. Each client in the unit/ department must be assessed whether they are independent or require assistance with a transfer, lift or reposition.

Individual Client Assessment Tool

The Individual Client Assessment tool can be used to collect relevant data related to client handling. (See Table 4 on page 62.) It should be used on a unit/department basis and consideration needs to be given to the varying needs of the clients during a 24-hour period. The client handling program coordinator or unit managers (with worker participation) may complete the survey. The required information may be collected in a variety of ways. If the organization currently has an effective procedure for documenting client mobility techniques, this system could be used. If the organization does not have an existing procedure, then the information can be gathered through interviews with the staff. In addition, client profiles/records can also be used to obtain the necessary information, but it is important to ensure that the information is up-to-date and reflective of the current needs of the clients. Each client in the unit/department must be assessed and included on the assessment tool regardless of whether they are independent or whether they require assistance with a transfer, lift or reposition.

Table 4. Individual Client Assessment Tool - Part 1

unit/department:																	
Date:																	
Assessment Completed by:																	
Number of Clients Assessed:																	
Client Name/ Location		Independent	Lift (Insert # of lifts)			Transfer (Insert # of transfers)			Reposition (Insert # of repositions)			Potential Barriers (check if applicable)					
		Insert # of Clients	Manual[a]	Mech.[b]	Device (Name)	One Person	Two People	Device (Name)	Bed	Wheel chair	Device (Name)	1	2	3	4	5	Other
Mr. A	Days																
	Afternoons																
	Nights																
Mr. B	Days																
	Afternoons																
	Nights																
Mr. C	Days																
	Afternoons																
	Nights																
Mr. D	Days																
	Afternoons																
	Nights																

a. Manual - the entire weight of the client is lifted by workers.
b. Mechanical - the entire weight of the client is lifted by a device.

Legend for Potential Barriers

1. environmental (i.e. room size, compatibility between furniture and a lift)
2. client resistance
3. family resistance
4. required equipment unavailable
5. known aggressive behavior

Other- note any other barriers that impact on the safe handling of clients

The "potential barriers" portion of Table 4 on page 62 assists the surveyor to identify other possible barriers. This valuable information is necessary to ensure all issues that may impact on the safe handling of every client are identified.

Unit/departmental Summary Tool for Client Assessments
Once the Individual Client Assessment has been completed, the information collected should be summarized using the Client Assessment Summary tool. (See Table 5 on page 64.) This tool summarizes the department's needs in terms of:

- number of clients requiring lifts and the specific lifting devices used
- number of clients requiring transfers and the specific transfer devices used
- number of clients requiring positioning and types of specific devices
- number of clients whose mobility status is independent
- identification of equipment needs

This information can then be used to help project equipment needs, staffing allocation and barriers that need to be addressed prior to the implementation of the program.

Table 5. Unit/departmental Client Assessment Summary Tool - Part 2

Unit/department:			
Date:			
Assessment Completed by:			
Number of Clients Assessed:			
Independent Lifts	**Days**	**Afternoons**	**Nights**
Total number of manual lifts[a]			
Total number of mechanical lifts[b]			
Specify the names of the device and the frequency of use			
Transfers	**Days**	**Afternoons**	**Nights**
Total number of one-person transfers			
Total number of two-person transfers			
Specify the types of transfer devices being used and their frequency			
Repositioning	**Days**	**Afternoons**	**Nights**
Total number of bed repositions			
Total number of wheelchair repositions			
Specify the types and frequency of use of repositioning devices			
Potential Barriers	**Provide explanation**		
Specify the Environmental barriers			
Specify the Client/Family Resistance barriers			
Specify the Equipment barriers			
Specify the Aggressive barriers			
Specify other barriers			

a. Manual - the entire weight of the client is lifted by workers.
b. Mechanical - the entire weight of the client is lifted by a device.

Assessing Equipment

An assessment of all existing equipment identifies the current problems or issues related to client handling devices and also identifies potential needs.

Table 6. Equipment Assessment Tool

unit/department:				
Date:				
Assessment Completed by:				
Equipment		**Name**	**Number of pieces**	**Comments**
Lift	Sit/stand			
	Shower/bath			
	Portable sling			
	Fixed lift			
	Other			
Transfer aids	Transfer board			
	Transfer disc			
	Transfer patient handling sling			
	Transfer belt			
	Transfer sheet			
	Other			
Survey questions		**Yes**	**No**	**Comments**
Does the lifting equipment or comply with the CSA Technical Information Letter?				
Are the batteries of the powered lifting devices maintained and charged regularly?				
Are there proper slings available to suit the clients?				
Do hooks and clasps secure reliably?				
Do casters suit the floor surfaces?				
Are lifts easy to manoeuvre?				
Are operating controls user friendly?				
Are lifts regularly maintained?				
Do staff routinely use the equipment?				
Have staff had proper training on the use of the devices?				
Are there annual, mandatory training sessions for all staff on the devices?				

Assessing Environmental Barriers

The environment can contribute significantly to hazards associated with client handling. The environment is the area in which the client handling tasks are carried out. For example, the client's bedroom, bathroom, tubroom, surgical suite, diagnostic imaging area, etc.

The following tool can be used to help identify where there may be environmental barriers that could pose challenges in client handling. If you answer "No" to any of the following questions, more investigation needs to be done.

Table 7. Environmental Assessment Tool

Unit/department:			
Date:			
Assessment Completed by:			
Bedroom	**Yes**	**No**	**Explanation**
Is there enough space around all three sides of the bed to work?			
Can staff work from either side of the bed?			
Will mechanical lift equipment fit underneath the bed?			
Is the positioning of the lift clear from monitors, IVs, etc.?			
Is there an unobstructed path for the lift to travel?			
Do the mechanical lifts fit though doorways?			
Does the transition between the client's room and the hall allow for easy transportation of a lift?			
Bathroom	**Yes**	**No**	**Explanation**
Can a mechanical lift be used in the bathroom?			
Is a commode used in the bathroom if a mechanical lift cannot be used?			
Is there space on either side of the toilet for a worker?			
Are the grab bars situated such that they do not interfere with the placement of equipment or the workers?			
Tub/shower room	**Yes**	**No**	**Explanation**
Can a mechanical lift be used in the tub/ shower rooms?			
Is there a risk of slipping on wet floors?			
Can mobile residents transfer easily in to the tub?			
Are clients secure while they are being transported?			
Are clients secure while in the tub?			
General	**Yes**	**No**	**Explanation**
Is there an accessible place to store the equipment?			

Assessing the Organizational Culture

An assessment of the organizational culture determines potential administrative issues that may impact the success of a client handling program. The assessment examines issues such as the organization's existing policies and procedures, assignment of tasks, management's and worker's perception of client handling demands, team work versus individual assignments, allocation of equipment, client service agreements (for community service organizations) and staffing. Management and workers should both be involved in this assessment process. This can be accomplished through interviews, focus groups or by an individual questionnaire/ survey. If you answer "No" to any of the following questions, more investigation needs to be completed.

Table 8. Organizational Culture Assessment Tool

Unit/department:			
Date:			
Assessment Completed by:			
Issue	**Yes**	**No**	**Explanation**
Are there documented policies and procedures on client handling?			
Do staff comply with existing client handling policies and procedures?			
Does management audit client handling practices?			
Is there sufficient staff to cope with the client handling demands?			
Is there a positive attitude toward safe handling practices?			
Do workers and managers accept responsibility for worker safety by following safe handling practices?			
Are safe handling practices followed consistently by all staff?			
Do staff have sufficient time to use lift or transfer equipment?			
Is there sufficient equipment for lifting and/or transferring?			
Is an assessment of client mobility carried out before a client handling procedure?			
Are casual or agency staff knowledgeable in using the lift and transfer equipment?			
Do clients co-operate with decisions around client handling?			
Have staff been trained in initial client mobility assessments?			
Have staff been trained in mini-assessments of client mobility?			

Table 8. Organizational Culture Assessment Tool (Continued)

Have staff been trained in use of assistive client handling devices?			
Is there assistance available when needed to carry out transfers, lifts and/ or repositions?			
Do staff prepare for the transfer/lift/ reposition by: • reviewing the client profile • speaking with the client • adjusting the height of the bed, • preparing the environment • readying themselves • co-ordinating effort with a partner			
Additional issues[a]	**Yes**	**No**	**Explanation**
• Are there issues with funding for equipment? • Does the Client Service Agreement have language that supports a safe handling of clients program? • Does the issue of client directed care pose any potential barriers? • Does the client's home pose any environmental barriers? • Do the Community Care Access Centres provide you with accurate client mobility information?			

a. Community care organizations may also want to incorporate these additional questions

4.3 Step Three: The Business Case

All organizations make decisions based on financial implications. It is for this reason, that the proposal for a client handling program be presented in a way that clearly identifies the potential for cost savings with the development and implementation of the program.

Cost benefit analysis is a method of comparing both direct and indirect costs and benefits that are related to the development and implementation of a new process or program.

Costs are the monetary essential costs of the program, which may include equipment, training, staff replacement, development time, etc. Benefits are the potential savings of preventing MSIs due to transfers, lifts and repositions. The potential savings can be examined from historic costs associated with compensable injuries.

Calculation of Cost Benefit Analysis

There are two sides to the cost benefit equation:

1. **B** represents the benefits of the program (WSIB costs, staff, replacement costs, etc.)
2. **C** represents the costs of the program (equipment, program, training, etc.)

Once all of the benefits and costs are totalled, a ratio is calculated by dividing the benefits by the costs (B1 + B2 / C1 + C2). If the ratio is 1:1 or greater, then the decision is economically sound.

Calculating the Benefit Portion of the Equation

The benefits portion of the equation equates to the money that can potentially be saved as a result of the implementation of the program. This portion of the equation involves four calculations:

1. Calculating the WSIB costs. See "WSIB Costs" on page 69.
2. Projecting WSIB cost savings. See "Projecting WSIB Claim Cost Savings" on page 70.
3. Calculating staff replacement costs. See "Staff Replacement Costs" on page 70.
4. Projecting staff replacement cost savings. See "Projected Staff Replacement Cost Savings" on page 71.

These costs comprise the benefits portion of the equation. These costs are minimized with the projected reduction of compensable injuries. It is recognized that there other costs that could be attributed to a client handling injury such as administration costs, possibly equipment damage, injury to clients, etc. To prevent confusion, we did not include these indirect costs in the cited example.

WSIB Costs

By reviewing the NEER Firm Summary Statement, organizations can determine their maximum potential NEER rebate or surcharge.

The NEER firm summary statement is sent to the employer on a quarterly basis: March 31, June 30, September 30 and December 31. Each statement contains the updated costs information based on the benefits processed up to the quarterly statement date.

The September 30 statement is considered to be the "money" statement, since it is the only statement where the refund/surcharge calculation is shown. The refund/ surcharge is calculated based on the NEER costs as of September 30.

Note that there are three years being reviewed at the same time (3-year review). The refund/surcharge sent to each firm is based on the total amount of the three years.

For example, Firm #123456 for the year 2001.

Table 9. Costs

Accident Year	Premium	Expected Cost Factor (%)	Expected Cost Costs(%)	NEER Costs($)	Rating Factor (%)
2001	546,246.84	51.24	281,820	300,300	64.48
2000	500,000	46.35	321,750	175,320	62.77
1999	475,000	43.52	200,720	120,160	61.61

Premium (2001) = $546,246.84
Expected Costs = $281,820
Rating Factor = 64.48%

Actual NEER Surcharge
NEER Costs: $300,300
Expected Costs: $281,820
Difference: $18,480

Difference x Rating Factor
($18,480 x 64.48%) = $11,915.90
Actual Rebate (-) or Surcharge (+): +$11,915.90 (surcharge)

If the result is negative, the facility has a rebate. If the result is positive, the facility has a surcharge.

Premiums (2001) $546,246.84 + Surcharge (2001) $11,915.90 = Total WSIB Payments $558,162.74

Projecting WSIB Claim Cost Savings

A conservative figure of 25% reduction in client handling accidents is used to project what the WSIB claim cost savings could be with a successful client handling program.

Premium (2001) $546,246
NEER Expected Costs (2001) $281,820
Actual NEER Costs (2001) $300,300
Projected 25% reduction in NEER Costs $225,225
Difference between NEER Expected and the projected 25% NEER Reduction (281,820 – 225,225 = $56,595)
Difference x Rating Factor (56,595 x 64.48%= $36,492.46)

In this situation, the firm would acquire a rebate for the year 2001 of $36,492.46 instead of a surcharge of $11,915. Therefore, there is a differential from surcharge to rebate of $48,359. $48,359.00 is B1 of the equation.

Staff Replacement Costs

Determine the staff replacement costs that were incurred by each department as a result of lost time injuries due to client handling. It is important to review the applicable collective agreement to determine overtime pay rates. Your organization's finance department may be able to provide you with this information.

Here is a simple example of staff replacement costs. A long term care facility incurred 15 WSIB lost time claims due to client handling injuries in 2001. 150 days were lost for these claims. Each claim resulted in injuries to Health Care Aids. For each day lost, the organization supplied replacement staff at an average hourly rate of $16.00. The average length of the shift was 7.5 hours.

Total Staff Replacement Costs
7.5 (hrs.) x 150(days) x $16.00(hourly rate) = $18,000.00

Projected Staff Replacement Cost Savings
If we estimate a 25% reduction in accidents, the staff replacement costs are also reduced by 25% and a savings is incurred.

$18,000.00 (2001 staff replacement costs) x 25%
(projected savings) = $4,500.00 (B2)

$4,500.00 is B2 of the equation.

Summary of the Benefit Portion of the Equation
B1 (WSIB projected cost savings) + B2 (projected staff replacement cost savings) = B.

$48, 359.00 + $4,500.00 = $52,859.00
B = $52,859.00

Calculating the Cost Portion of the Equation
The costs associated with implementing a client handling program may involve external consultants, internal personnel time, equipment purchasing, training, duplicating printed material and human resources. All tangible costs should be considered in to the total program costs.

Table 10. Example of Cost Summary

Item	Cost
Purchase of program material	$200
Equipment purchases	$25,000
Human resources for program development time	$3,000
Training costs:	$20,000
Total	$48,200

Total Program Costs = $48,200 (C)
Calculating the Cost Benefit Ratio
(Total Savings / Total Costs = Cost Benefit)
TOTAL SAVINGS (B) $52,859/TOTAL
COSTS (C) $48,200 = 1.10

What does this mean? For every dollar invested in the program, a benefit or savings of $1.10 was realized. Therefore, a decision to implement the program would be economically feasible.

4.4 Step Four-Developing the Program

There are three main components that require development in this phase of the program:

- Developing a Policy
- Developing Program Procedures
- Developing the Training/Education Program

Developing a Policy

A policy is a statement of principles and general rules written by an employer, which serves as a guide for action and communicates senior management's commitment. The policy, if reflective of current legislation, can be enforced in the facility as if it were law. It is important that the policy contain all essential components to ensure it supports the prevention of all injuries related to client handling procedures. A comprehensive policy should include the following:

- Policy commitment statement
- Goals
- Objectives
- Definitions
- Roles and responsibilities of all workplace parties
- Accountability
- Education/training
- Evaluation

The policy commitment statement should be brief, but should include the following information:

- A general statement of senior management's commitment to health and safety in relation to client handling.
- Language from the organization's mission and/or vision statement. This builds an organizational identity with the policy and fosters the organization's general philosophy governing their service.

The policy goals should be concisely stated and should be achievable and measurable. The objectives of the policy need to identify what the policy and program are intended to accomplish.

The use of consistent terminology is important. In addition, terms such as lift, procedure and repositioning should be defined to ensure that all workplace parties understand the context of the policy. Terms such as lifting device, transfer device and assistive devices may also warrant defining. A Glossary of terms is found at the end of this document.

Zero Lift Policy

While a zero lift policy is certainly promoted as a best practice, this may not be practical for all organizations. Careful consideration must be made based on the type, nature and location of client services. In addition, a zero lift policy requires a considerable commitment in terms of equipment and assistive devices. Some organizations may choose to limit the situations in which clients are manually lifted. In these cases, it is suggested that language such as minimal lift or zero lift be used with stated exceptions.

The term zero lift means that there are absolutely no manual client lifts permitted. It is important to clarify that "lifts" pertain to the one, two or three person lift and not to the lifting of client limbs, etc. that may be associated with client transferring and repositioning activities. All total client lifts must be completed with the use of equipment (client lifting devices).

According to Garg (1996), the zero-lift policy should include the following objectives:

- Eliminate all manual lifting of clients by providing modern, safe, easy-to-use equipment (total lifts, sit/stand lifts, walking belts, tub/shower chairs and repositioning in bed devices such as slider sheets).
- Provide an environment in which the use of equipment is expected, encouraged and enforced.
- Mandatory employee participation in all aspects of the program.
- Provision of training that includes demonstration, hands-on practice, follow-up and feedback for all staff using lift/transfer/repositioning devices.

The following section shows an example of a Client Handling Policy:

- Commitment Statement
- Goals
- Objectives
- Accountability
- Definitions
- Management roles and responsibilities
- Supervisor roles and responsibilities
- Worker roles and responsibilities
- Joint Health and Safety Committee (JHSC)
- Orientation/Education
- Developing Program Procedures

Commitment Statement
The following text is an example of a Commitment Statement:

> *This organization is committed to providing a safe and healthy working environment for all staff and clients. Our organization demonstrates its commitment by providing financial, physical and human resources to reduce ergonomic hazards and encouraging safe and healthy work practices during client handling, whether it be in transferring, lifting or repositioning procedures. This organization greatly values its staff and makes every effort to protect them from injury.*

Goals
The following text is an example of goals:

- To decrease the risk of musculoskeletal injuries (MSIs) associated with client handling tasks.
- To promote and support the health and safety of all clients and employees.
- To provide equipment, resources and effective training.

Objectives
The following text is an example of objectives:

- To promote the consistent application of client lift, transfer and repositioning techniques.
- To ensure all caregivers continually assess all risk factors related to client mobility.
- To ensure caregivers have the appropriate skills in assessment, communication and problem-solving with respect to client mobility.
- To ensure that caregivers know, understand and can apply safe body mechanics.

Accountability
The following text is an example of an accountability statement:

> *All employees and management staff are expected to comply with the processes and guidelines for assessment, lifts and transfers as set out by the policy and program. Non-compliance results in progressive discipline.*

Definitions
The following terms are examples of definitions:

- **Transfer:** procedure used to assist a client, who can bear weight at least through one leg or both arms, to move from one surface to another. A transfer should be used to move a client who is mentally able to help and can bear weight at least through one leg or both arms and, when appropriate, transfer devices, such a transfer belt, transfer board or transfer disk, are available.
- **Lift:** procedure used to lift or carry the entire weight of a person from one surface to another. A lift is used to move a client who is physically unable to help with the procedure.
- **Repositioning:** procedure used to move a client to a new position on the same surface. Repositioning should be used to move a client up in bed or a chair, when the client is physically unable to move or is mentally unable to follow instructions.

Management roles and responsibilities
The following text is an example of management roles and responsibilities:

- Provide equipment, necessary resources and training
- Maintain the client handling program through continuous quality improvement strategies
- Enforce the policy, procedure and program
- Annually evaluate and update the program

Supervisor roles and responsibilities
The following text is an example of supervisor roles and responsibilities:

- Enforce program through regular monitoring strategies
- Conduct accident/incident investigations
- Report all findings of investigations through a monthly summary report to senior management
- Ensure all new staff receive general and site-specific orientation to the policy and program
- Maintain equipment assigned to their department
- Conduct pre-start-up inspections of equipment
- Include the auditing of worker practice in the monthly planned inspections and report on findings to senior management in a monthly report
- Ensure that all new clients have a mobility assessment within 24 hours of admission and determine transfer, lift or repositioning technique and equipment
- Ensure adequate communication and documentation processes
- Take every reasonable precaution for the protection of workers and clients
- Acquaint workers with policy and supporting program through orientation and regular education sessions

Worker roles and responsibilities
The following text is an example of worker roles and responsibilities:

- Comply to policy and procedures at all times
- Participate in regular training as established by the supervisor
- Adhere to the designated lift/transfer status as documented on each Resident's care plan and on the card at each resident's bedside
- Report any unsafe acts, hazards, equipment problems, change in client mobility status or any other untoward issue to the supervisor, or delegate immediately
- Report any incidents, accidents or near misses to the supervisor immediately and co-operate in the investigation as required by management

Joint Health and Safety Committee (JHSC)
The following text is an example of the JHSC responsibilities:

- Review quarterly incident/accident data related to client handling
- Review policy and program annually
- Make recommendations in writing to management

Orientation/Education
The following text is an example of an orientation and education section within a policy:

> *To ensure client and staff safety, all staff are to be oriented to the program policy, procedures and program. All new staff must be oriented to the policy and program prior to taking a client care assignment. The orientation consists of two components:*
>
> ***General**: Orientation to general policy, procedures and program.*
>
> ***Site Specific**: Specific training on equipment, assessments and techniques. This training is two full days and is followed by a two-day buddy system.*
>
> *All staff receive an annual half-day training session. This involves a review of the policy, procedures and program with a hands-on re-instruction of proper use of equipment, techniques and proper body mechanics. Any workplace party may request additional training and education at any time. The departmental supervisor maintains the training records. These records shall be stored in the Health and Safety Training binder.*

Evaluation
The following text is an example of an evaluation statement within a policy:

> *The multidisciplinary committee conducts an evaluation of the program by department on a quarterly basis. The committee completes an annual total review of the policy and associated procedures.*

Accountability
The following text is an example of an accountability statement within a policy:

> *The supervisor is responsible for auditing worker practice with respect to compliance to the program policy and procedures. Workers found not complying are corrected as per the Progressive Discipline policy. The supervisor documents any such discipline on the employee's personnel file.*

Lift Team Method

A Lift Team is one training method that various long-term care facilities and hospitals have adapted, to reduce their nursing back injuries due to the lifting of clients (Charney, 1997). The "Lift Team" involves eliminating from the task of lifting clients within their facilities. The Lift Team is trained to perform all the required daily scheduled lifts as well as being on-call for non-scheduled lifts and transfers. These teams consist of two people trained in the biomechanics of lifting. Fine tuned co-ordination between departments also allows this method to work. Some facilities have 1-2 trained teams, depending on the size and workload of the facility. Positive results have included:

- **Lifting teams help control risk.**
- **Lifting is a skill, not a random task, and should be performed by skilled teams using mechanical lifting devices.**

Developing Program Procedures

The development of program procedures is an important part of the program development. The development of comprehensive procedures ensures that the program (from an operational perspective) is complete and is followed consistently by management and staff.

There are many procedural components that are required for an effective client handling program. Such procedures include:

- Initial and Ongoing Client Mobility Assessments
- Client Mobility Mini-Assessments
- Communicating the Acceptable Client Handling Technique
- Client Handling Techniques
- Orientation
- Regular Staff Education
- Purchasing Client Handling Equipment
- Preventative Maintenance of Related Equipment
- Pre-Start Up of Equipment Checks
- Cleaning of Client Handling Devices
- Reporting Hazards and Employee Incidents/Accidents
- Community Care-Specific Issues

Initial and Ongoing Client Mobility Assessments

The procedure for conducting initial and ongoing assessments is the same but the frequency of the assessments varies. A procedure outlining the process for an initial assessment of the mobility status of all new clients should be developed. Important components to include in the procedure comprise the following:

- What is the time frame for completion of the assessment?
- Who is responsible for completing the assessment?
- What are the parameters surrounding the assessment (i.e., fragility, pain, injury, cognitive status and the ability of the client to bare weight)?
- Which form or tool is to be used?
- How to communicate the client handling technique?
- What are the documentation processes?

Client Mobility Mini-Assessments

A client's mobility status can change at any time due to a number of influencing factors. It is necessary that an assessment of the client mobility status be conducted by the caregivers prior to each client handling procedure. It is recommended that the assigned caregiver have the ability to request additional help and/or the use of a client handling device as required. However, it is recommended that the caregiver not be given the ability to upgrade the procedure (making recommendations for fewer helpers or no mechanical lift). In this case, the procedure should detail a further assessment by the team leader. In addition, whenever a client's condition is altered, a formal re-assessment should be conducted to assure the recommended lift/transfer is still appropriate.

The procedure should include:

- The standard process for conducting an assessment and reference to an applicable tool or form
- Communication and documentation processes

Communicating the Acceptable Client Handling Technique

This procedure should detail the process for communicating the appropriate client handling technique for each client. The procedure should include the following components:

- Use of an assessment card
- Details regarding the documentation into the client's profile/care plan
- Identification of appropriate client handling technique
- Identification of client handling equipment and devices
- Use of logo cards and location of logo card placement

It is critical that this information be communicated to each caregiver at the beginning of each shift and reviewed and updated upon any change in the client's condition.

Client Handling Techniques

Each client handling method requires a formal, documented, step-by-step procedure. This ensures consistency of safe client handling techniques and promotes safety for both staff and clients. Client handling techniques include:

- Client lifting technique–specific to each client handling device
- Client transfer techniques–bed to chair/commode; chair/commode to bed; bed to wheelchair; bed to stretcher; use of sit/stand equipment
- Client repositioning techniques–with/without use of assistive device; pulling client up/down in bed; rolling client side to side; moving a client in a chair

The organization should consult with the suppliers and/or vendors of the various client handling equipment and devices for specific equipment and device procedures. Many suppliers and vendors have well-documented client handling procedures associated with their equipment. More information on these topics can be found in Modules 6 and 7 of this document.

Orientation

The procedure should detail all parameters surrounding both the general and site-specific orientation. It is suggested that the general orientation include the following components:

- Introduction of program policy
- Reinforcement of program compliance and outline of accountability
- Introduction to the program procedures
- General MSI prevention

The site-specific orientation should include:

- Instruction in client assessments
- Program communication and documentation systems
- Instruction in the safe use of all client equipment/devices
- Client-specific issues and considerations

Regular Staff Education

Organizations are strongly encouraged to provide annual, unit/department-specific retraining of all staff. The annual retraining should include the following components:

- Review of the policy and procedures
- Review of client assessments and logo system
- Review of communication and documentation processes
- Equipment checks and preventative maintenance processes
- Hands-on re-instruction of proper use of equipment and client handling techniques
- MSI prevention and proper body mechanics

The procedure should detail the following parameters:

- Training content
- Frequency of the training
- Statement as to whether the training is mandatory
- Statement that staff may request additional training and education at any time
- Preservation of training records

Purchasing Client Handling Equipment

It is recommended that a procedure be established for purchasing any client handling equipment. The procedure should include the following components:

- Assessment process to establish the need for equipment/devices
- Identification of person/department responsible for equipment purchasing and process of notification to such
- Process of contacting vendors/suppliers
- Arranging a unit-specific trial of equipment/devices
- Evaluating the equipment/device
- Securing the necessary resources from vendor/supplier such as staff training on the proper use of the equipment/device, documented procedure, preventative maintenance details and warranty documents

More information on this topic can be found in "Environment and Equipment" on page 161.

Preventative Maintenance of Related Equipment

This procedure should outline the process for the regular maintenance of all client handling equipment. The procedure should include:

- The individual(s) responsible for the repairs (internal and/or external resources)
- Tagging system for malfunctioning equipment
- Frequency of preventative maintenance
- Listing of all equipment requiring preventative maintenance
- Use of a maintenance/repair request form
- Communication
- Record keeping

Pre-Start Up of Equipment Checks

This procedure should outline the regular inspecting of all patient handling equipment at a frequency established by the organization. A suggested frequency is every 24 hours. Records should be maintained. Refer to "Environment and Equipment" on page 161 for further information on the equipment checks. In addition, any serviced or new equipment should be checked initially by the supervisor prior to use by the staff.

Cleaning of Client Handling Devices

A procedure outlining the regular cleaning/disinfection of client handling equipment and devices is required. This procedure should include the following components:

- Equipment-specific cleaning techniques
- Reference to the name of the general disinfectant used
- Frequency of cleaning
- Who is responsible for the cleaning
- Tagging of soiled and cleaned equipment/devices
- Cross-reference to isolation cleaning procedures
- Laundering/cleaning of slings and slider sheets
- Safe use of chemicals used including any personal protective equipment required and the safe use of atomized products

Reporting Hazards and Employee Incidents/Accidents

A procedure is required for the prompt reporting of hazards, incidents and/or accidents associated with client handling to the supervisor. The organization should have established procedures and forms for near miss/hazard reporting, employee incident/accident reporting and accident investigation. In this case, the organization should cross-reference the applicable policy/procedure documents.

The procedure should reinforce the following components:

- Prompt investigation of all reported client handling incidents/accidents and documentation of corrective action by the area supervisor
- Review/retraining of staff as required
- Communication of incidents/accidents, investigative findings and corrective actions to the program leader/multidisciplinary committee

Community Care-Specific Issues

Community-based services face some unique challenges with respect to client handling. This section addresses the issues associated with client service agreements, client directed care and the funding of handling equipment.

Client Service Agreements

One of the main objectives of the client handling program is to minimize the amount of manual client handling. If a client is resistant to being lifted and/or moved with an assistive device, this could be a potential barrier to the program. It is beneficial for the organization to include wording in the client service agreement that supports the use of client handling aids. This should clearly communicate the importance of both client and employee health and safety and set a positive tone for the culture and philosophy of the organization.

There are two important issues that should be addressed in the health and safety section of the Client Service Agreement:

1. Requirement that the working environment not pose a risk to the well-being of workers;
2. Repairs to broken equipment are the responsibility of the client and that services may have to be modified until the repairs are completed.

Ongoing non-compliance may result in the discontinuation of services.

Sample Wording of the Health and Safety Section of a Client Service Agreement
The following sections provide examples of health and safety language that could be considered for inclusion in a community care organization's Client Service Agreement.

> *Client-directed services means that the Client knows what assistance is required and when and how that assistance should be provided.*

This clause helps to ensure that all employees carry out tasks in a similar manner. For instance, all employees use mechanical lifts rather than lifting the client manually.

> *The Client communicates when and how assistance should be provided to those who provide assistance.*

This clause addresses the importance of a communication tool. It may be verbal, via the client, or preferably written and left in the client's home.

> *The Client has the responsibility to develop a contingency plan in the event of service disruption (e.g., snow storm, illness, equipment break down, etc.).*

This clause allows the organization to limit the provision of service when a worker's safety is in jeopardy. For example, when a mechanical lift is broken and the normal service has to be altered to prevent manual lifting.

> *Ensure that all equipment and supplies required for use in providing services are available to the employees.*

This clause emphasizes the fact that it is the responsibility of the client to provide support for the services. Clients must provide the equipment that is deemed necessary for the service.

> *Ensure that all equipment used in the provision of service, which is owned or used by the Client, is regularly maintained.*

This clause places the responsibility for the equipment on the client and emphasizes the need for caring for the equipment.

> *Ensure that any broken equipment used in the provision of the service is promptly repaired at the expense of the Client.*

This clause identifies the client as the party responsible for the equipment and the fact that they need to assume financial responsibility for maintaining the equipment.

> *Keep the home free of any possible health and safety hazards that may injure the employees.*

This clause is a general statement that could be useful when obscure health and safety risks arise. For example, obstacles that interfere with the mobility of a lifting device.

Interact with employees in a co-operative and non-abusive manner.

This clause states intolerance for abusive behaviour toward employees.

Ensure that family members and guests interact with employees in a co-operative and non-abusive manner.

This clause extends the responsibility of providing for a non-abusive environment to anyone who may be in the client's home at the time of service delivery. This may occur when a family member does not want their family member lifted in a mechanical lift.

Cancellation of the Service Agreement

The Agreement may be immediately cancelled by written notice where the Client's:

- *Behaviour creates a risk of serious physical or emotional harm to employees.*
- *Home is used for an illegal act, trade or business.*

These clauses allow for cancellation of service if a health and safety situation cannot be resolved.

Client Directed Care

Client directed care is an important consideration in client handling in the home care environment. However, it is important to note that a client cannot direct a worker to provide care in a manner that may injure a worker. The employer needs to ensure that staff are safe and remain healthy while they are working with the clients. Hence, the client's right to direct their own care has limits.

Workers must remember that they have the right to refuse unsafe work. Although the Ministry of Labour does not get directly involved, due to the difficulty in entering a person's home, there is still an obligation on the part of the employer to investigate and implement suitable controls to promote worker health and safety.

Funding for Transfer and Lift Equipment

The clients being serviced by a community care organization may have difficulty ascertaining funds for mechanical lifts. When a client's mobility status is assessed as being a lift, the organization needs to put safe work practices in place. If you cannot access a mechanical lift, a two-person manual lift needs to be utilized. Workers who work alone should not be expected to lift a client by themselves. If a family member cannot participate in the lift, a second worker may be needed for the completion of the lift.

Developing the Training/Education Program

A training program is needed as an integral part of this program. Procedures associated with the training and the development of the material needs to be completed prior to the implementation. The content of the training should include:

- Legislation
- Goals/Objectives
  - Assessment of risk factors related to the client, caregivers and the environment
  - Choice of an appropriate transfer/lift/reposition after assessment of risk factors
  - Performance of transfers/ lift/reposition
  - Use of the assessment cards and logos
  - Choice of appropriate equipment
  - Anatomy and physiology
  - Body mechanics
- MSIs
- Ergonomics
  - Principles of adult learning
  - Communication and teaching skills
  - Discussion of causes, prevention and treatment of MSIs
  - Practical demonstrations
  - Information about stretch breaks to relieve static and awkward postures

More information on developing procedures for training/education can be referenced in "Tips for Training" on page 177.

4.5 Step Five: Implementation

Upon completion of the development of policies, procedures and the training material, you are ready to proceed with an implementation strategy for the program. There are different implementation approaches. A facility-wide implementation requires that the program be launched simultaneously across the organization. This approach requires extensive preparation to ensure all of the *glitches* of the program are ironed out prior to implementation. A more conservative approach is a staggered implementation or–pilot program–where the unit with the highest incident/accident rate is selected as the pilot and the implementation of the program is initiated there.

The following are steps to the implementation of a pilot program:

1. Summarize and rank department injury rates. See "Rank Statistical Information" on page 85.
2. Choose pilot area. See "Choose the Pilot Area" on page 86.
3. Conduct and summarize unit/department needs. See "Conduct and Summarize Unit/Departmental Needs" on page 86.
4. Summarize the needs of the unit/department. See "Conduct and Summarize Unit/Departmental Needs" on page 86.
5. Prepare for education/training. See "Prepare for Training" on page 88.
6. Plan for and launch the pilot program. See "Planning for and Launching the Pilot Program" on page 89.
7. Evaluate and Revise the program. See "Evaluating and Revising the Program" on page 90.

Rank Statistical Information

Once the data is collected from the Incident/Accident Analysis Tool, the program leader or multidisciplinary committee should organize the statistical information in a way that the priority units for immediate intervention are determined. The statistical summary should collate all factors from the unit/departmental assessments including first aid claims, medical aid claims, lost time and the number of WSIB claims per unit or department which occurred during client transferring, lifting or repositioning. Units/ departments should then be classified from the highest to lowest priority based on the statistics. However the data is summarized, ranking the information shows which hazardous areas need immediate action.

Table 11. Incident/Accident Summary Tool

Year:									
Dept. Unit	**Lift**	**Transfer**	**Reposition**	**First Aid**	**Medical Aid**	**Lost Time**	**Total Claim Costs**	**TOTAL**	**Rating Highest to Lowest**
TOTAL:									

Choose the Pilot Area

Once every unit or department has been summarized and rated from highest to lowest incidents and claims, the next step is determining where to implement the pilot project.

Conduct and Summarize Unit/Departmental Needs

The unit/department chosen for the program pilot needs to conduct a complete assessment of the area. This is summarized in "Step Two: Assessing Organizational Factors" on page 55 in the HCHSA Handle with Care™ program. The following assessments must be completed:

- "Assessing Clients" on page 61
- "Assessing Equipment" on page 64
- "Assessing Environmental Barriers" on page 65
- "Assessing the Organizational Culture" on page 67

Following the completion of the various assessments the information needs to be summarized by the program leader or multidisciplinary committee in preparation for the actual implementation of the program.

Table 12 on page 87 helps to summarize key points during the assessment phase of the program. This allows the information to be analyzed and the appropriate action/ remedy applied prior to the implementation of the program.

Table 12. Departmental Summary of Client Handling Needs

Unit/department:			
Date:			
Assessment completed by:			
Client Mobility Summary			
Client	**Days**	**Evenings**	**Nights**
Lifts			
Transfers			
Repositioning			
Independent			
Other barriers			
List of Client Handling Equipment and Devices			
Mechanical Lifts	**Assistive Devices**		
Identified Equipment Needs			
Mechanical Lifts	**Assistive Devices**		
Identified Environmental Barriers			
Environmental Barriers	**Recommended Action**		
Identified Organizational Barriers			
Organization Barriers	**Recommended Action**		

Address the Unit/Departmental Needs

Following the completion of the Departmental Summary of Client Handling Needs form, the program leader or member of the multidisciplinary committee should review the information with the unit/department manager to ensure it is accurate. Then, an action plan needs to be established to address the identified needs and barriers. This may require various interventions such as:

- An ergonomic evaluation
- Adjustments to the environment
- Purchasing of equipment and assistive devices
- Repair/preventative maintenance to existing equipment
- Administrative changes such as staff scheduling, staff adjustments and work method changes
- Updated/revised client mobility assessments

Prepare for Training

This step of implementation focuses on the questions that the committee or program leader must review before the actual training program for client handling begins. This section asks the question, "Are you ready to begin your training sessions?" The following checklist should be completed before beginning training sessions:

Sample checklist:

- Have you booked the training/education facility?
- Have you obtained the names of the participants?
- How many workers are attending per session?
- Have financial arrangements been made for the presenter (if applicable)?
- Has an introduction summary of the presenter been made?
- Do you need photocopies, designated training booklets for the session?
- Has scheduling of the training session (how many times, shifts, what months) been arranged?
- What type of equipment do the presenters need?
  - projector and screen?
  - laptop computer?
  - overhead projector?
  - TV and/or VCR?
  - extension cords?
  - flip chart?
  - wheelchairs?
  - props/mannequins?
  - chairs?
  - transfer devices?
  - lifting devices?
  - copies of the evaluation?
  - refreshments?
  - gift for presenters?

If all of the pertinent questions have been answered, you are prepared to present the training/education session in an organized manner.

Planning for and Launching the Pilot Program

By this point, all the barriers have been addressed and the training is ready to be delivered. Now, attention needs to turn to administrative and communication issues. The program policies and procedures must be communicated and made accessible to all staff, including managers, supervisors, workers and the JHSC/H&S Rep.

The initial communication plan should include a review of the program with the management team of the organization, so that management can prepare for the implementation of the program in their area. It is recommended that the program leader review the program with the management team by:

- Making a presentation at a management meeting
- Circulating a letter and the program material

In addition, the program should be incorporated into the following organizational activities:

- Orientation program for new staff
- Planned training sessions
- Management meetings
- Unit/departmental meetings

Although physicians, volunteers, students, contract workers and family/visitors of clients are not considered employees, it is recommended that they be provided with a general knowledge of the program policies and procedures. They should also be provided with a general orientation to the program. Any individual who is directly involved in moving clients should be included in the site- or unit-specific orientation.

For family members/visitors, a memo can be either mailed or a sign posted in the area that outlines general program information. In addition, a section can be added to the orientation booklet, outlining general program components.

It is suggested that a section outlining key program components be added to an existing "Employee Handbook", pamphlet or other staff communication tool.

Meetings with the manager(s) of the area(s) selected for the pilot and the program leader or multidisciplinary committee member should follow. This provides an opportunity to carefully plan out the program implementation with that particular unit/ department.

The following items should be addressed:

- Ensure understanding of client handling program policies/procedures
- Ensure that identified needs and barriers have been addressed or resolved
- Ensure appropriate equipment is in place
- Ensure that environmental issues have been addressed
- Schedule training dates and times
- Ensure that client mobility assessments are current
- Ensure that client profiles/care plans are up-to-date and that the chosen client handling technique is identified
- Order/print sufficient program materials such as staff training material, forms, logo cards, etc. and ensure that the training material is delivered to unit/department
- Choose staff preceptors (if applicable)
- Ensure you have an education/training evaluation tool (see sample in Table 15 on page 97)

Careful planning with the unit/department supervisor/manager ensures that the implementation of the pilot runs smoothly.

Evaluating and Revising the Program

Upon completion of the pilot program, an evaluation of the program needs to be completed. Results from this evaluation are used to make suitable revisions to the program for full-scale implementation. The issues that need to be evaluated include:

- How well did the needs assessment tools identify environmental, equipment and organizational barriers?
- How consistently and accurately were the clients assessed?
- How well was the client handling technique documented in client care plans?
- How well were policies and procedures followed?
- How many incidents/accidents were reported and how was the investigation handled?

In addition to the operational elements of the program, the material taught in the training sessions needs to be evaluated. Issues that should be considered are:

- Have all participants completed the training evaluation?
- Are the staff carrying out the training procedures correctly?
- Have problematic clients been identified and problem solving carried out?

The findings from this evaluation should be documented. This information is used for possible program revisions in the next phase of implementation before the program goes organization-wide.

Information gathered from the pilot program should be communicated to and analyzed by the program leader and/or the multidisciplinary committee and by the manager/supervisor of the pilot area. This helps to fine tune the various elements of the program. All parties should be involved in Analysing the information and recommending any program enhancements.

A thorough evaluation of the pilot program should be completed and the program enhanced prior to organization-wide implementation. See "Step Six: Evaluation" on page 91.

Upon completion of the pilot evaluation, the program leader or committee needs to revise the existing structure of the program to reflect the findings from the pilot. This may include rewriting procedures, revising the training program, enhancing the methods of communication, etc. It is important to recognize that the revision process needs to occur on a regular basis based on the changing needs of the organization. Revisions beyond the initial pilot occur as a result of the information obtained in the program evaluation as outlined in "Step Six: Evaluation" on page 91.

The completion of "Step Five: Implementation" on page 85 is a significant point in the client handling program. It signifies that all of the program components are in place, have been tested, revisions have occurred and the program can be fully implemented. The full- scale implementation mirrors the process that occurred during the pilot implementation. The success of the program is highly dependant on the compliance to the program policies and procedures and enforcement of this accountability by management. Managers have a role to play in ensuring policies and procedures are followed and training is given to all staff. The staff must be expected to follow all related policies and procedures.

An evaluation of the program and its impact on the organization helps to illustrate the value of this important program for worker health and safety. "Step Six: Evaluation" on page 91 outlines how the program can be evaluated to provide qualitative and quantitative measures of success.

4.6 Step Six: Evaluation

The policy and supporting program should be evaluated not only following the pilot program, but on an ongoing basis using a continuous quality improvement framework. The department supervisor should collect, analyze and summarize the following information in a monthly report to senior management:

- Employee incident/accidents
- Accident investigations
- Near misses/hazards
- Equipment inspections
- Planned monthly inspections–auditing of worker practice

Assessing Ongoing Risk and Continuous Improvement

Leading management consultants reinforce that an organization cannot effectively manage a program if there are no measurable indicators. Measuring and evaluating your program is vital to program effectiveness.

Program evaluation is a systematic continuous process of providing information about the value of a program for the purpose of decision-making. It is also a process where potential risks are identified and fed back into the program with the goal of improving insufficiencies. This enhances both the effectiveness and efficiency of the program.

The goals of program evaluation include:

- Rationalizing the existence of the program
- Enhancing and improving components of the program
- Ensuring that the stated goals and objectives of the program are met
- Maintaining the program

There are two general categories of evaluation methods:

1. "Quantitative Methodologies" on page 92
2. "Qualitative Methodologies" on page 93

The quantitative indicators may be variables such as numbers of incidents, severity of the incidents, staff use of mechanical lifts, etc. The qualitative indicators may consider issues such as numbers of complaints, compliance with policy and procedures, completion of client handling assessments, etc.

Quantitative Methodologies

Quantitative methodologies involve the collecting and Analysing of objective data such as lost time days, cost, number of incidents/accidents, WSIB premiums, etc. Data should be analyzed and presented in a way that allows decisions to be made. Examples of internal sources of data that may be collated and analyzed include:

- Employee incident/accident reports
- Near miss/hazard reports
- First Aid logs
- Accident investigation reports
- Injury analysis reports
- WSIB cost statements

Analysis of Quantitative Data

Establishing unique patterns of injuries due to client handling procedures is key in evaluating the effectiveness of the program. The analysis of incidents/accidents by department and any resultant WSIB costs should be completed as a baseline and repeated at set intervals. This is the key to demonstrating financial success through reduced expenditures related to disability costs (WSIB) and provides validation for the program to solicit ongoing support by senior management.

Accidents resulting in injury or illness and incidents that had the potential of causing injury or illness must be investigated and corrective action applied to prevent recurrence. It is strongly recommended that each incident/accident involving a client handling procedure be investigated by the supervisor. All findings should be documented and the corrective action applied or planned for.

The goal of accident/incident investigation is to determine root causes and corrective action steps that correct the root causes. It is important to ascertain whether the incident occurred during a lift, transfer or client repositioning. In addition, it is important to identify the root cause and any contributing factors. Consider the following:

- Equipment issues: broken equipment; uncharged battery pack; missing parts; unavailability; improper/incorrect use;
- Client mobility issues: sudden change in mobility status; unreported change; undocumented change; out-of-date client profile, lack of, or improper assessment; missing or inappropriate logo;
- Worker issues: lack of training/orientation; non-compliance;

All incident/accident investigations related to client handling must be reviewed and summarized for the purpose of a more detailed analysis. A summary report needs to be prepared and communicated back to the program. This supports the continuous quality improvement process.

Qualitative Methodologies

Qualitative methodologies provide a holistic approach to program evaluation. It puts the evaluator in direct contact with the program. This evaluation method relies on gathering data based on observed program impacts and effects from participants or other observers. After the observation, conclusions can be drawn based on the results of data collected. This method of evaluation is extremely beneficial for evaluating the following components of the program:

- Implementation phase of program
- Effectiveness of education/training
- Program compliance

It is important to note that the validity of this research method largely depends of the evaluator's ability to accurately and completely describe/report what is seen. Care should be taken to ensure that the evaluator remains objective to prevent personal bias from interfering with the results. Strategies to help control bias in data collection include:

- Care in framing questions - don't suggest or solicit answers
- Provide training for evaluators in objective recording
- Check for incongruities
- Use an external objective evaluator

Analysis of Qualitative Data

There are three general types of data collection used in qualitative analysis:

1. **In-depth open-ended interviews/focus groups.** This involves collecting data from one individual or a group of individuals. Questions must be framed appropriately to ensure they are relevant, clear and open-ended so as to facilitate information sharing. This is useful for evaluating the program implementation strategies and training component. It is often used when front line staff have difficulties reading, writing and understanding the English language.

2. **Written questionnaires.** This is similar to method one except that the information is collected by way of written questionnaire. This is particularly useful for evaluating the implementation phase and the education/training component.
3. **Direct Observation.** This involves the regular auditing of worker practices by management for policy and program compliance. This should be incorporated into the management inspection processes - planned and unplanned inspections. Compliance should be positively reinforced or validated. Providing positive feedback and recognition to employees reinforces good performance. The manager must address improper worker techniques and/or non-compliance. Investigation of the issue determines why and what needs to be done for future compliance. It may be possible that the worker requires re-instruction or re-training on techniques or review of procedures. All findings and corrective action on the part of management requires documentation. This demonstrates due diligence on the part of management and promotes the importance and commitment to this program.

Reporting the Findings
Qualitative evaluation reports are descriptive in nature and are organized into a methodical framework. A typical qualitative evaluation report may contain:

- Brief description of program and how it was implemented
- Analysis of major processes involved
- Participants
- Activities observed
- Observed changes and outcome
- Program strengths and weaknesses

Management should collect and analyze their findings in a monthly report. This information should be fed back into the program, which can ultimately result in potential program enhancements. Such enhancements may include:

- Improved strategies for communication of program policies and procedures to ensure they are understood by all.
- Improved procedures and/or work methods to change existing procedures that are not working.
- Increased training or altering training methods to ensure that the employees are provided with the appropriate skills.

Following the indicators, the program leader or multidisciplinary committee should assume responsibility for the co-ordination of efforts aimed at the appropriate program enhancements/improvements. Program changes should be documented and communicated immediately to all management and staff. The department supervisor needs to implement any changes within their area as directed by the program leader. The program leader should be informed as to the progress of the implemented changes and any issues or concerns that arise.

Table 13. Monthly Client Handling Program Performance Measurement Tool for Managers

Department:	
Date:	
Manager:	
Client Mobility Assessments	**Comments**
Initial assessment completed within 24 hours of admission	
Ongoing assessments of clients completed and documented prior to every client handling procedure	
Mini assessments conducted prior to each manoeuvre	
Current information related to client mobility documented and communicated	
Acceptable methods of client handling documented on client profile	
Client Mobility Assessments	**Comments**
Staff perform acceptable techniques during client handling activities	
Staff perform client transfers, lifts and repositioning competently	
Equipment Use	**Comments**
Total body lifts used consistently and correctly	
Stand-assist lifts used consistently and correctly	
Ambulation lifts used consistently and correctly	
Bath/shower lifts used consistently and correctly	
Lifts completed with two staff members	
Transfer devices used consistently and correctly	
Repositioning devices used consistently and correctly	
Staff Education and Training	**Comments**
All new staff oriented to program–general and site specific	
Annual training completed and training records up-to-date	
Staff can demonstrate knowledge with program policies/procedures/processes	
Maintenance and Equipment	**Comments**
Pre-start up of equipment inspections completed and recorded daily	
All equipment in good working order	
Slings laundered as per protocol	
Equipment disinfected as per protocol	
Equipment stored appropriately	
Batteries charged	
Preventative maintenance of equipment completed and documented as per schedule	
Out-of-service equipment tagged appropriately and reported to Maintenance via maintenance requisition	

Table 14. Manager Monthly Report of Employee Incidents/Accidents Related to Client Handling Activities

Department:	
Date:	
Manager:	
Number of Incidents/Accidents and Near Misses by Claim Type	**Comments**
Near Miss/Hazard:	
First Aid:	
Medical Aid:	
Lost Time:	
Total:	
Number of Incidents by Body Part	**Comments**
Back:	
Shoulders:	
Upper Extremities:	
Lower Extremities:	
Head:	
Other:	
Number of Incidents/Accidents/Near Misses by Client Handling Activity	**Comments**
Client Lift:	
Client Transfer:	
Client Repositioning:	
Number of Incidents/accidents by Causative Factor	**Comments**
Lack of initial documented assessment of client:	
No reassessment of client completed:	
Equipment unavailable:	
Equipment malfunction:	
Environmental issue (wet floor, room clutter, etc.):	
Employee non-compliance:	
Other:	
Type and Number of Supervisor's Corrective Actions	**Comments**

Table 15. Client Handling Program Training Evaluation

Date:	
Unit:	
Interviewer:	
Question	**Response**
1. Can you demonstrate a transfer, lift and client repositioning?	yes
	no
	partially
2. Can you demonstrate safe use of all the equipment?	yes
	no
	partially
3. Where would you position yourself when moving someone from a stretcher to a bed?	
4. In addition to assessing the patient what are the two other areas you need to assess?	
5. Identify three reasons you would need help with a transfer.	
6. Have you had a patient fall to the floor, since taking the Transfer and Lift Program?	yes
	no
7. If you answered yes to the above question, how did you get the patient off of the floor?	mechanical lift
	lifted with other staff members
	other
8. How often are other staff available to help you with patient lifts?	never
	rarely
	sometimes
	most of the time
	always
9. Do other staff approach you to help them with patient lifts?	yes
	no
10. How have you obtained information about how a patient transfers?	client Profile
	report
	logo cards
	white board
	other
11. Once you established the type of transfer a patient required, how did you communicate this to your co-workers?	client Profile
	verbal reporting
	logo cards
	white board
	other
12. Since attending the training program, are you more confident with respect to body mechanics?	yes
	no

Table 15. Client Handling Program Training Evaluation (Continued)

13. How many of your patients have logo cards above their bed?	none
	a few
	some
	most
	all
14. Are the Logo cards accurate and up to date?	never
	rarely
	sometimes
	most of the time always
	always
15. How often is the type of transfer a patient uses identified in the client profile?	never
	rarely
	sometimes
	most of the time always
	always
16. Are mechanical lifting devices readily accessible?	yes
	no
17. If "yes" to the question above, are the slings for the lift readily available?	yes
	no
18. Do you feel competent to use the mechanical devices on your unit?	yes
	no
19. In daily practice, which parts of the client handling program do you find most helpful?	
20. In daily practice, which parts of the client handling program do you find least helpful?	
21. What can we assist you to use the client handling program skills more effectively?	
22. Any other comments?	

Module 5: Client Mobility Assessment

The assessment of the client's mobility status is a critical component in a successful client handling program. All caregivers must be well versed in assessing all factors that impact a client's mobility. Typically client mobility assessments should occur as soon as possible following admission, at regularly defined intervals and prior to each client handling activity. The goal of the assessment is to both maximize the client's participation in the move and ensure that the client is moved safely without jeopardizing the safety of the client or the caregiver.

The purpose of the assessment is to determine how much assistance from the staff is required to move a client and which type of procedure should be used. The assessment considers issues such as:

- How much physical help can the client give?
- How much the client can co-operate?
- Does the client have perceptual problems or sensory deficits?
- Is the appropriate equipment available?
- Are there environmental factors that can interfere with the transfer?
- Are there risk factors associated with the caregiver?

There are three types of client mobility assessments. They are:

1. Initial client mobility assessment
2. Ongoing client mobility assessments
3. Client mini-assessment

The client mobility assessment should be incorporated into other organizational client assessments as a critical component in the holistic approach to client care and staff safety.

When conducting an assessment of a client's mobility status, there are four major factors that should be assessed. These are the caregiver, client, equipment and environment.

5.1 Initial Client Mobility Assessment

The initial client mobility assessment should be conducted within 24 hours of the client's admission to the facility or program. When moving a client within the first 24-hour period, prior to the completion of an initial assessment, staff should obtain extra assistance from other staff to perform and ensure a safe manoeuvre. The initial mobility assessment should be integrated into the formal admission assessment that already exists within the organization. The purpose of the mobility assessment is to make a decision on the type of lift, transfer and/or repositioning technique that is most suitable for the client and staff.

The components of the initial assessment include:

- Testing of the client's weight-bearing capacity
- Communication abilities
- Cognitive capacity
- Pain level
- Level of co-operation
- Behaviour
- ROM
- Strength
- Joint mobility
- Balance

In addition to the assessment of the client's abilities, the environment, the equipment and the caregivers' statuses should also be assessed. The initial client mobility assessment should be detailed and carried out by a staff member who is trained to conduct these types of assessments.

The procedures for conducting an initial client mobility assessment are outlined in "Detailed Procedures for Initial and Ongoing Client Mobility Assessment" on page 101.

5.2 Ongoing Client Mobility Assessment

When a client's condition changes, it is critical that their mobility status be reassessed to reflect the change in condition. Even when a client's status is stable, it is important to assess their mobility on an ongoing basis to ensure that a handling routine has not become the norm when an alternative, safer procedure exists. Organizations could incorporate this ongoing assessment into the existing review of their client's service and care plans.

The benefits of completing ongoing client mobility assessments are to:

- Ensure that the most appropriate client handling technique is being carried out
- Help to maintain a high level of awareness about client handling

The ongoing client mobility assessment mirrors the components of the initial client assessment. A staff member who is trained in completing client assessments should complete the ongoing mobility assessments. The procedures for the assessment are

outlined below in "Detailed Procedures for Initial and Ongoing Client Mobility Assessment."

5.3 Detailed Procedures for Initial and Ongoing Client Mobility Assessment

The Client Mobility Assessment Summary Form can be used to collate the information collected during an initial or ongoing client mobility assessment. A thorough assessment considers the risk factors associated with the client, equipment, environment and the caregiver(s).

The assessment summary form helps caregivers to determine if the appropriate client handling procedure should be a transfer or a lift. If you answer "No" to any of the following questions, a lift is the preferred method for the client handling manoeuvre. Once the decision is made about whether the manoeuvre is to be a transfer or lift, the assessor must then determine which type of transfer or lift is most appropriate.

Table 16. Client Mobility Assessment Summary Form

Question	If all are yes	Then transfer (identify type of transfer)	If any are no	Then Lift (identify type of lift)
Can the client bear weight through one leg or both arms, to be moved from one surface to another?				
Is the client consistent and reliable in bearing weight?				
Can the client communicate with you?				
Can the client follow commands?				
Is the client free from pain or medical devices that may interfere with carrying out the procedure?				
Is the client co-operative?				
Is the client's behaviour non-aggressive?				
Is the client's ROM suitable for performing a transfer?				
Is the client's strength suitable for performing a transfer?				
Is the client's mobility and balance suitable for performing a transfer?				
Are all environmental factors suitable?				
Are all equipment factors suitable?				
Are all caregivers able to perform the task?				

Risk Factors Related to the Client

Table 17 summarizes the risk factors related to the client, which should be considered in a client mobility assessment.

Table 17. Risk Factors Related to the Client

Communication	Cognition	Medical Status	Physical Status	Emotional Status
Speech	Memory	Diagnosis	Weight	Resistive
Vision	Judgement	Devices	Height	Unpredictable
Hearing	Concentration	Pain	Range of motion	Unco-operative
Understanding	Decision-making	Medication	Strength	Depressive
Language barrier		Fatigue	Balance	Aggressive
		Time of day	Co-ordination	Confused
			Tone	Agitated
			Sensation	
			Skin integrity	
			Body awareness	
			Depth Perception	

Communication

The caregiver must assess the client's ability or inability to communicate. The client's inability to communicate may affect their performance when learning new techniques, or their co-operation with the caregivers during transfers and lifts. The risk of injury to the caregiver and the client increases if the client:

- Does not speak and/or understand the same language as the caregiver
- Does not understand speech
- Does not understand non-verbal communication
- Cannot follow simple commands
- Communicates with sign language or uses devices to communicate
- Has a hearing impairment and is not using a hearing device
- Has a speech problem
- Has a low level of consciousness

Assessing Communication

To assess the level of communication:

1. Stand in front of the client if the client is sitting. Stand beside the bed close to the client's head if the client is lying in bed.
2. Ask the client simple questions. For example, "Are you hungry?"
3. Give the client simple instructions. For example, "Take my hand. Give your hand to me. Take this cup."
4. Ask the client to repeat words or short sentences.

Cognition

Clients often lose their short-term memory due to age and due to certain physiological and/or psychological conditions.

Clients can also make inappropriate judgements about their ability to complete tasks. The client may overestimate or underestimate their abilities, which becomes a risk factor in client handling. For example, if the client claims that they are able to stand up on their own, and during a procedure their legs give out.

Many clients have difficulty making decisions. For example, if you give the client four different chairs to choose to sit on, they may become confused and frustrated because they cannot decide which one to choose. It is better to suggest one first, wait for a response and then give another choice.

If the short-term memory is poor, the client may have difficulty in following instructions. Therefore, the instructions during the procedure have to be short, clear and given one at a time. This also helps the client concentrate during the procedure.

Assessing Cognition

To assess the short-term memory, ask the client questions such as:

- What did you have for breakfast/lunch/dinner?
- Who has visited today?
- What day is it today?

Medical Status

It is important to understand and recognize the various signs and symptoms associated with different medical conditions. For example, typical symptoms of Parkinson's disease include tremors (shakes) of the hands and difficulty moving the feet. A client who is suffering from Multiple Sclerosis (MS) may have symptoms such as weakness and/or spasticity in the legs, lack of co-ordination and impaired vision. These symptoms affect the client's ability to help with a procedure and the client may require more assistance and/or the use of devices.

Caregivers should also be aware of the effects that some medications have on the client. Side effects may also affect the client's ability to transfer. For example, some painkillers cause drowsiness, which may result in an unsafe transfer. Caregivers should be provided with education regarding a client's physiological and psychological illnesses, the effects of symptoms related to their condition and the effects that certain medications may have on their mobility status. In addition, there must be a communication system in place so that all caregivers are aware of the various physiological and psychological conditions, the medications that a client is taking, and how these may impact on a client's mobility. This helps the caregivers to determine the safest and most appropriate procedure.

A client's level of fatigue, pain and stiffness may vary depending on the diagnoses and daily activities. For example, a client suffering from osteoarthritis has more stiffness in the joints in the morning. A client who has had a number of tests or physio-occupational therapy during the day may be tired and require more assistance with a transfer.

Assessing the Medical Status

Changes in a client's medical status must be accurately documented in the client's chart/profile and communicated to all caregivers. Caregivers need to observe how the changes in the client's medical status impact their ability to perform a transfer or lift.

Physical Status

There are a number of physical status factors that are assessed including:

- Weight Bearing
- Weight
- Height
- ROM
- Strength
- Balance
- Co-ordination
- Sensation
- Clothing
- Footwear

Table 18 on page 105 can be used as a tool to collect the physical data for the client assessment.

Table 18. Client Mobility Assessment – Physical

Client name:		
Unit/department:		
Date:		
Client Weight:		
Client Height:		
Symptom	**Condition Present**	**Comments**
Can the client weight bear?	Yes	
	No	
Are the client's senses impaired (touch, vision, hearing)?	Yes	
	No	
Range of Motion (ROM) Indicate F=full; M=moderate; P=poor		**Comments**
Shoulder	Left	
	Right	
Elbow	Left	
	Right	
Wrist	Left	
	Right	
Hip	Left	
	Right	
Knee	Left	
	Right	
Ankle	Left	
	Right	
Strength Indicate G=good; M=moderate; P=poor		**Comments**
Shoulder flexors	Left	
	Right	

Table 18. Client Mobility Assessment — Physical (Continued)

Shoulder extensors	Left	
	Right	
Elbow flexors	Left	
	Right	
Elbow extensors	Left	
	Right	
Wrist flexors	Left	
	Right	
Wrist extensors	Left	
	Right	
Hip flexors	Left	
	Right	
Hip extensors	Left	
	Right	
Knee flexors	Left	
	Right	
Knee extensors	Left	
	Right	
Ankle dorsi flexors	Left	
	Right	
Ankle plantar flexors	Left	
	Right	
Mobility and Balance Indicate G=good; M=moderate; P=poor		**Comments**
Ability to roll from side to side	Left	
	Right	
Ability to sit up unassisted	Left	
	Right	

Table 18. Client Mobility Assessment – Physical (Continued)

Ability to maintain sitting balance	Left	
	Right	
Ability to stand	Left	
	Right	
Ability to maintain standing balance	Left	
	Right	

Assessing for Weight Bearing

Assessing a client's ability to bear weight should be completed while the client is sitting.

1. Initially ask the client to put both hands on the bed or arms of the chair and push down on it as if they were about to stand.
2. Ask the client to push down hard enough to raise their bottom off the surface they are seated on.
3. Ask the client to stand (provide them with a support to lean on if necessary).
4. Ensure the client can remain standing with or without the support for approximately 5 seconds.

Assessing ROM

The ROM of the joints indicates if the client is able to reach with their arms, stand up straight, sit or walk. When assessing the ROM of the joints, ensure that caregivers:

- Tell the client what they are going to do and why
- Raise the bed to the proper height to perform the manoeuvre safely
- Position themselves properly so that they can use good body mechanics to avoid injury
- Record and check whether the movement is pain-free or increases the pain
- Do not force the movement beyond the range that the client feels is comfortable
- Ensure that the system for recording ROM is consistent in your facility. For example, record the ROM of flexion (bending) and extension (straightening) as F (full), M (moderate) or P (poor).

Table 19. Assessing ROM

Joint ROM	Client's Position	Caregiver's Position
Head and Trunk	Sitting on the edge of the bed or in a chair	Stand in front of the client. While supporting the client from their shoulders, assess their ability to maintain or restore normal alignment.
Shoulder	Sitting or lying in the bed	If the client is in a sitting position, stand in front of them. If the client is lying in the bed, stand beside the bed. Make sure the bed is raised to the proper height so that you do not have to assume an awkward posture. • Ask the client to raise their arm up and forward as far as they can comfortably. Demonstrate the movement at the same time. If the client is unable to do this, assist them by placing one hand behind and above the elbow and grasping their hand in your other hand. • Repeat the procedure with the client's other arm. • Ask the client to raise their arm up and sideways as far as they can comfortably. Demonstrate the movement at the same time. If the client is unable to do this, assist them with the movement by placing one hand behind and above their elbow and grasping their hand in your other hand. • Repeat the procedure with the client's other arm.
Elbow	Sitting or lying in the bed	If the client is in a sitting position, stand in front of them. If the client is lying in the bed, stand beside the bed. Make sure the bed is raised to the proper height to avoid awkward posture. • Ask the client to bend and straighten their elbow. Demonstrate the movement at the same time. If the client is unable to do this, assist them with the movement by placing one hand below the elbow and grasping their hand in your other hand. • Repeat the procedure with the client's other elbow.
Wrist	Sitting or lying in the bed	If the client is in a sitting position, stand in front of them or sit on the edge of the bed beside them or on a stool slightly to the side of the client. If the client is lying in the bed, stand beside the bed or sit on the edge of the bed. • Ask the client to bend their wrist up and down. Demonstrate the movement at the same time. If the client is unable to do this, assist them to move their wrist up and down by holding the hand and forearm. • Repeat the procedure with the client's other wrist.
Fingers	Sitting or lying in the bed	If the client is in a sitting position, stand in front of them or sit on the edge of the bed beside them or on a stool slightly to the side of the client. Make sure the bed is raised to a proper height to avoid awkward posture. • Ask the client to make a fist. Demonstrate the movement at the same time. If they are unable to do this, assist them with the movement by bending and straightening their fingers with one hand while supporting the client's wrist with the other hand. • Repeat the procedure with the client's other hand.

Table 19. Assessing ROM (Continued)

Hip	Sitting or lying in the bed	If the client is in a sitting position, stand in front of them or sit on the edge of the bed beside them or on a stool slightly to the side of the client. If the client is lying in the bed, stand beside the bed. Make sure the bed is raised to a proper height to avoid awkward posture. • If the client is sitting, ask them to lift their knee up toward the chest. Demonstrate the movement at the same time. If the client is unable to do this, assist them with the movement by placing one hand under the heel and the other hand just above the client's knee. Lift the knee toward the chest. Note that when the client is in a sitting position, extension of the hip joint cannot be assessed. • If the client is lying in the bed, ask them to lift their knee up toward the chest and then straighten the hip and the knee back down. If the client is unable to do this, assist them by placing one hand under the heel and the other one under the knee. Assist them to lift the knee up toward their chest. • Repeat the procedure with the client's other leg.
Knee	Sitting or lying in the bed	If the client is in a sitting position, stand in front of them or sit on the edge of the bed beside them or on a stool slightly to the side of the client. If the client is lying in the bed, stand beside the bed. Make sure the bed is raised to the proper height to avoid awkward posture. • If the client is in a sitting position, ask them to straighten their knee and then bend it. Demonstrate the movement at the same time. If the client is unable to do this, place one hand under the heel and the other hand just above the knee. Assist the client to straighten and bend the knee. • If the client is lying in the bed, ask them to pull their knee up and then straighten it. Demonstrate the movement at the same time. If the client is unable to do this, assist them by placing one hand under the heel and the other hand under the knee. Assist them to bend the knee. • Repeat the procedure with the client's other knee.
Ankle	Sitting or lying in bed	If the client is in a sitting position, stand in front of them or sit on the edge of the bed beside them or on a stool slightly to the side of the client. If the client is lying in bed, stand beside the bed or sit on the edge of the bed. • Ask the client to move their foot up and down. Demonstrate the movement at the same time. If the client is unable to do this, place a hand under the client's sole or grasp the foot and assist them to move the foot up and down. • Repeat the procedure with the client's other ankle.

Assessing Mobility and Balance

You can use Table 20 to help you assess the mobility and balance of a client.

Table 20. Assessing Mobility and Balance

Client's Ability	Client's Position	Caregiver's Position
To turn to their side(s) in bed	Lying on their back	Stand beside the bed about the client's shoulder level facing the client: • Ask the client to bend their knees so that their feet are flat on the bed. • Ask the client to roll toward you and then roll back onto their back. If the client is unable to do this, assist them to roll toward you by placing one hand on their hip while holding onto the shoulder blade. • Repeat the procedure from the other side.
To sit up	Lying on their back	Stand beside and near the bed about the client's shoulder level facing the client: • Lower the bed rail on the side where you are standing. • Ask the client to bend their knees. • Ask the client to roll toward you. Reassure them that you are there to prevent them from falling. • Ask the client to lower their legs over the side of the bed and push up with their arms at the same time. • If the client is unable to do this, assist them to a sitting position by placing one hand under the shoulder and the other one under the knees.
To balance	Sitting on the edge of the bed, hands in their lap	Stand in front of and facing the client: • Assess the client's ability to maintain a sitting balance by first placing your hands on the client's shoulders with your palms on the front and your fingers on the back of the shoulders. • Push the client gently from side to side. Ask the client to resist the movement or ask them to prevent you from pushing. • Repeat the procedure while gently pushing the client forward and backward.
To stand up	Sitting on the edge of the bed	Two caregivers may be needed to ensure that the procedure is safe for the caregiver and the client. • Face the client and stand closely in front or slightly to the side of them: • Ask the client to move forward to the edge of the bed so that they can put their feet flat on the floor. • Ask the client to lean forward to push up from the bed with their hands. Support them by putting your arms around the waist, if necessary.

Assessing Muscle Strength

Muscle strength and tone indicates how much and what kind of assistance a client needs. Muscle tone can be normal or spastic (i.e., muscles are stiff and the movements awkward) or flaccid (i.e., weak, lax and soft). The caregiver must assess and record the strength of the flexors and extensors of each joint to determine how much and what kind of assistance the client needs. The movements are the same as for assessing the ROM.

When assessing the strength of the muscles, ensure that for each assessment you:

- Tell the client what you are going to do and why.
- Position yourself properly so that you can use good body mechanics to avoid injury.
- Raise the bed to the proper height to perform the manoeuvre safely.
- Check and record whether the movement is pain-free or increases the pain.
- Place your hands at midpoint between the joints.
- Apply resistance according to the client's ability. Never force the movement beyond the range that the client feels is comfortable.
- Stop immediately if there are any signs of discomfort or increasing pain (e.g., facial expression, resistance).
- Ensure that the recording of muscle strength is consistent in your facility. Record the strength of flexors and extensors of each joint using, for example, Good = G, Moderate = M, Poor = P.

Table 21. Assessing Muscle Strength

Joint	Client's Position	Caregiver's Position
Shoulder	Sitting or lying in the bed	If the client is in a sitting position, stand in front of them. If the client is lying in the bed, stand beside the bed. Make sure the bed is raised to the proper height so that you do not have to assume an awkward posture. • Grasp the client's one hand with your hand and place your other hand at the mid-point of the client's upper arm. • Ask the client to raise their arm forward and up while applying resistance to the direction of the movement. • Place one hand under the upper arm of the client and the other hand on the client's hand. • Ask the client to lower their arm while applying resistance in the direction of the movement. • Repeat the procedure with the client's other shoulder.
Elbow	Sitting or lying in the bed	If the client is in a sitting position, stand in front of them. If the client is lying in the bed, stand beside the bed. Make sure the bed is raised to a proper height so that you do not have to assume an awkward posture. • Grasp the client's hand with one hand and place your other hand at the mid-point of their forearm. • Ask the client to bend their elbow, while applying resistance to the direction of the movement. • Ask the client to straighten their elbow while applying resistance in the direction of the movement. • Repeat the procedure with the client's other elbow.
Wrist	Sitting or lying in the bed	If the client is in a sitting position, stand in front of them. If the client is lying in the bed, stand beside the bed. Make sure the bed is raised to a proper height so that you do not have to assume an awkward posture. • Place your hand on the client's hand so that your fingers are on their palm and your thumb is one the back of the knuckles. • Ask the client to bend their wrist up and down while applying resistance in the direction of the movement. • Repeat the procedure with the client's other wrist.

Table 21. Assessing Muscle Strength (Continued)

Grip	Sitting or lying in the bed	If the client is in a sitting position, stand in front of them. If the client is lying in the bed, stand beside the bed. Make sure the bed is raised to a proper height so that you do not have to assume an awkward posture. • Cross your index and middle fingers. Place them in the client's palm and ask the client to squeeze your fingers. By doing this, you avoid pain in your hand/fingers in the event that the client squeezes too hard.
Hip Flexors	Sitting or lying in the bed	If the client is in a sitting position, stand slightly to the side of the client. If the client is lying in the bed, stand beside the bed about their hip/thigh level. • Place one hand on the top of the client's thigh just above the knee and the other hand under the client's heel. • Ask the client to pull their knee up toward the chest while applying resistance with your hand on their thigh. • Repeat the procedure with the client's other hip.
Hip Extensors	Lying in the bed on their back, lying on their side or lying on their stomach	Stand beside the bed. • If the client is lying on their back, place one hand at mid-point under the client's thigh and the other one under the heel. • Ask the client to push down against your hands and then relax. • Repeat the procedure with the client's other hip. • If the client is lying on their side, place one hand at the mid-point under the back of the thigh and the other under the heel. • Ask the client to push the leg back against your hands while you are applying resistance in the direction of the movement. • Repeat the procedure with the client's other hip. • Another way to assess the strength of the hip extensors is to ask the client to bend the knees while lying on their back, then to lift the hips up and lower gently.
Knee Extensors	Sitting on the edge of the bed or in a chair/ wheelchair	In squatting position in front or slightly to the side of the client or sitting on a stool slightly to the side of the client. • Place one hand above the client's knee and your other hand on the top of the client's lower leg at mid-point. • Ask the client to straighten their knee while applying resistance in the direction of movement with your hand on the lower leg. • Repeat the procedure with the client's other knee. • The assessment of the strength of the knee extensors can also be done when the client is lying on their back. Your hand position is the same as when assessing the client in the sitting position: • Ask the client to bend one knee so that their foot is flat on the bed. • Ask them to raise the other leg straight up while applying resistance in the direction of movement with your hand on the lower leg.
Knee Flexors	Sitting on the edge of the bed or in a chair/ wheelchair	In squatting position in front or slightly to the side of the client or sitting on a stool slightly to the side of the client. • Place one hand above the client's knee and the other hand under and behind the client's heel while the client's knee is straight. • Ask the client to bend their knee while applying resistance in the direction of the movement with your hand under and behind the heel. • Repeat the procedure with the client's other knee.

Table 21. Assessing Muscle Strength (Continued)

Ankle	Sitting or lying in the bed	If the client is in a sitting position, sit on a stool or assume a squatting position. If the client is lying in bed, stand beside the bed about the level of the client's lower leg or sit on the edge of the bed. • Place one hand so that your fingers are on top of their foot and your thumb is under the sole. Place the other hand under the client's heel. • Ask the client to bend their foot up while you are applying resistance with your fingers in the direction of the movement. Then ask the client to bend the foot down while you are applying resistance with your thumb in the direction of the movement. • Repeat the procedure with the client's other ankle.

Assessing Co-ordination

To assess hand co-ordination, ask the client to:

1. Touch their nose with their index finger while demonstrating the movement. Repeat with the other hand.
2. Touch their index fingers together while demonstrating the movement. If the client is unable to do this, repeat the instructions a few times while demonstrating the movements.

To assess leg co-ordination, ask the client to:

1. Touch the heel of one foot to the inside of the other knee and then run the heel down the inside of the shin to the ankle and back up to the knee.
2. Repeat the procedure a few times.
3. Repeat the procedure with the other leg.

Assessing Sensation

If the client is sitting, the caregiver should stand in front of them. If the client is lying in the bed, the caregiver should stand beside the bed close to the client.

Assessing the client's physical status

To assess sensation	To assess body awareness	To assess vision	To assess hearing
Touch the client. For example, touch a finger, arm, toe or leg.	Ask the client to close both eyes.	Ask the client to identify items from various distances.	Stand in front of the client.
Ask the client where you touched them.	Move the client's finger up and down.	Ask the client to follow your fingers while you move them back and forth in the client's view.	Ask the client to repeat the words that you say in a normal voice.
Ask client to close both eyes and repeat the procedure.	Ask the client to identify the direction of movement.		Repeat the procedure while standing on each side of the client.

Assessing Clothing and Footwear

It is necessary to assess the type of clothing the client is wearing before performing transfers and lifts. Some clothing is made of slippery material (polyester). These fabrics may make it difficult to hold the client firmly and, therefore, increase the risk of injury to the client and the caregiver. Poorly fitting or worn out slippers and shoes interfere with safe and proper transfers. Appropriate footwear gives the client stability and enables them to reach their full potential during transfers.

Emotional and behavioural states

A client's behavioural and emotional state may vary throughout the day. Many clients become agitated at sundown. Sometimes a client may need more assistance; sometimes the caregiver may need assistance. The caregiver may have to develop a variety of approaches to decrease the risk of provoking aggressive behaviour.

Clients whose behaviour can be characterized in any of the following ways may cause difficulties during transfers or lifts:

- **Agitated:** Client exhibits extreme restlessness and may engage in urgent or active verbal argument. An agitated client cannot concentrate on tasks.
- **Aggressive:** Client may display verbal or non-verbal hostility that can disturb and distract the caregiver.
- **Anxious:** Anxiety is characterized by feelings of mingled dread and apprehension about the future without specific cause for the fear. A high level of anxiety may restrict participation in transfers and lifts.
- **Assaultive:** Client has a history of hitting, kicking, or biting caregivers.
- **Confused:** Client is unable to think logically and may be out of touch with reality.
- **Dependent:** Client relies totally on others for daily care.
- **Depressed:** Client exhibits a non-pathological state of despondency characterized by feelings of inadequacy, by lowered activity, and by pessimism about the future.
- **Hostile:** Client is angry and has a tendency to inflict harm on others.
- **Impulsive:** Client habitually acts without thinking about the consequences and may not wait for instructions.
- **Low tolerance for change:** Client has difficulty adjusting to a new environment, a new caregiver, or a new procedure.
- **Low self-esteem:** A client who thinks poorly of their abilities may not feel able to complete a transfer as instructed.
- **Rejected:** A client who has co-operated and performed well in the past but has not received positive feedback may hesitate to co-operate again.
- **Resistive:** Client habitually refuses to co-operate and fails to respond to orders, commands, or rules.
- **Self-destructive:** Client seems to co-operate, but may cause an accident endangering self and caregiver.
- **Unpredictable:** Client is known to behave erratically and inconsistently.

Risk Factors Related to the Caregiver

There are many risk factors related to the caregiver that may contribute to caregiver and client injuries. Although a formal assessment of the individual caregiver is not conducted, it is important that the caregivers completing client handling procedures recognize when there may be risk factors related to their own or another caregiver's abilities. When caregivers recognize potential risks that affect a client handling technique, they need to address these issues by consulting with their unit/department manager.

Table 22. Risk factors related to the caregiver

	Attitude **Approach**	
Skills **Knowledge** **Experience** **Height** **Size relative to client** **Vision** **Hearing**		Time of day **Time pressures** **Shift work** **Fatigue** **Frequency of lifting** **Number of caregivers**
	Wellness **Fitness** **Strength**	

Relative Sizes of the Caregiver(s) and the Client

The risk of injury increases during a transfer or lift when there is a great difference in weight and/or height between the caregiver(s) themselves and between the caregiver(s) and the client. The height difference between two caregivers may affect the performance of some transfers and/or lifts, such as, the front and back lift. When performing a front and back lift, the taller caregiver should be the leader and be positioned behind the client. The shorter assistant should be positioned in front of the client.

Physical Condition of the Caregiver

The caregiver's general health, fitness, alertness, strength and fatigue level may vary at different times of the day and can affect safe task performance.

Various factors increase the caregiver's level of fatigue (e.g., repetitive lifting and bending). Caregivers also feel differently and work in different ways at different times of the day/shift.

To assess caregiver-related risk factors, communication with co-workers is necessary to ensure that all precautions have been taken when preparing for a transfer or lift. For example, if the caregiver feels that they do not have their usual strength at a given moment, they should ask someone else to be the leader.

Shift Work

Shift work affects the caregivers for various reasons:

- The number of caregivers varies from shift to shift. There may not be as many staff in the afternoon shift as in the morning shift and yet it may be necessary to perform the same number of transfers and lifts. This increases the risk of injury to the caregiver and the client.
- The frequency of transfers and lifts may vary by the shift.
- The caregivers may have difficulties maintaining their sleep and activity patterns due to the design of the shifts (e.g., rotating counter clockwise, too rapid/slow rotation).

Skills, Knowledge and Experience

To ensure that client handling procedures are performed in the safest and most appropriate way, assess the caregiver's skills and knowledge with respect to client mobility. There is a wide range of client transferring and lifting methods and equipment. Each method and piece of equipment requires that the caregiver follow the procedures that are set out by the organization. A caregiver's skills, knowledge and experience in these areas is critical to the safety of both the clients and staff. All caregivers must be trained to use appropriate and safe client handling techniques. Issues that commonly arise in this area include new staff and/or replacement staff from external organizations, who may not possess the necessary skills, knowledge and experience with the organization's client handling procedures. These issues should be reported to the unit/department manager.

Workload Constraints

Many caregivers face heavy workloads and, therefore, caregivers may rush to complete transfer and lift procedures. This increases the risk of injury to the caregiver and the client. To ensure that the planned procedure is the safest and most appropriate, caregivers need to assess, plan and communicate their intentions to clients and to each other. Caregivers should also work at a safe speed.

Clothing

It is important to assess the caregiver's clothing and footwear. Appropriate footwear with non-slip soles gives the caregiver stability and decreases the risk of slips and falls. Appropriate clothing allows the caregiver unrestricted movement during the procedures and, therefore, decreases the risk of injury. Jewellery, such as necklaces, bracelets or hanging earrings, may become a risk factor if they get tangled with the client's clothing or hair or if the client grabs or pulls them.

Approach

The caregiver's approach has to be assessed. Training in how to approach an aggressive client must be provided. Consistency in the caregiver's approach reduces the risk of injury to the caregiver and the client. This also extends to how the caregiver explains the upcoming procedure and reassures the client.

Risk Factors Related to Equipment

The amount of equipment or furniture present may limit the caregiver's use of proper body mechanics. Any clutter increases the likelihood of trips and falls.

Medical devices, such as catheter bags, intravenous tubing or prostheses, attached to the client increase the risk of injury to the caregiver and the client.

Inadequate training in the use of equipment, improper use of equipment and use of faulty equipment may also increase the risk of injury during a transfer or lift.

Risks are also increased when equipment or furniture is not adjustable. For example, beds that cannot be raised or lowered and wheelchairs or geriatric chairs with fixed arm and leg rests do not allow the caregivers to use proper body mechanics. The brakes, bed rails, bed crank, etc. should be designed to ensure that operation requires minimal force.

When equipment is being used in client handling, there may be associated risk factors. These are outlined in detail in "Program Development and Implementation" on page 51. Some important risk factors to consider include:

- Fit of the equipment with respect to the client
- Fit of the equipment with respect to the environment
- Ease of use of the equipment
- Availability of the equipment

Risk Factors Related to the Environment

The environment impacts on how safely a client handling manoeuvre is completed. The following environmental risk factors need to be considered:

- Colours
- Layout
- Space
- Lighting
- Temperature
- Obstacles
- Floor

Environmental risk factors are also discussed and can be referenced in "Program Development and Implementation" on page 51. The size and/or layout of the room in which the transfer and lift occurs may present a barrier. It may not allow the caregiver to use good body mechanics when moving the client, especially if clutter and distraction are present. There may not be adequate space for equipment such as lifting devices or a wheelchair.

Other problems include:

- A highly polished or wet floor produces an unsafe base for transfers and lifts.
- High room temperatures that, while meeting the needs of elderly or sick clients, may be uncomfortable for the caregiver.
- Colours (e.g., light pastels) and contrasts (e.g., black and white) that create visual perception obstacles in elderly clients.
- Poor lighting can hinder clients from seeing properly and therefore, they may be unable to help the caregiver.
- Excessive noise (e.g., radios and television) that may distract the caregivers and the client during the procedure.

5.4 Client Mini-Assessment

This is the third type of assessment that is completed in a client handling program. Each time a transfer or lift is planned, a mini-assessment must be completed prior to the planned activity to ensure that the previously chosen procedure is still appropriate. A mini-assessment reminds a caregiver to look for changes in a client's medical condition, communication, cognitive status, behaviour, strength and ROM as well as changes in the environment or issues with the caregivers themselves. All caregivers should be trained to conduct this client assessment while they are preparing for the client handling procedure.

The following tool can be used to help a caregiver through the process of a mini-assessment.

If the answer to all of the following questions is "Yes", then the caregiver can proceed with the prescribed procedure. If the answer to one or more of the questions is "No", the ongoing client assessment should be completed to determine a new procedure.

Table 23. Client Mini-Assessment

Has there been a change in:	
Client's medical condition?	Yes
	No
Client's ability to communicate?	Yes
	No
Client's cognition?	Yes
	No
Client's level of aggression?	Yes
	No
Client's strength?	Yes
	No
Client's ROM?	Yes
	No
Environment?	Yes
	No
Availability of equipment?	Yes
	No
Caregivers' abilities?	Yes
	No

5.5 Communication of Client Assessment

Upon completion of the client assessment, a mobility plan needs to be developed, communicated and documented in the client's chart or service delivery notes. The organization needs to decide how to communicate the acceptable reposition, transfer or lift. This may be done on the charting system and augmented with a logo system. The logo system is an effective way to communicate the chosen procedure to all staff regardless of whether they have reviewed the written documentation. Some organizations are resistant to posting logos by a client's bed and have opted to shrink the logo and insert it at a prominent place in the client's chart.

HCHSA has developed 13 logos to complement this program. An organization may decide to supplement the types of logos that are available to include specific equipment and techniques that are being used within your organization. The following is a list of logos included with this program:

- Unsupervised transfer
- Supervised transfer
- One-person pivot transfer
- Two-person side-by-side transfer
- Two-person front-back transfer
- Transfer disk
- Transfer board
- Transfer belt
- Sling lift
- Two-person side-by-side lift
- Two-person shoulder lift
- Two-person front-back lift
- Mechanical lift

The following client mobility plan outlines a variety of potential reposition, transfer and lift techniques as well as the equipment that might be utilized.

Table 24. Client Mobility Plan

Client's Name:							
Location:							
Date:							
Type of Reposition	✔	**Type of Transfer**	✔	**Type of Lift**	✔	**Equipment**	✔
Up in bed		Independent unsupervised		Side-by-side		Repositioning/ Turning sheet	
Turn in bed		Independent supervised		Front and back		Slide	
In chair		Minimum assistance		Shoulder		Slider board	
		Two-person side-by-side		Lifting device		Roll board	
		One-person pivot				Glider	
		Two-person pivot				Transfer belt	
		Sit-stand mechanical lift				Transfer disk	
						Transfer board	
						Patient handling sling	
						Mechanical lift	

5.6 Assessing in a Community Setting

Caregivers face a variety of risk factors while providing client care in the community. In a community setting, the caregiver may not have the same level of assistance as in an organization such as a hospital, long-term care facility or group home. The organization providing client services in the community, should ensure that the client and the client's home have been assessed to determine the level of assistance and equipment required. An assessment should be completed to determine the presence of any actual or potential safety hazards that may impact the caregiver. This should be completed prior to the caregiver providing service.

The following checklist outlines risks that may be present in a home care environment:

- Doorways not wide enough to accommodate equipment
- Assisting clients up and down stairs
- Rugs
- Pets
- Children
- Family members not available to assist
- Family members not capable of properly assisting with the procedure
- Cultural issues
- Shoes not being allowed to be worn indoors
- Icy walkways, stairways, driveways
- Unsafe structures
- Transferring clients in to and out of vehicles
- Old/unsafe household equipment
- Low beds
- Lack of equipment

Summary

The initial, ongoing and mini-assessments of the client's mobility status and the other impacting factors, are critical components to the success of a client handling program. The organization must develop, implement and enforce these procedures. Caregivers require training and retraining in this area to ensure that they are competent in accurately assessing clients.

Module 6: Repositioning and Transfers

Performing the most appropriate and safe client transfers and repositioning manoeuvres can help to minimize the risks of injury related to client handling. Often musculoskeletal problems occur because the physical demands of client handling tasks do not match the capabilities of the caregivers. According to several studies, frequent manual transferring and/or lifting of clients is one of the major risk factors contributing to back injuries and other MSIs among caregivers.

Although some organizations view transfer and repositioning activities as a means of supporting client independence and a source of client physical therapy, under no circumstances should the safety of a worker be compromised for the sake of a therapeutic approach with a client. When worker safety is in question, a mechanical aid should be used and the client's physical therapy carried out as a distinct activity with the client in a seated or reclining position.

This section contains descriptions of various transfer and repositioning procedures as well as how best to use transfer devices. Some equipment may be referred to by name. The name refers to the type of equipment and does not indicate endorsement of a particular brand of equipment that may bear the same name.

6.1 Definitions: Transfer, Lift and Repositioning

There is a clear distinction between the terms lift, transfer and repositioning, yet these terms are often used interchangeably. Consistent terminology is important so that both caregivers and clients are clear on which procedure is being performed. Referring to a procedure by many different names may result in an injury to the client and/or the caregiver.

- **Lift.** The procedure used to lift or carry the entire weight of a person or object. A lift is used to move a client who is physically unable to help with the procedure. A lift may be accomplished manually by at least two caregivers or mechanically using a lifting device.
- **Transfer.** The procedure used to assist a client, who can bear weight at least through one leg or both arms, to move from one surface to another. A transfer should be used to move a client who is mentally able to help, co-operative, and can bear weight at least through one leg or both arms and when appropriate transfer devices, such as a transfer belt, transfer board or transfer disk, are available.
- **Repositioning.** The procedure used to move a client to a new position on the same surface. Repositioning should be used to move a client up in bed or a chair, when the client is physically unable to move or mentally unable to follow instructions.

6.2 Preparing for Client Transfer and/or Reposition

The task of transferring and repositioning of clients can be as hazardous to workers as manually lifting clients. Organizations should support the use of transfer and repositioning devices to help assist a worker in executing a safe transfer or reposition. It is essential that caregivers use the assistive devices with which they are provided.

An appropriate transfer or reposition is one that:

- Ensures the safest and most comfortable procedure for the client and the caregiver.
- Allows the client to be as independent as possible.
- Reduces the risk of injury to both the client and the caregiver.
- Ensures a secure client transfer.
- Reduces the intensity of biomechanical stresses associated with client transfers on the caregivers.
- Reduces physical demands of the task, such as pushing or pulling.
- Provides better control when transferring a client. For example, a transfer belt provides a place for the caregiver to grip in case the client starts to fall.
- Permits the caregiver to assume a position with better leverage.
- Allows the client to participate as much as possible.

Preparing for a safe transfer begins with the caregiver confirming that the prescribed transfer is still the most appropriate technique for the particular client. The "Client Mobility Assessment" on page 99 details the assessment processes that should be carried out each time a caregiver is transferring a client.

Preparation is required in four areas:

- "Caregiver" on page 125
- "Client" on page 126
- "Environment" on page 126
- "Equipment" on page 126

Caregiver

Caregivers must complete the following tasks to prepare for a client transfer:

- Complete a mini-assessment, prior to performing the agreed upon transfer, to ensure that the chosen procedure is still appropriate. If it is not, notify other staff members and document any changes.
- Position themselves correctly next to the client to ensure that:
  - The client feels safe. If the client is lying down, the caregiver should stand at the client's shoulder level. If the client is sitting, the caregiver should stand in front or slightly to their side.
  - The client can hear and see the caregiver. When the caregiver is positioned beside or in front of the client, the client can hear and/or see the caregiver better and the caregiver can maintain a good base of support.
  - The caregiver can use good body mechanics to decrease the risk of injury.
- Wear appropriate clothing and footwear to allow unrestricted movements.
- Discuss and plan the procedure with the partners prior to the transfer and determine who is the leader and who is the assistant.
- Explain the procedure to the client and what they must do to help.
- Give short, simple commands and instructions that are clearly communicated to the client and the caregiver working as a partner.
- Give one instruction at a time.
- Tighten abdominal and buttock muscles and use the leg muscles to perform the client handling procedure. This helps to protect the spine from injury.
- Never grasp the client under the armpits. This could result in a shoulder injury to the client.
- Be prepared for the unexpected: pause during each step of the procedure for the safety of the client and of the caregiver.
- Postpone the task if the client is resistive, unco-operative and/or aggressive.
- Move the whole body in the direction of the transfer. Do not rotate or twist the spine.
- Ensure the client is transferred the shortest distance possible.

Client

Caregivers must also make sure that the client is ready to perform the procedure. The caregiver should ensure:

- The client wears proper clothing and nonslip footwear.
- The client places their hands on the caregiver's forearms, shoulders, hips or on a piece of equipment. The client should not put their arms around the caregiver's neck. This helps to avoid neck injuries.
- The client's IV tubes and poles, urine bags and safety belts are positioned so they are safe for the client and do not interfere with the transfer.
- That the client's dignity is preserved.

Environment

Caregivers should ensure that the environment is also ready for client handling procedures. Caregivers should:

- Ensure that the path of the transfer is clear by removing any obstacles.
- Ensure furniture is arranged to allow easy access.
- Be sure that there are no spills on the floor.
- Ensure that the lighting is adequate.
- Ensure that noises, such as personal conversations, instructions to another client in the same room at the same time, television and radio, are kept to a minimum to avoid distraction when preparing to transfer a client.

Equipment

Caregivers must prepare the environment for client handling procedures. The caregiver should:

- Check equipment for safety. Label or tag and remove faulty equipment immediately.
- Ensure that devices such as slings, belts or disks are in good working order and the correct size.
- Ensure that any equipment is positioned and used correctly. For example, place the wheelchair, commode chair or chair parallel to the bed or at a slight angle close to the bed.
- Apply or remove slings, splints or braces according to the policies and procedures and/or the instructions provided by the manufacturer.
- Set the bed at the optimum height for the caregiver(s) and the client.
- Lock all of the wheels on the equipment in use unless otherwise required.
- Ensure that the bed rails are lowered when necessary.
- Remove the wheelchair arm and leg rests when necessary (unless otherwise required).

6.3 Repositioning a Client

The following sections outline the steps for various repositioning techniques. The organization should review these procedures and make modifications or additions, if necessary.

Turning a Client in Bed with Two Caregivers

You can use this procedure to reposition a client from side to side to avoid bed sores. See Figure 22 on page 128 for an example of the positioning involved with this procedure.

The devices required for this procedure are:

- turning sheet
- draw sheet

This procedure requires two caregivers.

1. Explain to the client what is going to be done and what they must do to help.
2. Always use a turning sheet or draw sheet.
3. Both caregivers should position themselves on the same side of the bed.
4. Lock the brakes of the bed.
5. Lower the bed rail on the side of the bed on which the caregivers are standing.
6. Adjust the height of the bed so that each caregiver can comfortably place one of their knees on the bed.
7. If the head of the bed is up, lower it unless the client's condition requires that it be left up.
8. If the client is lying on their side, roll them onto their back and have them bend their knees up, if possible. If the client is unable to do this, assist them.
9. Cross the client's arms across their chest.
10. Roll the turning sheet in a longitudinal tubular fashion and position it close to the client's side so that it stretches under the client from the shoulders to the hip area.
11. Roll the client gently away from the caregivers, tuck the rolled part of the sheet under them, and then roll the client toward you. Stretch the rolled part of the sheet to the other side. Then roll the client back onto their back.
12. One caregiver stands at the client's hip level and the other stands at the client's shoulder level. Both caregivers place their outside knee on the bed to allow more low back stability with the reposition. When positioned at the client's hips, the knee closest to the client's feet is on the bed and when positioned at the client's shoulders, the knee closest to the client's head is on the bed.

13. Grasp the rolled sheet firmly using both hands with palms up.
14. Together: count "1, 2, 3, slide". On the command "slide", slide the client gently toward the caregivers.
15. Leader: Move to the other side of the bed, lower the bed railing and place one knee on the bed. Assistant: Remain on the original side of the bed.
16. Bend the client's outside leg, if possible, to help with the procedure.
17. Leader: Grasp the client's shoulder and leg. Assistant: Help the leader to turn the client toward the leader, while maintaining good body mechanics.
18. Ensure that the client is comfortable, safe and well supported.
19. Straighten the turning sheet and raise the bed rails.

Figure 22. Turning a Client in Bed with Two Caregivers

Repositioning a Client in Bed

You can use this procedure to reposition a client who has moved to the:

- to the end of the bed
- sideways on the bed

See Figure 23 on page 130 for an example of the positioning involved with this procedure.

The devices required for this procedure are:

- draw sheet
- turning sheet
- repositioning sheet

This procedure requires two caregivers. One is the leader and the other is the assistant.

1. Explain to the client what you are going to do and what they must do to help.
2. Ensure that all of the necessary equipment is available, in good working order and the correct size where applicable.
3. Lock the bed brakes.
4. Adjust the height of the bed so that each caregiver can comfortably place one of their knees on the bed. Lower the bed railing(s) and the head of the bed unless the client's condition requires otherwise.
5. Place a pillow against the head of the bed.
6. Ask the client to bend their knee(s) and cross their arms across their chest. If they are unable to do this, assist them.
7. The caregivers should position themselves on either side of the bed.
8. Review the procedure for turning a client in bed. If the draw sheet is already underneath the client, roll the draw sheet in close to the client and grasp it with both hands.
9. With one foot placed in the direction of the move, place the other knee on the bed. Option: Keep the feet apart and on the floor. Brace thighs firmly against the bed. Tuck in the trunk area "inner unit".
10. Together: Count "1, 2, 3, move". On the command "move," move the client up in bed. Repeat in several small stages. The caregivers should move their feet and knees forward at each stage.
11. Straighten the draw sheet and bed linen out. Remove the pillow from the head of the bed and put it under the client's head.
12. Ensure that the client is comfortable, safe and well supported. Raise the bed rails, if necessary.

Figure 23. Repositioning a Client in Bed with Two Caregivers

Getting a Client to a Sitting Position

You can use this procedure to reposition a client from a prone to sitting position.

This procedure requires one or two caregivers.

1. Explain to the client what you are going to do and what they must do to help.
2. Always turn the client on their stronger side first, if possible. (The client can also be turned to their weaker side for therapeutic reasons.)
3. The caregiver(s) should be positioned at the client's shoulder level, facing the client.
4. If the client is lying on their back, ask them to bend their hips and knees. If they are unable to do this, assist them with the procedure. Ask the client to roll on the side to face the caregiver. If they are unable to do this, assist them by placing one hand on the back of the shoulder and the other one on the backside of the hip and gently assist them to roll toward the caregiver.
5. Place one hand under the client's shoulder (the one that is against the bed) and the other one over behind the knees.
6. Ask the client to push down on the bed and help them.
7. Together with one movement, pivot the client into a sitting position. Support the client through the procedure. Remain close to the client. Support them from the shoulders until they are well balanced in the sitting position.

Getting a Client from Sitting to a Standing Position

You can use this procedure to reposition a client from a sitting to a standing position. See Figure 24 below for an example of the positioning involved with this procedure.

An assistive device for this procedure is a transfer lift.

This procedure requires one or two caregivers.

1. Explain to the client what you are going to do and what they must do to help.
2. Position the bed so that the client's feet are flat on the floor. Facing the client, ask them to move to the edge of the bed. If the client is unable to do this, assist them to move as close to the edge of the bed or chair as possible. The client can do this by alternatively moving their buttocks (bum walk). Support the client through the procedure.
3. Be sure that the client's knees are at an 80°-90° angle.
4. The caregiver should face the client and block their weaker foot or both feet. To block the client's foot/feet, the caregiver should place their feet in front or slightly on either side of the client's foot/feet. The caregiver should block the client's knee(s) with their knees on either side of the client's.
5. The caregiver should place their hands around the client's waist, above the sacrum area or under the buttocks.
6. Ask the client to look up and place their hands on the caregiver's forearms, shoulders, hips or on the piece of equipment.
7. On the count of three, the caregiver should assist the client to straighten their hips and knees by gently putting pressure on the sacrum with their hands and blocking the client's knees with their knees.
8. To prevent the client from losing their balance, the caregiver should ensure that the client is standing straight up and is not leaning forward.

Figure 24. Getting a Client from Sitting to a Standing Position

Repositioning a Client in a Chair by Two Caregivers

You can use this procedure to reposition a client who has slid down or bent over the armrest of a chair or wheelchair and is unable to correct this posture.

This procedure is suitable only for a chair with a low back or a removable back support. It is **not** suitable for a geriatric chair.

This procedure requires two caregivers. One is the leader and the other is the assistant.

1. Explain to the client what you are going to do and what they must do to help.
2. Lock the wheels of all equipment in use.
3. Position the wheels of the wheelchair so that they do not pivot.
4. Remove the foot rests and the back/head rest where applicable.
5. Bend the client's knees to approximately 80 degrees, if possible. Place the client's feet slightly apart.
6. Remove the client's seat belt or tray, where applicable.
7. Leader: Stand behind the chair and assume a bent knee walk stance. Assistant: Stand in front of the client and assume a bent knee walk stance.
8. Ask the client to fold their arms. If they are unable to do this, assist them.
9. Leader: Stand behind the client, lean them forward and grasp the client's forearms by placing your hands/arms under the client's arms, between the client's arms and chest.
10. Assistant: Place your arms under the client's knees.
11. The caregivers should tighten their abdominal muscles.
12. Together count "1, 2, 3, up". On the command "up", the caregivers slide the client up/back in the chair while straightening their knees.
13. Replace the footrests, seat belt, tray and back/head rest, where applicable.
14. Ensure the client is comfortable, safe and well supported.

Reposition a Client in a Geriatric Chair

You can use this procedure to reposition a client who has who has slid down or bent over the armrest of a chair or wheelchair and is unable to correct this posture.

This procedure requires one caregiver.

1. Explain to the client what you are going to do and what they must do to help.
2. Lock the wheels of all equipment in use.
3. Position the wheels of the wheelchair so that they do not pivot.
4. Bend the client's knees approximately to 80 degrees, if possible. Place the client's feet slightly apart.
5. Remove the client's seat belt or tray where applicable.
6. The caregiver should stand in front of client with their knees bent slightly. The caregiver should brace their knees up against the client's legs.
7. The caregiver places their hands on the client's sacrum.

8. Shift the client's buttock toward the back of the chair by raising one side of the sacrum then the other (bum walk). Apply gentle pressure on the client's legs to assist in shifting them backward. Ask the client to assist when possible.
9. Ensure that the client is comfortable.

6.4 Transferring a Client

The following sections describe various transfer techniques. The organization should review these procedures and make modifications or additions where necessary.

Independent Unsupervised Transfer

Independent unsupervised transfers are for clients assessed as totally independent and safe with transfers. No procedure required.

Independent Supervised Transfer

Independent supervised transfers are for clients who are independent and safe transferring themselves, but require verbal guidance and reminders. May be supervised from a distance.

You must ensure the client follows all safety precautions with the equipment, if applicable. (For example, the activation of safety brakes.) No physical assistance or formal procedure required.

Minimum Assistance Transfer

You can use this procedure to transfer a client under the following conditions:

- client requiring minimum assistance
- client requiring assistance with equipment (e.g., wheelchair, geriatric chair, or commode chair)

This procedure requires one caregiver.

1. Clear all obstacles from the path of the transfer.
2. Explain to the client what you are going to do and what they must do to help with the procedure.
3. Ensure all necessary equipment is available, in good working order and the correct size, where applicable.
4. Position the wheelchair parallel or at a slight angle to the bed on the side on which the transfer is performed, preferably the client's stronger side.
5. Ask the client to move closer to the edge of the bed so they can place their feet flat on the floor. If they are unable to do this, assist them to the edge of the bed.
6. Lock all wheels on the equipment in use, unless otherwise required.
7. Position the leg rests so that they do not interfere with the transfer. Leave the armrests in place.
8. Stand on the client's weaker side facing the client.
9. Ask the client to sit on the edge of the bed. If they are unable to do this, assist them to a sitting position.
10. Stabilize the client's weaker foot with your foot and the weaker knee with your knees, if necessary.
11. Support the client around their waist.
12. Ask the client to look up and lean forward and push up from the bed with their hands.
13. Count "1, 2, 3, stand." On the command "stand," stand up together.
14. Ask the client to turn toward their stronger side and grasp the further armrest of the wheelchair.
15. Assist the client to sit in the wheelchair.
16. Ensure the client is comfortable, safe and well supported.

One-person Pivot Transfer

You can use this procedure to transfer a client who is:

- co-operative
- capable of bearing weight on at least one leg
- able to pivot with some assistance

An example of the transfer is from a bed to a wheelchair. The preferred method is to use an assistive device.

This procedure requires one caregiver.

1. Clear all obstacles from the path of the transfer.
2. Explain to the client what you are going to do and what they must do to help with the procedure.
3. Place the wheelchair parallel or at a slight angle close to the bed on the client's stronger side.
4. Lock all the wheels of the equipment in use unless otherwise required.
5. Remove or lower the bed rail. Adjust the height of the bed so that the client is able to place their feet flat on the floor with their knees at an 80°-90° angle.
6. Remove the footrests from the wheelchair.
7. Stand facing the client. Ask or assist the client to sit on the edge of the bed. Pause for a moment to let the client adjust to the upright position.
8. Ask the client to put their hands on your waist, shoulders, forearms or one hand on the armrest closest to them. To be able to do this, the client's arm strength and ROM of the joints have to be fair.
9. The caregiver should block the client's foot/feet with their feet. To do this, the caregiver should place their feet on either side of the client's foot/feet to prevent slipping. The caregiver should brace the client's knee(s) by placing their knees on either side.
10. The caregiver should place their hands on the client's sacrum.
11. Ask the client to look up and lean slightly forward.
12. The caregiver should bend their knees, tighten the abdominal and buttock muscles. Count "1, 2, 3, stand". On the command "stand", straighten the knees and assist the client to a standing position using a smooth motion.
13. Pivot the client so that the backs of their legs are toward the seat of the wheelchair while maintaining control of their knees.
14. Ask the client to move back toward the wheelchair and to place both hands, if possible, on the arm rests of the wheelchair.
15. Count "1, 2, 3, down". Slowly assist the client to sit down.
16. Replace the footrests and ensure that the client is comfortable, safe and well supported.

One-person Pivot Transfer with Assistive Device

You can use this procedure to transfer a client who is:

- co-operative
- capable of bearing weight on at least one leg
- attached to equipment such as IV poles, catheters, or tubes

The devices required for this procedure are:

- client handling sling
- transfer belt
- transfer disk for client unable to pivot

This procedure requires one caregiver.

1. Clear all obstacles from the path of the transfer.
2. Ensure that all the necessary equipment is available, in good working order and the correct size, where applicable.
3. Explain to the client what you are going to do and what they must do to help with the procedure.
4. Place the wheelchair parallel or at a slight angle close to the bed on the client's stronger side.
5. Lock all the wheels of the equipment in use unless otherwise required.
6. Remove or lower the bed rail. Adjust the height of the bed so that the client is able to place their feet flat on the floor with their knees at an 80°-90° angle.
7. Remove the footrests from the wheelchair.
8. Stand facing the client. Ask or assist the client to sit on the edge of the bed. Pause for a moment to let the client adjust to the upright position.
9. Ask the client to put their hands on your waist, shoulders, forearms or one hand on the armrest closest to them. To be able to do this, the client's arm strength and ROM of the joints have to be fair.
10. The caregiver should block the client's foot/feet with their feet. To do this, the caregiver should place their feet on either side of the client's foot/feet to prevent slipping. The caregiver should brace the client's knee(s) by placing their knees on either side.
11. Position the assistive device. Ask the client to lean slightly forward.
12. The caregiver should bend their knees, tighten the abdominal and buttock muscles. Count "1, 2, 3, stand"! On the command "stand", straighten the knees and assist the client to a standing position by using a smooth motion. Use the sling to apply pressure forcing the client's pelvic area to straighten up. Stand up with the client for a couple of seconds for balance.
13. Pivot the client so that the backs of their legs are toward the seat of the wheelchair while maintaining control of the knees.
14. Ask the client to move back toward the wheelchair and to place both hands, if possible, on the arm rests of the wheelchair.
15. Count "1, 2, 3, down". Slowly assist the client to sit down.
16. Replace the footrests and ensure the client is comfortable, safe and well supported.
17. Return the equipment to its storage place after use.

Two-person Pivot Transfer

You can use this procedure to transfer a client who is:

- unpredictable
- capable of bearing weight on at least one leg

An example of the transfer is from a bed to a wheelchair. The preferred method is to use an assistive device.

This procedure requires two caregivers. One is the leader and the other is the assistant.

1. Clear any obstacles in the path of the transfer.
2. Explain to the client what you are going to do and what they must do to help with the procedure.
3. Place the wheelchair at a slight angle to the bed on the side to which the client is transferred. Preferably transfer the client to their stronger side.
4. Remove the foot rests and the arm rest nearest to the client, if possible.
5. Adjust the bed height so that the client's feet are flat on the floor when they are sitting on the edge of the bed.
6. Assistant: Stand between the wheelchair and the bed. Place the knee closest to the bed on the bed. Grasp either side of the client's sacral area.
7. Leader: Stand in front of the client. Block the client's weaker foot or both feet with your feet, if necessary. The caregiver should brace the client's weaker knee(s) by placing their knees on either side, if necessary. Grasp the client's upper back (not under the arms). Ask the client to place their hands on your forearm or waist and lean slightly forward.
8. Together count "1, 2, 3, stand". On the command "stand", tighten the abdominal and buttock muscles. While the assistant lowers their knee from the bed, assist the client to stand. The assistant guides, not lifts, the move.
9. Pivot the client toward the wheelchair so that the backs of their legs are touching the wheelchair.
10. Together, count "1, 2, 3, down". On the command "down", gently assist the client to sit well back in the wheelchair.
11. Replace the footrests, armrest and remove the transfer belt.
12. Ensure that the client is comfortable, safe and well supported.

Two-person Pivot Transfer Using A Transfer Belt

You can use this procedure to transfer a client who is:

- unpredictable
- capable of bearing weight on at least one leg

An example of the transfer is from a bed to a wheelchair. The device required for this procedure is a transfer belt.

This procedure requires two caregivers. One is the leader and the other is the assistant.

1. Clear any obstacles in the path of the transfer.
2. Ensure that the transfer belt is available, in good working order and the correct size, where applicable.
3. Explain to the client what you are going to do and what they must do to help with the procedure.
4. Place the wheelchair at a slight angle to the bed on the side to which the client is transferred, preferably the client's stronger side.
5. Remove the foot rests and the arm rest nearest to the client, if possible.
6. Adjust the bed height so that the client's feet are flat on the floor when they are sitting on the edge of the bed.
7. Apply the transfer belt securely to the client.
8. Assistant: Stand between the wheelchair and the bed. Place the knee closest to the bed on the bed. Grasp the handle in the back of the transfer belt.
9. Leader: Stand in front of the client. Block the client's weaker foot or both feet with your feet, if necessary. The caregiver should brace the client's weaker knee(s) by placing their knees on either side, if necessary. Grasp the client's upper back (not under the arms). Ask the client to place their hands on your forearm or waist and lean slightly forward.
10. Together count "1, 2, 3, stand". On the command "stand", tighten the abdominal and buttock muscles. While the assistant lowers the knee from the bed, assist the client to stand The assistant guides, not lifts, the move from the back handle of the transfer belt.
11. Pivot the client toward the wheelchair so that the backs of their legs are touching the wheelchair.
12. Together count "1, 2, 3, down". On the command "down", gently assist the client to sit well back in the wheelchair.
13. Replace the footrests, armrest and remove the transfer belt.
14. Ensure that the client is comfortable, safe and well supported.
15. Return the transfer belt to its storage place.

Two-person Pivot Transfer Using a Patient Handling Sling

You can use this procedure to transfer a client from one surface to another. You can also use this procedure to assist in some manual client lifts such as:

- "One-person Pivot Transfer" on page 134
- "Two-person Pivot Transfer" on page 137
- "Two-person Side-by-side Transfer" on page 140
- "Shoulder Lift" on page 159

The device required for this procedure is a patient handling sling. (You can also simultaneously use a transfer disk to provide pivoting assistance.)

The procedure remains essentially the same as the two-person pivot transfer using a transfer belt. The exception is that the assistant has to place the sling under the client's buttocks to assist with the move as in a two-person pivot transfer.

This procedure requires one or two caregivers.

1. Clear any obstacles in the path of the transfer.
2. The caregiver needs to ensure that:
   - The sling is located so that it is easily available.
   - The sling is clean and in good working order.
   - The sling is placed on the client's lower back/buttock area while the client is sitting on the end of the bed or wheelchair.
   - The bed is adjusted so that the client's feet are flat on the floor and their knees are at an angle of approximately 80°-90°.
   - The client wears clothing that is not slippery and does not cause the sling to slide up.
   - The client puts their hands on the caregiver's forearms or shoulders, never around the neck.
3. Hold the handles on either end of the sling.
4. Use a smooth movement to apply pressure on the client's hip and pelvic area to straighten the hips up. If necessary, assist the client with your knees to straighten the client's knees to a standing position.

Two-person Pivot Transfer Using a Transfer Disk

You can use this procedure to transfer a client who is:

- capable of bearing weight on at least one leg
- having difficulty moving their feet

You can also use this procedure to assist with the following procedures:

- "One-person Pivot Transfer" on page 134
- "One-person Pivot Transfer with Assistive Device" on page 135
- "Two-person Pivot Transfer" on page 137
- "Two-person Side-by-side Transfer" on page 140

The device required for this procedure is a transfer disk. (You can also simultaneously use a patient handling sling to assist the transfer.)

This procedure requires one or two caregivers.

The procedure remains the same as the one followed in the two-person pivot transfer with or without the transfer belt or patient handling sling.

1. Clear any obstacles in the path of the transfer.
2. The bed is positioned so that the client's feet are flat on the floor and their knees are at an 80°-90° angle when seated on the edge of the bed.
3. The transfer disk is placed under the client's feet so that the feet are in the middle of the disk, not touching the outer rim.
4. Use a smooth movement in assisting the client to a standing position and in pivoting them toward the wheelchair.
5. Demonstrate the pivoting on the disk, if necessary.

Two-person Side-by-side Transfer

You can use this procedure to transfer a client who is:

- capable of bearing weight and standing with assistance
- mentally capable of following instructions

The devices required for this procedure are:

- transfer belt
- transfer disk

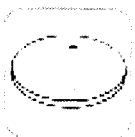
An example of the transfer is from a bed to a wheelchair. This procedure requires two caregivers. Each caregiver is positioned on one side of the client. One is the leader and the other is the assistant.

1. Clear any obstacles in the path of the transfer.
2. The client must be wearing appropriate clothing and footwear.
3. Explain to the client what you are going to do and what they must do to help with the procedure.
4. Ensure the necessary equipment is available, in good working order, and the correct size. Apply the transfer belt, if necessary.
5. Position the wheelchair parallel or at a slight angle to the bed on the side to which the client is to be transferred, preferably the client's stronger side.
6. Remove the footrests and the armrest closest to the client. If possible, lock all wheels of the equipment in use, unless otherwise required.
7. Ask the client or assist them to sit on the edge of the bed and move forward to the edge of the bed so that they can place their feet flat on the floor.
8. Sit on the bed on either side of the client.
9. The caregiver should stabilize the client's foot/feet by placing your foot/feet in front of the client's foot/feet, if necessary.
10. The caregiver places the hand closest to the client under their forearm and grasps the client gently above the wrist. Hold the client's hand in the other hand holding the palms up.
11. Ask the client to lean forward and push down against the palm of the caregiver's hands. If the client is unable to do this, use the back handle of the transfer belt to assist them to a standing position.
12. Together count, "1, 2, 3, stand". On the command "stand", stand together with the client.
13. Walk to the wheelchair, turn slowly around so that the client's back is toward the seat of the chair and the backs of their legs are touching the wheelchair.
14. Together count, "1, 2, 3, down". On the command "down", assist the client to sit well back in the chair.
15. Replace the foot rests and the arm rest, remove the transfer belt.
16. Ensure that the client is comfortable, safe and well supported.
17. Return the equipment to its storage place.

Side-by-side Transfer Using a Transfer Disk

You can use this procedure to transfer a client who is:

- capable of bearing weight on at least one leg
- having difficulty moving their feet



The devices required for this procedure are:

- transfer disk
- transfer belt (optional)
- client handling sling (optional)

This procedure requires one or two caregivers.

1. When using a transfer disk, follow steps 1 through 5 of "Two-person Side-by-side Transfer" on page 140.
2. Place the transfer disk under the client's feet so that their feet do not touch the edge of the disk.
3. Ask the client to lean forward.
4. Ask the client to push down against the palms of the caregiver's hands. Together count "1, 2, 3, stand". On the command "stand", stand up together.
5. Together turn the client so that their back is toward the seat of the wheelchair. The assistant repositions the wheelchair, if necessary.
6. Together count, "1, 2, 3, down". On the command "down", assist the client to sit well back in the wheelchair.
7. Replace the footrests, the arm rest and remove the transfer disk.
8. Ensure the client is comfortable, safe and well supported.
9. Return the equipment to its storage place.

Side-by-side Transfer Using a Transfer Belt

You can use this procedure to transfer a client when:

- mild balance problems exist
- additional client security is required
- caregiver is unable to place their hands around the client due to client size or length of the caregivers arms

You can use this procedure to assist with "Getting a Client from Sitting to a Standing Position" on page 131. This procedure is unsuitable if the client is unable to tolerate any pressure due to abdominal tenderness, sensitive skin, or other skin problems.

The device required for this procedure is a transfer belt. (You must not use the belt to lift the client.)

This procedure requires one or two caregivers.

1. When using a transfer belt, follow steps 1 through 5 of "Two-person Side-by-side Transfer" on page 140.
2. Ensure that the client's feet are flat on the floor and the belt fits snugly.
3. Stand on either side of the client.
4. Hold the belt by the side handles and assist the client, with a smooth movement, to a standing position. Do not use the belt to lift the client.

One-person Transfer Using a Transfer Board

You can use this procedure to transfer a client between surfaces of equal height. (The surface you are transferring the client to can be slightly lower, as well.) You can use this procedure for a client with:

- excessive weakness in lower limbs and trunk
- knee/hip contracture
- leg amputations

You can use this procedure to assist with "Car Transfer" on page 148.

This procedure requires one or two caregivers.

1. Ensure that:
   - The origin and destination surface heights are equal or that the surface at the end of the transfer is lower.
   - The client wears proper clothing and/or the surface of the transfer board is powdered to allow the client to smoothly slide on the board.
   - The wheelchair is placed parallel or at a slight angle on the client's stronger side.
   - All the wheels on the equipment in use are locked unless otherwise required.
   - The foot rests and armrest closest to the client are removed from the wheelchair.
   - The transfer board is partially under the client's buttock and the other end of the board extends halfway across the seat of the other surface, bridging the gap between them.
2. Explain to the client what you are going to do and what they must do to help with the procedure.
3. Position the two surfaces parallel to one another (i.e., wheelchair and tub).
4. Slide the transfer board underneath the buttock of the client. Position a towel between the client's buttock and the transfer board. The towel is then used to pull the client along the board.
5. Ensure the opposite end of the transfer board is resting on the other surface.
6. Pull the client along the transfer board.
7. Remove the board from underneath the client once they are firmly supported by alternate surface.

Transfer Using a Slide Board

You can use this procedure to transfer a client who is:

- supine and unable to sit and/or help with the other transfers
- unable or not allowed to move or is unconscious

A slide transfer is suitable to move a pre- or post-operative client.

A draw sheet should be used in conjunction with the slide board.

Examples of using this procedure are the transfer of a client between bed, stretcher, operating table, or x-ray table. The surfaces involved in the transfer must be of equal height. (The surface you are transferring the client to can be slightly lower, as well.)

The slide can compensate for small differences in heights. These differences can by softened by placing padding under the slide on the edges of the surfaces.

This procedure requires two caregivers. One caregiver is the leader and the other is the assistant.

1. Ensure that:
   - All the wheels of the equipment in use are locked unless otherwise required.
   - The surfaces are level, bed rails are lowered, and the head of the bed is flat unless the client's condition requires it to be raised.
   - The necessary equipment is available, in good working order, and the correct size, where applicable.
2. Explain to the client what you are going to do and what they must do to help.
3. Position the client close to the edge of the bed on the side to which the transfer is taking place by using the draw sheet.
4. Roll the client on the side away from the caregiver. Roll the draw sheet close to the client's back. Roll the client back to their other side and pull/straighten the draw sheet. Roll the client onto their back.
5. Position the stretcher parallel to the bed.
6. Two caregivers stand on either side of the bed facing the bed. Leader: Stand on the side to which the transfer takes place.
7. Assistant: Ask the client to cross their arms across their chest. If they are unable to do this, assist them to do so.
8. Assistant: Maintaining a straight back and good body mechanics, roll the client toward you by grasping the client's far shoulder and hip or bent knee, if the client is able to bend it.
9. Leader: Place the slide either directly under the client or underneath the draw sheet, half way under the client, bridging the bed and the stretcher.
10. Assistant: Move to the same side as the leader.
11. Kneel on the stretcher to allow you to comfortably reach the client.
12. Facing the stretcher, together roll the draw sheet close to the client grasping the draw sheet in a *palms up* grip.
13. Together count "1, 2, 3, slide". On the command "slide", slide and pull the client smoothly onto the stretcher, maintaining good body mechanics.
14. Remove the slide.
15. Ensure that the client is in the middle of the stretcher, well supported and comfortable.
16. Return the equipment to its storage place.

Transfer Using a Slide Sheet

You can use this procedure to transfer a client who is:

- unable to sit
- unable to help with the transfer
- unable or not permitted to move
- unconscious

An example of using this procedure is the transfer of a client between bed, stretcher, operating table, or x-ray table.

The device required for this procedure is a slide sheet.

This procedure requires one or two caregivers.

1. Follow the same procedure as when using a slide board, except the slide sheet is placed all the way underneath the client.
2. When using the smaller size slider sheets, ensure that one is placed all the way under the client's shoulders and the other one underneath the hips. Use the handles of the slider or draw sheets to gently slide the client to the other surface.
3. Ensure that:
   - All the wheels of the equipment in use are locked unless otherwise required.
   - The surfaces are level.
   - There are two caregivers, one on either side of the bed/stretcher.
   - The slide sheet is tucked completely under the client, underneath the draw sheet.
4. One knee is placed on the bed, if possible, to avoid reaching and bending.

Roll Board Transfer

You can use this procedure to transfer a client who is:

- unable to help with the transfer
- unable or not permitted to move
- unconscious

An example of using this procedure is the transfer of a client between bed, stretcher, operating table, or x-ray table.

The device required for this procedure is a roll board.

This procedure requires two caregivers.

1. Follow the same procedure as when using a slide board or slide sheet.
2. Ensure that:
   - All the wheels of the equipment in use are locked unless otherwise required.
   - The surfaces are level.
   - There are two caregivers, one on either side of the bed or stretcher.
   - The roll board is tucked as far under the client as possible by turning the client on their side
   - The client is moved to the new surface gently with slight push and pull.

Mechanical Transfer Device

You can use mechanical devices to transfer a client The devices are useful for transferring clients between a chair and toilet. See the instructions provided by the device manufacturer for compete operation details.

Getting a Client In and Out of a Bathtub in a Home Care Setting

You can use this procedure to transfer a client between wheelchair/commode chair and bath board/bath chair. The client must be able to:

- bear weight on at least one leg
- follow instructions

The devices required for this procedure are:

- transfer bath board
- bath chair
- towel

This procedure requires one caregiver.

1. Clear any obstacles in the path of the transfer.
2. Ensure that all the necessary equipment is available, in good working order and the correct size where applicable. Fill up the tub halfway with warm water. Check that the water temperature is not too hot.
3. Explain to the client what you are going to do and what they must do to help with the procedure.
4. Place the wheelchair/commode chair parallel or at a slight angle to the side of the bathtub.
5. Remove the foot rests and the arm rest nearest to the bathtub.
6. Place the bath board or bath chair securely on/in the tub approximately two-thirds from the front end of the tub.
7. Stand in front of the client and assist them to a standing position.
8. Smoothly assist the client to pivot so that their back is facing the bathtub.
9. Count "1, 2, 3, down". Assist the client to sit down on the bath board/chair.
10. Ask the client to hold onto the grab bar on the wall. (Note: Grab bars should be installed in appropriate locations.)
11. Ask the client to lift their legs over the edge and into the tub. If they are unable to do this, assist them by grasping the legs underneath the knees and lift them over the edge.
12. The caregiver should stand so that they do not have to twist and/or bend when washing or assisting the client to wash. Sit on the edge of the tub or on a chair beside the tub, or in a kneeling position with a towel or bath mat under the knees.
13. Use the hand shower, if available, to rinse the client.
14. Reverse the procedure to get the client out of the tub.
15. If the client is going to be bathed in the tub, follow steps 1. through 11. then assist the client to smoothly lower themselves into the tub. Apply a towel around the client's chest underneath the armpits holding onto the towel. Note: this procedure requires the caregiver to place one foot in the tub to be able to perform good body mechanics. When getting a client out of the tub, reverse the procedure. Let the water drain out before assisting them.

Car Transfer

The client must be able to:

- bear weight on at least one leg
- assist with their hands and arms
- follow instructions

The optional devices required for this procedure are:

- transfer belt
- transfer disk
- swivel cushion

This procedure requires one caregiver.

1. Always transfer the client to the front seat of the car. The rear door does not usually open wide enough to allow an easy transfer.
2. Explain to the client what you are going to do and what they must do to help.
3. Place the wheelchair parallel or at a slight angle to the side of the car. Leave enough space between the car door and the wheelchair.
4. Have the client use the car door, the frame of the door or the back of the seat for hand support.
5. Stand facing the client. Ask the client to move as close to the edge of the wheelchair as possible. If they are unable to do this, assist them.
6. Assist the client to a standing position and to pivot toward the car seat so that the backs of the legs are close to the car seat.
7. Assist the client to sit down while protecting their head from hitting the door frame.
8. Ask the client to lift their legs in to the car and turn toward the front. If they are unable to do this, assist them by lifting their legs under the knees at the same time turning them. A swivel cushion may be used to facilitate the turn.
9. Ensure that the client has the seat belt fastened and is comfortable.
10. When transferring a client out of the car, the steps in the process are reversed. The caregiver may find that they need to provide extra assistance particularly if the car seat is very low. The use of a transfer belt is appropriate for this purpose.

Module 7: Client Lifts and Lifting Devices

Lifts are carried out on those clients who are physically unable to bear weight or mentally unable to assist with the manoeuvre. A lift may be carried out manually or with the use of an assistive device to move the entire body weight of the client. Manual lifting is strongly discouraged. However, when manual lifting is the only option of lifting a client, workers should not be expected to perform the lift alone unless the client is less than 50 lbs. (NIOSH, 1991). Otherwise, two staff members are required to perform the lift.

This section focuses on the safe use of lifting devices and also provides descriptions of manual procedures.

7.1 Preparing for a Lift

Prior to performing a client lift, the caregiver must consider the four major parameters that impact on the safety and effectiveness of the lift – the caregiver, client, environment and equipment. Regardless of whether the lift is being done manually or mechanically, these factors need to be assessed. Consistency in performing manual or mechanical lifts is essential to help reduce the client's anxiety and confusion during lifting procedures.

Caregiver

A caregiver's approach to a client has a significant impact on the response of the client to the lifting procedure. Each time a lift is completed, the caregiver must conduct a client mini-assessment to ensure that there have not been any changes in the client's status. The mini-assessment is described in "Client Mobility Assessment" on page 99. The mini-assessment does not require a detailed, comprehensive assessment, but rather observation of the environment for possible obstacles, the current physical and cognitive capabilities of the client and ensuring the equipment is in good working order. If you discover that the agreed upon lift is no longer suitable, the appropriate staff member should be informed so that the lift procedure can be changed and documented accordingly.

The caregiver(s) need to ensure that adequate preparation time is taken to position themselves and the equipment properly. When preparing for manual lifting, the caregiver(s) should:

- Position themselves correctly next to the client to ensure that:
  - The client feels safe. If the client is lying down, the caregiver should stand at the client's shoulder level. If the client is sitting, the caregiver should stand in front or slightly to their side.
  - The client can hear and see the caregiver. When the caregiver is positioned beside or in front of the client, the client can hear and/or see the caregiver better and the caregiver can maintain a good base of support.
- Use good body mechanics to decrease the risk of injury.
- Tighten abdominal and buttock muscles and use the leg muscles to perform the client handling procedure. This helps to protect the spine from injury.
- Move the whole body in the direction of the lift. Do not rotate or twist the spine.
- Wear appropriate clothing and footwear to allow unrestricted movements.
- Ensure the client is lifted the shortest possible distance.
- Never grasp the client under the armpits. This could result in a shoulder injury to the client.
- Be prepared for the unexpected: pause during each step of the procedure for the safety of the client and for the caregiver.
- Postpone the task if the client is resistive, unco-operative and/or aggressive.

When preparing for lifting using mechanical equipment, the caregiver should:

- Follow the recommended procedures for use of the equipment.
- Position the equipment in the most advantageous position.
- Return the equipment to its "parking spot".
- Try to have two staff members present.

Client

Caregivers must also make sure that the client is ready to perform the procedure. The caregiver should ensure:

- The client wears proper clothing and nonslip footwear.
- The client places their hands on the caregiver's forearms, shoulders, hips or on a piece of equipment. The client should not put their arms around the caregiver's neck. This helps to avoid neck injuries.
- The client's IV tubes and poles, urine bags and safety belts are positioned so they are safe for the client and do not interfere with the transfer.
- That the client's dignity is preserved.

Environment

Caregivers should ensure that the environment is also ready for client handling procedures. Caregivers should:

- Ensure that the path of the transfer is clear by removing any obstacles.
- Ensure furniture is arranged to allow easy access.
- Be sure that there are no spills on the floor.
- Ensure that the lighting is adequate.
- Ensure that noises, such as personal conversations, instructions to another client in the same room at the same time, television and radio, are kept to a minimum to avoid distraction when preparing to transfer a client.

Equipment

Caregivers must prepare the environment for client handling procedures. The caregiver should:

- Check equipment for safety. Immediately, label, tag and remove faulty equipment.
- Ensure that the battery is charged in a battery-operated lifting device.
- Ensure that any equipment is positioned and used correctly. For example, place the wheelchair, commode chair or chair parallel to the bed or at a slight angle close to the bed.
- Apply or remove slings, splints or braces according to the policies and procedures and/or the instructions provided by the manufacturer.
- Set the bed at the optimum height for the caregiver(s) and the client.
- Lock all of the wheels on the equipment in use unless otherwise required.
- Ensure that the bed rails are lowered when necessary.
- Remove the wheelchair arm and leg rests when necessary (unless otherwise required).
- Never use the lifting device for transporting the client any distance (e.g., to another room) unless the equipment has been specifically designed for this purpose (e.g., stretcher tub lift).

7.2 Lifting Devices

Eliminating manual client lifting is the key to reducing MSIs. Suitable lifting devices should be provided and their use enforced. The purpose of using a lifting device is to:

- Ensure a secure client lift.
- Reduce the intensity of biomechanical stresses on the caregiver that are associated with manual client lifts.
- Reduce physical demands of the task such as pulling and pushing.
- Eliminate or reduce manual lifting.
- Permit the caregiver to assume a position with better leverage.

The lifting devices come in a variety of designs. They can be categorized as:

- Ceiling lifts
- Portable lifts
- Stationary or fixed lifts

Advantages of ceiling lifts include:

- Ideal for tight space constraints
- Require less effort
- Easy to manoeuvre
- One caregiver or a functional client can operate a ceiling lift, as opposed to a portable lift that should be operated by two caregivers

Portable lifts offer more flexibility in the area around where a client may be transported. Two caregivers should be present at all times during a client lift.

Stationary or fixed lifts are typically used at bathtubs and swimming pools.

The Canadian Standards Association has recently announced a Certification Program for the standard on Mechanical/Electromechanical Lifting Devices for Persons (Z323.5). This new equipment certification process has been developed due to recommendations from a coroner's inquest that occurred due to a fatal accident where a client was lifted using a faulty lift. The benefit of having a certification process is that consumers can be assured of the safety of the integrity of a mechanical lifting device. Many aspects of the lift are assessed such as the design and construction of the materials being used, the electrical requirements, hydraulics, valves, base design, hooks and chains, castors, controls and accessories such as slings. Also, performance testing is to be carried out on load capability, mechanical strength, stability and brake effectiveness.

Slings

The slings associated with a lifting device are a critical component in ensuring a lift is utilized effectively and safely. Most sling manufacturers offer a myriad of designs. The condition and size of the client(s) being lifted in the slings must be considered to ensure there is a proper fit between the client and the sling. Suppliers of lifting equipment should be consulted to help determine the appropriate sling.

Slings come in three or four different sizes and within each sling, size adjustments can be made. The task helps to determine the appropriate sling. For example, a mesh sling should be used to go into a tub while an open bottom sling should be used for toileting.

The shape of the sling provides various types of support for specific clients such as amputees or clients with cerebral palsy. The following are examples of types of slings available:

- **Hammock.** The hammock sling cradles the client from four supporting points: the client's arms are tucked within the sling, the client's arms are placed across the chest, the client's bottom is covered and, depending on the size of the hammock, the head is supported.
- **Hygiene Split Leg**. The split leg sling is easier to position underneath a client when they are seated because it is not placed underneath the bottom. The trunk portion of the sling is positioned behind the back of the client and then a wide leg section of the sling is positioned underneath each thigh. Securing the straps to the lifting device, positions the client's legs either opened or closed.
- **Amputee**. An amputee sling positions the client in a semi-reclined position. Its special design ensures the security of the client being lifted.
- **Band**. Some lifting devices utilize two broad bands of padded straps to lift the client. One strap is positioned under the axilla of the client and the other under the thighs.

7.3 Lifting Procedures

The following sections describe client lifting techniques:

- "Lifting Device" on page 154
- "Front & Back Lift" on page 156
- "Side-by-side Lift" on page 157
- "Shoulder Lift" on page 159

Lifting Device

You should use a lifting device when a client is:

- Not physically able to move themselves
- Not mentally able to help with lifts
- Unable to bear weight using:
  - one or two legs
  - both arms
- Maintain balance while standing
- Unable to move/ straighten their hips, knees, shoulders or elbows due to severe contracture or pain
- Inconsistent and/or behaviour aggressive

A mobile lifting device requires two caregivers to operate. A ceiling mounted lifting device may require one or two caregivers to operate and may also be operated by the client himself. A fixed lift such as a tub lift requires one to two caregivers to operate.

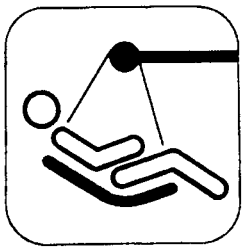


Figure 25. Lifting Device

This procedure requires two caregivers, one on either side of the bed. One is the leader and the other is the assistant.

1. Ensure that the lifting device is in good working order and all parts are in place.
2. Check that all lift attachments (i.e., slings, hooks, chains, straps and supports) are available, appropriate and the correct size.
3. Check the load limit of the lift and the slings.
4. Clear a path for the lift to operate and be maneuvered.
5. Explain to the client what you are going to do and why it is necessary to use a lifting device. Demonstrate the operation of the device, if necessary.
6. Explain to the client what they must do to help.
7. Lock the wheels of all equipment in use.
8. Adjust the height of the bed so that it is at optimum level for the caregivers and the base of the lift can be rolled under it.
9. Lower the bed rails of the bed.
10. Place the sling(s) in the appropriate place under the client according to the instructions below.

11. Place the mobile lifting device close to the bed with the base under the bed and the boom (bar) above the client's waist level.
12. Lower the boom slowly to the point where the hooks can be attached to the sling comfortably and safely.
13. The leg portion of the slings can be attached so that it crosses the body (from right side of the body to the left side of the lift) or straight up (right side of the body to right side of the lift). Attach the slings to the lift with the hooks facing away from the client.
14. Broaden the base of the lift as necessary to ensure security and safety.
15. Check that all hooks and attachments are secure.
16. Raise the client off the bed slowly with a smooth, gentle movement. Pause to allow the client to adjust and to ensure the client feels safe and secure. The assistant on the other side of the bed supports the client's head and shoulders and guides the move through the procedure. If the client is off balance, lower the lift and re-position them.
17. While still above the bed, turn the client to face the mast of the lift.
18. Gently turn the lift while the other caregiver supports the client. Guide the client toward the chair where they are going to be placed.
19. Bring the client above the chair while gently lowering the client into the chair. Ensure that they are positioned in the chair properly to avoid having to reposition them in the chair.
20. Remove the sling(s) and straps carefully, first from the lifting device and then from the client.
21. Ensure that the client is comfortable, safe and well supported in the chair.
22. Place the slings and the attachments on the lift and return the lift to the storage place. Be sure that all the parts and the device are left in good working order for the next use.
23. Place the battery on re-charge if a battery-operated lifting device has been used.

Applying the Sling(s) When the Client is Lying in Bed

Slings should not be kept in position under the client if the client is at risk of developing bedsores.

1. Roll the client toward you. Roll the sling in half lengthwise and position the sling so that the bottom of the sling aligns with the base of the spine.
2. Roll the client away from you and position the client on the flat section of the sling. Feed the leg sections under the client's thighs and then draw them up between the thighs.
3. When using band slings, place one under the client's thighs and the other one under the upper back. Never allow the client's arms to be inside the sling.

Applying the Sling(s) When the Client is in a Chair

When using a sling:

1. Place the sling down between the chair and the client's back.
2. Position the sling equally around both sides of the client's body.
3. Draw each of the leg sections along and under the client's thigh.

When lifting a client from chair to the bed the same procedure is followed in reverse.

Front & Back Lift

You can use a front & back lift to move a client who is unable to bear weight on at least one leg or with their arms. You can only use this lift to move a client from bed to a wheelchair, commode chair, etc. and vice versa if the chair has a low back and removable arm and leg rests.

Figure 26. Front & Back Lift

This procedure requires two caregivers. One is the leader and the other is the assistant.

1. Ensure that all necessary equipment is available, in good working order and the correct size or type where applicable.
2. Explain to the client what you are going to do and what they must do to help.
3. Lower the bed rails if necessary. Remove the armrest (of the chair) nearest to the bed and the leg rests from the wheelchair.
4. Adjust the height of the bed slightly higher than the wheel of the wheelchair.
5. Position the wheelchair parallel and close to the bed.
6. Clear any obstacles in the path of the lift (including arm and footrests).
7. Lock all the wheels on the equipment in use.
8. Leader: Assist the client from a lying position to a sitting position. Ask the client to bend their knees. If they are unable to do this, assist them to bend their knees. Roll the client to the side facing you. Place one hand under the client's shoulders and the other one over and behind the knees. Ask the client to help by pushing with their elbow and/or hand, then with one movement pivot the client into a sitting position supporting them through the procedure.
9. Cross the client's arms across their chest and lean them slightly forward.
10. Stand behind and close to the client with the knee closest to the bed on the bed. Shift your body weight on that leg. Place the other leg on the inside of the chair wheel.

11. To grip the client, use a through-arm grip and grasp the client's opposite forearms low across the client's abdomen.
12. Assistant: In a squat position, wrap one arm under the client's thighs and the other arm under the lower legs to support the legs. Hold them close to your body.
13. Together count: "1, 2, 3, move". On the "move" command, both caregivers shift the client close to the edge of the bed.
14. Leader: Move the leg from the bed. Shift the body weight to both legs and assume a lunge position.
15. Check your body mechanics. Tighten the abdominal and buttocks muscles. Together count: "1, 2, 3, lift". Lift the client smoothly toward the chair until the client is above the chair.
16. Together, count "1, 2, 3, down". On the "down" command, lower the client into the chair while maintaining good body mechanics.
17. Replace the arm and leg rests on the chair.
18. Ensure that the client is comfortable, safe and well supported.

To move a client from a wheelchair or commode chair, to bed, etc., use the same procedure in reverse.

Side-by-side Lift

You can use the side-by-side lift to move a client who is unable to bear weight through the legs but is able to use their arms and is able to sit. This procedure uses a move from bed to chair with fixed arms (e.g., geriatric chair) as an example.

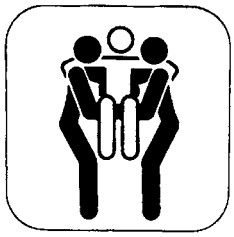


Figure 27. Side-by-side Lift

Side-by-side lift devices include:

- Client handling sling
- Transfer belt
- Towel

This procedure requires two caregivers, one on either side of the client. One caregiver is the leader and the other is the assistant.

1. Explain to the client what you are going to do and what they must do to help.
2. Ensure that all the necessary equipment is available and in good working order and the correct size where applicable.
3. Clear any obstacles from the path of the lift (including arm and footrests).
4. Position the wheelchair parallel to the bed about one metre from the bed.
5. Lock all wheels on equipment being used.
6. Using the proper procedure, assist the client to sit on the edge of the bed.
7. If using a transfer belt, place it on client.
8. Sit on the bed on either side of the client.
9. Ask the client to put their arms over your shoulders, if possible. If they are unable to do this, fold the client's arms in front of their body. The caregivers and client all face forward.
10. Grip from the back handle of the transfer belt to support the client from falling back. Do not lift from the handle. Place the client handling sling or towel under the client's thighs. Grip from the handle on either end, close to the client's thighs.
11. Together count: "1, 2, 3, lift". On the command "lift" stand up together and lift the client while tightening the abdominal muscles.
12. Walk in step to the wheelchair with the client's back facing the seat of the chair.
13. Together count: "1, 2, 3, down". On the command "down", gently lower the client to the chair while tightening your abdominal muscles and bending your knees.
14. Replace the arm and leg rests of the wheelchair.
15. Ensure the client is comfortable, safe and well supported.
16. Return all equipment to the storage place.

If you don't have a client handling sling or towel, place one arm behind the client's back and grip the other caregiver's wrist. Place your other arm under the client's thighs and interlock wrists with the other caregiver.

Shoulder Lift

You can use the shoulder lift to move a client who cannot bear weight through at least one leg and is unable to help with their arms. The client must be able to sit, be pain-free and have fair to full ROM in both shoulder joints. This procedure uses a move from bed to wheelchair, commode chair, geriatric chair as an example.

Figure 28. Shoulder Lift

Shoulder lift devices include:

- Client handling sling
- Towel

This procedure requires two caregivers of equal height. One is the leader and the other is the assistant.

1. Ensure that all the necessary equipment is available, in good working order and the correct size where applicable.
2. Explain to the client what you are going to do and what they must do to help.
3. Position the wheelchair parallel or at a slight angle to the bed about one metre away.
4. Clear any obstacles from the path of the lift (including arm and footrests).
5. Lock all the wheels of the equipment in use unless otherwise required.
6. Assist the client to sit on the edge of the bed.
7. The leader and the assistant stand on either side of the client and assume a lunge position.
8. Place the knee closest to the client on the bed.
9. The client leans forward (facing the caregivers) and places their shoulders against the caregivers inside shoulder.
10. Move as close to the client's side as possible.
11. Ask the client to place their arms over the back of the caregiver's closest shoulder. The client and the caregivers are facing in opposite directions throughout the procedure.
12. Use the client handling sling or a towel to facilitate this lift. Place the sling or towel at midpoint under the client's thighs. Use the handles on either end of the sling.
13. Grip partners wrists behind the client.
14. Pause to ensure the position is safe and that everyone is fully prepared for the lift.

15. Together count: "1, 2, 3, lift". On the "lift" command, lift by pushing down with the hands on the bed and straightening your knees from the bed.
16. Stand together and place your free hand so it supports the client's buttocks.
17. Walk in step together toward the wheelchair.
18. Together count: "1, 2, 3, lower". On the "lower" command, lower the client gently into the wheelchair while maintaining good body mechanics. Place the hand from the client's buttocks on the armrest or the back of the wheelchair to ensure it does not move.
19. Be sure that the client is comfortable, safe and well supported.
20. Return all equipment to its storage place.

If you don't have a client handling sling or towel, place your hands/arms closest to the client under the thighs. Interlock your hands/wrists, if possible.

Module 8: Environment and Equipment

A major premise of a client handling program is to reduce the physical demands on staff which are associated with lifting, transferring and repositioning clients. The most effective way to reduce physical demands is to incorporate the use of an assistive device during the client handling technique to take on all or a portion of the load being handled by the caregiver. In addition to equipment as a control mechanism, a suitable environment also has a significant impact on the overall demands of the transfer, lift or reposition.

This module addresses important considerations with respect to the design of the environment, equipment and tools, the various types of mechanical lifting devices and other related client handling equipment.

8.1 Environmental Design

Environmental design involves physical changes to the workstations, equipment, tools and the work environment. Considering the impact of the environmental design is important to:

- Ensure a secure client transfer/lift.
- Reduce the intensity of biomechanical stresses on the caregiver associated with transfers and lifts.
- Eliminate or reduce physical demands of the task, such as pulling or pushing.
- Eliminate or reduce manual lifting.
- Provide better control when transferring a client.
- Permit the caregiver to assume a position with better leverage.

An important design consideration is the type of flooring, particularly in areas where the caregiver has to push wheeled equipment. Although carpet absorbs noise, feels and looks nice, it is more difficult to push and manoeuvre wheeled equipment on carpet than on a hard surface such as linoleum. Research has shown that cart push/pull forces are the lowest on concrete rather than tile, asphalt and carpeted surfaces.

If a lip or joint is present between two surfaces or two kinds of flooring, the difference between the surfaces must be graduated to avoid a significant obstacle to wheeled equipment.

Colour can also be used to enhance the general safety of the environment. Making call bells and thresholds colourful can reduce safety risks. Colour contrasts should be

used in areas such as bathrooms. For example, a toilet seat should be in a different colour from the toilet bowl.

Colour-coded faucets make it easier to distinguish between hot and cold temperatures. A client with impaired depth perception benefits from having a strip of red tape affixed along the edge of the bathtub and having the armrests of sofas and chairs in a different colour from the seat. All of these measures help in client handling procedures.

Extreme temperatures have physiological effects on workers. When exposed to hot or cold temperatures, the body has to work harder. When the environment is cold, the extremities lose sensitivity and dexterity because the blood vessels constrict. This means more force is needed to handle things. High temperature and humidity in the tub/shower room are often above the caregivers' comfort level and may affect their task performance. Engineering controls such as providing adequate ventilation in these areas should be considered.

Poor, lack of, or too much lighting can contribute to the onset of MSIs. For example, reduced lighting during the night shift or excessive lighting that causes glare from reflective surfaces may force the caregiver to assume an awkward posture.

8.2 Workstation Layout

A workstation is a fixed place where work tasks are performed. Examples of workstations related to client handling include: beside a toilet, the bedside, by the tub or shower, and beside a wheelchair. If the physical layout of the workstation does not allow the caregiver to use the equipment and perform safe procedures, the risk factors associated with client handling increase the risk of the caregiver developing MSIs.

Layout of Client Rooms

The design and limited space in the client's room has a major impact on the way that pieces of equipment can be used. The space between the furniture and the walls should be adequate to allow the caregiver to manoeuvre a mobile lifting device into the correct position, without having to move any furniture. An overhead lifting device should be considered when space is limited.

There are many issues concerning the layout of a client's room. For example, the location of the bed with respect to the other furniture in the room may limit the amount of space between the foot and sides of the bed and the walls. It is recommended that the minimum clearance around the bed to allow a wheelchair to fit comfortably, is to allow 76 cm to 102 cm, according to the *Humanscale*™ (1974). (See Figure 29.) The caregiver should have access from either side of the bed or from the side from which the client is transferred or lifted. Other pieces of furniture at the bedside should not interfere with the procedure.

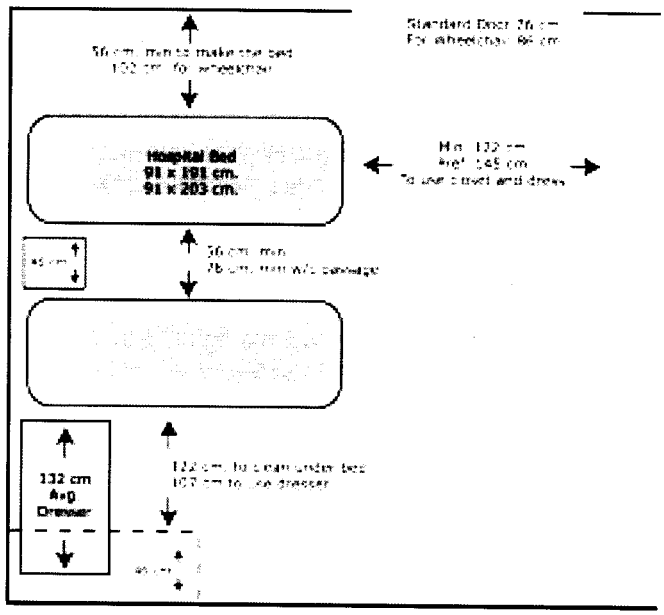


Figure 29. Space Planning

In hospitals, one room may accommodate up to four beds, four bedside tables, four meal tables and guest chairs. In long term care facilities and private residences, there may be many other pieces of furniture in the client's room that can interfere with transfers and lifts. This requires rearrangement and/or removal of the furniture to allow the caregiver to perform safe procedures and to ensure ease of mobility of client devices (such as wheelchairs). (See Figure 30.)

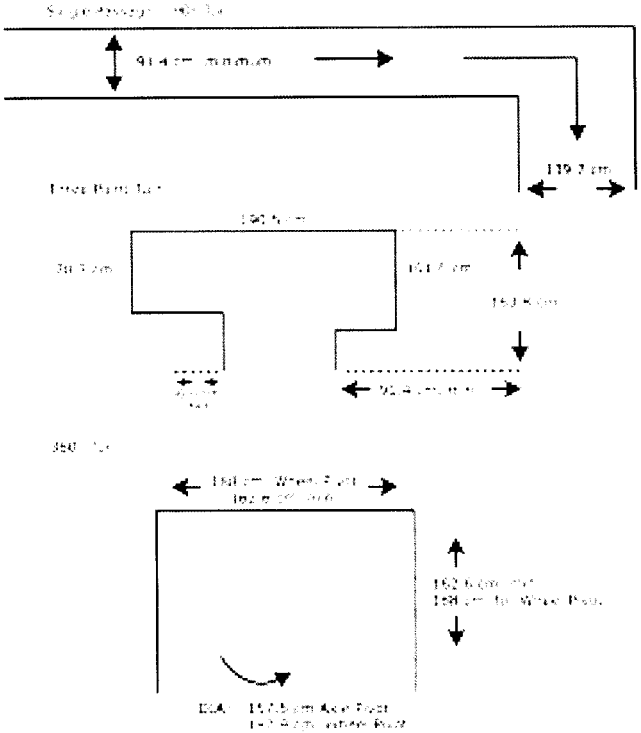


Figure 30. Wheelchair Turning Radius

Layout of Bathrooms

The design of bathrooms in health care facilities is often so poor that it is difficult to safely perform transfers and lifts. The limited space and poor layout of a bathroom increases the risk of injury to the caregiver and the client.

Toilets should be located so that they can be accessed from both sides. Wall mounted toilets are preferred because they provide additional space at toe level and allow room for the base of a lifting device. Often the toilet is placed near a wall, limiting access to one side only. The caregiver may have to transfer the client to their weaker side simply because the design restricts the options regarding which side to transfer the client.

The overall design of the bathroom should allow enough room for a wheelchair, commode chair or lifting device and room to accommodate one or two caregivers to assist with transfers. A minimum space clearance of 117 cm is recommended to allow a wheelchair to be positioned approximately 90° to the toilet. (See Figure 31.)

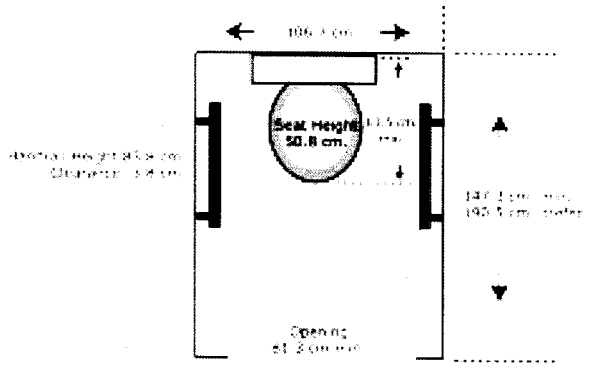


Figure 31. Toilet Space Parameters

Layout of Tub/Shower Rooms

Similarly, the design of the tub/shower room should allow adequate space for a wheelchair, commode chair, lifting device and two caregivers. Two caregivers and a lifting device are often required to get a client to the bathtub. The *Humanscale*™ (1974) recommends a minimum space clearance of 142 cm for a frontal transfer. This should be taken into consideration when planning and designing the tub/shower rooms.

When a fixed tub lift is being used, the client is transferred from a wheelchair to the lifting device. The space requirements are the same as in a frontal transfer that allows space for the wheelchair.

The tub itself should be height adjustable to minimize the physical demands, such as bending and twisting, while the caregiver is assisting a client with their bath. A roll-in shower stall accommodates a client in a wheelchair or a commode chair. The dimensions of a roll-in shower stall should be at least 75 cm x 150 cm. The shower stall should have a bevelled threshold and a maximum height of 13 cm to prevent water from draining into the general bathroom area. The thresholds must be designed so that they allow a smooth and safe access to the shower stall. The minimum clear floor space in front of the shower should be 90 cm x 120 cm.

Accessories for the bath and shower, such as shelves for towels, blankets and/or sheets, washing and cleaning supplies, must be designed for easy access by the caregiver and client.

8.3 Equipment, Furniture and Tools

Engineering applications have been developed and implemented in many pieces of the equipment, such as hydraulic/electric lifting devices and removable/adjustable arm rests. However, there are still pieces of equipment that do not have these controls. For example, many geriatric chairs lack removable arms. As a result, lifting clients from these chairs requires awkward postures and places force on the shoulders, neck and back. The ergonomic features and engineering controls must be considered in the purchasing process to ensure that the most appropriate and safest products are purchased.

Table 25. Design Considerations for Equipment, Furniture, and Tools

Equipment/ Furniture/ Tools	Design Considerations
Bed	Must be adjustable to allow the caregiver to perform safe transfers and lifts. Electric or hydraulic mechanisms are easy to operate and controls are generally accessible either on the bed rail or at the end of the bed. Mechanisms that require the caregiver to raise or lower the bed manually increase the risk MSIs due to repetitive and forceful movements. Cranks are usually located too low on the foot end of the bed, such that the caregiver has to assume a bent or squatting posture. Lubrication of the cranks must be maintained to ensure easy operation. Space or height of the bed from the floor must allow the caregiver to position the base of a lifting device underneath it.
Bed rails	Two most common types of bed rails are a full-length rail and a split design. Design of the mechanism that unlocks the bed rail should be such that the caregiver can easily operate it with one hand. Weight of the rails should be as light as possible to minimize the physical demands required to lift and lower the rails.
Wheelchair	Arm and leg rests should be easily removable. If arm and leg rests have a locking mechanism that secures them in place, it should be large enough and accessible from the side of the wheelchair to enable the caregiver to operate it easily. Cushions should be secured to the chair so that they do not slip while the client is being positioned. Some come with straps that can be secured around the backrest of the wheelchair. Some could be attached with Velcro to the seat pan, allowing for easy removal of the cushion for cleaning purposes. Non-slip, thin vinyl matting, available from hardware stores, can be placed directly under the client to prevent them from sliding. Hand controls, such as wheelchair brakes, should be located on both sides of the top section of the large wheels in order to enable the client and caregiver to operate the brakes easily.

Table 25. Design Considerations for Equipment, Furniture, and Tools (Continued)

Equipment/ Furniture/ Tools	Design Considerations
Geriatric chair	Typically have fixed, high backrest, fixed arm and leg rests; leg rests are usually the large platform type. This design does not allow the caregiver to assume a close and proper posture during a transfer or lift. Optimal design has removable arm and footrests. Some come with a two-piece backrest that allows the caregiver to remove the top portion for access to the client from behind. Mechanism for tilting the chair should be easy to operate by the caregiver.
Commode chair	Two common types – the toilet basin as part of the commode or where the commode is rolled above a regular toilet. Optimal features are removable arm and leg/footrests, brakes and a lap belt to secure the client. Non-rusting materials such as stainless steel or plastic are best. Casters of the commode chair should be made of non-slip material and have a tread. They should be large enough so that they can be pushed over a lip at the threshold of the shower room door or at the threshold of the shower itself. There should be brakes on the casters.
Casters	Casters must be compatible with the type of flooring (e.g., carpet, tile and vinyl) on which they are to be used. If casters do not swivel easily, the force required to move the equipment is substantial. Hard casters should be used on soft surfaces and soft casters used on hard surfaces. The amount of force necessary to push and pull wheeled equipment can be measured with a force gauge to determine if it falls within safe limits. Pushing puts less force on the body than pulling. Caregivers should be able to operate both the locking and releasing mechanism with a foot control, where possible. The foot control must be large enough so it is easy to find and allows for a more advantageous angle when depressing it. A preventive maintenance program for casters is important, especially if the floors are carpeted. Because of the build up of lint on the casters, the resistance increases as does the force required to push the equipment.
Grab bars	Correct placement of grab bars allows the caregiver to safely transfer a client from a wheelchair to the toilet and vice versa. Grab bars should be placed on both sides of the toilet if there are no arm rests. This allows the client to use the appropriate grab bar on their stronger side. Grab bars can be secured to the back wall or extend from floor to ceiling. They can also be designed to swing up or out of the way to allow the caregiver to assist a client to transfer easily and safely. Grab bars that do not extend to the ground allow for more freedom of movement around the toilet for mechanical lifts and caregivers.

8.4 Client Handling Lifting Devices

Mechanical lifting devices decrease the risk of injury by eliminating the forceful exertion, awkward postures and repetitive motions associated with manual client lifting. Procedures for using client lifting devices are outlined in "Client Lifts and Lifting Devices" on page 149.

Mechanical lifts should be used to lift or move clients:

- Off the floor
- To and from a bed
- To and from a seated surface (wheelchair, geriatric chair, commode)
- To a standing position
- During ambulation
- In and out of tubs/showers
- In and out of vehicles

There are four general categories of mechanical lifts:

- "Total-Body Lifts" on page 168
- "Stand-Assist Lifts" on page 168
- "Ambulation Lifts" on page 168
- "Bathtub and Shower Lifts" on page 169

Total-Body Lifts

These lifts are used to lift or move totally dependent clients who require that their entire body weight be lifted. There are a variety of lifts on the market. Some devices are designed to lift from the floor and some are designed to lift clients up to 500 pounds or more. There are also smaller versions of total lifts available that are designed for use in the community due to their compact features. These devices are used to lift persons in/out of cars and in the homecare setting. Battery-operated devices are the preferred type.

Stand-Assist Lifts

These lifts are used to move clients to and from chairs, commodes, toilets, and bed. They can also be used to move clients in and out of the shower. These lifts are used for clients who can bear weight and who have some degree of upper-body strength. Battery operated devices are the preferred type.

Ambulation Lifts

These lifts are designed to support a client during ambulation. The lift is pushed along by the client while a back strap prevents them from falling.

Bathtub and Shower Lifts

These lifts are designed for direct transfer of clients from the bed or chair, to a bathtub or shower. There are a variety of models available — some are fixed while others are portable. The battery operated devices are also the preferred types.

In summary, there are many manufacturers of lifting devices with a wide variety of features. The organization has to consider the environment, needs of the client/ staff and the budget when choosing the equipment for their organization. There are some essential features that an organization should consider prior to pursuing a trial or purchase of a device:

- Ability to lift from the floor to the highest bed
- Can lift the largest, heaviest or smallest client
- Easy to operate and steer
- Easy to raise and lower
- Effective brakes
- Adjustable base of support
- Casters are compatible with the type of flooring
- Equipped with an emergency stop switch
- Equipped with rechargeable batteries that have a sufficient capacity and quick charging time
- Fits through doorways of bedrooms and bathrooms
- Can go under beds and around equipment
- Safe, stable, and comfortable for the client
- Easy to clean and maintain
- Equipped with slings that can be positioned easily (minimal lifting/pulling), come in multiple sizes, promote client comfort and are securely attached to the lift

8.5 Client Transfer and Repositioning Devices

Due to the lack of appropriate transferring and lifting devices, caregivers in many organizations are transferring and lifting clients manually. One caregiver may perform up to thirty transfers and lifts over an eight-hour shift. In addition, caregivers are performing up to 100 other client handling related activities, such as feeding, dressing and bathing, which also contributes to the risk of MSIs. The proper choice and use of equipment to transfer clients results in the elimination or reduction of unnecessary manual handling and, therefore, diminish the risk of injury to the caregivers and clients.

There is a wide variety of client handling equipment and devices available. Familiarity with the various types of equipment and their uses helps the organization select the most appropriate piece of equipment for transferring clients. Detailed procedures for using transfer and repositioning equipment are outlined in "Repositioning and Transfers" on page 123.

The use of transfer devices should:

- Ensure a secure client transfer.
- Reduce the intensity of biomechanical stresses associated with client transfers on the caregivers.
- Reduce the physical demands of the task, such as pushing or pulling.
- Provide better control when transferring a client. For example, a transfer belt provides a place for the caregiver to grip in case the client starts to fall.
- Permit the caregiver to assume a position with better leverage.
- Allow the client to participate as much as possible.

Repositioning/Turning Sheet

The features and benefits of a repositioning/turning sheet are:

- 82 cm x 182 cm
- Made of flannelette fabric on the top, and plasticized, slippery, non-static material on the bottom
- Easy to store and clean

Transfer/Walking Belt

Figure 32 shows a transfer/walking belt.

Figure 32. Transfer/Walking belt

The features and benefits of a transfer/walking belt are:

- Comes in different widths and lengths. The most desirable width is approximately 18 cm-22 cm. Narrower belts have the potential of cutting into the client's skin during the procedure.
- Length of the belt varies from 100 cm to 150 cm.
- Often made of non-flammable, soft but firm webbing material that can be easily washed.
- Handles, on either side and in the back, increase security and control when handling a client.

Ensure that the:

- Belt has proper handles on it, for example, one on either side and one on the back
- Mechanism for fastening the belt is safe and secure
- Material of the belt is not:
  - Too hard - may cut the client's skin
  - Too slippery - may result in the belt sliding up
  - Too soft - would not provide enough support

Velcro, car seat belt buckles or metal loops are commonly used to attach the belt. The car seat buckle is fast and less cumbersome than other types of fastening mechanisms. Velcro fastening alone is not safe enough, as the client may be able to open the belt in the middle of the procedure, which could be hazardous to the caregiver and the client.

Transfer Disk

Figure 33 shows a transfer disk.

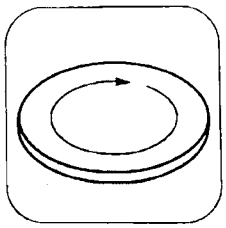


Figure 33. Transfer Disk

The features and benefits of a transfer disk are:

- A round, flat disk approximately 1.5 cm thick, covered with non-slip material on either side.
- Disk rotates on graphite pads like a turntable. When weight is on it, rotation is smooth and controlled.
- Comes in two sizes, approximately 30 cm and 38 cm in diameter.

Transfer Board

Figure 34 shows a transfer board.

Figure 34. Transfer Board

The features and benefits of a Transfer Board are:

- A wooden board approximately 20 cm x 70 cm.
- Some have handles at both ends.
- Most are made of birch plywood with a smooth lacquer finish. Both ends are tapered and edges are rounded. This makes it easy to slide the client on and off the board.
- Another type is a 2.5 cm thick, S-shaped board with a moveable seat in the middle, on a track. It is approximately 102 cm x 30 cm in diameter at each end and made of plastic acrylic fibreglass.

Client Handling Sling

Figure 35 shows a client handling sling.

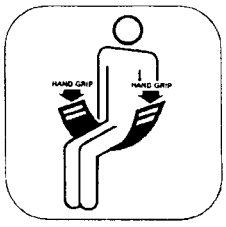


Figure 35. Client Handling Sling

The features and benefits of a client handling sling are:

- A 3 mm thick, 51 cm x 20.5 cm, flexible sling made of polymer-based material, with two handles at each end.
- Easy to store and to clean.

Mechanical Transfer Device

Some lifting devices can be used to transfer a client. Special slings can be attached and used for pivoting and toileting.

Slide

The features and benefits of a slide are:

- A tube made of fibre-filled, anti-static and fire-retardant material covered with nylon.
- Full size slide (190 cm long) comes in widths of 50 cm, 60 cm, 70 cm and 90 cm.
- Is also available in a mini-size, 60 cm x 60 cm.
- To be used with a draw sheet.
- Easy to store and clean.

Slider Board

The features and benefits of a slider board are:

- Similar to the transfer board.
- Has rounded edges and is made of hard, firm plastic with a smooth, even surface on the top and non-skid inserts on the other side to permit stability.
- Some models have two handles on either side of the board.
- Usually comes in two sizes 63.5 cm x 152.5 cm and 63.5 cm x 131.5 cm.
- To be used with a draw sheet.
- Easy to store and clean.

Roll Board

The features and benefits of a roll board are:

- Comes in two sizes, 165 cm x 50 cm and 70 cm x 50 cm.
- Inner roll board core is made of flexible, kink-resistant plastic covered with coated glass-fibre fabric.
- Top roll material is made of nylon with a special coating on one side and is tear-resistant.
- Folds up and is easy to clean.

Glider

The features and benefits of a glider are:

- Consists of two mats made of low-friction material with safety straps and handles on either end.
- Easy to clean and store.

8.6 Purchasing of Equipment and Devices

Organizations often purchase equipment without evaluating how the equipment is going to be used, whether staff require any additional training on its use, or whether it does what it is supposed to do. If the caregivers do not know the purpose of a piece of equipment or are not properly trained in how to use it, it may be left unused or used improperly. A proactive approach that involves all levels of staff in the purchase decision helps to reduce client handling injuries.

Most companies let an organization borrow their products so that the caregivers can test them in an actual work setting before a purchasing decision is made. The product should be used long enough and by as many caregivers as possible to allow for sound evaluation.

The most common evaluation method is to obtain information from brochures and from the salesperson. The following information should be gathered:

- Where is the product made?
- What is the price and what is included (e.g., are accessories included or extra)?
- What is the length of the warranty on the equipment itself and on the accessories?
- What is the maximum capacity rating on lifting devices and on slings?
- What is the availability of service from the manufacturer or another organization?
- What is the availability of references from other product users?
- What are the operational requirements (e.g., adjustability, ease of use, safety features)?
- What is the training required to enable caregivers to operate the equipment?
- Does the manufacturer or another organization provide the required training?
- What are the maintenance considerations for both the product and follow-up training?
- What is the interaction with other equipment?
- What are the space requirements to operate and store equipment?

The most thorough and elaborate evaluation method is to use the actual or proposed product in an equipment trial. This method is especially important during the design phase and during major renovations. For example, when purchasing grab bars, a bathroom can be set up with all of the fixtures such as a sink, toilet, tub and the grab bars.

When conducting a product trial, the following factors should be considered:

- safety of the caregiver and the client
- accessibility of the caregiver, client, wheelchair, commode chair, lifting device, etc.
- location of the product in relation to the other fixtures/functions

Other purchasing considerations include:

- ordering sufficient quantity of equipment and attachments
- arranging a flexible purchasing agreement with the vendor, allowing for the evaluation and purchase of up-to-date equipment
- on-site testing of equipment by the users
- providing for appropriate storage areas that ensure that equipment is easy to find and access

The availability and accessibility of the equipment is a major factor in whether the equipment is used. To determine the number and types of equipment required in each department, conduct a needs analysis. In addition, if employees are expected to use the equipment and devices, the organization should ensure that the equipment and devices are:

- Purchased in sufficient quantities to meet the needs of the clients and staff
- Stored for easy accessibility
- Trialed by staff and evaluated by management prior to purchase
- Equipped with replacement accessories (e.g., slings)
- Regularly maintained

8.7 Preventative Maintenance of Equipment and Assistive Devices

Equipment must always be in good working order to avoid unnecessary accidents and injuries. A preventive maintenance program must be in place. Regular check-ups of all parts of wheeled equipment such as beds, chairs, transfer or lift devices and their attachments must be carried out according to manufacturers' instructions by a competent person. Most equipment comes with a maintenance schedule. A well-documented and communicated process must be in place in the event that the equipment fails. This includes reporting a breakdown, removing the equipment from service and repairing the equipment.

A regularly scheduled maintenance program ensures that there are a sufficient number of safe and effective mechanical lifting devices and associated equipment. All mechanical lifts have a preventative maintenance schedule. This must be followed to ensure the reliability of the equipment and to protect the organization from any liability issues that could arise from faulty equipment. Slings should also be laundered according to the manufacturer's guidelines. Inappropriate cleaning may affect the integrity of the material that the sling is made of and may result in tearing.

In addition to the standard preventative maintenance on the equipment, the organization should ensure that there is a system to take malfunctioning equipment out of regular use, ensure that there is a tracking system for prompt turnaround times, maintain the equipment instruction manuals and establish a documentation system.

Maintenance of the environment should also be considered so that equipment can be easily moved and safely used. This includes:

- Ensuring doors open easily.
- Maintaining floors so that they are clean, dry, free from holes, broken tiles and/or torn carpet.

Ensure that halls, bath areas and client rooms are clutter free.

Module 9: Tips for Training

Successful HCHSA Handle with Care™ training is not a one-time deal or the only solution to client handling. It is the ongoing reinforcement of policies and procedures and continuing education where safe transfers, lifts and repositioning become an entrenched practice that determines the success of a program. Those most able to transfer the new skills to others should be selected to initially attend the training. These individuals may be managers, professionals or colleagues. By using a train-the-trainer approach, training efforts are maximized.

The success of the training depends greatly on how well the multidisciplinary committee or program leader has prepared and planned for the training. This section covers some of the principles involved in planning a training session. Sample session plans are provided to guide facilitators in the development of comprehensive client handling training. It is recommended that persons conducting the training, possess experience in training adult learners and possess knowledge of ergonomic principles, human anatomy and client handling.

Comprehensive HCHSA Handle with Care™ training material is available from the Health Care Health and Safety Association of Ontario.

9.1 Trainers

There are many ways in which training can be delivered to meet your organization's needs:

- Preceptor/Instructor approach
- Hiring an external consultant (i.e., your regional HCHSA consultant)
- Vendor/Supplier instructors
- Internal educators

Whichever type of trainer resource you choose, there are key skills that you should consider when organizing trainers.

According to Thiagi (1998), an effective trainer has the following skills to offer:

- **Effective trainers are flexible.** They modify their small-group activities before and during use.
- **Effective trainers are adaptive.**
- **Effective trainers are proactive.** Before using a small-group activity, they modify it on the basis of the characteristics of the participants and the purpose of the activity.
- **Effective trainers are responsive.** They make modifications during the small-group activity to keep the different tensions within acceptable ranges.
- **Effective trainers are resilient.** They accept whatever happens during the small-group activity as valuable data and smoothly continue with the activity.

9.2 Learning Objectives

An objective describes the outcome of training. It is what you want the person to be able to know, do or feel as a result of the training. Objectives are written for different levels of learning: cognitive (knowing), psychomotor (doing), and affective (feeling). Training is effective to the degree that it succeeds in changing participants in desired directions. Therefore, you must first specify which outcomes you anticipate as a result of training.

Writing objectives helps you to:

- Decide where you want to go
- Create a method for getting there
- Find out whether you arrived

To write objectives, use action words (writing, sorting, solving, identifying, and conducting) not passive words (understanding, enjoying, valuing).

Three effective objectives are:

1. **Performance.** What is the learner expected to be able to do? For example, safely transfer a client using a patient handling sling.
2. **Conditions.** Under which conditions is the performance to occur? For example, from memory.
3. **Criterion.** What is the standard or yardstick? Describes how well the learner must be able to perform the task to be acceptable. For example, without error.

It is not always necessary to include conditions and not always practical to include criteria. The more explicit you can be, the better your objective can be communicated.

Learning experiences are selected in order to meet the objectives. There are different types of teaching methods (e.g., lectures, case studies, role playing, simulations) and some are more appropriate to some objectives than others. For example, if you want to teach someone to safely complete a one-person pivot transfer, a lecture is not effective.

Before finalizing learning objectives, it is helpful to test them against the following criteria:

- Are they relevant? The objectives should be based on the real needs of the group.
- Are they clear? Avoid double or multiple statements. Each objective should be one direct and simple statement.
- Are they attainable? An objective should be possible to accomplish. If you do not have the resources to carry out the objective or cannot get them, start over and prepare a new more realistic statement of the objective.
- Are they specific? Each objective should deal with specifics rather than general and vague problems, needs or learning areas.
- Are they measurable? Objectives should contain some indication of the standards of measurement so that it is easy to tell whether or not new behaviours have been learned.
- Are they behavioural? While knowledge and attitudes can be changed, a new behaviour has not been learned until it has been internalized and becomes part of a person's behavioural repertoire.

9.3 Adult Learning Principles

Facilitating learning requires an understanding of the factors that influence how adults learn and the characteristics of adults. Fostering a positive learning experience depends on how well the trainer takes adult teaching issues into consideration.

Principles of Adult Teaching

According the Honolulu Community College, principles of adult teaching include the following principles:

- **Treat learners like adults.**
- **Adults are people with years of experience and a wealth of information.** Focus on the strengths learners bring to the classroom, not just gaps in their knowledge. Provide opportunities for dialogue within the group. Tap their experience as a major source of enrichment to the class. Remember that you, the teacher, do not need to have all the answers, as long as you know where to go or who to call to get the answers. Students can be resources to you and to each other.
- **Adults have established values, beliefs and opinions.** Demonstrate respect for differing beliefs, religions, value systems and lifestyles. Let your learners know that they are entitled to their values, beliefs and opinions, but that everyone in the room may not share their beliefs. Allow debate and challenge of ideas.
- **Adults are people whose style and pace of learning has probably changed.** Use a variety of teaching strategies such as small-group problem solving and discussion. Use auditory, visual, tactile and participatory teaching methods. Reaction time and speed of learning may be slow, but the ability to learn is not impaired by age. Most adults prefer other teaching methods than lecture.
- **Adults relate new knowledge and information to previously learned information and experiences.** Assess the specific learning needs of the audience before the class or at the beginning of the class. Present single

concepts and focus on application of concepts to relevant practical situations. Summarize the information frequently to increase retention and recall. Material outside of the context of participants' experiences and knowledge becomes meaningless.

- **Adults are people with bodies influenced by gravity.** Plan frequent breaks, even if they are 2-minute stretch breaks. During a lecture, a short break every 45-60 minutes is sufficient. In more interactive teaching situations, breaks can be spaced 60-90 minutes apart.
- **Adults have pride.** Support the students as individuals. Self-esteem and ego are at risk in a classroom environment that is not perceived as safe or supportive. People do not ask questions or participate in learning if they are afraid of being put down or ridiculed. Allow people to admit confusion, ignorance, fears, biases and different opinions. Acknowledge or thank students for their responses and questions. Treat all questions and comments with respect. Avoid saying "I just covered that" when someone asks a repetitive question. Remember, the only foolish question is the unasked question.
- **Adults have a deep need to be self-directing.** Engage the students in a process of mutual inquiry. Avoid merely transmitting knowledge or expecting total agreement. Do not spoon-feed the participants.
- **Individual differences among people increase with age.** Take into account differences in style, time, types and pace of learning. Use auditory, visual, tactile and participatory teaching methods.
- **Adults tend to have a problem-centred orientation to learning.** Emphasize how learning can be applied in a practical setting. Use case studies, problem solving groups, and participatory activities to enhance learning. Adults generally want to immediately apply new information or skills to current problems or situations.

9.4 Training Methods

To ensure consistency in client handling, training has to be provided to all staff. Training should consist of:

- practical demonstrations of transfers and lifts
- ongoing problem solving, both in the classroom and at the client's bedside
- information on the prevention of MSIs (e.g., anatomy and physiology of the spine, body mechanics)

New staff must be oriented to the client handling program as soon as possible. Adequate time must be allotted for the training. The orientation should take place within a week of beginning work. The new staff member should be paired with a caregiver trained in client handling procedures for a period of time following the orientation.

The training methods depend on the type of learning expected. It is important to select training methods on the basis of the learning objectives. Each different type of training has its strengths and weaknesses. See Table 26.

Table 26. Training Methods

Strengths	Limitations	Preparation
Lecture		
Presents factual material in a direct, logical manner. Contains experience which inspires. Stimulates thinking to open discussion. Useful for large groups.	Experts are not always good teachers. Audience is passive. Learning is difficult to gauge. Communication in one way.	Needs clear introduction and summary. Needs time and content limit to be effective. Should include examples and anecdotes.
Lecture with discussion		
Involves audience at least after the lecture. Audience can question, clarify and challenge.	Time may limit discussion period. Quality is limited to quality of questions and discussion.	Requires that questions be prepared prior to discussion.
Panel of experts		
Allows experts to present different opinions. Can provoke better discussion than a one-person discussion. Frequent change of speaker keeps attention from lagging.	Experts may not be good speakers. Personalities may overshadow content. Subject may not be in logical order.	Facilitator co-ordinates focus of panel, introduces and summarizes. Briefs panel.
Brainstorming		
Listening exercise that allows creative thinking for new ideas. Encourages full participation because all ideas equally recorded. Draws on group's knowledge and experience. Spirit of congeniality is created. One idea can spark off other ideas.	Can lack focus. Needs to be limited to 5-7 minutes. People may have difficulty getting away from known reality. If not facilitated well, criticism and evaluation may occur.	Facilitator selects issue. Must have some ideas if group needs to be stimulated.
Video tapes		
Entertaining way of teaching content and raising issues. Keep group's attention. Looks professional. Stimulates discussion.	Can raise too many issues to have a focused discussion. Discussion may not have full participation. Only as effective as following discussion.	Need to set up equipment. Effective only if facilitator prepares questions to discuss after the show.

Table 26. Training Methods (Continued)

Class discussion		
Pools ideas and experiences from group. Effective after a presentation, film or experience that needs to be analyzed. Allows everyone to participate in an active process.	Not practical with more than 20 people. Few people can dominate. Others may not participate. Time consuming. Can get off topic.	Requires careful planning by facilitator to guide discussion. Requires question outline.
Small group discussion		
Allows participation of everyone. People often more comfortable in small groups. Can reach group consensus.	Needs careful thought as to purpose of group. Groups may get side tracked.	Needs to prepare specific tasks or questions for group to answer.
Case studies		
Develops analytic and problem-solving skills. Allows for exploration of solutions for complex issues. Allows student to apply new knowledge and skills.	Develops analytic and problem-solving skills. Allows for exploration of solutions for complex issues. Allows student to apply new knowledge and skills.	Case must be clearly defined in some cases. Case study must be prepared.
Role playing		
Introduces problem situation dramatically. Provides opportunity for people to assume roles of others and thus appreciate another point of view. Allows for exploration of solutions. Provides opportunity to practice skills.	People may be too self-conscious. Not appropriate for large groups. People may feel threatened.	Trainer has to define problem situation and roles clearly. Trainer must give very clear instructions.
Report-back sessions		
Allows for large group discussion of role plays, case studies and small group exercise. Gives people a chance to reflect on experience. Each group takes responsibility for its operation.	Can be repetitive if each small group says the same thing.	Trainer has to prepare questions for groups to discuss.
Worksheets/survey		
Allows people to think for themselves without being influences by others. Individual thoughts can then be shared in large group.	Can be used only for short period of time.	Facilitator has to prepare handouts.

Table 26. Training Methods (Continued)

Guest speaker		
Personalizes topic. Breaks down audience's stereotypes.	May not be a good speaker.	Contact speakers and co-ordinate. Introduce speaker appropriately.

If participants are expected to learn new skills, such as client transfers and lifts, role playing, practical demonstration, case studies and/or individual exercises are the most appropriate teaching methods. Lecture, video, television, interview, recording and reading may be the best choice for increasing knowledge.

Group discussions, sharing experience, role-playing, case studies and individual exercises can cause the participants to adopt new feelings or change their attitudes by experiencing successes.

9.5 Session Planning

When designing training sessions, determine:

- Objectives
- Methods that you want to use to achieve these objectives
- Time you are going to spend on each topic/section
- Level of knowledge and experience of the group
- Size of the group (8 to 12 is optimum)
- Best way to foster a safe and comfortable learning atmosphere
- Best way to encourage the audience to participate
- Best way to keep the participants interested (e.g., using variety of training methods, mixing different size groups)

Equipment to use during the training sessions may include:

- Overhead projector and screen
- Tape recorder
- VCR and TV monitor
- Flip chart
- Bed, pillows, trapeze, extra drawsheets
- Wheelchairs
- Stretcher
- Transfer devices
- Geriatric chair
- Mechanical/electromechanical lifting device
- Boxes of various sizes and weights for demonstrations
- Sample of a partial skeleton including the pelvis and part of the base of the skull

9.6 Delivering the Training

The organization needs to plan the content for their training program. The HCHSA Handle with Care™ program has been divided into nine modules. Not all modules need to be covered in the training. The organization should determine their specific training content needs and omit specific modules that are not relevant.

The nine modules of the HCHSA Handle with Care™ program are:

- "Introduction" on page 1
- "Legislation" on page 7
- "Musculoskeletal Injuries (MSIs) and Ergonomics" on page 17
- "Program Development and Implementation" on page 51
- "Client Mobility Assessment" on page 99
- "Repositioning and Transfers" on page 123
- "Client Lifts and Lifting Devices" on page 149
- "Environment and Equipment" on page 161
- "Tips for Training" on page 177

9.7 Evaluating the Training

The evaluation method has to be defined when designing a training program. The delivery of the training, the content, the mode of delivery and the location of the training must be evaluated. The most frequently used evaluation is one which is designed to gather the participants' feedback on the training session and its delivery. In this type of evaluation, the trainer usually gives out a questionnaire at the end or the beginning of the session. Items may include participants' satisfaction with the session, the extent to which the learning objectives were met, the usefulness of the content, and the effectiveness of the trainer in communicating the information.

Some evaluation forms use open-ended questions, such as:

- How are you going to apply this information in your workplace?
- What did you learn from this session?
- What changes would you suggest for future training?

The second level of evaluation measures whether the learning objectives were met. This requires that the facilitator administer a pre- and post-test with the participants. Alternatively, the participants may evaluate their own learning by completing a competency profile on their own before and after their participation in the training session.

To determine whether the participants have increased their knowledge on the subject, the evaluation tool needs to be structured so that key principles and facts relevant to the training session are assessed. Attitudinal change can be measured in a similar way. That is, a questionnaire can be designed to assess the extent to which participants agree with statements related to client handling issues.

Table 27 provides a sample for the Participant Training Evaluation.

Table 27. Participant Training Evaluation

Name:						
Facilitator:						
Company:						
Training session:						
Please rate the following on a scale of 1 to 4 by circling the evaluation beside the criteria:	**Strongly Disagree**				**Strongly Agree**	
General						
Overall, this is an excellent course.	NA	1	2	3	4	5
The course was well organized.	NA	1	2	3	4	5
This course was helpful in developing new skills.	NA	1	2	3	4	5
The course made me aware of current problems in this field.	NA	1	2	3	4	5
The length of the course was just right.	NA	1	2	3	4	5
The material in the course was excellent.	NA	1	2	3	4	5
Instructor						
The facilitator presented material clearly, defining new terms and concepts.	NA	1	2	3	4	5
The facilitator's knowledge of the course was excellent.	NA	1	2	3	4	5
The facilitator seemed aware of student needs.	NA	1	2	3	4	5
The facilitator created a positive class environment.	NA	1	2	3	4	5
The facilitator was prepared for class.	NA	1	2	3	4	5
The facilitator answered satisfactorily answered my questions.	NA	1	2	3	4	5
The facilitator related theories and concepts to practical issues.	NA	1	2	3	4	5
The facilitator presented the material at a comfortable speed.	NA	1	2	3	4	5
Materials						
AV materials were used and well integrated into the course.	NA	1	2	3	4	5
AV materials helped to clarify difficult concepts.	NA	1	2	3	4	5
Handouts were used in a helpful and constructive manner.	NA	1	2	3	4	5

Table 27. Participant Training Evaluation (Continued)

Were the following satisfactory to you		
Location	**No**	**Yes**
Classroom temperature	**No**	**Yes**
Duration	**No**	**Yes**
Instructor	**No**	**Yes**
Audio visuals	**No**	**Yes**
Group exercises	**No**	**Yes**
Workbook/Resource package	**No**	**Yes**
Other		
Would you recommend this course to others? (Justify answer.)		
Would you recommend any changes to the course?		
Was the time scheduling of the course convenient for you?		
What other training or information would be most helpful to you in promoting workplace health and safety?		
Any additional comments?		

Glossary

Administrative applications
Typical adjustments to work organization and work practices.

Anthropometry
Study of measurements of the human body, including height, reaches and proportions.

Assistive devices
Those transfer and lifting devices used to assist with transfer and lift procedures.

Awkward posture
Position of the body other than neutral.

Biomechanics
Science of the internal and external forces required to manually lift, lower, push, pull and carry objects or people and the effects of these forces on the body.

Caregiver
Any person who comes into contact with clients.

Client
Client, patient or resident.

Cognition
Mental and intellectual functions.

Dynamic muscular action
The action of muscles contracting and relaxing causing good blood flow through them and their related structures.

Engineering applications
Design, arrangement or alteration of physical aspects of the workplace, tools, equipment or workstations.

Ergonomics
The science of matching the workplace environment and job tasks with workers' capabilities, making the work environment more "human friendly".

Force (Forceful exertions)
Amount of work that the body must be exerted to perform a particular action.

Hazard
Any real or potential condition that previously caused or could reasonably be expected to cause personal or property damage.

Incidence
Number of injuries occurring in a population within a specific time interval.

Isometric muscle contraction
A contraction occurring without shortening or changing the distance between the origin and insertion of the muscle.

Job demands analysis (JDA)
Systematic breakdown of a task into its elements, including a description of mental and manual activities, task duration, speed, frequency, complexity, environmental conditions and equipment required to perform a task.

Lift
Procedure that is used to lift or carry the entire weight of a person (or object).

Lifting device
Device designed to take the total weight of a client during the lift procedure.

Musculoskeletal injury (MSI)
Injuries or illnesses of muscles, tendons, ligaments, bursa, nerves, joints, bones, and supporting blood vessels in either the upper or lower extremities (arms and legs) or the back.

Musculoskeletal system
System of the body that includes the skeleton (bones), muscles and their tendons, ligaments and joints. This system gives the body form and enables it to move and exert muscular force.

Perception
Process of becoming aware of and interpreting external objects, events and relationships based on experience following the receipt of sensory information.

Physical demands analysis (PDA)
Involves the physical requirements of a task such as repetition, force and awkward postures.

Proprioception
Sense of posture or the physical position/movement of the limbs in relation to one's environment.

Psychosocial factors
Any combination of psychological and sociological conditions and their effects.

Range of motion (ROM)
Spatial extent through which a joint, limb, neck or trunk can normally be moved.

Repetition
Repeated movement of the body or body part(s). Cycle time of less than 30 seconds; where the cycle time is the time it takes to do one repetition.

Reposition
Procedure used to move a client to a new position on the same surface.

Risk factor
General characteristics of work which increase the likelihood of physical or mental harm to the worker.

Static muscular action
The simultaneous contraction of muscles on both sides of the joints to keep a joint stable and in a fixed position.

Transfer
Procedure used to assist a client who can bear weight at least through one leg or both arms, to move from one surface to another.

Transfer device
Equipment used to assist with a transfer (board, belt, disk, slide, and slider).

Trunk/Torso
Part of the body between the neck and lower limbs (including the thoracic, lumbar and sacral areas of the spine).

Workplace components
Equipment, tools, workstation, environmental factors and work organization.

Work environment
Physical, physiological, social and psychological environments within which workers perform their tasks.

Work organization
Manner in which job tasks are organized and assigned.

Work surface
Any surface or plane within which movement (work tasks) occur at the workplace.

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